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Biodiversity, Bioprospecting and Patents: A case study of Traditional Knowledge in French Guiana

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Biodiversity, Bioprospecting and Patents: A Case Study of Traditional Knowledge in French Guiana - Céline INVERNIZZI

Abstract

Brazil, Peru, Colombia, Venezuela and French Guiana are said to contain the "lungs of the Earth", because 20% of earth's oxygen is produced by their vegetation, known as the Amazonian tropical rainforest. French Guiana, a French overseas region, possesses an exceptionally rich biodiversity and wealth of natural resources, shaped by the presence of indigenous peoples through the application of their traditional knowledge. Indigenous peoples have used their knowledge and resources over the centuries, contributing to the conservation and sustainable management of biodiversity and the development of modern science. It is widely acknowledged that natural resources and the associated indigenous knowledge has a significant value for bioprospecting. However, problems associated with the misappropriation of the knowledge of indigenous peoples and natural resources have gained the attention of the international community.

Despite the implementation of local measures to monitor and manage access to resources in French Guiana, this research argues that France has failed to enact international commitments within its domestic legislation, or to give adequate protection to its indigenous peoples, creating conditions potentially favourable to the illegitimate appropriation of knowledge and resources. The indivisibility of the French republic is a fundamental tenet of French identity. However, this tenet has harmful repercussions for indigenous French Guianese peoples when it comes to the consideration of the recognition of their rights and their capacity to control their own knowledge and access to genetic resources. In adopting a new French biodiversity policy in August 2016, France guarantees the effective access to genetic resources and the fair and equitable sharing of benefits, and to that extent the regulation of bioprospecting activities.

In the light of the Convention on Biological Diversity and the Agreement on Trade-Related Aspects of Intellectual Property Rights, with particular emphasis on the access to genetic resources and traditional knowledge held by indigenous peoples, this research seeks to critically discuss the potential conflicts between intellectual property laws and environmental law related to bioprospecting.

List of Contents

List of abbreviations

ABS	Access and Benefit-Sharing
BCP	Biocultural Protocols
CBD	Convention on Biological Diversity
COP	Conference of the Parties
EPC	European patent Convention
EPO	European Patent Office
FAO	Food and Agriculture Organisation
IP	Intellectual Property
IPR	Intellectual Property Right
IAITPTF	International Alliance of Indigenous and Tribal Peoples of the Tropical Forests
ICBG	International Cooperative Biodiversity Group
IISD	International Institute for Sustainable Development
ILC	Indigenous and Local Community
IUCN	International Union for Conservation of Nature
MAT	Mutually Agreed Term
OHCHR	Office of the United Nations High Commissioner for Human Rights
PIC	Prior Informed Consent
SPAW	Caribbean Specially Protected Areas and Wildlife
TK	Traditional Knowledge
TKDL	Traditional Knowledge Digital Library
TRIPS	Agreement on Trade-Related Aspects of Intellectual Property Rights
UN	United Nations
UNCED	United Nations Conference on Environment and Development
USPO	United States Patent Office
WIPO	World Intellectual Property Organisation
WTO	World Trade Organisation

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CHAPTER 1. Aims, objectives and background to the research

I. Aims and objectives

The main aim of the research is to analyse international and domestic approaches which apply to bioprospecting activities regarding access to genetic resources and traditional knowledge in the light of environmental law and intellectual property law. Using French Guiana as a case study, the research project seeks to analyse whether the French legal system adequately protects its biodiversity resources and associated knowledge. Hence, the objectives of the research are as follows:

1. Critically analyse the international intellectual property rules and policy frameworks such as the TRIPS, which sets up standards for the protection of intellectual property rights.

2. Critically analyse the international environmental law and policy frameworks, such as the Convention on Biological Diversity and the Nagoya Protocol, which regulate: biodiversity protection, recognising indigenous and local communities, confirming rights to indigenous peoples, ensuring equitable benefit sharing, safeguarding access to genetic resources and developing broad guidelines that States shall follow.

3. Critically discuss the potential conflicts between the Convention on Biological Diversity and the Agreement on Trade-Related Aspects of Intellectual Property Rights and point out essential distinctions between them.

4. Analyse the current French legal system and the legal status of French overseas territories regarding bioprospecting activities.

5. Critically analyse the indigenous people's legal status, addressed by the French regulation.

6. Critically analyse the effectiveness of the implementation of the new Biodiversity Law adopted in August 2016 into the French regulation. Critically analyse potential changes that the law will bring for mainland France and French Guiana.

II. Background to the research

According to the Secretariat of the Convention on Biological Diversity, "Biodiversity prospecting" or "bioprospecting," is the exploration of biodiversity for commercially valuable genetic and biochemical resources. It can be defined as the "process of gathering information from the biosphere on the molecular composition of genetic resources for the development of new commercial products."[1] Bioprospecting has an important economic value to modern science and industry, and equally for host countries and local communities.[2] Bioprospecting also includes the collection of traditional knowledge (TK) associated with the use of biological resources by indigenous peoples and local communities (ILCs).[3] Since the dawn of the civilisation, indigenous peoples have used their knowledge and resources in their daily lives while at the same time preserving biodiversity.[4] Hence, there has been a growing appreciation of the value of TK, and recognition of the direct contribution of ILCs in the preservation and safeguarding of biodiversity through their knowledge, skills and techniques which make them more than 'natural resource managers', ensuring biological diversity and the preservation of valuable information for humanity.[5] This link between TK and the sustainable use of biological resources has been especially promoted since the adoption of the Convention on Biological Diversity (CBD) and Agenda 21.[6] Both agreements were adopted by governments during the Earth Summit held in Rio de Janeiro in 1992. Those agreements and their protocols brought attention to the impacts of changes to ecosystems such as loss of biodiversity, pollution, ozone

[1] United Nations Environment Programme, Progress Report on the Implementation of the Programmes of Work on the Biological Diversity of Island Water Ecosystems, Marine and Coastal Biological Diversity, and Forest Biological Diversity (COP Nairobi, 20 April 2000) UNEP Doc. UNEP/CBD/COP/5/INF/7 page 2 https://www.cbd.int/doc/meetings/cop/cop-05/information/cop-05-inf-07-en.pdf accessed 14 December 2016

[2] Inna Abramova and Alexander Greer, 'Ethnochesmistry and Human Rights' (2013) 10 Chem Biodivers see also http://www.wipo.int/edocs/pubdocs/en/tk/933/wipo_pub_933.pdf

[3] 'Bioprospecting' (UNDP web-site) http://www.undp.org/content/sdfinance/en/home/solutions/bioprospecting.html accessed

[4] United Nations Permanent Forum on Indigenous Issues, Study on the treatment of traditional knowledge in the framework of the United Nations Declaration on the Rights of Indigenous Peoples and the post-2015 development agenda' (2 February 2015) UN Doc. E/C.19/2015/4

[5] Inter-Agency Support Group on Indigenous Peoples' Issues, 'The Knowledge of Indigenous Peoples and Policies for Sustainable Development: Updates and Trends in the Second Decade of the World's Indigenous' (June 2014) http://www.un.org/en/ga/president/68/pdf/wcip/IASG%20Thematic%20Paper_%20Traditional%20Knowledge%20-%20rev1.pdf accessed 20 December 2016

[6] United Nations Convention on Biological Diversity (concluded 5 June 1992, entered into force 29 December 1993) 1760 UNTS 79

depletion and climate change,[7] and the need of biodiversity conservation to protect against biopiracy. Although indigenous peoples did not participate in the drafting of the CBD, they have increasingly participated in CBD meetings, mainly through presence at Conferences of the Parties (COP).[8]

The call for action by Governments to set up a legal framework for the fair and equitable sharing of genetic resources allowed, from 1998, the adoption of guidelines and working groups. A Panel of Experts on Access and Benefit-sharing was created in 1998 to define ABS concepts. In 2000 an Ad Hoc Open-ended Working Group on Access and Benefit-sharing (ABS) was established in order to create ABS guidelines for future implementation. The Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization, adopted in 2002, was an important step in the process of ABS regime implementation.[9] The Nagoya Protocol, adopted in 2010, completed the CBD and aimed at sharing the benefits arising from the utilisation of genetic resources in a fair and equitable way. It established a legal framework for the access to genetic resources and fair and equitable sharing of the benefits arising out of their utilisation.[10]

While international environmental law seeks to protect biodiversity and TK of indigenous peoples, accepting bioprospecting activities if they are well conducted, intellectual property rights (IPRs) establish intellectual property (IP) standards, promoting a patent system under the World Trade Organisation (WTO) and the World Intellectual Property Organisation (WIPO), allowing companies to patent TK, medicines and foods.[11] The TRIPS, a WTO Agreement concluded in 1994, protects intellectual property rights including trademarks, copyrights, patents, industrial designs, integrated circuit layout designs, geographical indications, undisclosed information and trade

[7] Ulrich Beyerlin and Thilo Marauhn, *International Environmental Law* (Oxford: Hart, 2011)
[8] Patricia Borraz, 'Indigenous Participation in the Convention on Biological Diversity Process' (*European Commissio*n, April 2005) 5-6 http://trade.ec.europa.eu/doclib/docs/2005/april/tradoc_122182.pdf accessed 30 January 2016
[9] Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization (adopted 2002) UN doc. UNEP/CBD/COP/6/24 ('Bonn Guidelines')
[10] 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 (adopted 29 October 2010, entered into force 12 October 2014)
[11] T. Mackey and B. Liang, 'Integrating Biodiversity Management and Indigenous Biopiracy Protection to Promote Environmental Justice and Global Health' (2012) 102 American Journal of Public Health

secrets.[12] It specifies a minimum level of protection that each Members of the TRIPS has to enforce and sets a dispute resolution system. Measures to protect TK, innovations and practices of indigenous have been addressed in the Intergovernmental Committee on Intellectual Property, Genetic Resources, Traditional Knowledge and Folklore of WIPO (IGC).[13]

Over the last 30 years, the recognition of indigenous peoples' rights has gained also the intention of the international community, as reflected within the United Nations.[14] This has been expressed with the establishment of the Permanent Forum on Indigenous Issues in 2000 and the Declaration on the Rights of Indigenous Peoples adopted by the UN General Assembly.[15] Recognition has been also influenced by the initiatives of the International Labour Organisation (ILO), specifically in adopting Convention 169 of the International Labour Organization concerning Indigenous and Tribal Peoples in Independent Countries.[16]

Other international legal instruments exist and address the question of the protection of TK: The Convention Concerning the Protection of the World Cultural and Natural Heritage 1972 (the UNESCO Heritage Convention); the FAO's International Undertaking on Plant Genetic Resources (the IUPGR-FAO) and the Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property 1970 (the UNESCO Cultural Property Convention).[17]

Thus the point has been reached that increased visibility has been given to ILCs within the international context in adopting key international conventions and creating organisations. The recognition of the link between environment and indigenous peoples is the outcome of the increasingly involvement of indigenous peoples in

[12] Agreement on trade-related aspects of intellectual property rights (concluded 15 April 1994, entered into force) 1869 UNTS 299 ('TRIPS')
[13] United Nations Permanent Forum on Indigenous Issues, Study on the treatment of traditional knowledge in the framework of the United Nations Declaration on the Rights of Indigenous Peoples and the post-2015 development agenda' (2 February 2015) UN Doc. E/C.19/2015/4
[14] Hendrik Strydom, 'Environment and Indigenous Peoples' (January 2013) in Rüdiger Wolfrum (ed), *Max Planck Encyclopedia of Public International Law* (online edn)
[15] United Nations Declaration on the Rights of Indigenous Peoples (adopted 13 September 2007) UNGA Res 61/295
[16] ILO 'Convention No 169 concerning Indigenous and Tribal Peoples in Independent Countries' (adopted 27 June 1989, entered into force 5 September 1991) 1650 UNTS 383.
[17] Djims Milius, 'Justifying intellectual property in traditional knowledge' (2009) Intellectual Property Quarterly 185

decision-making processes, nationally and internationally.[18] This finally determines the manner in how these issues have to be solved globally.

The case study, France was one of the first States to sign the CBD in 1992; however, the country did not immediately ratify the Nagoya Protocol which implements CBD objectives, and failed to provide a satisfactory solution for biodiversity preservation and indigenous peoples. Hence, until August 2016 France did not possess any legislation regarding access to genetic resources for the whole territory. Only certain provisions were adopted in overseas territories such as in French Guiana, for example with the creation of the French Guiana Amazonian Park in 2007,[19] which shows the shift towards locally governed legislation.[20] Concerning the UN Declaration on the Rights of Indigenous Peoples, France voted in favour; whereas other countries, such as Australia, the United States, New Zealand and Canada voted against. In regard to ILO 169, France has not ratified it yet. This, emphasizes the lack of recognition and the implementation of important treaties that France denies to implement within its legal framework.

[18] Hendrik Strydom, 'Environment and Indigenous Peoples' (January 2013) in Rüdiger Wolfrum (ed), *Max Planck Encyclopedia of Public International Law* (online edn)

[19] Centre d'Echange d'Informations sur la Biodiversité en France, 'Mise en œuvre du Protocole de Nagoya sur l'Accès et le Partage des Avantages' http://biodiv.mnhn.fr/info/mise-en-oeuvre-du-protocole-sur-l-acces-et-le-partage-des-avantages accessed 14 November 2016

[20] Geoffroy Filoche, 'Domestic biodiplomacy: navigating between provider and user categories for genetic resources in Brazil and French Guiana' (2012)

CHAPTER 2. Introduction

Despite international conventions, protocols and guidelines, indigenous heritage is under threat in many ways.[21] The fourteenth session of the Permanent Forum on Indigenous Issues pointed out challenges and obstacles that indigenous peoples are facing.[22] Indigenous peoples, including indigenous youth, face discrimination, marginalisation, poverty, loss of identity and TK, while indigenous women face barriers with regard to access to education, access to their lands and territories, and lack of health care.[23] Expropriation of their lands,[24] migration, climate change, loss of biodiversity, unauthorised or overexploitation of biodiversity resources, unfair sharing of benefits or absence of sharing, absence of free consent, disrespect of their rights and knowledge are also worldwide major issues facing indigenous peoples.[25] These issues might lead to the disappearance of TK developed over centuries and used in many areas including agriculture, fishing, medicine and environment management.

In this sense, it has been asserted that genetic resources and associated TK, which are considered as inseparable,[26] have been the basis for bioprospecting activities on behalf of pharmaceutical companies, biotechnology industries and other industries in order to make profits from biodiversity, which could be one of the biggest threats to biodiversity.[27] Genetic resources and associated TK allow the development of medicines, seeds and cosmetics. TK is considered as the starting point for discovery,

[21] United Nations Permanent Forum on Indigenous Issues, Study on the treatment of traditional knowledge in the framework of the United Nations Declaration on the Rights of Indigenous Peoples and the post-2015 development agenda' (2 February 2015) UN Doc. E/C.19/2015/4 paras 8 – 9 https://documents-dds-ny.un.org/doc/UNDOC/GEN/N15/028/00/PDF/N1502800.pdf?OpenElement accessed 5 September 2016

[22] Ibid

[23] Ibid

[24] United Nations General Assembly (UNGA), Rights of indigenous peoples (29 July 2016) UN Doc. A/71/229 http://www.refworld.org/pdfid/57bfd9d84.pdf accessed 7 September 2016

[25] Trips, CBD and Traditional Medicines: Concepts and Questions. Report of an ASEAN Workshop on the TRIPS Agreement and Traditional Medicine, Jakarta, February 2001 (Report) http://apps.who.int/medicinedocs/en/d/Jh2996e/6.3.html accessed 10 September 2016

[26] Jennifer Tauli Corpuz, 'International Biopiracy Protocol: Protecting the Rights of Indigenous Peoples' (*Global Policy Forum*, December 2009) https://www.globalpolicy.org/social-and-economic-policy/global-public-goods-1-101/48675-international-biopiracy-protocol-protecting-the-rights-of-indigenous-peoples-.html accessed 12 October 2016

[27] R. D. Singh, S.K. Mody, H.B Patel, Sarita Devi and others, 'Pharmaceutical Biopiracy and Protection of Traditional Knowledge' (2014) 3 International Journal of Research and Development in Pharmacy and Life Sciences, 866

enabling researchers to isolate molecules in the genetic resources.[28] Through the application of IPRs, in particular patents, these industries can claim full ownerships over the control of genetic resources. Often, bioprospectors totally ignore the fully informed consent of TK holders, thus violating human rights and excluding indigenous peoples of any fair compensation from patent monopolies.[29] This is often called 'biopiracy'. According to the Action Group on Erosion, biopiracy means "*the appropriation of the knowledge and genetic resources of farming and indigenous communities by individuals or institutions seeking exclusive monopoly control over these resources and knowledge*".[30] There has been sharp criticism that global IPRs have been ineffective, failing to protect indigenous rights and biodiversity and prevent biopiracy.[31] Patent systems might even be "a main tool in the service of biopiracy" activities.[32]

Chapter 4 details the various international agreements regulating bioprospecting activities and the access to genetic resources and the fair and equitable sharing of benefits arising from their utilisation. It details IP regimes and highlights its potential involvement into the wrongful appropriation and monopolisation of TK and associated resources through patent rights. It argues that TK has difficulties fitting into an existing IP regime which was not created for this knowledge. Thus five controversial bioprospecting cases from around the world will be presented, reflecting the misappropriation of biological resources and associated knowledge of ILCs. It describes as well other legal instruments protecting indigenous peoples' rights reflecting the growing recognition to protect indigenous rights and the increased awareness to respect and protect the cultural diversity of indigenous peoples. The chapter ends by highlighting proposed international approaches and recommendations discussed in order to fill the legal gap between IP law and environmental law, while preventing

[28] Inna Abramova and Alexander Greer, 'Ethnochesmistry and Human Rights' (2013) 10 Chem Biodivers see also http://www.wipo.int/edocs/pubdocs/en/tk/933/wipo_pub_933.pdf
[29] Debra Harry, 'Biopiracy and Globalization: Indigenous Peoples Face a New Wave of Colonialism' (2001) 7 Splice http://www.ipcb.org/publications/other_art/globalization.html accessed 3 November 2016
[30] Report of the Commission on Intellectual Property Rights, 'Integrating Intellectual Property Rights and Development Policy' (London, September 2002)
[31] T. Mackey and B. Liang, 'Integrating Biodiversity Management and Indigenous Biopiracy Protection to Promote Environmental Justice and Global Health' (2012) 102 American Journal of Public Health
[32] R. D. Singh, S.K. Mody, H.B Patel, Sarita Devi and others, 'Pharmaceutical Biopiracy and Protection of Traditional Knowledge' (2014) 3 International Journal of Research and Development in Pharmacy and Life Sciences, 866

issues associated with the misappropriation of TK and associated resources: implementation of a *sui generis* system, a global TK database, a common agenda to harmonise CBD and TRIPS provisions and the modification of the existing patent law.

Chapter 5 aims to apply these international legal instruments to a case study: French Guiana. The chapter explains the French legal context dealing with bioprospecting activities conducted in French Guiana. In this debate themes related to bioprospecting will be covered, such as French Guiana's biodiversity, the access to genetic resources, and indigenous peoples and their rights. The French legal approach to the protection of French Guiana biodiversity and its populations appears to be fragmented and unfair.[33] This chapter focuses on human rights perspective as well, as based on French Constitutional principles, French law ignores minorities and refuses to recognise collective rights to indigenous peoples.[34] This chapter concludes with the efforts made by France through the adoption of the new biodiversity law which ratifies the Nagoya Protocol.[35]

Academics analysed the current French legal system in overseas territories, such as Thomas Burelli. Thomas Burelli, professor in law, published journal article on the impacts of the implementation of the Nagoya Protocol into the French legal system.[36] He critically analysed the proposed measures of the draft bill entitled, *the bill for biodiversity regrowth, nature and landscapes.* He also published several articles on the protection of traditional knowledge in French overseas territories and bioprospecting activities in overseas territories such as French Guiana, New Caledonia and French Polynesia.[37] He underlined that the adoption of different regional measures emphasizes the failure to adopt a conjoint national legal framework.[38] Finally, Thomas

[33] Thomas Burelli, 'Les chemins tortueux de la mise en œuvre de la Convention sur la Diversité Biologique dans l'Outre-mer français' (2013) 1 RJE 31

[34] Gallianne Palayret, 'Overseas France and Minority and Indigenous Rights: Dream or Reality?' (2004) International Journal on Minority and Group Rights 221

[35] Law No 2016-1087 8 August 2016 on the Recovery of Biodiversity, Nature and Landscapes

[36] Thomas Burelli, La France et la mise en œuvre du protocole de Nagoya : Analyse critique du dispositif d'accès aux ressources génétiques et de partage des avantages (APA) dans le projet de loi français relatif à la biodiversité' (2014) 14 Vertigo – La Revue électronique en Sciences de l'Environnement

[37] Thomas Burelli, 'Les chemins tortueux de la mise en œuvre de la Convention sur la Diversité Biologique dans l'Outre-mer français' (2013) 1 RJE 31 and 'La Bioprospection dans l'Outre-mer français : opportunités et limites des dispositifs de régulations émergents dans l'Outre-mer français' (2013) 4 RRJ 1747

[38] ibid

Burelli's articles evaluate the relationships between indigenous peoples and researchers related to the use of traditional knowledge. Only Thomas Burelli published articles on the implementation of the New Biodiversity law. Geoffroy Filoche and Catherine Aubertin, researchers, analysed the impacts of the creation of the French Guiana Amazonian Park.[39] Geoffroy Filoche also studied the position of French Guiana regarding ABS issues.[40] Concerning the legal status of indigenous peoples in France, Geoffroy Filoche and Catherine Aubertin argued that the creation of the French Guiana Amazonian Park does not change the status of indigenous peoples settled in the National Park. It shows the existence of different legal frameworks and protections applied in French Guiana and in the National Park.[41] Furthermore, there is a wealth of academic opinion analysing the legal status of minorities, such as indigenous peoples and the reluctance of the French Government to recognise collective rights to indigenous peoples.[42]

[39] C. Aubertin and G. Filoche, 'La création du parc amazonien de Guyane: redistribution des pouvoirs, incarnations du "local" et morcellement du territoire' in *Aires Protégées, espaces durables* (IRD edn, 2008)

[40] Geoffroy Filoche, 'Domestic biodiplomacy: Navigating between provider and user categories for genetic resources in Brazil and French Guiana' (2013) Int. Enviro. Agreements 177

[41] C. Aubertin and G. Filoche, 'La création du parc amazonien de Guyane: redistribution des pouvoirs, incarnations du "local" et morcellement du territoire' in *Aires Protégées, espaces durables* (IRD edn, 2008)

[42] G. Palayret (2004), F. Garde (1999), F. Grenand (2000), F. Luchaire (2007), S. Diemert (2005).

CHAPTER 3. Methodology

Overall, this research will rely on black letter law methodology which aims to describe legal rules found in primary sources.

The first part will apply black letter law methodology involving international environmental law and intellectual property law in the demonstration of existing international rules influencing bioprospecting. Thus, a comparative methodology will be integrated into the analysis of the CBD, the Nagoya Protocol and the TRIPS Agreement. This, will lead to the study of the relationship between the CBD and TRIPS Agreement and the importance of global cooperation in the harmonisation of these two legal instruments. The research includes international legislation, case studies and academic opinions regarding the impacts of the CBD and TRIPS Agreement, the harmonisation and addresses ways to approach reconciling both international instruments

The second part will be based on black letter law as well, studying current French legal system in order to expose bioprospecting activities in French Guiana. As French legal system applies decentralised rules in its overseas territories, the law applied in French Guiana will be developed as a primary source, particularly concerning the access to genetic resources filling the gap left by French domestic law. Hence, a comparative approach will be conducted in order to explain differences between French national rules and decentralised rules dealing with bioprospecting.

The aim of this research is to analyse and evaluate current legal framework at international level and domestic level related to the topic. Using black letter law might show some weaknesses, such as the ignorance of sociological issues.[43] However, the research will stress indigenous peoples' issues that affect these communities in France by studying their legal status. Consideration could be given on how indigenous peoples have been protected in a human rights perspective.

[43] R. K Neumann Jr, *Legal reasoning and Legal Writing: Structure, Strategy and Style* (Wolters Kluwer 6th edn, 2009)

Published sources would be used as a data collection including reports, guidance and opinions from French policy, French Guiana policy and international bodies. Besides, books, e-books and journal articles would be included as a secondary source narrowing the topic and mentionning legal issues found through Bournemouth University's library and literature. Hence, various databases such as Lexis, HeinOnline, Westlaw and Scopus will be used. Legal encyclopaedias such as Max Planck Encyclopaedia of Public International Law will be referred as well providing basic introduction to TK, indigenous peoples, environment and Indigenous Peoples, TRIPS Agreement. Finally, newspapers articles, reports will be added in this research found in web based searches. In both parts, data collection method is used to gather information about a specific topic.

CHAPTER 4. Existing global rules influencing bioprospecting, biodiversity and the interests of indigenous peoples: Comparison of the CBD and the TRIPS

I. Introduction

The development of technology, innovations and health improvements associated with biodiversity and biological resources in the 1980s had the consequence of pushing the international agenda to cooperate in adopting measures at an international level to monitor the access to genetic resources.[44] These measures were mainly adopted during the Rio de Janeiro Earth Summit in 1992, approving a new international legal instrument, the Convention on Biological Diversity, which recognised the sovereign rights of States over their natural resources (Article 15 CBD). CBD emphasised important concepts, such as the access to genetic resources (Article 15) to prior informed consent (PIC), to mutually agreed terms (MAT), to the fair and equitable sharing of the results of research and development and the benefits arising from the commercial and other utilisation of genetic resources, and the recognition of TK of indigenous and local communities (Article 8j).[45] The Nagoya Protocol and the Bonn Guidelines completed this binding convention, having the aim of sharing the benefits arising from the utilisation of genetic resources in a fair and equitable way.[46] The access to genetic resources has been addressed in other forums; for instance, the WIPO IGC also discusses IPRs issues related to access to genetic resources, benefit-sharing and TK.[47] These measures show the international community's willingness to monitor users access to biological resources while protecting the holders resources. Hence, users must satisfy the conditions required for the access to genetic resources, whereas holders must give their consent before the access to genetic resources and TK

[44] Ulrich Beyerlin and Thilo Marauhn, *International Environmental Law* (Oxford: Hart, 2011)
[45] Convention on Biological Diversity web-site, 'Programme of Work' https://www.cbd.int/traditional/pow.shtml accessed 17 November 2016
[46] Gurdial Singh Nijar, 'Traditional Knowledge Systems, International Law and National Challenges: Marginalization or Emancipation?' (2013) 24 Eur. J. Int. L. 1205
[47] Krishna Ravi Srinivas, 'Protecting Traditional Knowledge Holders' Interests and Preventing Misappropriation—Traditional Knowledge Commons and Biocultural Protocols: Necessary but Not Sufficient?' (2012) 19 IJCP 401

associated with these resources is given in order to regulate bioprospecting activities while avoiding biopiracy.[48]

When bioprospecting research is well regulated, products derived from genetic resources satisfying conditions for access to genetic resources are often protected by IPRs through patents, generating revenues.[49] IP perspectives have been addressed by both the WTO, notably through its agreement named the TRIPS, and the WIPO.[50] The first organisation protects and promotes trade between nations, whereas the second protects IP throughout the world. However, issues arise when bioprospecting activities are conducted and products derived from genetic resources are patented without a fair benefit-sharing distribution to ILCs and without their consent.[51]

This chapter aims to demonstrate how international environmental legal instruments and IP rights regulate bioprospecting activities, and will provide an overview of international legal instruments. The purpose of Section (I) is to show the work of the CBD and the Nagoya Protocol in the regulation of bioprospecting activities, mainly through the concept of access to genetic resources and the fair and equitable sharing of benefits arising from their utilisation. This section will emphasize legal uncertainties that these two environmental legal instruments embody: lack of clear language, lack to implement enforcement mechanism, lack to give a satisfactory protection to indigenous peoples. Section (II) aims to analyse IPRs regarding bioprospecting activities together with relevant worldwide biopiracy cases (the Enola Bean Plant, the Pozol patent case, the Quinoa patent case, the Basmati rice patent and the Hoodia case), highlighting the role of the TRIPS and patent system in the misappropriation of resources and associated knowledge. Section (I) and (II) will lead, in Section (III), to a detailed analysis of the interface between the CBD Agreement and TRIPS Agreement regarding bioprospecting, showing that interactions may affect biodiversity, access to genetic resources, TK and indigenous peoples. Lastly, Section (IV) will address

[48] Trips, CBD and Traditional Medicines: Concepts and Questions. Report of an ASEAN Workshop on the TRIPS Agreement and Traditional Medicine, Jakarta, February 2001 (Report) http://apps.who.int/medicinedocs/en/d/Jh2996e/6.3.html accessed 18 November 2016

[49] 'Bioprospecting' (UNDP web-site) http://www.undp.org/content/sdfinance/en/home/solutions/bioprospecting.html accessed 26 October 2016

[50] TRIPS (n 12) 1869 UNTS 299

[51] Trips, CBD and Traditional Medicines: Concepts and Questions, Report of an ASEAN Workshop on the TRIPS Agreement and Traditional Medicine, Jakarta, February 2001

proposed international approaches to harmonize and reconcile CBD and TRIPS Agreement, providing possible changes and recommendations which need to be brought in the CBD and TRIPS Agreement.

II. The impacts of the Convention on Biological Diversity and the Nagoya Protocol

1. The CBD

1.1. Overview of the CBD

In the last 20 years, many global initiatives have been made to protect biodiversity and thus promote sustainable development. In 1992 the CBD formulated the first formal recognition of the conservation of biodiversity, which was promoted during the Rio Earth Summit.[52] The convention sets up three main objectives which are:

- The conservation of biological diversity,

- The sustainable use of the components of biological diversity and,

- The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources.[53]

The Convention's commitments aim to promote the world's ecological preservation. For the first time, an international agreement affirms and recognises that "the conservation of biological diversity is a common concern of humankind".[54] In addition, through the CBD the international community recognises the dependence of ILCs on biological resources and the contribution of TK for the preservation of biological resources and sustainable development.[55]

[52] CBD (n 6)
[53] CBD Article 1
[54] CBD Preamble
[55] Convention on Biological Diversity web-site, 'Traditional Knowledge and the Convention on Biological Diversity' https://www.cbd.int/traditional/intro.shtml accessed 28 October 2016

1.2. CBD concerns related to indigenous and local communities

As previously stated, the CBD recognises the value of traditional knowledge and emphasizes the importance of the involvement of ILCs in the management of biodiversity,[56] notably in its Preamble which recognises:

"*The close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources, and the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components*".[57]

States obligations toward these communities are considered particularly under Articles 8(j), 10, 17 and 18 of the CBD.

However, before proceeding to examine the CBD concerns, it is important to define indigenous and local communities and determine the extent of TK. There is no formal definition on what constitutes ILCs. No definition has been adopted in international law, though it has been the subject of intense debate at an international level.[58] This, can be explained by the fact that it might be difficult to determine which groups of people are indigenous. Each country might have their own criterion according to their history, traditions, customs and policies as applied by national authorities.[59] Besides, the UN argued that indigenous peoples did not agree to adopt a formal definition,

[56] Francesco Mauro and Preston D. Hardison, 'Traditional Knowledge of Indigenous and Local Communities: International Debate and Policy Initiatives' (2000) 10 Ecological Applications 1263
[57] CBD Preamble
[58] 'The United Nations Declaration on the Rights of Indigenous Peoples: A Manual for National Human Rights Institutions' (August 2013) Asia Pacific Forum of National Human Rights Institutions http://www.ohchr.org/Documents/Issues/IPeoples/UNDRIPManualForNHRIs.pdf accessed 1 November 2016
[59] United Nations Commission on Human Rights Sub-Commission on Prevention of Discrimination and Protection of Minorities, Study of the Problem of Discrimination against Indigenous Populations – Final Report submitted by the Special Rapporteur Mr José R. Martinez Cobo' (20 June 1982) UN Doc. E/CN.4/Sub.2/1982/2/Add.6 Chapter V http://www.un.org/esa/socdev/unpfii/documents/MCS_v_en.pdf accessed 1 November 2016

emphasising "the right of each indigenous people to define themselves".[60] According to the UN the most extensively definition is provided by the Martinez Cobo Study:[61]

"*Indigenous communities, peoples and nations are those 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 system*".

Although there is no universal definition, some common principles might be identified and accepted by international law as relevant to the understanding of the notion of indigenous people:[62] Self-identification as indigenous, by themselves, by other groups and by the State; possession of a different language, religion, culture, values, or social organisation distinct from the State; experience of marginalisation, discrimination and exclusion; possession of a specific land prior to colonisation, or dispossession of their lands.

From the Arctic to the South Pacific, indigenous peoples are present in 90 countries, representing five per cent of the world's population and due to their TK playing a vital role in the management of the environment and the development of biological resources.[63] In broad terms, TK can be defined as any intellectual achievements held by communities and frequently transmitted orally from one generation to the next

[60] 'The United Nations Declaration on the Rights of Indigenous Peoples: A Manual for National Human Rights Institutions' (August 2013) Asia Pacific Forum of National Human Rights Institutions http://www.ohchr.org/Documents/Issues/IPeoples/UNDRIPManualForNHRIs.pdf accessed 1 November 2016

[61] E/CN.4/Sub.2/1986/7/Add.4, para. 379

[62] See Francesco Mauro and Preston D. Hardison, 'Traditional Knowledge of Indigenous and Local Communities: International Debate and Policy Initiatives' (2000) 10 Ecological Applications 1263; the Chairperson-Rapporteur of the Working Group on Indigenous Populations E/CN.4/Sub.2/AC.4/1996/2, para. 69 and James Anaya, *Indigenous Peoples in International Law* (Oxford University Press, 1996)

[63] 'The United Nations Declaration on the Rights of Indigenous Peoples: A Manual for National Human Rights Institutions' (August 2013) Asia Pacific Forum of National Human Rights Institutions http://www.ohchr.org/Documents/Issues/IPeoples/UNDRIPManualForNHRIs.pdf accessed 11 November 2016

over millennia.[64] TK encompasses traditional medicine, agriculture, fisheries and technical information, to biodiversity and food-related knowledge, taking the form of stories, rituals, songs, or dances.[65] According to the WIPO, TK refers to:

"*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.*"[66]

Examples of TK include the *Neem Tree* in India, which is used for medicinal purposes, fighting types of fungus and bacteria and preventing infections, being used as well as a bio pesticide;[67] *the Hoodia* plant used in South Africa by the San indigenous peoples for treating diseases and as appetite suppressor;[68] the Amazonian plant *Sacha inchi* concentrated in fatty acids cultivated by indigenous peoples in Peru, [69] or the *Argan* tree in Morocco, used by local peoples such as Berber tribes for food, and for oil used for helping with skin problems and for anti-aging treatments.[70]

Many weaknesses pointed out by scholars have therefore been raised regarding the CBD's role to ILCs. [71] First of all the CBD does not provide a definition of ILCs, indigenous knowledge or traditional knowledge in its text.[72] TK is only referred as "knowledge, innovations and practices of indigenous and local communities", which is not specify what TK encompasses. The main weakness is the degree of uncertainty around terminologies used in the Convention, leading to the potential confusion of

[64] Christian Riffel, 'Traditional Knowledge' (April 2014) in Rüdiger Wolfrum (ed), *Max Planck Encyclopedia of Public International Law* (online edn)
[65] Convention on Biological Diversity web-site, 'Traditional Knowledge and the Convention on Biological Diversity' https://www.cbd.int/traditional/intro.shtml accessed 11 November 2016
[66] World Intellectual Property Organisation web-site, 'Traditional Knowledge' http://www.wipo.int/tk/en/tk/ accessed 12 November 2016
[67] Gunther Teubner and Andreas Fischer-Lescano, 'Cannibalizing Epistemes: Will Modern Law Protect Traditional Cultural Expressions?' in Christoph Beat Graber and Mira Burri-Nenova (eds), *Intellectual Property and Traditional Cultural Expressions in a Digital Environment* (Edward Elgar Publishing, 2008) https://www.jura.uni-frankfurt.de/42852624/TCE_englisch.pdf accessed 14 July 2016
[68] Rachel Wynberg and Roger Chennells, 'Green Diamonds of the South: An overview of the San-Hoodia Case' in *Indigenous Peoples, Consent and Benefit Sharing* (Springer Netherlands, 2009)
[69] Pierre Johnson and Guy Kastler, *Biopiraterie : Quelles alternatives au pillage des ressources naturelles et des savoirs ancestraux ?* (Charles Léopold Mayer, 2012)
[70] World Intellectual Property Organisation web-site, 'Protecting Society and the Environment with a Geographical Indication' http://www.wipo.int/ipadvantage/en/details.jsp?id=2656 accessed 2 July 2016
[71] Krishna Ravi Srinivas, 'Protecting Traditional Knowledge Holders' Interests and Preventing Misappropriation—Traditional Knowledge Commons and Biocultural Protocols: Necessary but Not Sufficient?' (2012) 19 IJCP 401
[72] CBD Article 2

interpretations.[73] For instance, the expression "fair and equitable" used in its first article is not defined by the Convention.[74] What is fair? What is equitable? These terms might embody a multitude of concepts. Critics have also argued that the CBD failed to address an effective dispute settlement mechanism.[75]

The PIC, one of the keystones of the CBD within Article 15, takes into account consultation with holders before their TK and genetic resources are used, and requests that they are informed about the potential result of the use.[76] However, another weakness is the failure of implementation of the PIC norms as an obligatory norm in the Access and Benefit-Sharing (ABS) system. The PIC, which has been implemented in many areas such as medicine and law, is considered as the "the permission given by the Competent National Authority of a provider country to a user prior to accessing genetic resources, in line with an appropriate national legal and institutional framework."[77] In international environmental law, the PIC has been integrated in various international conventions such as the Cartagena Protocol on Biosafety,[78] the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal and finally under Article 15 of the CDB.[79] Despite the lack of a clear definition of PIC and its implementation by the Convention,[80] the Bonn Guidelines and the Nagoya Protocol filled the gap by defining what PIC is. [81] The PIC finds support in Article 8(j) of the CBD as well, nonetheless the provision which says "Subject to its

[73] Krishna Ravi Srinivas, 'Protecting Traditional Knowledge Holders' Interests and Preventing Misappropriation—Traditional Knowledge Commons and Biocultural Protocols: Necessary but Not Sufficient?' (2012) 19 IJCP 401

[74] François Blais, 'The Fair and Equitable Sharing of Benefits from the Exploitation of Genetic Resources' in *Governing Global Biodiversity*, edited by Philippe G. Le Prestre, 145-58 (Aldershot, UK: Ashgate, 2002)

[75] Krishna Ravi Srinivas, 'Protecting Traditional Knowledge Holders' Interests and Preventing Misappropriation—Traditional Knowledge Commons and Biocultural Protocols: Necessary but Not Sufficient?' (2012) 19 IJCP 401

[76] WIPO, 'Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions' (2015) http://www.wipo.int/edocs/pubdocs/en/tk/933/wipo_pub_933.pdf accessed 3 July 2016

[77] Secretariat of the Convention on Biological Diversity, 'Introduction to access and benefit-sharing' (*CBD*, 2010) https://www.cbd.int/abs/infokit/brochure-en.pdf accessed 3 July 2016

[78] Cartagena Protocol on Biosafety to the Convention on Biological Diversity (concluded 29 January 2000, entered into force 11 September 2003) 2226 UNTS 208

[79] Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (concluded 22 March 1989, entered into force 5 May 1992) 1673 UNTS 57

[80] CBD Article 15 (5) "Access to genetic resources shall be subject to prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that Party."

[81] Nagoya Protocol Article 6

national legislation" and guaranteed "as far as possible and as appropriate" reduces the effectiveness of the PIC principle and asserts state-sovereignty.[82]

Article 14(1) (a) highlights the CBD's fragility and tends to give an important role and place to the legitimacy of States rather than ILCs.[83] This Article states that each contracting party shall "as far as possible and as appropriate" establish:

"Appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects and, where appropriate, allow for public participation in such procedures;"

Establishing appropriate procedures will depend on whether States decide to accept public involvement, which could fail to address indigenous participation in the environmental impact assessment.[84] Other issues have been identified as wanting in the CBD concerning indigenous peoples' participatory rights when it comes to the granting access to genetic resources. Article 15 of the CBD considers by:

"*Recognizing the sovereign rights of States over their natural resources, the authority to determine access to genetic resources rests with the national governments and is subject to national legislation*."

When the access is granted, it "shall be on mutually agreed terms" and the access to genetic resources "*shall be subject to prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that Party*." Hence, States have the full power to involve or not indigenous consultation in the access to the genetic resources regime.[85] Indigenous consultation depends on whether the States will involve indigenous peoples in the process. Thus, indigenous peoples' rights and interests are ruled by national law, which might lead to possible abuses by States.[86] Once again, the Bonn Guidelines and the Nagoya Protocol filled the legislative gaps left

[82] Christian Riffel, 'Traditional Knowledge' (April 2014) in Rüdiger Wolfrum (ed), *Max Planck Encyclopedia of Public International Law* (online edn)
[83] Uzuazo Etemire, 'The Convention on Biological Diversity Regime and Indigenous Peoples: Issues concerning Participatory Rights and Impact Assessment' (2013) City U. H. K. L. Rev
[84] Uzuazo Etemire, 'The Convention on Biological Diversity Regime and Indigenous Peoples: Issues concerning Participatory Rights and Impact Assessment' (2013) City U. H. K. L. Rev
[85] Uzuazo Etemire, 'The Convention on Biological Diversity Regime and Indigenous Peoples: Issues concerning Participatory Rights and Impact Assessment' (2013) City U. H. K. L. Rev
[86] Ibid

by the CBD. The Bonn Guidelines and the Nagoya Protocol refer to the consultation of indigenous peoples for the access to genetic resources.[87] Article 6(2) of the Nagoya Protocol clearly refers to ILCs by stating that:

"*Each Party shall take measures, as appropriate, with the aim of ensuring that the prior informed consent or approval and involvement of indigenous and local communities is obtained for access to genetic resources*".

This article applies as long as ILCs have "the established right to grant access to such resources" and measures must be taken in accordance with domestic law.

Indigenous people face another issue with the CBD. Article 8 establishes 'protected areas' in order to preserve biodiversity resources. By protected areas, the Convention "means a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives."[88] However, the CBD does not refer to ILCs in the selection, establishment and management process of the promotion of protected areas. Besides, opposition to protected areas have been raised by international organisations such as the International Alliance of Indigenous and Tribal Peoples of the Tropical Forests (*IAITPTF*).[89] The IAITPTF has been opposed to the establishment of these protected areas, considering that these areas are used to "deprive" them of their "lands and rights to resources".[90] According to the IAITPTF "protected areas that are under the control of indigenous peoples working in harmony with states and environmentalists is an important goal and several organisations, including the WWF, are trying to implement policies in this direction".[91]

Article 8(j) has a particular importance stating: "*Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices*

[87] Bonn Guidelines Section 15, 17, 18, 19, 20 and Article 6(2) of the Nagoya Protocol
[88] CBD Article 2
[89] International Alliance of Indigenous -Tribal Peoples of the Tropical Forest and International Work Group for Indigenous Affairs, 'Indigenous Peoples, Forest, and Biodiversity' http://www.iwgia.org/iwgia_files_publications_files/0146_forests_and_biodiversity.pdf accessed 5 of July 2016
[90] ibid
[91] ibid

and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices;"

Despite the recognition of indigenous communities dependence on biological diversity and the elaboration of equitable sharing of the benefits arising from the use of genetic resources, the implementation of Article 8(j) has been a "labyrinthine endeavour".[92] Indeed, no clear provisions have been made to show the possible interaction between the CBD and the TRIPS.[93] In addition, it has argued that the vocabulary and terms used by this Article are qualified as 'soft' by practitioners, such as "each Contracting Party shall, as far as possible and as appropriate" or "subject to its national legislation", "promote", "encourage".[94] On the other hand, this Article shows that traditional knowledge and genetic resources are connected to each other. This article, described as the most "complex", has been the focus of discussions regarding its implementation into national legislations.[95] Significant work have been accomplished in the implementation of Article 8(j). Indeed, a working group on article 8(j) and related provisions was created in 1998 in order to implement nationally, regionally and internationally this article, which constitutes "the main instrument" for Parties to the CBD.[96] Parties have adopted guidelines ensuring the involvement of ILCs in the CBD discussions and have to achieve Article 8(j) commitments.[97]

In the light of the CBD and the measures of the Bonn Guidelines, the ABS regime has not been satisfactory for indigenous people under domestic laws. By affirming the importance of state sovereignty the CBD focuses on States and its beneficiaries rather than ILCs, which might lead to abuses and deny indigenous sovereign rights.[98]

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[92] 'Benedict Kingsbury', 'Indigenous People' (November 2006) in Rüdiger Wolfrum (ed), *Max Planck Encyclopedia of Public International Law* (online edn)
[93] Ibid
[94] Konstantia Koutouki, 'The Nagoya Protocol: Status of Indigenous and Local Communities' (2011) Legal aspects of Sustainable Natural Resources Legal Working Paper Series http://cisdl.org/public/docs/legal/The%20Nagoya%20Protocol%20-%20Status%20of%20Indiginous%20and%20Local%20Communities.pdf accessed 4 July 2016
[95] Francesco Mauro and Preston D. Hardison, 'Traditional Knowledge of Indigenous and Local Communities: International Debate and Policy Iniatives' (2000) 10 Ecological Applications 1263, p1265
[96] Convention on Biological Diversity web-site, 'Programme of Work'https://www.cbd.int/traditional/pow.shtml accessed 6 July 2016
[97] Ibid
[98] CBD Article 3 "*States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction*."

However, the CBD and the Nagoya Protocol remain important for ILCs, being the only ratified international agreements which give visibility to the value of TK. It allows the recognition of indigenous communities' interests in providing an opportunity to have a better status. On the other hand, the development of various forums in order to deal with the protection of TK and indigenous communities rights makes the international regime for TK and indigenous peoples more confused.[99] The creation of the WTO and the TRIPS, the WIPO and the IGC, show the complexity of multiple forums defending their own remits.[100] How therefore does the CBD deal with the conservation of biological diversity, its components and the utilisation of genetic resources?

1.3. CBD, genetic resources and benefit sharing

The third objective stated by the CBD is:

"*The fair and equitable sharing of benefits arising out of the utilisation of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding*".[101]

By genetic resources, the Convention means "genetic material of actual or potential value". Genetic material refers "to any material of plant, animal, microbial or other origin containing functional units of heredity." [102] It means all genetic resources excluding human genetic resources.[103] However the Convention limits the scope of genetic resources to "*only those that are provided by Contracting Parties that are countries of origin of such resources or by the Parties that have acquired the genetic resources in accordance with this Convention*."[104] In other words, it does not include the acquisition of genetic resources before the 29 December 1993, date when the Convention entered into force.

[99] Report of the Commission on Intellectual Property Rights, 'Traditional Knowledge and Geographical indications' in Integrating Intellectual Property Rights and Development Policy (London, September 2002) 78 http://www.iprcommission.org/papers/pdfs/final_report/CIPRfullfinal.pdf accessed 6 July 2016
[100] Krishna Ravi Srinivas, 'Protecting Traditional Knowledge Holders' Interests and Preventing Misappropriation—Traditional Knowledge Commons and Biocultural Protocols: Necessary but Not Sufficient?' (2012) 19 IJCP 401
[101] CBD Article 1
[102] CBD Article 2
[103] Second Meeting of the Conference of the Parties to the Convention on Biological Diversity [COP 2] [6–17 November 1995] 'Decision II/11: Access to Genetic Resources' para. 2
[104] CBD Article 15(3)

The access to genetic resources is governed by Article 15 of the CBD. The first paragraph recognises: "*the sovereign rights of States over their natural resources, the authority to determine access to genetic resources rests with the national governments and is subject to national legislation*."

States have the power to manage ABS. Behind this provision is the idea "that in recognition of the sovereign rights of states over their natural resources states can regulate access to genetic resources within their jurisdiction."[105] These provisions have changed the ways of regulating, implementing and utilising resources, causing Contracting Parties difficulties in implementing and applying these provisions into national regulation.[106] When access is obtained it shall be on MAT and be subject to PIC of the Contracting Party.[107] For those countries who grant access, Article 16 explains how the transfer of technology must be implemented by Contracting Parties. This Article states the importance of access to, and transfer of, technology in order to reach CBD objectives regarding the conservation and sustainable use of biological diversity.[108] Hence, access to technologies resulting from the utilisation of genetic resources are provided to developing countries.

Concerning the equitable sharing of benefits arising from the utilisation of genetic resources, some provisions refer to this in Article 15(7), Article 8(j) and Article 21. Finally, distribution of benefits issued from biotechnology is addressed in Article 19 of the CBD. The CBD uses simple terms such as "share", "benefit", "fair" or "equitable", however these terms are poorly or imprecisely defined.[109]

Many criticisms have been raised regarding ABS achievements by the CBD. Critics argued that few provisions and details have been implemented in order to fulfil benefit-sharing obligations, while some CBD provisions are ambiguous.[110] The Convention does not provide any instruments in order to achieve benefit-sharing obligations, which might lead to a potential conflict between developed countries,

[105] Konstantia Koutouki, 'The Nagoya Protocol: Status of Indigenous and Local Communities' (2011) Legal aspects of Sustainable Natural Resources Legal Working Paper Series
[106] Bruce S. Manheim, 'Restrictions Governing International Trade in Genetic Resources Enter into Force' (2014) 14 Bio-Science Law Review 163
[107] CBD Article 15(4) and (5)
[108] CBD Article 16(1)
[109] Ulrich Beyerlin and Thilo Marauhn, *International Environmental Law* (Oxford: Hart, 2011)
[110] John Linarelli, 'Treaty Governance, Intellectual Property and Biodiversity' (2004) 6 ELR

users of genetic resources and developing countries, holders of genetic resources.[111] Additionally, the CBD refers to the IP system and there are clear ambiguities with three subsequent paragraphs of Article 16: 16(2), 16(3) and 16(5). For instance, Article 16(5) held that:

"*The Contracting Parties, recognizing that patents and other intellectual property rights may have an influence on the implementation of this Convention, shall cooperate in this regard subject to national legislation and international law in order to ensure that such rights are supportive of and do not run counter to its objectives*."

These provisions suggest that the protection of the IP system is not an obstacle for the transfer of technology.[112] In fact, Article 16 of the CBD appears to be contradictory and ambiguous, balancing two opposite positions: on one hand the need to give a consistently fair access to technologies to developing countries, and on the other, protecting developed countries interests through IPRs.[113] Finally, there are many instances where the Convention relies on and uses the statement "mutually agreed terms", such as Article 15(4), which represent a "fall-back in the interests of developed countries". [114] Hence, it shows that the interests of developed countries are clearly present in the Convention, both in the accessing of genetic resources and in the preservation of biodiversity, leading to the idea that the Convention facilitates the sovereign rights of States.

The CBD is an essential international convention which emphasized the importance of the involvement of indigenous peoples and their TK in the preservation of biodiversity and cultural diversity. Some scholars noted that CBD "help to affirm indigenous peoples' moral and political claims to lands, natural resources, and knowledge."[115] However as mentioned above, CBD received strong criticism, asserting that it failed to protect developing countries' interests and ILCs, and that it did not lead to adequate

[111] Ituki Shimbo, Yoko Ito and Koichi Sumikira, 'Patent Protection and Access to Genetic Resources' (2008) 26 Nature Biotechnology 645
[112] Ulrich Beyerlin and Thilo Marauhn, *International Environmental Law* (Oxford: Hart, 2011)
[113] Jayashree Watal, 'Intellectual Property and Biotechnology: Trade Interests of Developing Countries' in Trading in Genes: Development Perspectives on Biotechnology, Trade, and Sustainability E-BOOK
[114] Ulrich Beyerlin and Thilo Marauhn, *International Environmental Law* (Oxford: Hart, 2011)
[115] David R. Downes, 'Global Trade, Local Economies, and the Biodiversity Convention' in *Biodiversity and the Law* (W. J. Snape ed., 1996)

and comprehensive biodiversity preservation and resource sharing.[116] Overall, the CBD objectives depend on the implementation of domestic law, which can be complex for States which do not have a compatible legislation through which to implement it.[117] Furthermore, it was said that CBD objectives were undermined by global capital, while benefit-sharing provisions were violated by the lack of enforcement. Indigenous representatives consider that in order to preserve their knowledge and biodiversity, CBD parties should respect other rights to lands, cultures, religions.[118] According to the Special Rapporteur of the Human Rights Council on the rights of indigenous peoples, one major drawback of the CBD is the failure "to contain explicit recognition of the human rights of indigenous peoples."[119]

In response, the Bonn Guidelines and the Nagoya Protocol were successively adopted.[120] Little progress has been made with the Bonn Guidelines. In 2002, the Conference of the Parties to the CBD (COP) at its Sixth meeting (COP VI) adopted the Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilisation assisting the development and the enforcement of ABS measures and helping negotiations between Contracting Parties such as holders of genetic resources, which are generally the developing countries, and users of genetic resources, which are generally the developed countries.[121] It guided governments in creating legislation and policy measures on ABS. Parties agreed to negotiate a new regime to implement those provisions and on 29 October 2010, the Nagoya Protocol was adopted in Nagoya, Japan.[122]

[116] Tim Mackey and Bryan Liang, 'Integrating Biodiversity Management and Indigenous Biopiracy Protection to Promote Environmental Justice and Global Health' (2012) 102 American Journal of Public Health 1091
[117] Francesco Mauro and Preston D. Hardison, 'Traditional Knowledge of Indigenous and Local Communities: International Debate and Policy Iniatives' (2000) 10 Ecological Applications 1263
[118] Rosemary J. Coombe, 'Intellectual Property, Humans Rights and Sovereignty: New Dilemmas in International Law Posed by the Recognition of Indigenous Knowledge and the Conservation of Biodiversity' (1998) 6 Indiana Journal of Global Legal Studies, 59
[119] United Nations General Assembly (UNGA), Rights of indigenous peoples (29 July 2016) UN Doc. A/71/229 http://www.refworld.org/pdfid/57bfd9d84.pdf accessed 9 December 2016
[120] Gurdial Singh Nijar, 'Traditional Knowledge Systems, International Law and National Challenges: Marginalization or Emancipation?' (2013) 24 Eur. J. Int. L. 1205
[121] ibid
[122] ibid

2. The Nagoya Protocol

2.1. Overview of the Nagoya Protocol

As explained earlier, the CBD has been severely criticised by developing countries regarding the lack of achievement with regards to ABS provisions.[123] The adoption of the Nagoya Protocol (in full *the 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*) occurred during the Ad Hoc Open-Ended Working Group on ABS and entered into force on 12 October 2014. The protocol is a binding international agreement and landmark treaty aiming at reaffirming CBD principles.[124] An overview of the Protocol will be conducted in order to understand its purpose and its impacts on current global biodiversity and the sharing of the benefits of resources.

To provide a full overview of the Protocol objectives, its Article 1 should be mentioned at this stage: "*The objective of this Protocol is the fair and equitable sharing of the benefits arising from the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding, thereby contributing to the conservation of biological diversity and the sustainable use of its components*."

The Protocol fullfils the third CBD objective and reasserting state-sovereignty of countries over the control of their own resources. The protocol starts with benefits-sharing provisions and moves toward to the regulation of benefits-sharing regulation. Article 5 of the Protocol distinguishes three kinds of benefits:

- Benefits arising from the utilization of genetic resources,
- Benefits arising from the utilization of genetic resources that are held by indigenous and local communities and finally,
- Benefits rising from the utilization of traditional knowledge associated with genetic resources.

[123] Konstantia Koutouki, 'The Nagoya Protocol: Status of Indigenous and Local Communities' (2011) Legal aspects of Sustainable Natural Resources Legal Working Paper Series

[124] Secretariat of the Convention on Biological Diversity, 'Introduction to access and benefit-sharing' (CBD, 2010) https://www.cbd.int/abs/infokit/brochure-en.pdf

All sharing is based on MAT and benefits can be monetary or non-monetary. [125] The Nagoya protocol reaffirms that the access to genetic resources for their utilisation are subject to the PIC of the Party providing.[126] The Party which requires the PIC shall take all the measures to ensure that PIC is ensured.[127]

The Protocol provides more clarity and more legal accuracy, defining for the first time the "utilisation of genetic resources", terms that the CBD had not defined.[128] It refers "*to conduct research and development on the genetic and/or biochemical composition of genetic resources, including through the application of biotechnology as defined in Article 2 of the Convention*".[129] Giving more clarity through this definition allows for some resources to fall within the scope of a benefits-sharing regime. For instance, chemical drugs extracted from biological resources fall today within the scope of benefits-sharing.[130]

Article 10 proposed a global multilateral benefit-sharing mechanism, while Article 11 promotes transboundary cooperation between Parties, cooperation with the involvement of concerned ILCs. However commentators such as Kamau, Fedder and Winter argued that both articles represent a "derogation of absolute state sovereignty".[131] Besides, global multicultural benefit-sharing mechanism has already suggested by the Africa Group.[132]

Kamau, Fedder and Winter challenged the Nagoya Protocol enforcement of benefits-sharing duties of user States, arguing that: "*There is no specified obligation of user states to ensure benefit sharing. As before, the enforcement of benefits-sharing duties is left to contractual means, with all the difficulties of forum, litigation costs, and prosecution of titles. The fact that the Protocol does not go further in that direction*

[125] Nagoya Protocol Article 5 (1) (2) (4) (5) and Nagoya Protocol Annex 'Monetary and Non-monetary Benefits'
[126] Nagoya Protocol Article 6(1)
[127] Nagoya Protocol Article 6(3)
[128] Kamau, Evanson Chege, Bevis Fedder and Gerd Winter, 'The Nagoya Protocol on Access to Genetic Resources and Benefit Sharing: What is New and what are the Implications for Provider and User Countries and the Scientific Community?' (2010) 6:3 Law, Environment and Development Journal 246
[129] Nagoya Protocol Article 2
[130] Evanson Chege Kamau, Bevis Fedder, & Gerd Winter, 'The Nagoya Protocol on Access to Genetic Resources and Benefit Sharing: What Is New and What Are the Implications for Provider and User Countries and the Scientific Community?' (2010) L. Envt'& Dev. J. 246
[131] Ibid
[132] Konstantia Koutouki, 'The Nagoya Protocol: Status of Indigenous and Local Communities' (2011) Legal aspects of Sustainable Natural Resources Legal Working Paper Series

constitutes a major disappointment for the provider side".[133] They criticised the protocol regarding user-States discretion as to whether or not they ensured and enforced benefits-sharing provisions.

Indigenous communities' representatives and organisations pointed out that ABS system facilitates business in genetic resources and knowledge and recommended taking into account indigenous peoples values and their traditional resources.[134] Thus, in recent years, scholars and organisations have suggested the establishment of a traditional knowledgecommons (TKC) and biocultural protocols (BCP) with the aims of passing over commercial interests and respecting indigenous communities' values.[135] However, so far it is difficult to determine if these new regimes (TKC and BCP) are fully successful due to the low numbers of case studies.[136]

2.2. Nagoya Protocol, indigenous peoples and TK

This Protocol aims to strengthen the protections for the use of genetic resources, associated knowledge and benefits-sharing provisions.

Access to traditional knowledge associated with genetic resources is provided in Article 7 of the Nagoya Protocol:

"*In accordance with domestic law, each Party shall take measures, as appropriate, with the aim of ensuring that traditional knowledge associated with genetic resources that is held by indigenous and local communities is accessed with the prior and informed consent or approval and involvement of these indigenous and local communities, and that mutually agreed terms have been established*."

With this Article the Protocol establishes an obligation for parties to take relevant measures regarding the access to TK. In that regard, parties must apply this obligation with PIC and MAT.

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[133] Evanson Chege Kamau, Bevis Fedder, & Gerd Winter, 'The Nagoya Protocol on Access to Genetic Resources and Benefit Sharing: What Is New and What Are the Implications for Provider and User Countries and the Scientific Community?' (2010) L. Envt'& Dev. J. 246

[134] Krishna Ravi Srinivas, 'Protecting Traditional Knowledge Holders' Interests and Preventing Misappropriation—Traditional Knowledge Commons and Biocultural Protocols: Necessary but Not Sufficient?' (2012) 19 IJCP 401

[135] Natural Justice: Lawyers for Communities and the Environment, 'Biocultural Community Protocols' http://naturaljustice.org/context/biocultural-community-protocols accessed 6 July 2016

[136] Krishna Ravi Srinivas, 'Protecting Traditional Knowledge Holders' Interests and Preventing Misappropriation—Traditional Knowledge Commons and Biocultural Protocols: Necessary but Not Sufficient?' (2012) 19 IJCP 401

While TK associated with genetic resources is governed by Article 12 of the Protocol, Article 16 reinforces compliance with domestic legislation or regulatory requirements on ABS for TK associated with genetic resources. States must ensure that utilisation of TK and genetic resources under their domestic laws complies with their ABS legislation. Although Article 16 is seen as making progress by addressing and defining compliance measures that user countries must satisfy and implement, during the Nagoya Protocol negotiations numerous critics argued that this article was an 'obstacle' to the development for fair and equitable benefits-sharing.[137] Lastly, the Protocol established checkpoints in order to ensure that States monitor and enhance transparency regarding the utilisation of genetic resources through a 'certificate of compliance'. [138]

Regarding the development and implementation of ABS legislation at the international stage, the Protocol sets up three kinds of international considerations under Article 8(a):

- research for the conservation and sustainable use of biological diversity;
- emergencies which threaten human, animal or plant health and,
- genetic resources for food and agriculture.

Hence, countries must respect these considerations when they implement the Protocol in their national legislations. The analysis of this Article will focus only on the first provision (Article 8.a), which is related to this topic. The first consideration is designated as the most rigorous, requiring a general obligation for countries to "create conditions to promote and encourage research which contributes to the conservation and sustainable use of biological diversity", ensuring by simplified measures access for non-commercial research purposes. The Protocol recognised for the first time the "research community as a key ABS stakeholder", thus promoting research collaborations.[139] Supporting non-commercial research, the Protocol promotes the idea of not blocking researchers with onerous measures. Nonetheless, this article led to some concerns. For instance, it has been argued that sometimes university research

[137] Konstantia Koutouki and Katharina Rogalla Von Bieberstein, 'Nagoya Protocol: Sustainable Access and Benefits-Sharing for Indigenous and Local Communities' (2012) 13 Vt. J. Envtl Law 513
[138] Nagoya Protocol, Article 17 Monitoring the Utilization of Genetic Resources
[139] 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* (Martinus Nijhoff Publishers, 2014)

might be conducted for commercial purposes; also industries or private companies might use the work of universities in developing new products, even if the universities did not want to be involved.[140] In addition, no clear relationship between this article and Article 6 (access to genetic resources) of the Nagoya Protocol has been made.[141] Finally, Parties would have the challenging task of determining between commercial research and non-commercial research.[142]

2.3. Concerns about the Nagoya Protocol

Like the CBD, it has been considered that the Nagoya Protocol gives importance to state sovereignty by limiting indigenous peoples' rights over their natural resources. Critics argued that the vocabulary used in the Nagoya Protocol is deliberately obscure and remains vague in references related to ILCs.[143] In all the articles referring to ILCs rights, the Protocol uses ambiguous terms stressing the State control over indigenous rights and resources. For instance, such terms include "as appropriate", "as applicable" or "in accordance with domestic law". The Protocol leaves to States the appreciation to determine other ambiguous terms, such as the "access to genetic resources where they have the established right to grant access to such resources."[144] What does 'established right' mean? A broad interpretation might include rights established by international law and customary laws, whereas giving a narrow interpretation might only include domestic rights under national law. Ambiguous language left to the interpretation of States might lead to a weakening of Nagoya Protocol implementation in their legislation.[145]

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[140] ibid

[141] Sebastian Oberthür and Kristin Rosendal, *Global Governance of Genetic Resources: Access and Benefit Sharing After the Nagoya Protocol* (Routledge, 2013)

[142] 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* (Martinus Nijhoff Publishers, 2014)

[143] Saskia Vermeylen, 'Nagoya Protocol and Customary Law: The Paradox of Narratives in the Law' (2013) Law Env't & Dev. J. 185

[144] Nagoya Protocol Article 6(2): "*In accordance with domestic law, each Party shall take measures, as appropriate, with the aim of ensuring that the prior informed consent or approval and involvement of indigenous and local communities is obtained for access to genetic resources where they have the established right to grant access to such resources*."

[145] Brendan M.Tobin, 'Bridging the Nagoya Compliance Gap: The Fundamental Role of Customary Law in Protection of Indigenous Peoples' Resources and Knowledge Rights' (2013) 9 Law Env't & Dev. J. 143

Another criticism is that the Nagoya Protocol does not refer to IPRs of indigenous peoples' over traditional knowledge.[146] Although the Protocol reaffirms indigenous rights over their TK and genetic resources, it does not refer to their "exclusive property rights over their resources and knowledge".[147] Finally, academics such as Brendan Tobin argued that the Protocol fails to establish "strong compliance mechanisms".[148]

Undoubtedly the Nagoya Protocol established for the first time legally binding measures in the context of an ABS regime arising from the use of TK. Although the Nagoya Protocol is new, there have been major achievements: stressing the importance of biodiversity preservation, giving a clear definition of 'utilisation of genetic resources', encouraging multilateral and international cooperation, addressing compliance measures that users States shall implement, empowering indigenous communities to manage the access and use of their genetic resources through a PIC mechanism. However it is apparent from the above debate that the Nagoya Protocol is unsatisfying in ensuring TK associated with genetic resources control over indigenous territories. The Protocol improved and developed the previous and criticised ABS regime of the CBD. Nonetheless, the Protocol language appears weak, giving an important place to the interests of developed countries. A final criticism is that the Protocol has not lead to modifications of WTO or TRIPS provisions. Also, Article 4 of the Protocol lays the basis for possible relationships with International Agreements and Instruments.[149] Indigenous interests have been preserved by other binding international instruments and non-binding international instruments.

3. Indigenous peoples and other international legal instruments

Not only the CBD tries to protect the interests of indigenous peoples, an overview of the existing key international instruments protecting indigenous peoples' rights will be addressed in this section.

The international community have adopted advanced international legal instruments and established several organizations, providing recognition, preservation of

[146] Konstantia Koutouki and Katharina Rogalla Von Bieberstein, 'Nagoya Protocol: Sustainable Access and Benefits-Sharing for Indigenous and Local Communities' (2012) 13 Vt. J. Envtl Law 513

[147] Brendan M.Tobin, 'Bridging the Nagoya Compliance Gap: The Fundamental Role of Customary Law in Protection of Indigenous Peoples' Resources and Knowledge Rights' (2013) 9 Law Env't & Dev. J. 143

[148] Ibid

[149] Sebastian Oberthür and Kristin Rosendal, *Global Governance of Genetic Resources: Access and Benefit Sharing After the Nagoya Protocol* (Routledge, 2013)

indigenous people rights while resolving indigenous peoples' issues, which have increased since the 1980s.[150] In 2007, the UN General Assembly adopted the most significant and symbolic instrument, the United Nations Declaration on the Rights of Indigenous Peoples.[151] The Declaration established individual and collective rights for indigenous peoples, promoting rights to health, education, employment, language, cultural rights and identity. The Declaration prohibited also any forms of discrimination, enhancing the participation of indigenous peoples by means of involving indigenous representatives in the decision-making. It promotes their right to self-determination, ensuring that they can have the right to maintain and develop their political, economic and social systems or institution, and improving their economic and social conditions.[152] Focusing on biodiversity resources, indigenous peoples have the right to the lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired.[153] Despite the non-binding character of this Declaration, the UN considers that the declaration "represent the dynamic development of international legal norms and reflect the commitment of states to move in certain directions" establishing "an important standard for the treatment of indigenous peoples" by "eliminating human rights violations" and "combating discrimination and marginalisation."[154] This declaration has been the first step forward the recognition of indigenous rights.

The UN Declaration applies in parallel with other international legal instruments which focused on indigenous peoples, such as the binding ILO Conventions 107 and 169.[155] The 1957 ILO Convention No 107 focus on recognising and protecting social, cultural, civil and religious rights of indigenous, tribal and semi-tribal populations in independent countries by promoting the idea that an international distinct body could

[150] Benedict Kingsbury, 'Indigenous Peoples' (November 2006) in Rüdiger Wolfrum (ed), *Max Planck Encyclopedia of Public International Law* (online edn)
[151] United Nations Declaration on the Rights of Indigenous Peoples (adopted 13 September 2007) UNGA Res 61/295
[152] United Nations Declaration on the Rights of Indigenous Peoples Articles 3, 18, 20, 21
[153] United Nations Declaration on the Rights of Indigenous Peoples Article 26
[154] UN press, 'FREQUENTLY ASKED QUESTIONS' Declaration on the Rights of Indigenous Peoples http://www.un.org/esa/socdev/unpfii/documents/FAQsindigenousdeclaration.pdf accessed 5 July 2016
[155] ILO 'Convention No 107 concerning the Protection and Integration of Indigenous and other Tribal and Semi-Tribal Populations in Independent Countries' (adopted 26 June 1957, entered into force 2 June 1959) 328 UNTS 247 and ILO 'Convention No 169 concerning Indigenous and Tribal Peoples in Independent Countries' (adopted 27 June 1989, entered into force 5 September 1991) 1650 UNTS 383.

deal with indigenous and tribal peoples issues.[156] Convention provisions include the right of ownership over lands,[157] the rights of access to full and occupationally safe employment.[158] This Convention was revised and replaced by the adoption of the new ILO Convention No 169.

The 1989 ILO Convention No 169 which entered into force in 1991, is the only international treaty dealing exclusively with Indigenous and Tribal peoples' rights. Like the 1957 ILO Convention No 107, the new Convention provisions cover a wide range of themes such as rights to land, employment, health, education, social security. It aims to respect and protect cultures and indigenous lifestyles by prohibiting discriminations which may affect the populations.[159] This Convention became an important legal instrument invoked by indigenous populations to national courts and governments and inspired for instance Latin American countries to make constitutional changes. [160]

These global instruments show the international attention to indigenous issues over the last thirty years, international consensus have been conducted in order to reach a comprehensive protection for indigenous peoples. These instruments have essentially contributed to the configuration of international standards protecting indigenous peoples and the enforcement of these legal standards.[161] For thousands of years, indigenous peoples have been highly involved into the preservation of biological resources, ecosystems such as organisms, plants, animals and genetic resources. They are closely and traditionally dependant of the natural resources for their survival based on biological resources for agricultural, medication, cultural and other purposes.[162] What is the role of WTO, particularly the TRIPS in the protection of IP rights of indigenous populations?

III. The impact of the TRIPS Agreement

[156] Benedict Kingsbury, 'Indigenous Peoples' (November 2006) in Rüdiger Wolfrum (ed), *Max Planck Encyclopedia of Public International Law* (online edn)
[157] ILO Convention No 107 Article 11
[158] ibid Article 15
[159] ILO web-site, 'Indigenous and Tribal Peoples' http://www.ilo.org/global/topics/indigenous-tribal/lang--en/index.htm accessed 5 July 2016
[160] Benedict Kingsbury, 'Indigenous Peoples' (November 2006) in Rüdiger Wolfrum (ed), *Max Planck Encyclopedia of Public International Law* (online edn)
[161] Hendrik Strydom, 'Environment and Indigenous Peoples' (January 2013) in Rüdiger Wolfrum (ed), *Max Planck Encyclopedia of Public International Law* (online edn)
[162] Darrell Posey, 'Commodification of the sacred through intellectual property rights' (2002) 83 Journal of Ethnopharmacology 3, 6

1.Overview of the TRIPS Agreement

Before proceeding to examine the impact of the TRIPS Agreement, it is important to briefly outline this Agreement. The Agreement on Trade-Related Aspects of Intellectual Property Rights, generally referred as the TRIPS Agreement, is one of the many important IP agreements in the area of intellectual property rights negotiated during the Uruguay Round of Multilateral Trade Negotiations (*Uruguay Round*). According to Article 7 of the TRIPS:

"*The protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations*."

TRIPS has been successful in comparison with other international treaties, 162 countries are Parties of the TRIPS.[163] When a country wants to be part of the WTO it is obliged to implement TRIPS provisions, which then allows access to the advantages of membership.[164]

As was mentioned in the first chapter, the TRIPS establishes a minimum level of protection that each Members of the TRIPS has to enforce and sets a dispute resolution system.[165] The WTO's TRIPS Agreement protects different kinds of intellectual property rights including trademarks, copyrights, patents, industrial designs, integrated circuit layout designs, geographical indications, undisclosed information and trade secrets.[166]

1.1. TRIPS and Patentable Subject Matter

TRIPS provisions relevant to biodiversity and genetic resources are under section Patents and start with Article 27(1) entitled 'Patentable Subject Matter". Article 27 is

[163] Daniel Gervais, 'Agreement on Trade-Related Aspects of Intellectual Property Rights (1994)' (March 2011) in Rüdiger Wolfrum (ed), *Max Planck Encyclopedia of Public International Law* (online edn)
[164] ibid
[165] 'Understanding the WTO: The Agreements - Intellectual property: protection and enforcement' (WTO) https://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm7_e.htm accessed 29 March 2017
[166] ibid

considered to be highly controversial, and is often subject to debate concerning the extending or limiting of express provisions.[167]

Article 27(1) states that "*patents shall be available 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*."

Thus it provides conditions for patentability. Article 27(2) contains an exclusion of the general principle of patentability inventions and affirms that:

"Members may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect ordre public or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited by their law."

Exclusion includes the protection of humans, animals and plants. Article 27(3) provides that:

"*Members may also exclude from patentability: (a) diagnostic, therapeutic and surgical methods for the treatment of humans or animals; and (b) plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes*."

In addition, "*members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof.*" In other words, non-biological, microbiological processes and micro-organisms are eligible for patenting. The fall of micro-organisms under the scope of patentability is linked to the pharmaceutical industry playing a critical role in the development of drugs and the pharmaceutical economy. Patents might protect their researches and their incomes.[168]

Like the CBD, the TRIPS remains vague and clarification has been requested. For instance, what does "*ordre public*" or "morality" under Article 27(2) mean? The terms

[167] Mohamed R. Hashim, 'International Influence – TRIPS and Patentable Subject-Matter' (2013) 44 International Review of Intellectual Property and Competition Law 656

[168] Mike Adcock and Margaret Llewelyn, 'TRIPs and the Patentability of Micro-organisms' (2001) Bio-Science Law Review 91

might refer to "security reasons" or "public interest" or "general public order".[169] However, some commentators consider that in this context *ordre public* tends to signify public safety, though such flexibility left by the language of the TRIPS causes confusion when it comes to analyse of the provisions of this Article.[170] Further, the terms "effective *sui generis*" are not defined and can be read and interpreted broadly. Hence, members have the task of determining what an effective *sui generis* system means.[171]

The TRIPS borrowed the term *ordre public* from another international instrument,[172] the European Patent Convention (*EPC*).[173] Indeed, Article 53 of the EPC states that: *European patents shall not be granted in respect of: (a) inventions the commercial exploitation of which would be contrary to "ordre public" or morality; such exploitation shall not be deemed to be so contrary merely because it is prohibited by law or regulation in some or all of the Contracting States; (b) plant or animal varieties or essentially biological processes for the production of plants or animals; this provision shall not apply to microbiological processes or the products thereof*;

Article 27(3)(b) finally mentions that these provisions shall be reviewed. The review started in 1999 and expressed concerns about CBD and commercial use of TK and genetic material.[174] The Declaration on the TRIPS Agreement and Public Health adopted in November 2001 in Doha, Qatar (*The Doha Declaration*) affirmed that the review should take into account the relationship between the TRIPS Agreement and the CBD, the protection of TK and folklore and other developments raised by Members, and that its review must be guided by Articles 7 and 8 of the TRIPS Agreement.[175] Various groups representing both developing countries and developed countries have proposed amendments and ideas since 1999. For instance, a group of indigenous peoples requested a review of this article, considering that it undermines

[169] Padmashree Gehl Sampath, *Regulating Bioprospecting: Institutions for Drug Research, Access, and Benefit-sharing* (United Nations University Press, 2005)
[170] Mohamed R. Hashim, 'International Influence - TRIPS and Patentable Subject-Matter' (2013) IIC 656
[171] Padmashree Gehl Sampath, *Regulating Bioprospecting: Institutions for Drug Research, Access, and Benefit-sharing* (3rd edn United Nations University Press, 2005)
[172] Nuno Pires de Carvalho, *The TRIPS Regime of Patent Rights* (Kluwer Law International, 2010)
[173] Convention on the grant of European patents (concluded 5 October 1973, entered into force) 1065 UNTS 199 ('European Patent Convention')
[174] Keith Maskus and Jerome Reichman, *International Public Goods and Transfer of Technology Under a Globalized Intellectual Property Regime* (Cambridge University Press, 2005)
[175] The Declaration on the TRIPS Agreement and Public Health (adopted 14 November 2001) WT/MIN(01)/DEC/2 ('The Doha Declaration')

their IPRs, heritage, resources, and suggested a legislative framework based "upon the indigenous methods and customary laws protecting knowledge and heritage and biological resources".[176] However, the United States was reluctant to hear the claims of indigenous peoples and asked for more clarity about *sui generis* subject matter.[177] Despite concrete proposals and recommendations made by some, especially developing countries, the review has been seen as a disappointment and does not seem to have had a positive impact.[178] Due to lack of clarity regarding the term this Article has been the cause of intense debate on *sui generis* compliance and shaping. Undoubtedly discussion on this matter still continuing within the TRIPS Council.[179]

1.2. TRIPS, indigenous peoples and TK

IPRs are crucial in regards to ABS regimes, as the misappropriation of such knowledge is linked to its commercialisation, which might be explained by the fact that IP law assists in ABS conflicts.[180] IP law is considered as a legal key instrument when it comes to the relationship between IP, TK and genetic resources. WIPO is negotiating the protection of TK and genetic resources under the IGC.[181] Established in 2000, the IGC aims to reach a binding agreement ensuring the effective protection of TK, genetic resources and traditional cultural expressions. Consultations and negotiations are still ongoing with the aim of drawing up one or more international legal instruments that WIPO members will ratify.[182] The IGC draws attention to issues of indigenous peoples and concerns over TK and genetic resources by linking IP systems and these issues raised by practitioners. This intergovernmental committee works with indigenous representatives in order to reach an appropriate outcome with the active participation of indigenous peoples. [183] However, due to divergent views the adoption of a

[176] Someshwar Singh, 'Indigenous raise debate in Geneva' (*Grain*, 5 November 1999) https://www.grain.org/article/entries/1958-indigenous-raise-debate-in-geneva accessed 21 August2016
[177] Keith Maskus and Jerome Reichman, *International Public Goods and Transfer of Technology Under a Globalized Intellectual Property Regime* (Cambridge University Press, 2005)
[178] ibid
[179] The Declaration on the TRIPS Agreement and Public Health (adopted 14 November 2001) WT/MIN(01)/DEC/2 ('The Doha Declaration')
[180] Semra Sevim, 'Acess and Benefit sharing (ABS)' (2012) EIPR 471
[181] Gibson, *Community Resources, Intellectual Property, International Trade and Protection of Traditional Knowledge* (Aldershot: Ashgate, 2005)
[182] WIPO, 'Background Brief N°2' (2016) http://www.wipo.int/edocs/pubdocs/en/wipo_pub_tk_2.pdf accessed 20 July 2016
[183] 'Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions' (2015) WIPO http://www.wipo.int/edocs/pubdocs/en/tk/933/wipo_pub_933.pdf accessed 21 July 2016

consolidated binding document is still far off. For instance the Japanese delegation pointed out:[184]

"*That despite a long history of discussion, the IGC had not been able to find common ground on the fundamental issues yet, namely on policy objectives, guiding principles, subject matter of protection and beneficiaries*".

The slow progress of the IGC might be related to the reservations of some developed countries "to fully engage with the subject" by asking for further discussions and studies.[185] Indigenous representatives such as Victoria Tauli-Corpuz, United Nations Special Rapporteur on the Rights of Indigenous Peoples, also raised the question of the role of the WIPO in the preservation of TK through IPRs regimes.[186] Indigenous representatives argued that WIPO is "the inappropriate forum to develop any policy recommendation which will safeguard our heritage" due to its mandate and the values it endorses. Besides this, apart from the WTO, the WIPO is the only organisation which promotes IPRs and their harmonisation.[187]

Two kind of protections help TK holders to avoid inappropriate use of their TK: positive protection and defensive protection.[188] While the positive protection tends to take into account PIC mechanisms and bans unauthorised use of TK, the defensive protection refers to strategies for excluding illegitimate rights acquisition over TK by third parties.[189] Nowadays there is no explicit and comprehensive IP right on TK, rather it is protected by a combination of IP rights such as patents, undisclosed information and geographical indication protection, which refers to positive protection.[190] Besides, defensive protection includes TK databases which developing countries such as India

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[184] Shivendu K. Srivastava, *Commercial Use of Biodiversity: Resolving the Access and Benefit Sharing Issues* (SAGE Publications, 2016) https://books.google.lu/books?id=X2AlDAAAQBAJ&pg=PT222&lpg=PT222&dq=IGC+WIPO&source=bl&ots=doxkWaTNdr&sig=PqkC6bVr1xvaCrEsUEigadd3MW4&hl=fr&sa=X&ved=0ahUKEwjutKTVjvvRAhXBOBQKHc40B_s4ChDoAQgsMAM#v=onepage&q=IGC%20WIPO&f=false accessed 15 December 2016

[185] The Center for International Environmental Law (CIEL), 'The Gap between Indigenous Peoples' Demands and WIPO's Framework on Traditional Knowledge' (September 2007) http://www.wipo.int/export/sites/www/tk/en/igc/ngo/ciel_gap.pdf accessed 15 August 2016

[186] Victoria Tauli-Corpuz, 'Biodiversity, Traditional Knowledge and Rights of Indigenous Peoples' (2003) 5 Intellectual Property Rights Series, Third World Network

[187] ibid

[188] Traditional Knowledge and Intellectual Property Background Brief - No. 1 (*WIPO*, 2016) http://www.wipo.int/edocs/pubdocs/en/wipo_pub_tk_1.pdf accessed 29 March 2017

[189] ibid

[190] Christian Riffel, 'Traditional Knowledge' (April 2014) in Rüdiger Wolfrum (ed), *Max Planck Encyclopedia of Public International Law* (online edn)

may us (Traditional Knowledge Digital Library).[191] China and North Korea established databases as well (China Medicine Patents Database and Korean Traditional Knowledge Portal).[192]

Developing countries, which tend to prefer strong TK protection, argued that there was no reference to TK either on the agenda of the Uruguay Round nor in the TRIPS Agreement, which led some to think that TK interests of indigenous people were non-existent and made the TRIPS "unjust" for them.[193]

So far, the TRIPS does not refer either to TK of indigenous peoples nor to the CBD failing to give a comprehensive legal framework which could fit the needs of indigenous peoples.[194] Numerous issues arise when TK is fitted into an IP rights regime.[195] For instance, as TK has been in existence longer than the limited duration of patents, hence the TRIPS considers TK to fall within the public domain.[196] IPRs registration is also expensive for indigenous populations, which limit it accessibility to them.[197] TK is usually a collective knowledge held by the indigenous community, which could undermine the identification of rights-holders and conflict with TRIPS standards.[198] In the section that follows it will be argued that misappropriation of knowledge or resources may in many ways be harmful to indigenous peoples.

2. IP rights, biodiversity and the concept of biopiracy

Biopiracy issue arises when industries or private bodies exploit biological resources without a fair benefit-sharing distribution to ILCs, for instance when developing new medication without the consent of the relevant indigenous peoples; [199] in other words,

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[191] Traditional Knowledge and Intellectual Property Background Brief - No. 1 (*WIPO*, 2016)
[192] Christian Riffel, 'Traditional Knowledge' (April 2014) in Rüdiger Wolfrum (ed), *Max Planck Encyclopedia of Public International Law* (online edn)
[193] ibid
[194] B Binkert, 'Why the Current Global Intellectual Property Framework under TRIPS is not working' (2006) 10 Intellectual Property Law Bulletin, 143
[195] IISD, 'Traditional knowledge and Patentability' (*International Institute for Sustainable Development,* May 2003) IISD Trade and Development Brief No. 7 of a Series Summer http://www.iisd.org/pdf/2003/investment_sdc_may_2003_7.pdf accessed 27 June 2016
[196] B Binkert, 'Why the Current Global Intellectual Property Framework under TRIPS is not working' (2006) 10 Intellectual Property Law Bulletin, 143
[197] G Aguilar, 'Access to Genetic Resources and Protection of Traditional Knowledge in the Territories of Indigenous Peoples' (2001) 4 Environmental Science & Policy, 241
[198] B Binkert, 'Why the Current Global Intellectual Property Framework under TRIPS is not working' (2006) 10 Intellectual Property Law Bulletin, 143
[199] Lucas Bergkamp, 'Bioprospecting Policy for Economic Development and Health Improvement' (2006) 7 Bio-Science Law Review 179

when researchers do not comply with CBD and Nagoya Protocol provisions while running their bioprospecting activities.[200] Through patent mechanisms, the revenues of industries or private organisations will be protected without a fair compensation to indigenous peoples.[201] In order to avoid biopiracy, the access to biological and genetic resources shall be based on legal grounds through authorised permits, however sometimes the permit is unauthorised, leading to biopiracy. Authorised means that any research must be conducted in a formal context of collaboration and partnership, or with institutional research bodies, whereas unauthorised access would be the total absence of consent or the unauthorised exploration of sites.[202] Hence, indigenous communities would not receive equitable revenues from the resulting innovation and some commentators qualify biopiracy as the 'theft of genetic resources'.[203] Biopiracy is used by Graham Dutfield to refer to "*the ways that corporations from the developed world claim ownership of, free ride on, or otherwise take unfair advantage of, the genetic resources and traditional knowledge and technologies of developing countries*."[204]

2.1. Biopiracy cases

Biopiracy may be illustrated by the following controversial cases: the Enola Bean Plant, the Pozol patent case, the Quinoa patent case, the Basmati rice patent and finally the Hoodia case. Three forms of biopiracy has been pointed out by the practitioner Gavin Stenton:[205]

- Bioprospecting,
- discovery of unknown properties in known plants and organisms and,
- most recently, the exploitation of TK.

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[200] United Nations Development Programme, 'Bioprospecting' http://www.undp.org/content/sdfinance/en/home/solutions/bioprospecting.html accessed 28 August 2016

[201] Jayashree Watal, 'Intellectual Property and Biotechnology: Trade Interests of Developing Countries' *in Trading in Genes: Development Perspectives on Biotechnology, Trade, and Sustainability*

[202] Trips, CBD and Traditional Medicines: Concepts and Questions. Report of an ASEAN Workshop on the TRIPS Agreement and Traditional Medicine, Jakarta, February 2001 (Report) http://apps.who.int/medicinedocs/en/d/Jh2996e/6.3.html accessed 29 August 2016

[203] Lucas Bergkamp, 'Bioprospecting Policy for Economic Development and Health Improvement' (2006) 7 Bio-Science Law Review 179

[204] Graham Dutfield, 'What is biopiracy?', in Bellot Rojas M. and Bernier S. (eds) *International Expert Workshop on Access to Genetic Resources and Benefit Sharing, Record of Discussion* ([n.pub.] 2004)89 92

[205] Gavin Stenton, 'Biopiracy within the pharmaceutical industry: a stark illustration of how abusive, manipulative and perverse the patenting process can be towards countries of the South' (2004) EIPR 17

The first category, considered the least piratical form, is the complete discovery of an unknown plant or organism. It becomes controversial when these natural products include TK and are patented.[206]

The second category refers to unknown properties found in already known natural resources which can be patented.[207] A relevant example of this second form of biopiracy would be the Enola bean Plant. A few words should be given to explain this famous case involving beans originated from Mexico.[208] An American, Larry Proctor, brought back some beans from Mexico to Colorado, and after a few years planting he applied for a patent, claiming that he had developed "a new field bean variety that produces distinctly colored yellow seed which remains relatively unchanged by season".[209] The United States Patent Office (*USPO*) granted the patent and the patent-holder obtained 20 years of patent protection. However, requests for re-examination were sought by the International Center for Tropical Agriculture (*CIAT*) and other organisations such as the Food and Agriculture Organisation (*FAO*), claiming that six beans identical to the Enola bean already existed.[210] In 2008, the USPO rejected all of the patent claims linked to the Enola bean. This case raised significant concerns about biopiracy and the involvement of IP in potential abuses.[211] It became a landmark decision, providing guidance to future patent reviews and biopiracy prevention.[212]

The third category, qualified as the "cheapest and the most piratical" is the exploitation of TK.[213] The Pozol patent case is a relevant illustration of this exploitation. Pozol is a traditional Mexican drink used by the Mayan peoples for generations both for medical purposes and for its nutritional values.[214] This led a Dutch corporation and a University of Minnesota to isolate a microorganism, an active component from the

[206] ibid
[207] ibid
[208] ibid
[209] U.S. Patent No. 5894079 (issued April 13, 1999)
[210] Gavin Stenton, 'Biopiracy within the pharmaceutical industry: a stark illustration of how abusive, manipulative and perverse the patenting process can be towards countries of the South' (2004) EIPR 17
[211] ibid
[212] 'US Patent Office rejects company's claim for bean commonly grown by Latin American farmers' (*EurekAlert, 30 April 2008*) http://www.eurekalert.org/pub_releases/2008-04/bc-upo043008.php accessed 27 August 2016
[213] Gavin Stenton, 'Biopiracy within the pharmaceutical industry: a stark illustration of how abusive, manipulative and perverse the patenting process can be towards countries of the South' (2004) EIPR 17
[214] Javier Garcia, 'Fighting Biopiracy: The Legislative Protection of Traditional Knowledge' (2007) 18 Berkeley La Raza Law Journal 7

drink, and jointly acquire a patent.[215] However, they refused any recognition of indigenous knowledge or to compensate the people for their ancestor's invention.[216]

Other examples of biopiracy exist in South America: Two Colorado researchers obtained a patent for a quinoa crop based on a traditional Bolivian variety, acquiring a fully monopoly over varieties of quinoa already known for decades by Bolivian peoples.[217] Finally, the quinoa patent was abandoned due to the raising of international opposition.[218]

South Asia has been also the target of biopiracy. One instance involves the world-famous Basmati rice, which has been grown for centuries in India and Pakistan, particularly in the Punjab region, where it has been used and improved through the breeding methods of indigenous farmers.[219] The basmati rice case came up in the 1990s when the US Patent and Trademark Office (*USPTO*) granted a patent to a Texas-based company called RiceTec. Researchers claimed to have developed new varieties of basmati rice.[220] Right after the patent was obtained, Indian NGOs supported by the Indian government asked for the re-examination of the patent, claiming that the novelty of such patent is questionable.[221] RiceTec agreed to withdraw some claims. In 2002, USPTO cancelled some claims, whereas three claims were kept due to the development of new varieties.[222] Although the withdrawal of claims was an accomplishment, other claims remain.[223]

These cases show the implication of IP law in biopiracy, the promotion of industries involved in the business of bioprospecting and the expansion of a market based on indigenous peoples knowledge and associated resources.[224] The phenomenon of biopiracy implies the notion of unauthorised appropriation of knowledge and

[215] ibid
[216] ibid
[217] James A. R. Nafziger, Robert Kirkwood Paterson and Alison Dundes Renteln, *Cultural Law: International, Comparative, and Indigenous* (Cambridge University Press, 2010)
[218] ibid
[219] Daniel F. Robinson, *Confronting Biopiracy: Challenges, Cases and International Debates* (Earthscan, 2010)
[220] Ikechi Mgbeoji, *Global Biopiracy: Patents, Plants, and Indigenous Knowledge* (UBC Press, 2014)
[221] Daniel F. Robinson, *Confronting Biopiracy: Challenges, Cases and International Debates* (Earthscan, 2010)
[222] Ikechi Mgbeoji, *Global Biopiracy: Patents, Plants, and Indigenous Knowledge* (UBC Press, 2014)
[223] Daniel F. Robinson, *Confronting Biopiracy: Challenges, Cases and International Debates* (Earthscan, 2010)
[224] Ikechi Mgbeoji, *Global Biopiracy: Patents, Plants, and Indigenous Knowledge* (UBC Press, 2014)

associated resources through IP systems, particularly through the patent system.[225] These cases demonstrate the appropriation of TK and associated resources by powerful states against developing countries and the lack to address the concerns of ILCs. It is also essential to bear in mind the particular influence of the United States and the US patent system in the global patent systems, reflected with these cases.[226] Indeed, Ikechi Mgbeoji explains how the US has an important role at the international level. Firstly, the US jurisprudence and ideology influenced the creation of Article 27 of the TRIPS; secondly the TRIPS Agreement has been influenced by US multinational corporations; thirdly the US accounts half of the patent issued and most of them raised the question of biopiracy, finally US decisions have a significant influence at the international level.[227]

One final example is the Hoodia patent case. For thousands of years, the San people, ancient inhabitants of Southern Africa, have, as part of their TK, used the Hoodia plant (*Hoodia gordonia*) as an alternative for food and water when hunting across in the inhospitable desert.[228] In the 1960s, the South African Council for Scientific and Industrial Research (*CSIR*) located in Pretoria saw the proprieties of this plant as a potential appetite suppressant and anti-obesity drug which could be patented and marketed.[229] In 1995 a patent was granted to the South African research institution for the active components of the Hoodia, the appetite suppressant.[230] However, the institution did not recognise the San's knowledge. Later the CSIR made an exclusive license agreement with a British company called Phytopharm in order to develop and commercialise Hoodia's active components.[231] In 2004, Phytopharm granted an exclusive global license to the multinational Unilever plc to use Hoodia extracts and incorporate them into food brands for weight-loss. In the same period, under pressure from NGOs the South African San Council and the CSIR concluded the specifics of a mutually acceptable benefit-sharing agreement in which San people would receive of 6% of CSIR royalties and 8% of CSIR milestone payments derived from the sale of

[225] ibid
[226] ibid
[227] ibid
[228] WIPO Academy, 'Case study: Hoodia Plant' (*WIPO*, January 2008) http://www.wipo.int/export/sites/www/academy/en/about/global_network/educational_materials/cs1_hoodia.pdf accessed 28 August 2016
[229] ibid
[230] ibid
[231] ibid

Hoodia products.[232] Funds would be distributed to original holders of Hoodia knowledge.[233]

The Hoodia case demonstrates the need to obtain PIC of local communities' holders of TK, and the need to involve these populations as soon as possible in the partnership process.[234] It also stresses the importance of preserving TK and ensuring a fair recompense distribution to TK holders. [235] Although there is compensation, one question that needs to be asked, however, is whether is it fair and sufficient for San tribe to receive such a small amount of the royalties? Some people might argue that a small amount is sufficient and better than nothing. Other people would say that local communities do not need to earn money as they have been using TK for centuries without receiving any amount of money for it.[236] On the other hand, it has been suggested that sharing the result of the research with local communities would be more supportive and helpful to them.[237] However, the most important aspect is to manifest respect for local communities and their knowledge and fairly balance both sides, industries as well as TK holders.[238]

2.2. The effects of biopiracy

Biopiracy can profoundly threaten the environment, biodiversity conservation and indigenous peoples as well as developing country's economy.[239] For instance, as a direct or indirect consequence of IPRs, biopiracy is an important factor in the overexploitation of natural resources.[240] While there has been seen an observable increase of bioprospecting activities related to genetic innovation, paradoxically this has accelerated the loss of biodiversity.[241] Members of the scientific community such as the American Harry Harlan and his son Jack Harlon noted the destruction of crop

[232] Rachel Wynberg and Roger Chennells, 'Green Diamonds of the South: An overview of the San-Hoodia Case' in *Indigenous Peoples, Consent and Benefit Sharing* (Springer Netherlands, 2009)
[233] ibid
[234] ibid
[235] ibid
[236] ibid
[237] ibid
[238] Semra Sevim, 'Access and Benefit sharing (ABS)' (2012) EIPR 471
[239] Priscah J. Rongoei, 'Biopiracy: Threat to Biodiversity Conservation' (UNESCO, 2008-2009) in International Conference on Bioethics Organized by the UNESCO Regional Centre for Documentation and Research on Bioethics at Egerton University, p 45 http://unesdoc.unesco.org/images/0018/001841/184159e.pdf accessed 2 September 2016
[240] Daniel F. Robinson, *Confronting Biopiracy: Challenges, Cases and International Debates* (Earthscan, 2010)
[241] Jack R. Harlan, 'Genetics of Disaster' (1972) 1 JEQ

diversity from 1930s.[242] The loss of biodiversity directly affects ILCs and raise important problems of environmental justice for them, threating the health of local communities through the lack of access to medicines and treatments, and threatening biodiversity resources used by local communities for their own medical knowledge and health.[243] Another consequence of biopiracy is the failure of relationships and the potential development of distrust between researchers and local communities; the misappropriation of resources and knowledge can be seen as a cultural and social offense by local communities, especially when their knowledges are commercialised.[244] Economic impacts also exist, generally resulting from industries, patent holders and the IP system keeping developing countries and indigenous communities out of the market access, excluded from the development of products stemming from their TK.[245] This causes an imbalance in the worldwide market.[246] As Vandana Shiva remarks, "granting exclusive patent rights amounts to stealing economic options of daily survival from the developing world."[247]

It has been asserted that the biopiracy phenomenon is caused by legal policies implemented by the Western system and shows the total absence of ethical considerations and the omission of recognition of indigenous work in preserving the natural resources on which they are dependant for their survival.[248] It has been pointed out that the International community is ineffective in preserving TK and natural resources against biopiracy, hence the biodiversity of developing countries is in danger, and the health of local communities is reduced.[249] The role of national governments reveals that they also fail to establish and implement biodiversity frameworks and infrastructures.[250] Overall, biopiracy not only encompasses natural

[242] ibid
[243] Tim Mackey and Bryan Liang, 'Integrating Biodiversity Management and Indigenous Biopiracy Protection to Promote Environmental Justice and Global Health' (2012) 102 American Journal of Public Health 1091
[244] Daniel F. Robinson, *Confronting Biopiracy: Challenges, Cases and International Debates* (Earthscan, 2010)
[245] ibid
[246] ibid
[247] Saritha Rai, 'India-U.S. Fight on Basmati Rice Is Mostly Settled' *The New York Times* (25 August 2001)
[248] Gavin Stenton, 'Biopiracy within the pharmaceutical industry: a stark illustration of how abusive, manipulative and perverse the patenting process can be towards countries of the South' (2004) EIPR 17
[249] ibid
[250] Tim Mackey and Bryan Liang, 'Integrating Biodiversity Management and Indigenous Biopiracy Protection to Promote Environmental Justice and Global Health' (2012) 102 American Journal of Public Health 1091

resources, organisms and soils, but it also affects indigenous populations themselves. Biopiracy is a real concern for both developing countries and developed countries due to its broader global implications and its impacts on rights to health, rights to food, rights to control access to genetic resources, and on human rights in general.[251]

Many times ILCs have emphasized the inadequacy of current IP rights systems, saying they provide inadequate protection for their knowledge and boost the misappropriation of their knowledge.[252] The examples of misappropriation of TK and genetic resources discussed in the previous pages, the ignoring of PIC and the sharing of benefits for the granting of patents to applicants who use TK in the development of new products, has shown that patent regimes are involved in this misappropriation due to their inadequate fit with TK.[253] As a result, existing IP rules fail to prevent the misappropriation of knowledge and the cultural heritage of indigenous peoples, and fail to address effective solutions for them.

Finally, "*perhaps the most prevalent and insidious form of appropriation of indigenous knowledge and resources has been the construction of conceptual and legal categories of valuable knowledge and resources that systematically exclude the knowledge and resources of local communities, farmers, and indigenous people*".[254]

IV. Coexistence and interaction between the CBD and the TRIPS

Since the establishment of both international agreements there have been ongoing discussions evaluating the relationship between TRIPS and CBD.[255] These debates show the interaction between both of agreements, highlighting political involvement, the interests of different actors and different norms originated from the two legal instruments. The debate focuses on "the lack of recognition of the objectives of the

[251] Sayan Bhattacharya, 'Bioprospecting, biopiracy and food security in India: The emerging sides of neoliberalism' (2014) 12 ILSHS 49
[252] Center for International Environmental Law (CIEL), 'The Gap between Indigenous Peoples' Demands and WIPO's Framework on Traditional Knowledge' (September 2007) http://www.wipo.int/export/sites/www/tk/en/igc/ngo/ciel_gap.pdf accessed 3 May 2016
[253] ibid
[254] Naomi Roht-Arriaza, 'Of Seeds and Shamans' (1996) 17 Mich. J. Int'L L. 919, 929
[255] IISD, 'Traditional knowledge and Patentability' (*International Institute for Sustainable Development,* May 2003) IISD Trade and Development Brief No. 7 of a Series Summer http://www.iisd.org/pdf/2003/investment_sdc_may_2003_7.pdf accessed 5 April 2016

CBD by some members as well as the need to incorporate these objectives into the TRIPS Agreement".[256]

According to the International Institute for Sustainable Development (IISD), interactions are seen in four areas:[257]

- Private property and national sovereignty;
- Benefit-sharing mechanisms through the access to genetic resources;
- Benefit-sharing through appropriate transfer of technology and,
- Intellectual property and TK.

The first issue concerns national sovereignty over genetic resources. TRIPS provisions might be in conflict with the rights of national sovereignty, a nation's supreme power to govern and regulate itself. For instance, the fact of changing, adding, mixing, removing, isolating or modifying natural products or organisms in order to grant a patent might affect the national sovereign rights of a State.[258] Hence, patents granted over "resources derived or extracted from the nature constitute a property claim" that a country consider as sovereign rights might be contrary to CBD objectives.[259]

The second issue covers benefit-sharing mechanisms and access to genetic resources.[260] While the benefit-sharing regime is regulated by the CBD and must fulfil conditions such as PIC, MAT (set up by subparagraphs of Article 15), the TRIPS Agreement undermines and restricts access to genetic resources and the fulfilment of these conditions through patent protections.[261] Besides this, the TRIPS possesses a

[256] David Eugui, 'Issues Linked to the Convention on Biological Diversity in the WTO Negotiations: Implementing DOHA Mandates' (*Center for International Environmental Law*, 6 July 2002) www.ciel.org/Publications/Doha_CBD-10oct02.pdf accessed 17 August 2016

[257] IISD, 'The TRIPS Agreement and biological diversity' (*International Institute for Sustainable Development, December 2003*) IISD Trade and Development Brief No. 8 of a Series http://www.iisd.org/sites/default/files/publications/investment_sdc_dec_2003_8.pdf 18 August 2016

[258] G.K. Rosendal, 'Biodiversity: between diverse international arenas' in Bergesen, Parmann and Thommessen, *Yearbook of International Cooperation Environment and Development* (Earthscan: London, 1999)

[259] Lekha Laxman and Abdul Haseeb Ansari, 'The interface between TRIPS and CBD: efforts towards harmonisation' (2012) JITLP 108

[260] IISD, 'The TRIPS Agreement and biological diversity' (*International Institute for Sustainable Development, December 2003*) IISD Trade and Development Brief No. 8 of a Series http://www.iisd.org/sites/default/files/publications/investment_sdc_dec_2003_8.pdf accessed 20 August 2016

[261] G.K Rosendal, 'The Convention of Biological Diversity: tensions with the WTO TRIPS Agreement over Access to Genetic Resources and the Sharing of benefits', in Oberthu and Gehring (Eds) *Institutional*

dispute settlement mechanism in order to enforce IPRs, particularly in this context, patents. The CBD has no enforcement mechanisms or specific guidelines to implement a benefit-sharing regime.[262]

The third concern is related to the transfer of technology and the access to technology by developing countries. It is indisputable that TRIPS facilitates the transfer of technology through Article 7, Article 40 and Article 66(2). However, it has been said that the global economy and technology has changed between the implementation of TRIPS in the 1990s and now, hence, developing countries should "realign their economies" and have new technology in order to be competitive with other countries. Actual TRIPS provisions are so questionable they could undermine the application of Article 16 of the CBD. [263]

Finally, the latest problem which comes during TRIPS and CBD interactions is the protection of TK in the IP system, as discussed above (*II, 3 TRIPS and indigenous peoples*).

Proponents of IP rights advance the idea that the patent system might have advantages such as facilitating economic development and promoting innovation by allowing an owner to have exclusive rights. Article 28 of TRIPS explains the rights conferred to a patents' owner. It confers the right to receive the benefits generated by the invention, which pushes inventors to invest in inventions. In the medical field, the patent system boosts the spread of medicines from new medical technology. The patent system has positive impacts on developing new medicines and producing therapies and alternative treatments for various diseases. Hence, a lot of patients have access to new medicines and treatments in both developed countries and developing countries.[264] "The intellectual property system is one of the cornerstones of modern economic policy".[265] In comparison, the role of the TRIPS has been also questionable

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Interaction in Global Environmental Governance: Synergy and Conflict among International and EU Policies (Cambrigde, 2006)

[262] Lekha Laxman and Abdul Haseeb Ansari, 'The interface between TRIPS and CBD: efforts towards harmonisation' (2012) JITLP 108

[263] ibid

[264] Lucas Bergkamp, 'Bioprospecting Policy for Economic Development and Health Improvement' (2006) 7 Bio-Science Law Review 179

[265] Shahid Alikhan, 'Intellectual Property Rights: The Paris Convention and Developing Countries' (1993) 52 J. Sci. & Ind. Res. 219

over the years, and has been seen as a "modern vehicle of western imperialism",[266] a form of "modern-day colonialism" and hostile to the interests of developing countries.[267] It has been asserted that the TRIPS Agreement made a controversial discord between the North and the South of the world, in other words between developed countries and developing countries.[268] Along these lines, TRIPS may undermine the interests of developing countries as well as the objectives of the CBD.[269]

In response, industrialised countries usually assert that the CBD is not in conflict with IP rights by taking the example of Article 16(2) of the CBD. As previously stated, Article 16 concerns the access and transfer of technology. Article 16(2) of the CBD reads:

"In the case of technology subject to patents and other intellectual property rights, such access and transfer shall be provided on terms which recognize and are consistent with the adequate and effective protection of intellectual property rights."

Thus, this article affirms the respect for IP rights. However, the same paragraph counterbalances this respect with the sentence: "Access to and transfer of technology referred to in paragraph 1 above to developing countries shall be provided and/or facilitated under fair and most favourable terms".[270] With this Article the CBD clearly affirms the recognition and the respect of IP rights and seems to recognise IP interests in the biotechnology field and "promote effective and adequate protection of intellectual property rights".[271]

On the other side, developing countries argued that the TRIPS Agreement was created to strength international patent protection for developed countries. Indeed, they consider that the formulation of the TRIPS Agreement was promulgated without the

[266] Lowell B. Bautista, 'Bioprospecting or Biopiracy: Does the TRIPS Agreement undermine the Interests of Developing Countries?' (2007) 82 Philippine Law Journal 14
[267] Lakshmi Sarma, 'Biopiracy: Twentieth Century Imperialism in the Form of International Agreements' (1999) Temp. Int'l & Comp. L. J. 125
[268] Marci A. Hamilton, 'The TRIPS Agreement: Imperialistic, Outdated and Overprotective' (1996) 29 VAND.J. INT'LL. 613
[269] Lowell B. Bautista, 'Bioprospecting or Biopiracy: Does the TRIPS Agreement undermine the Interests of Developing Countries?' (2007) 82 Philippine Law Journal 14
[270] CBD Article 16(2)
[271] TRIPS Preamble "*Members, Desiring to reduce distortions and impediments to international trade, and taking into account the need to promote effective and adequate protection of intellectual property rights, and to ensure that measures and procedures to enforce intellectual property rights do not themselves become barriers to legitimate trade*"

dynamic investment of developing countries. In other words, that TRIPS has been established in order to recognise a solid international protection of IPRs for the interests of developed countries and for them to receive significant benefits-sharing. Developing countries failed to guide the core of the TRIPS Agreement.[272] As a result, developing countries suggested the need to amend TRIPS, especially Article 27(3)(b), in order to ensure that it conforms with the CBD.[273]

Similarly, the CBD has been criticised. For instance, Gibson considers the CBD as a "double edged sword", [274] "on the one hand, it is important to protect traditional knowledge and on the other hand, it is a distinct cause for concern".[275] Other practitioners such as Fourmile remark that the CBD is, as an international agreement, too soft.[276] Finally, some commentators see this Convention as being "much more about deciding who was to have the right to exploit living nature than protecting the earth's diversity".[277]

In short, both legal instruments receive strong criticism by the international community for not addressing bioprospecting issues, promoting the benefits-sharing system and preferring the development of a strong protection for intellectual property rights.[278] The call to "reconcile" both agreements with each other has never been so strong.[279]

Having discussed the potential conflicts between the CBD and the TRIPS Agreement and pointed out essential distinctions between them, the final section of this chapter addresses ways to approach reconciling both international instruments.

V. Proposed international approaches

[272] Ulrich Beyerlin and Thilo Marauhn, *International Environmental Law* (Oxford: Hart, 2011)
[273] Lekha Laxman and Abdul Haseeb Ansari, 'The interface between TRIPS and CBD: efforts towards harmonisation' (2012) JITLP 108
[274] Gibson, *Community Resources, Intellectual Property, International Trade and Protection of Traditional Knowledge* (Aldershot: Ashgate, 2005)
[275] Semra Sevim, 'Acess and Benefit sharing (ABS)' (2012) EIPR 471
[276] H. Fourmile, "Indigenous Peoples, the Conservation of Traditional Ecological Knowledge, and Global Governance" in N. Low, *Global Ethics and Environmen*t (London: Routledge, 1999) 229
[277] John Foster, *The Ecological Revolution: Making Peace with the Planet* (Monthly Review Press, 2009)
[278] Lucas Bergkamp, 'Bioprospecting Policy for Economic Development and Health Improvement' (2006) 7 Bio-Science Law Review 179
[279] Jerzy Koopman, 'Biotechnology, Patent Law and Piracy: Mirroring the Interests in Resources of Life and Culture' (2003) 7.5 Electronic Journal of Comparative Law 23

Actions have been taken by the WIPO and the Secretariat of the CBD reconciling the interests of the CBD and the interests of TRIPS through panels and working groups.[280] For instance, in the WIPO fact-finding mission conducted for the needs of TK holders, WIPO recommended the establishment of a regime of *sui generis* protection for TK and to define the scope, mechanisms, and enforcement measures of this regime.[281]

1. The implementation of a *sui generis* protection

The subject matter of *sui generis* systems has been adopted and recognised in some countries such as Panama, Brazil and the Philippines. Panama was the first country in the world to enact a "special collective IP rights regime for the protection and defence of the cultural identity and TK of indigenous peoples", becoming the most advanced country to implement such a legal framework in order to protect the IP and TK of indigenous peoples and indigenous peoples' human rights.[282] Brazil as well adopted a *sui generis* legislation with the Provisional Measure No. 2186-16 of 2001 Regulating Access to the Genetic Heritage, Protection of and Access to Associated Traditional Knowledge. This law regulates access to Brazilian genetic heritage and associated TK, and implements inspections and authorisations for its commercialisation and for the granting of patents.[283]

With the Indigenous Peoples Rights Act 1997 adopted by the Philippines government, the Philippines recognises and promotes all the rights of ILCs.[284] This legislation is mainly based on PIC process, taking into account customary laws and stressing by the statement "no permit, no collection".[285] National implementation has the advantage of responding to specific circumstances by adopting specific measures. However, it has been argued that this kind of legislation is complex, that only few permits are issued

[280] ibid

[281] WIPO, 'Intellectual Property Needs and Expectations of Traditional Knowledge Holders' (Geneva, 2001) Report on Fact-Finding Missions on Intellectual Property and Traditional Knowledge http://www.wipo.int/edocs/pubdocs/en/tk/768/wipo_pub_768.pdf accessed 19 August 2016

[282] United Nations General Assembly (UNGA) 'The status of indigenous peoples' rights in Panama', Report of the Special Rapporteur on the rights of indigenous peoples, James Anaya (2014) UN Doc. A/HRC/27/52/Add.1

[283] Bernardo Marinho Fontes Alexandre, 'Access to genetic heritage and associated traditional knowledge in Brazil' (*Dannemann Siemsen News*, 1 June 2011) http://www.dannemann.com.br/dsbim/Biblioteca_Detalhe.aspx?&ID=813&pp=1&pi=1 accessed 28 August 2016

[284] The Indigenous Peoples Rights Act 1997 (1997) (Tenth Congress) S. No. 1728 Chap. 1, Section 2

[285] Gavin Stenton, 'Biopiracy within the pharmaceutical industry: a stark illustration of how abusive, manipulative and perverse the patenting process can be towards countries of the South' (2004) EIPR 17

and that the protection is restricted to the country in question.[286] All the above-mentioned legislations show that *sui generis* regimes implemented at national level exist and should be implemented at the international stage, insuring a broader protection. Nonetheless, in order to implement a *sui generis* approach at international level, it requires full harmonisation of legal frameworks through norms and principles.[287]

In her conclusions of the "Workshop on Biodiversity, Traditional Knowledge and Rights of Indigenous Peoples", Victoria Tauli-Corpuz and other indigenous peoples' representatives contested the implementation of a *sui generis* system. According to them, developing a *sui generis* system "within IPRs framework is still IPRs". States and governments should recognise their customary rules in order to preserve and safeguard their TK, rather than implement a *sui generis* system.[288]

Academics such as Kamau suggested also that measures need to be considered on customary or *sui generis* basis as a method of protection instead of "*fitting TK into already existing mechanisms that were not designed for that kind of knowledge. An exploration of mechanisms that would meet suit the nature of TK and meet the TK holders' needs is necessary for the accounting of a lot of the tradition-based inventiveness that does not fit the IP definition and criteria*."[289]

Tobin comments: "*The role of a sui-generis regime could therefore be to establish a bridge between indigenous/local community and national and international legal systems, in order to secure the effective recognition and protection of rights which derive from customary law and practice*."[290]

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[286] Graham Dutfield, 'Developing and Implementing National Systems for Protecting Traditional Knowledge: A Review of Experiences in Selected Developing Countries', in Twarog and Kapoor (eds) *Protecting and Promoting Traditional Knowledge: Systems, National Experiences & International Dimensions* (United Nations, 2004)

[287] Secretariat of the Pacific Community headquarters Noumea, 'Guidelines for developing national legislation for the protection of traditional knowledge and expressions of culture based on the Pacific Model Law 2002' (*WIPO*, 2006) http://www.wipo.int/edocs/lexdocs/laws/en/spc/spc001en.pdf accessed 28 August 2016

[288] Victoria Tauli-Corpuz, 'Biodiversity, Traditional Knowledge and Rights of Indigenous Peoples' (2003) 5 Intellectual Property Rights Series, Third World Network

[289] Charles Kamau Maina, 'What Patents Tell: Limitations of Patent-Based Indicators of Innovation' (2007) 1 Journal of Law, Ethics, and Intellectual Property, p24 http://www.scientificjournals.org/journals2007/articles/1254.pdf accessed 2 August 2016

[290] Brendan Tobin, *Speaking in Tongues: Indigenous Participation in the Development of a Sui Generis Regime to Protect Traditional Knowledge in Peru* (IIED, 2001)

2. The creation of databases

WIPO suggested also the utilisation of the Traditional Knowledge Digital Library (*TKDL*) as a model for the protection of TK, with the possibility of incorporating TK in its Intellectual Property Digital Libraries.[291] The TKDL is an Indian database electronically collecting and classifying the knowledge and practices of remedies and medicines. This database aims to prevent misappropriation of traditional knowledge from biopiracy and unethical patents, becoming an effective instrument against biopiracy and recognised as a worldwide pioneer in the field of TK protection. The TKDL has signed agreements with principal global patent offices allowing patents examiners access to the TKDL database when considering TK during patent procedures.[292] Such databases would give a more adequate option to the patent framework, would produce direct income and would easily facilitate the access of patent examiners to knowledge. In this regards the slow progress by other countries, particularly Western countries, stems from the idea that TK is seen as an uncodified knowledge, uncategorised and not structured, and so not fitting within Western system. It is seen more as a communal right coming from oral transmission. Hence, for Western patent examiners it is difficult to recognise TK in a patent process.[293]

Indigenous peoples' representatives also questioned the usefulness of the implementation of codification and databases in order to list TK, explaining that codifying TK may provoke its disappearance.[294] Firstly, having records of TK might lead indigenous peoples, especially the youth, to not transmit TK through rituals, songs and ceremonies. Secondly, the fear of TK misappropriation and biopiracy is another potential concern when TK is transferred into databases, whereby it is considered that the appropriation would be easier through the granting of patents and could affect the novelty requirement. Finally, databases and the codification of TK might be expensive to set up and indigenous peoples and local communities might not have access to the technology to list their knowledge. Representatives have also argued that set up an

[291] Report of the Commission on Intellectual Property Rights, 'Traditional Knowledge and Geographical indications' in Integrating Intellectual Property Rights and Development Policy (London, September 2002)

[292] TKDL web-site http://www.tkdl.res.in/tkdl/langdefault/common/Home.asp?GL=Eng accessed 18 August 2016

[293] Jerzy Koopman, 'Biotechnology, Patent Law and Piracy: Mirroring the Interests in Resources of Life and Culture' (2003) 7.5 Electronic Journal of Comparative Law 23

[294] Victoria Tauli-Corpuz, 'Biodiversity, Traditional Knowledge and Rights of Indigenous Peoples' (2003) 5 Intellectual Property Rights Series, Third World Network

international database would be even more "dangerous", unless it is monitored by indigenous people in their own communities. Any centralised database must follow PIC requirements and respect the right to self-determination, to decide whether or not indigenous peoples want to document their knowledge and their heritage.[295] Representatives of indigenous peoples such as Victoria Tauli-Corpuz have emphasised the importance of the recognition of the right of self-determination and have argued that:

"*The best protection and defence of our biodiversity and traditional knowledge is for us to persistently assert our right to self-determination and our rights to our territories and resources. Self-determination means our right to freely determine our political status and freely pursue our economic, social and cultural development*."[296]

Edith Bastidas considers that "participation, consultation, consent and self-determination" are key in developing "an instrument that recognises the rights of indigenous peoples' cultural expressions and knowledge."[297] Regarding the right of self-determination, scientists have been encouraged to "recognise and defend" the right of self-determination of indigenous peoples to control and protect their knowledge in order to overcome the problems of biopiracy.[298] Chemists often forget the importance of indigenous knowledge as a starting point in drug discovery.[299]

3. Geographical indications and disclosure of origin

Solutions to protect TK related to genetic resources through an adequate IP protection system have been proposed by the international community in order to tackle the insufficiencies of patent regimes.[300] For instance, patent fillings should be based on the adoption of a disclosure of origin policy.[301] Another solution proposed by Graham

[295] Victoria Tauli-Corpuz, 'Biodiversity, Traditional Knowledge and Rights of Indigenous Peoples' (2003) 5 Intellectual Property Rights Series, Third World Network

[296] ibid

[297] Julia Fraser and Maeli Astruc, 'Indigenous Peoples Present Their Perspectives On Traditional Knowledge At WIPO' (*Intellectual Property Watch*, 25 Mars 2014) http://www.ip-watch.org/2014/03/25/indigenous-peoples-present-their-perspectives-on-traditional-knowledge-at-wipo/ 10 August 2016

[298] Inna Abramova and Alexander Greer, 'Ethnochesmistry and Human Rights' (2013) 10 Chem Biodivers

[299] ibid

[300] Djims Milius, 'Justifying intellectual property in traditional knowledge' (2009) 2 Intellectual Property Quarterly 185

[301] Marko Berglund, 'The Protection of Traditional Knowledge Related to Genetic Resources: The case for a modified patent application procedure' (2005) 2 SCRIPT-ed 206, 209 et seq., available at https://script-ed.org/wp-content/uploads/2016/07/2-2-Berglund.pdf

Dutfield is the establishment of public investigations by a public defender to inspect abuses against indigenous peoples.[302] The publication of TK in the public domain through community registers and databases, in particular through confidential registers, might solve issues of patent granted over indigenous knowledge.[303] As an alternative to patents, geographical indications (GIs) have been advanced as a means of protecting TK and traditional agricultural products.[304] While developed countries already have adopted policies in this matter, developing countries started embracing this regime as a local strategy. It has been suggested that GI regimes should be expanded for protecting TK-associated resources,[305] especially in developing countries due to their suitability for protecting traditional products if the product possesses qualities connected to a specific geographical origin.[306] Hence products fall under public good because qualities linked to their place of origin have been developed by generations over many decades. As a result, this regime has benefits for local communities and farmers, improves the national economy by generating income, enhances TK and shows that it is a direct cause of biological and genetic resource conservation,[307] as well as means of ensuring food security.[308] Despite economic impacts and marked quality improvement,[309] implementing GIs tends to be more challenging in developing countries as levels of IP protection is lower.[310] GIs have also involved in propositions to disclose the geographical origin of genetic resources in

[302] Graham Dutfield, *Intellectual Property Rights, Trade and Biodiversity: Seeds and Plant Varieties* (London: Earthscan & IUCN, 2000), p.81

[303] Marko Berglund, 'The Protection of Traditional Knowledge Related to Genetic Resources: The case for a modified patent application procedure' (2005) 2 SCRIPT-ed 206

[304] Tesh W. Dagne, 'Beyond Economic Considerations: (Re)conceptualising Geographical Indications for Protecting Traditional Agricultural Products' (2015) International Review of Intellectual Property and Competition Law 682

[305] ibid

[306] Report of the Commission on Intellectual Property Rights, 'Traditional Knowledge and Geographical indications' in Integrating Intellectual Property Rights and Development Policy (London, September 2002)

[307] Jorge Larson Guerra, 'Geographical Indications, In Situ Conservation and Traditional Knowledge' (*International Centre for Trade and Sustainable Development*, November 2010) Policy Brief Number 3 http://www.ictsd.org/downloads/2011/12/geographical-indications-in-situ-conservation-and-traditional-knowledge.pdf accessed 6 September 2016

[308] Tesh W. Dagne, 'Beyond Economic Considerations: (Re)conceptualising Geographical Indications for Protecting Traditional Agricultural Products' (2015) International Review of Intellectual Property and Competition Law 682

[309] Report of the Commission on Intellectual Property Rights, 'Traditional Knowledge and Geographical indications' in Integrating Intellectual Property Rights and Development Policy (London, September 2002)

[310] Jorge Larson Guerra, 'Geographical Indications, In Situ Conservation and Traditional Knowledge' (*International Centre for Trade and Sustainable Development*, November 2010) Policy Brief Number 3

patent applications.[311] In consequence, patent applicants must disclose the origin of the resource and apply PIC requirements, which could lead to more "transparency" and enforce ABS provisions. However, identifying the precise place of origin might be difficult.[312] Several developing countries have called for the indication of origin in the patent process as a patent requirement. In 2004, a group of developing countries requested that disclosure of the country of origin of genetic resources in patents should be an international obligation. At the same time, an amendment submitted by a group of developing countries led by India and Brazil required disclosure of the country of origin of genetic resources as a TRIPS obligation. While some countries have adopted measures on this matter into their own domestic legislation, such proposals have been highly disputed and have not made progress at international levels.[313] The IGC still debate this disclosure requirement during their sessions and opinions about it are divided. Developing countries have stressed that a disclosure requirement should be an obligation and should be introduced into the IP system, whereas developed countries argued that a mandatory disclosure requirement might create uncertainty in patent law and potentially interfere with benefit-sharing implementation. [314]

4. Other proposed international approaches

Furthermore, projects developed by the International Cooperative Biodiversity Group (ICBG) have made efforts to harmonise CBD and TRIPS provisions. The ICBG conducts bioprospecting activities in several developing countries in Latin America, Africa and Asia by promoting collaborative research between public and private institutions and in compliance with CBD objectives. However, the ICBG received strong criticism concerning one project conducted in indigenous Maya community in Mexico. Due to

[311] Report of the Commission on Intellectual Property Rights, 'Traditional Knowledge and Geographical indications' in Integrating Intellectual Property Rights and Development Policy (London, September 2002) 85

[312] ibid

[313] Ituki Shimbo, Yoko Ito and Koichi Sumikira, 'Patent Protection and Access to Genetic Resources' (2008) 26 Nature Biotechnology 645

[314] Catherine Saez, 'WIPO Members Debate Disclosure Of Origin For Genetic Resources In Patents' (Intellectual Property Watch, 17 February 2016) http://www.ip-watch.org/2016/02/17/wipo-members-debate-disclosure-of-origin-for-genetic-resources-in-patents/ accessed 22 August 2016

accusations of absence of PIC, the project closed in 2001 and became the first case to highlight bioprospecting issues.[315]

Another suggestion would be that patent examiners should precisely examine the novelty and non-obviousness of inventions when it comes to grant a patent.[316] Analysis of the application of novelty and non-obviousness of inventions would be required, however any adjustment might fully affect and influence the spread of innovations in the biotechnology area.[317]

Other proposals emerged, such as to setting up a common agenda between countries which possess rich biodiversity in order to bring CBD objectives into TRIPS and biodiversity concerns into the IP system.[318] The absence of a common agenda make it difficult to change and incorporate new proposals in the TRIPS Council.[319] For instance, issues and proposals which could be brought in a common agenda would be: the incorporation of PIC and benefits-sharing principles established by the CBD and the Nagoya Protocol into the TRIPS Agreement, the recognition of IP rights registration as a commercial use of genetic resources or TK; the clarification of Article 27(3)(b); establishing national enforcements measures to implement CBD provisions into domestic law including IP law.[320] Regarding TK, proposals would be: the creation of a database of rights; the insertion into the TRIPS Agreement of an obligation to preserve and maintain knowledge such as in Article 8(j) of the CBD.[321]

It is important to promote a win-win situation in bioprospecting, particularly between resources holders and users. The international community should emphasize changes at a national level, allowing countries to adopt adequate regimes in order to protect

[315] Brent Berlin and Elois Ann Berlin, 'Community Autonomy and the Maya ICBG Project in Chiapas, Mexico: How a Bioprospecting Project that Should Have Succeeded Failed' (2004) 63 Human Organization 472 https://www.cbd.int/doc/articles/2004/A-00278.pdf accessed 18 August 2016
[316] WIPO, 'Intellectual Property Needs and Expectations of Traditional Knowledge Holders' (Geneva, 2001) Report on Fact-Finding Missions on Intellectual Property and Traditional Knowledge http://www.wipo.int/edocs/pubdocs/en/tk/768/wipo_pub_768.pdf accessed 19 August 2016
[317] Jerzy Koopman, 'Biotechnology, Patent Law and Piracy: Mirroring the Interests in Resources of Life and Culture' (2003) 7.5 Electronic Journal of Comparative Law 23
[318] David Eugui, 'Issues Linked to the Convention on Biological Diversity in the WTO Negotiations: Implementing DOHA Mandates' (*Center for International Environmental Law*, 6 July 2002) www.ciel.org/Publications/Doha_CBD-10oct02.pdf accessed 17 August 2016
[319] ibid
[320] ibid
[321] Graham Dutfield, 'Protecting traditional knowledge and folklore: A review of progress in diplomacy and policy formulation' (2003) International Trade and Sustainable Development Series, Paper No. 1

biological resources over any threats. Hence, developing countries should adopt satisfactory measures and avoid the implementation of amendments for patent law which might "stifle bioprospecting".[322]

VI. Summary

This chapter has shown that finding a balance between IP law and environmental law is an important international problem and crucial for the smooth running of bioprospecting activities. The effective implementation of the CBD and the TRIPS Agreement is crucial to the conservation and protection of TK and genetic resources. These treaties define the manner in which TK should be safeguarded and how genetic resources should be accessed when bioprospecting activities are in process.

As has been pointed out before, both CBD and TRIPS recognise the supremacy of state sovereignty, do not give an effective answer to issues related to bioprospecting, and promote a vigorous protection of IP law. Despite the steps made by the CBD and its good intentions, it did not amplify the support that indigenous peoples need to have. In addition, both treaties have deliberately ambiguous language which might be an open door to potential interpretative abuses. However, so far the CBD and the Nagoya Protocol are the most exhaustive treaties regarding balancing preservation, protection, equity of TK and access to genetic resources in order to monitor bioprospecting activities.

Although, CBD and TRIPS harmonisation and reconciliation is highly recommended by all practitioners, NGOs and developing countries in order to deal with conflicts interests and diverse claims, it is important to bear in mind that any possible modification might have significant influence and consequences over biotechnology area and, IP framework in general in the future. It is important that international institutions have interrelationships for the well-being of the international community and for the smooth implementation of their objectives, avoiding fragmentations and conflicts between institutions. Besides, countries should enact a comprehensive bioprospecting policy to make effective international agreements such as the CBD and

[322] Lucas Bergkamp, 'Bioprospecting Policy for Economic Development and Health Improvement' (2006) 7 Bio-Science Law Review 179

the TRIPS which have different focus and issues.[323] The following chapter would apply these global legal instruments to a case study, French Guiana, in order to see how this country achieves and enforces these instruments and solutions provided to help its indigenous communities.

[323] 'Trips, CBD and Traditional Medicines: Concepts and Questions.' Report of an ASEAN Workshop on the TRIPS Agreement and Traditional Medicine, Jakarta, February 2001 http://apps.who.int/medicinedocs/en/d/Jh2996e/6.3.html accessed 13 November 2016

CHAPTER 5. Caste study: French Guiana

I. Introduction

French Guiana (officially called "*Guyane"* in French), located in the north east of the South American continent and bordered by Brazil and Suriname, is the only French and European territory in South America, forming a rich cultural diversity illustrated by multiple nationalities and ethnic groups.[324] This diversity is the result of the settlement of indigenous peoples before the French colonisation, by colonialism in the 1600s and by immigration. Today this diversity includes: Creoles; Amerindians, divided into six groups (Arawaks, Palikurs, Galibis, Wayanas or Roucouyennes, Oyampis or Wayampis and Emerillons peoples); Maroons; H'mongs; Metropolitan French and other populations (Haitians, Brazilians, Surinamese, Asians).[325]

Nowadays, indigenous peoples such as the Amerindians face challenges regarding their culture and their way of life, amplifying existing social gaps between this territory and mainland France.[326] Among the challenges French Guiana's indigenous peoples continue to face include: lack of health protection, lack of education, clandestine gold mining and insecurity involving related mercury poisoning.[327] One important consequence is the rate of suicide among indigenous peoples, which became 13 times higher than in Metropolitan France, and is particularly prevalent in the indigenous youth.[328] French Guiana's biodiversity is also under threat. In the last twenty years French Guiana has seen an increase in legal and illegal gold mining in its territory, [329] which might cause ecological and health damage due to the use of mercury

[324] European Commission, 'Amazonia' (*BEST voluntary scheme for Biodiveristy and ecosystem services in territories of European overseas*, May 2015) http://ec.europa.eu/environment/nature/biodiversity/best/pdf/hubfactsheet-amazonia.pdf accessed 9 May 2016

[325] Ministère des Outre-Mer, 'French overseas territories' http://www.outre-mer.gouv.fr/?presentation-guyane.html accessed 18 May 2016

[326] International Work Group for Indigenous Affairs, 'French Guiana' (2014) p 142 http://www.iwgia.org/images/stories/sections/regions/latin-america/documents/IW2014/IW2014FrenchGuyana.pdf accessed 18 May 2016 and http://www.iwgia.org/regions/latin-america/french-guiana

[327] Alex Bellos, 'Illegal, polluting and dangerous: the gold rush in French Guiana' *The Guardian* (17 December 2007)

[328] International Work Group for Indigenous Affairs, 'French Guiana' (2014) p 142 http://www.iwgia.org/images/stories/sections/regions/latin-america/documents/IW2014/IW2014FrenchGuyana.pdf accessed 18 May 2016 and http://www.iwgia.org/regions/latin-america/french-guiana

[329] Alain Coppel, Stephane Guitet, Olivier Brunaux and others, 'Legal alluvial gold mining in French Guiana' (*Guianas Geographic*) http://www.guianas-geographic.com/article-en/ecology/legal-alluvial-gold-mining-in-french-guiana/ accessed 15 May 2016

activities.[330] While biodiversity and centuries of the heritage of indigenous peoples are under threat, the effectiveness of the French framework in meeting international objectives by protecting indigenous rights and knowledge remains in question.

The first Section (I) will briefly outline French biodiversity and will focus on French Guiana's biodiversity, showing that France Guiana holds exceptional resources in fauna and flora due to its geographical position. Section (II) analyses existing French actions undertaken by the government to preserve biodiversity and the implementation of the CBD into its domestic regulation. Furthermore, this section will stress the absence of an ABS regime in France which led French Guiana to shift toward a local regime to monitor and manage access to genetic resources, in particular with the creation of the French Guiana Amazonian Park. In Section (III) bioprospecting cases in French Guiana will be considered. Section (IV) will explain the French legal approach concerning the rights of overseas populations, and particularly the rights of ILCs who are settled in overseas territories. Finally, Section (V) will begin with an overview of the Biodiversity Law No. 2016-1084, mentioning its key measures for the protection of biodiversity, and will then consider the creation of the French Agency for Biodiversity, before analysing the new legal framework for ABS.

II. France and French Guiana's biodiversity

1. French biodiversity

Unlike many other countries, France owns biodiversity *in situ* and *ex situ* in both mainland France and overseas territories.[331] According to the CBD, "ex-situ conservation" means the conservation of components of biological diversity outside their natural habitats, whereas "in-situ conservation" is the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive

[330] Damon Tabor, 'French Guiana: Mercury, the Global Threat' (*Pulitzer Center*, 16 July 2010) http://pulitzercenter.org/blog/untold-stories/french-guiana-mercury-global-threat accessed 15 May 2016
See also 'French Guiana' in the Indigenous World 2014 (IWGIA web-site) International Work Group for Indigenous Affairs, p 142 http://www.iwgia.org/images/stories/sections/regions/latin-america/documents/IW2014/IW2014FrenchGuyana.pdf accessed 20 May 2016

[331] Claudio Chiarolla, 'Commentary on the ABS Provisions of the Draft Biodiversity Law of France' in *Implementing the Nagoya Protocol: Comparing Access and Benefit-Sharing Regimes in Europe* edited by (Hotei Publishing, 2015)

properties.[332] *In situ* conservation means conservation within natural environment itself whereas *ex situ* means off-site conservation (such as zoos and botanical gardens).

What is covered by French *in situ* conservation? Due to its geographical position in Europe and in the world, France possesses a rich biodiversity and cultural heritage, grouping altogether different local areas. In Europe, France is considered as an intersection between four important bio-geographical regions: Alpine, Atlantic, Continental and Mediterranean.[333] Furthermore, France possesses five biodiversity hot spots, several of which are located in the overseas territories. As a result, France is rich in ecosystems and diverse landscapes, having a large number of animal species, fauna and flora in both mainland and overseas territories.[334]

Ex situ conservation concerns the collection of genetic resources of wild and domesticated species. Public research institutions such as the French National Museum of Natural History (*Muséum national d'histoire naturelle*), the National Institute of Agricultural Research (*Institut National de la recherche Agronomique*) the French Agricultural Research Centre for International Development (*Centre de coopération internationale en recherche agronomique pour le développement*) and the Pasteur Institute (*Institut Pasteur*) carry out this collection. All possess significant databases and collections of genetic resources.[335]

Due to its unique biodiversity, France and its overseas territories have been the focus of various organisations. Hence, French public research bodies carry out researches to ensure the monitoring, function and conservation of biodiversity. Biodiversity resources also interest scientists and private bodies based in France and in the overseas territories.[336]

In addition to exceptional biodiversity, illustrating cultural diversity in the French territories, France has communities of indigenous peoples in French Guiana, French

[332] CBD Article 2
[333] Centre d'échange d'informations sur la biodiversity en France, 'Data on French metropolitan and overseas biodiversity' http://biodiv.mnhn.fr/information/fol796490 accessed 2 September 2016
[334] ibid
[335] Claudio Chiarolla, 'Commentary on the ABS Provisions of the Draft Biodiversity Law of France' in Implementing the Nagoya Protocol: Comparing Access and Benefit-Sharing Regimes in Europe edited by (Hotei Publishing, 2015)
[336] Thomas Burelli 'La Bioprospection dans l'Outre-mer français : opportunités et limites des dispositifs de régulations émergents dans l'Outre-mer français' (2013) 4 RRJ 1747

Polynesia and New Caledonia whose their knowledge and lifestyles are associated with biodiversity. Hence, French biodiversity is a direct and indirect support to human activities, including the provision of food, medicine, clothing, construction, farming and breeding. [337]

This section has attempted to provide a brief summary of France's biodiversity. The following section will focus on the biodiversity of French Guiana in order to show the exceptional biodiversity of this territory which create a potential ground for bioprospecting.

2. French Guiana's biodiversity

French Guiana is a significant region qualified as "the one of the last wilderness places on Earth" holding one of the highest worldwide levels of biodiversity.[338] 94% of the territory is covered by tropical forest hosting a wide variety of wildlife, including rare animals such as the anaconda, jaguar, freshwater fishes, mammals, reptiles and birds which define the riche cultural heritage of the entire territory.[339] The abundance of biodiversity and unexplored areas enables botanists, researchers and zoologists to frequently find new species of animals and plants. The forest goes towards the Brazilian Amazon, having many of the same animals and plants species.[340]

French Guiana has seven natural reserves and an important national park, the French Guiana Amazonian Park (Parc Amazonien de Guyane), which was created on 27 February 2007 and covers 3.4 million hectares in the South of the territory (40% of French Guiana). It is the biggest French national park, protecting a part of the Amazonian forest situated in French Guiana. The park enjoys an exceptional biodiversity which comprises the value and the wealth of its territory, containing various species, rivers and habitats. Hence, databases from the French Guiana Amazonian Park highlight the number of species in French Guiana:[341] For instance,

[337] Claudio Chiarolla, 'Commentary on the ABS Provisions of the Draft Biodiversity Law of France' in Implementing the Nagoya Protocol: Comparing Access and Benefit-Sharing Regimes in Europe edited by (Hotei Publishing, 2015)
[338] Centre d'échange d'informations sur la biodiversity en France, 'Data on French metropolitan and overseas biodiversity' http://biodiv.mnhn.fr/information/fol796490 accessed 2 September 2016
[339] European Commission web-site, 'Amazonia' http://ec.europa.eu/environment/nature/biodiversity/best/regions/amazonia_en.htm accessed 2 September 2016
[340] Alain Pavé, *On the Origins and Dynamics of Biodiversity: the Role of Chance* (Springer New York, 2010)
[341] ibid

there are more than 400 species of freshwater fish; hundreds of reptiles and batrachians; more than 700 species of birds, thousands of insects species and around 200 species of mammal; as well as over 5 800 species of flora, including more than types of 1 200 trees.[342]

Situated in the South of French Guiana, the French Guiana Amazonian park shares kilometres of rivers and borders with Brazil and Suriname. Two rivers border the park: the Maroni and the Oyapock. Theses rivers are source of food, are used daily and support strong cultural values as well as symbolic values and are essential for transporting people and goods. The water quality is essential for the preservation of biodiversity on which local communities depend.[343]

This biodiversity is clearly an asset for France and the country has tried to protect it by implementing international instruments. What actions have been taken by the French government in protecting biodiversity, particularly in French Guiana?

III. France and the key international instruments

1. How France applies international legal instruments.

1.1. France and the CBD

France signed the Convention in June 1992 and ratified into its domestic legislation in July 1994. During CBD negotiations, due to its exceptional biodiversity resources in its overseas territories France acted both a user and provider country. In other words, France holds at the same time the necessary technology to develop new products or treatments by firms, and biodiversity resources to allow this development.[344] The CBD provisions were implemented by *Decree No. 95-140 of 6 February 1995 on the implementation of the CBD* ("*Portant publication de la Convention sur le Diversité Biologique*"). Other actions were also adopted; the following paragraphs describe the actions and measures undertaken by France to preserve biodiversity.

For instance, in 2004 France launched its own national Strategy for Biodiversity (*Stratégie Nationale pour la Biodiversité*) conforming to CBD commitments

[342] Parc Amazonien de Guyane http://www.parc-amazonien-guyane.fr/
[343] ibid
[344] Geoffroy Filoche, 'Domestic biodiplomacy: Navigating between provider and user categories for genetic resources in Brazil and French Guiana' (2013) Int. Environ. Agreements 177

(particularly Article 6 of the CBD).[345] It aimed to protect and enhance biodiversity in both mainland France and overseas territories. In 2010, France reviewed the first national strategy and implemented a second national strategy for 2011-2020 which aims to designate long-term commitments promoting the involvement of stakeholders such as national authorities, local authorities, research stakeholders and non-profit associations. In participating in projects integrating biodiversity, France emphasised the importance of conserving, restoring and enhancing biodiversity at a national and regional level.[346] Such participation ensures the sustainable and equitable use of biodiversity.[347] A parallel could be drawn with 'Biodiversity 2020' strategy in the United Kingdom, which sets out commitments for implementing international and EU commitments for biodiversity in order to protect England's' wildlife and ecosystem.[348] This, might be the English equivalent of the French National Strategy for the Biodiversity. However Biodiversity 2020 depends on calculated objectives and concrete results, which France failed to do. The French General Council for the environment and sustainable development (*Conseil général de l'environnement et du développement durable*) suggested that France should take the UK's Biodiversity 2000 strategy as an example. Stakeholders also asked for a better operational trajectory for biodiversity in order to measure and specify the National Strategy for the Biodiversity objectives. Finally, a last criticism would be that there are more stakeholders' memberships than

[345] CBD Article 6: "*Each Contracting Party shall, in accordance with its particular conditions and capabilities:*
(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 which shall reflect, inter alia, the measures set out in this Convention relevant to the Contracting Party concerned; 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."

[346] 'National Biodiversity Strategy 2011-2020', Ministère de l'écologie, du Développement durable des Transports et du Logement (2011) http://www.developpement-durable.gouv.fr/IMG/pdf/National_Biodiversity_trategy_2011_2020.pdf accessed 28 August 2016

[347] 'French strategy for biodiversity' (December 2013) http://www.developpement-durable.gouv.fr/French-strategy-for-biodiversity,23446.html accessed 28 August 2010

[348] UK Department for Environment, Food & Rural Affairs, 'Policy Paper Biodiversity 2020: A strategy for England's wildlife and ecosystem services' (19 August 2011) https://www.gov.uk/government/publications/biodiversity-2020-a-strategy-for-england-s-wildlife-and-ecosystem-services accessed 29 August 2016

stakeholder' commitments in the National Strategy for the Biodiversity. The French government should encourage stakeholders to commit themselves.[349]

The Grenelle Environment Roundtable (*Grenelle de l'environnement*), launched in 2007, initiated ecological transition and developed strategies for sustainable development issues.[350] It brought species conservation plans and was implemented in French Guiana as well. Despite efforts and progress through the Grenelle Environment Roundtable commitments, it has been asserted that these plans were implemented by public sector agencies without involving participation of French local authorities. In addition, both national and overseas levels France frequently fails to monitor actions or plans. For example national committees have met once in five years.[351]

France has been part of encouraging projects such as the Caribbean Specially Protected Areas and Wildlife (SPAW) Protocol, ratified in January 1990 to assist the CBD at regional level, particularly in the Caribbean region.[352] France is one of the eight founding members of the International Coral Reef Initiative which aims to form a partnership between countries and organizations in order to preserve coral reef ecosystems.[353] France also participates in the Guiana Shield Facility Project, a multi-donor funding facility with aims in developing, financing and monitoring benefits issuing from the conservation and the sustainable development of biological resources.[354]

In 2000, France transposed into its national legislation Article 8(j) of the CBD through *Law No. 2000-1207 on Overseas Orientation Statute* which was the first

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[349] Sophie Fabrégat, 'Les pistes pour rendre opérationnelle la stratégie nationale de la biodiversité' (*Actu-environnement*, 26 October 2015) http://www.actu-environnement.com/ae/news/mise-en-oeuvre-strategie-nationale-biodiversite-25532.php4 accessed 29 August 2016

[350] United Nations web-site, 'Grenelle Environment Roundtable' https://sustainabledevelopment.un.org/index.php?page=view&type=99&nr=17&menu=1449 accessed 29 August 2016

[351] Dominique Benzaken and Yves Renard, 'Future directions for biodiversity action in Europe overseas: outcomes of the Review of the Implementation of the Convention on Biological Diversity' (*International Union for Conservation of Nature*, December 2010) https://portals.iucn.org/library/efiles/documents/2011-024.pdf accessed 1 September 2016

[352] Caribbean Environment Programme, 'Overview of the SPAW Protocol' http://www.cep.unep.org/cartagena-convention/spaw-protocol accessed 29 August 2016

[353] International Coral Reef Initiative web-site http://www.icriforum.org/about-icri accessed 2 September 2016

[354] United Nations Development Programme, Guiana Shield Facility (GSF) UN Project Document http://www.gy.undp.org/content/dam/guyana/docs/GSF%20SIGNED%20PROJECT%20DOCUMENT.pdf accessed 29 August 2016

comprehensive effort made by France. Article 33 states that State and collective territories (*collectivités territoriales*) shall encourage the respect and the protection, and maintain knowledge, innovations and practices of autochthonous and local communities based on their traditional lifestyles, and which contribute to the preservation of the natural environment and sustainable use of biological diversity.[355]

The International Union for Conservation of Nature (*IUCN*), which aims to preserve nature and biodiversity through the involvement of public, private and NGOs, providing governments expertise and recommendations to achieve goals in environmental challenges, considers the implementation of the CBD Article within the overseas legal framework was a symbolic new step, integrating biodiversity preservation as a challenge for overseas territories in national policy.[356] However, the IUCN remarked that France had failed to implement sufficient regulation in transposing CBD objectives, with only Article 8(j) being implemented into the overseas legal framework. Even though France has transposed the Convention's provisions into its national and regional legislation, France took time to ratify the Nagoya Protocol.[357]

1.2. The non-existent regime for access and benefit-sharing in France

It is important to note that France signed the Nagoya Protocol in September 2011 but only ratified it in August 2016. As was mentioned in the previous chapter, the main legal instrument promoting the access and benefit-sharing of resources is the Nagoya Protocol and France took almost five years to ratify it. This has been seen as a significant issue due to the French position regarding access to genetic resources: France is both provider and user of genetic resources.[358] What was the French legal situation in regards to access and benefit-sharing before the ratification?

At national level, France failed to comply with international measures provided by the Nagoya protocol and did not establish any national measures regulating the

[355] Article 33 Loi n° 2000-1207 du 13 décembre 2000 d'orientation pour l'outre-mer
« *L'Etat et les collectivités locales encouragent le respect, la protection et le maintien des connaissances, innovations et pratiques des communautés autochtones et locales fondées sur leurs modes de vie traditionnels et qui contribuent à la conservation du milieu naturel et l'usage durable de la diversité biologique*. »

[356] Dominique Benzaken and Yves Renard, 'Future directions for biodiversity action in Europe overseas: outcomes of the Review of the Implementation of the Convention on Biological Diversity' (*International Union for Conservation of Nature*, December 2010)

[357] ibid

[358] Geoffroy Filoche, 'Domestic biodiplomacy: Navigating between provider and user categories for genetic resources in Brazil and French Guiana' (2013) Int. Environ. Agreements 177

appropriate access to genetic resources and the fair and equitable sharing of the benefits arising from the utilization of genetic resources.[359] This failure in implementing and enforcing Nagoya Protocol measures has led overseas territories to adopt their own measures to fill this legislative gap.[360] For instance, New Caledonia and French Polynesia did not wait for France to legislate in this matter and they adopted in 2009 (New Caledonia) and 2012 (French Polynesia) legal frameworks for the access to genetic resources and the sharing of benefits arising from their promotion.[361]

This filling of legislative gaps has been possible due to the decentralization of the French legal system.[362] Hence a few words should be provided concerning the legal status of French overseas territories. The legal statues of overseas territories are provided by the French Constitution under the Title XII "on Territorial Communities".[363] French law identifies various categories of territorial communities. According to Article 72-3 the overseas departments and regions ("*Départements et Territoires d'Outre-mer*") are Guadeloupe, French Guiana, Martinique, La Réunion and Mayotte. French Polynesia, Saint-Barthélémy, Saint-Martin, Saint-Pierre and Miquelon, Wallis and Futuna are part of overseas territorial communities governed by Article 74. New Caledonia, French Southern and Antarctic Lands and Clipperton Island are also part of territorial communities and they are governed by special law.[364] It is Article 73 which regulates the regime of French Guiana. France recognises that territorial communities "may take decisions in all matters arising under powers that can best be exercised at their level". In addition, "these communities shall be self-governing through elected councils and shall have power to make regulations for matters coming within their jurisdiction".[365] The French Constitution recognises that in general French

[359] Dominique Benzaken and Yves Renard, 'Future directions for biodiversity action in Europe overseas: outcomes of the Review of the Implementation of the Convention on Biological Diversity' (*International Union for Conservation of Nature*, December 2010)
[360] Thomas Burelli, 'Les chemins tortueux de la mise en œuvre de la Convention sur la Diversité Biologique dans l'Outre-mer français' (2013) 1 RJE 31
[361] ibid
[362] ibid
[363] French Constitution (1958) Title XII on Territorial Communities http://www2.assemblee-nationale.fr/langues/welcome-to-the-english-website-of-the-french-national-assembly accessed 25 February 2016
[364] Gregor Novak, 'Overseas Territories, Australia, France, Netherlands, New Zealand, United Kingdom, United States of America' (December 2013) in Rüdiger Wolfrum (ed), *Max Planck Encyclopedia of Public International Law* (online edn)
[365] French Constitution (1958) Article 72

statutes and regulations are automatically applicable to overseas departments and regions as these regions are integral parts of France. However, Article 73 approves adaptations: [366]

"In the overseas departments and regions, statutes and regulations shall be automatically applicable. They may be adapted in the light of the specific characteristics and constraints of such communities.

Those adaptations may be decided on by the communities in areas in which their powers are exercised if the relevant communities have been empowered to that end by statute. (…)

These rules may not concern nationality, civic rights, the guarantees of civil liberties, the status and capacity of persons, the organisation of justice, criminal law, criminal procedure, foreign policy, defence, public security and public order, currency, credit and exchange, or electoral law. This list may be clarified and amplified by an Institutional Act."

When analysing this article, the French Constitution recognises political autonomy and specific legislation for these departments and regions when they address particularities circumstances. They can create their own laws and rules through decentralisation concept. Hence Article 73 makes easier the adaptations of laws and regulations to the local realities of these territories. By invoking Articles 73 and 74 of the French Constitution, French overseas territories adopted their own laws on access to genetic resources. As a result, these overseas territories possess unique legislation on access to genetic resources. Academics such as Thomas Burelli underlined that the adoption of different regional measures emphasizes the failure to adopt a conjoint national legal framework.[367] This disunited situation might lead to consequences for both providers and users who hold the resources.[368] Legal certainty with clear rules is crucial in protecting the users of genetic resources for the smooth running of bioprospecting activities. Lack of certainty for users might restrain them in their activities, worrying they could be wrongly accused of biopiracy. Biopiracy allegations

[366] French Constitution (1958) Article 73
[367] Thomas Burelli, 'Les chemins tortueux de la mise en œuvre de la Convention sur la Diversité Biologique dans l'Outre-mer français' (2013) 1 RJE 31
[368] ibid

can have serious consequences which could lead to the interruption of their researches.[369]

Despite the failure of France to implement ABS provisions at a national level, France managed to implement a law in French Guiana regulating the access to genetic resources. This was put into operation through the *Law of April 14th 2006 relating to National parks, marine natural reserves and regional natural reserves*, which created the French Guiana Amazonian Park. [370] Thus, French Guiana is considered as an exception, possessing its own law reflecting the will to shift the authority from the national level to regional level in order to preserve biodiversity and permitting the establishment of the French Guiana Amazonian Park.

2. French Guiana exception

2.1. The French Guiana Amazonian Park

The creation of this park followed the law of April 14th 2006 relating to *National parks, marine natural reserves and regional natural reserves* and is linked to the international conventions when the French President Francois Mitterand announced during the Rio de Janeiro Earth Summit in 1992, the participation of France to the CBD by creating a new national park. However, during ten years no actions were taken. During the World Summit on Sustainable Development in Johannesburg in 2002, the French President Jacques Chirac relaunched the project of creation of a park in French Guiana. The law brought essential changes by establishing a legal regime which protects the central zone of the park. The legal regime is settled by Article 33 and the National park Charter.[371]

Inside the French Guiana Amazonian Park, two different protected areas have been created: a core zone (*zone de coeur*) and an adhesion area (*zone de libre adhesion*).[372] The core zone, which possesses its own specific regulations, aims to strongly protect

[369] Daniel F. Robinson, *Confronting Biopiracy: Challenges, Cases and International Debate* (Earthscan, 2010)

[370] Loi n 2006-436 du 14 Avril 2006 relative aux parcs nationaux, aux parcs naturels marins et aux parcs naturels régionaux. Décret n 2007-266 du 27 février créant le parc national 'Parc amazonien de Guyane'

[371] Catherine Aubertin and Geoffroy Filoche, 'La création du parc amazonien de Guyane : redistribution des pouvoirs, incarnations du « local » et morcellement du territoire' in Catherine Aubertin and Estienne Rodary (eds) *Aires Protégées : espaces durables ?* (Marseille IRD, 2008) 163

[372] 'French Guiana Amazonian Park : An innovative tool supporting the conservation and development of Southern French Guiana' (2016) http://www.parc-amazonien-guyane.fr/assets/brochure-multilinguepag2016web.pdf accessed 5 March 2016

natural resources, collecting databases and respecting indigenous ways of life and local practices; whereas the adhesion area objectives are diverse, focusing on the preservation of local activities and local ways of life, developing an adequate local economy, protecting traditional knowledge, eradicating illegal gold mining and promoting economic activities while respecting the environment.[373]

The park hosts several local communities: Teko Wayãpi, Wayana, Apalaï, Tïlïo, Aluku and Creole. Their living spaces overlap, extending beyond the perimeter of the National Park. Every community possess its own language, usually spoken within the group, and their own values where the nature plays an important role. In addition, they also have they own social and political organisations and practices which guarantee the cohesion, preservation and the transmission of their cultures and knowledge. Farming, hunting and fishing have an important place in their lifestyles and in the daily economy of the region. [374]

The park has been entrusted with various missions embedded in Article L.331-15-5 of the French Environment Code. This article sets missions, which are the protection and management of French Guiana's biodiversity, and the development of local communities which make their traditional livelihoods from the forest by taking into account their lifestyle. It also sets social, economic and cultural improvements within a sustainable development framework defined by the National Park Charter.[375] Hence, the main axes of action are: protecting natural heritages, promoting cultural values, and enhancing the sustainable development of the territory locally.[376]

2.2. The National Park Charter

The National Park Charter possesses fundamental principles and values promoted by the French Guiana Amazonian Park. The Charter determines stakes of the territory,

[373] Par amazonien de Guyane, 'Charte du Parc Amazonien' http://www.parc-amazonien-guyane.fr/assets/charte_pag_approuvee_28102013.pdf accessed 10 March 2016

[374] Parc Amazonien de Guyane, 'Diversité culturelle' http://www.parc-amazonien-guyane.fr/territoires-vivants/diversite-culturelle/ accessed 12 March 2015

[375] Code de l'environnement Article L331-15-5 Loi n°2006-436 du 14 avril 2006 - art. 12 JORF 15 avril 2006 '*L'établissement public du parc national a pour mission de préserver, gérer, mettre en valeur et assurer un rayonnement national et international de la diversité biologique de la Guyane, de contribuer au développement des communautés d'habitants qui tirent traditionnellement leurs moyens de subsistance de la forêt, en prenant en compte leur mode de vie traditionnel et de participer à un ensemble de réalisations et d'améliorations d'ordre social, économique et culturel dans le cadre du projet de développement durable défini par la charte du parc national*.'

[376] French Environment Code Article L.331-15-5

orientations and strategic objectives defined by all the stakeholders of this Charter. The charter is an initiative having the purpose to end as a contractual document, signed by the localities wishing to adhere to it, by the Amazonian Park and by the French Prime Minister. This is a guideline for the intervention of the French Guiana Amazonian Park and its partners for 10 years. The proposed objectives and measures will be implemented through partnerships.[377]

The National Park Charter ensures that the conservation and the management of the park heritage is respected and maintained in a good state in order to guarantee the protection of a territorial identity, preserving natural habitats, flora, fauna, ecosystems while avoiding biodiversity fragmentation. Monitoring of human activities must be sufficient to guarantee the protection of the park heritage and its preservation.[378] The Charter undertakes the following missions:[379]

- Identifying the main elements which constitute the character of the park;
- Identifying natural spaces;
- Supervising activities to guarantee their compatibility with the protection of the park heritage, by promoting respectful practices of the environment;
- Defining and enhancing respectful practices favourable to the protection of biodiversity, in particular in farming and forest sectors;
- Defining rules relating to the cultural and landscaped heritage;
- Preventing any impacts on the park heritage which may change the park character due to accumulated individual authorisations;
- Taking into account culture, traditional lifestyles, activities, needs of local communities living in the park who use the forest.

The local community which wants to join the park framework must:[380]

[377] Charte du Parc Amazonien de Guyane
[378] Charte du Parc Amazonien de Guyane Article 4
[379] ibid
[380] Charte du Parc Amazonien de Guyane Article 5

- Pursue consistency in the activities planned on its territory in regards to Charter guidelines, taking into account impacts;

- Benefit from the protected name of "local territory of the national park" which refers to a to a patrimonial wealth;

- Benefit from the technical support and public subsidies of the National Park implementing measures and orientations planned by the Charter.

Finally, the Charter aims to enforce the principle of access and benefit-sharing of genetic resources in the National Park.

2.3. The access to genetic resources in French Guiana

Article L. 331-15-6 of the French Environment Code introduces the principle of access and benefit-sharing for genetic resources.[381] In this article the access to genetic resources and their use are subject to authorisation. The Charter defines, in respect of the principles established in the CBD (Article 8 and 15), the conditions of access to genetic resources, especially in regards to the profit-sharing which can result. Hence, this article provides the conditions for authorisation of the access to genetic resources and defines the authority who will be in charge of granting access. The authorisation will be granted by the President of the Regional Council, after consultation of the National Park.[382]

This Article states:

"*Access to the genetic resources of species collected within the national park and their use are subject to authorisation. As proposed at a meeting of French elected representatives from the departments and regions, provided for in article 5915-1 of the General Code of Territorial Authorities, the National Park Charter defines the guidelines relating to the conditions for access and the utilisation of these resources, including with regard to the procedures for the sharing of any ensuing benefits, in compliance with the principles of the convention on biological diversity of 5 June 1992, and its articles 8.j and 15, in particular. The authorisations are issued by the President of the Regional Council (Conseil régional), with the assent of the President of the General*

[381] French Environment Code Article L. 331-15-6
[382] ibid

Council (Conseil général) and after consultations with the public institution of the National Park, without prejudice to the provisions of the French Intellectual Property Code".[383]

Any project requiring access to genetic resources is subjected to authorisation from the President of the Regional Council, after the meeting of the National Park and with the notice of the scientific counsel. Personal and non-commercial uses are excluded from the scope of this authorisation. In addition, the access to biological resources, including genetic, which concerns TK, is subjected to preliminary, free and informed consent of ILCs. The profits ensuing from the use and the commercialisation of genetic resources, as well as from traditional knowledge related to genetic and biologic resources, are shared in a fair way between the concerned parties. The sharing is submitted to agreed conditions by mutual agreement and subjected to authorisation and the signature of the President of the Regional Council.[384]

The access to biological resources which has no other object than the knowledge and does not call to traditional knowledge does not require the preliminary, free and informed consent of local communities. A copy of every sample will be kept in a collection located in French Guiana and in the National Natural History Museum. The access to database will be public.[385]

Any application for patenting genetic resources or biological resources associated to TK will be the object of a sharing agreement. The regional authority shall:[386]

- ensure a strict application of IP law by the interested bodies: the National Institute of Industrial Property (*INPI*), the WIPO and the International Union for the Protection of New Varieties of Plants;
- ensure that patent application complies with the preservation of biodiversity;
- Ensure that IP rights will not be harmful to local communities' traditions.

[383] 'Mise en œuvre du Protocole de Nagoya sur l'Accès et le Partage des Avantages http://biodiv.mnhn.fr/info/mise-en-oeuvre-du-protocole-sur-l-acces-et-le-partage-des-avantages accessed 1 April 2016
[384] Par amazonien de Guyane, 'Charte du Parc Amazonien' p142 http://www.parc-amazonien-guyane.fr/assets/charte_pag_approuvee_28102013.pdf accessed 5 April 2016
[385] ibid
[386] ibid

As a result, bioprospecting researchers must satisfy the conditions of this article when they would like to access these resources or associated TK. Despite important commitments undertaken by the National Park regarding the preservation of its biodiversity, many concerns have been raised since 2006.[387]

2.4. Concerns about the National Park

There were however some objections raised by Amerindian community regarding the creation of the National Park.[388] According to them, the park could expose their community to both legal and illegal gold mining activities and required extending the scope of the legal protection of the park by including their villages within the protected areas.[389] Other stakeholders raised considerable objections about the park, such as gold panners who challenged the policy of limiting access implemented by the park, and asked to have access to gold resources in the name of freedom of movement.[390] It was held that the creation of the National Park appeared disconnected from peoples' needs and aspirations.[391]

The main criticism concerned the scope of the legal protection of the National Park. Only 40% of the French Guianese territory would be covered by the regulation and protection of the park. What about the other 60% of French Guiana territory? This 60% is seen as heterogeneous and fragmented territory. On one side, a large part of the population is concentrated on the littoral coast with developed infrastructures where lifestyles are oriented to modern consumer society standards. On the other side, the South of French Guiana is seen as a full entity where peoples live from hunting and fishing living in villages controlled by community rules and customs. The difficulty of access to the South allowed the conservation and protection of authentic lifestyles. Until today the indigenous peoples preserved their social rules, their languages, and

[387] Moïse Tsayem Demaze, 'Le parc amazonien de Guyane française : un exemple du difficile compromis entre protection de la nature et développement' (2008) Cybergeo European Journal of Geography 416 https://cybergeo.revues.org/17203 accessed 14 February 2016

[388] ibid

[389] Eric Navet, 'Les Amérindiens et le Parc Amazonien de Guyane : Réflexion d'un ethnologue sur une colonisation masquée' (*IKEWAN, ICRA International*, 2007) http://www.icrainternational.org/ikewan/64/1.pdf accessed 15 February 2016

[390] Brigitte Wyngaarde, 'Parc National de Guyane Francaise : un projet d'assimilation ?' (Groupe International de Travail pour les Peuples Autochtones, 2-6 November 2006) http://www.gitpa.org/Dvd/pj/GUYANE/GUYC1_1.pdf accessed 16 February 2016

[391] ibid

their own conception of the world.[392] Clearly, this means that a significant part of the territory of French Guiana does not have the same protection as provided by the French Guiana Amazonian Park (core zone and adhesion area), showing an unequal legal protection of the territory. Finally, the National Park seems to be a powerful machine imposing its own administrative practices, its own law and a certain way of managing territory.[393]

Some concerns and questions have been also raised about the access to genetic resources within the National Charter regulations.[394] In 2011, the French Guiana Congress rendered a report on access to biological resources and its benefit-sharing.[395] In this report, the Congress noted that scientists and industries, attracted by such biodiversity, aimed to find new discoveries and innovations in the territory. Due to France's particular status as both a producing territory and a supplier of biodiversity, French Guianese authorities should implement the same legal framework for access to biological resources and benefit-sharing for the whole territory as was adopted for the protected areas of the National Park. Applying this legal framework to the whole French Guiana territory might avoid the misappropriation of resources in zones not covered by the Charter. France and French Guiana should implement more measures and monitor the conservation, protection of genetic resources and traditional knowledge outside the National Park. In the report the legal context of French Guiana is seen as "fragmented". Indeed, apart from the National Park, there are different regulations for various actors and which are applicable to different protected spaces, such as nature reserves and forests. However, none of the existing regulations deal with either the access to genetic resources and the fair and equitable sharing of benefits arising from their utilisation, or the access to TK-related to genetic resources used by native and local communities. Additionally, the proximity of the Brazilian, Surinamese and Guiana territories implies that border cooperation has also to be implemented in a legal and political framework.[396] Finally, the report suggested

[392] ibid
[393] ibid
[394] Annexe 3 : Accès aux ressources génétiques et partage des avantages : résolution du congrès adoptée par le congrès des élus régionaux et départementaux (21 Juillet 2011) in the National Park Charter p187 http://www.parc-amazonien-guyane.fr/assets/charte_pag_approuvee_28102013.pdf accessed 29 February 2016
[395] ibid
[396] ibid

implementing international conventions relating to the rights of indigenous peoples in order to comply with international provisions, at the same time promoting social cohesion.[397]

The relationship between France and its indigenous peoples has caused international denunciation regarding biodiversity conservation issues and the respect of humans' rights. These issues will be considered by analysing the French legal position on the matter, demonstrating France's failure to organize a unique status for these populations and ratify binding legal instruments granting rights to indigenous peoples.

IV. The legal status of indigenous peoples

French Guiana is not the only French overseas territory to have indigenous peoples. Other territories such as New Caledonia and French Polynesia also have indigenous communities. Their relationships with France result from colonialism and their current legal status is a recurrent debate at national level.[398] For decades, native and local communities occupied these territories, satisfying their needs, adopting their own customs, developing knowledge on the management of biological resources mainly for food, medicine, agriculture, hunting, and fishing.[399]

This section sets out to answer: How France deals with indigenous peoples of French Guiana and with indigenous peoples in general? What are they legal status? How to apply Article 1 of the French Constitution to local communities? How to balance the indivisible principle and the unity of French people with the overseas people's distinction? In pursuit of answering these questions, it is necessary to understand the French constitutional regime in order to fully understand the legal situation of France's indigenous peoples.

1. The French constitutional principles

Four main texts compose the French constitutional regime: the 1789 *Déclaration des Droits de l'Homme et du Citoyen*,[400] the Preamble of the 1946 Constitution,[401] the 1958

[397] ibid
[398] Benoit Trépied, 'A New Indigenous Question in France's Overseas Territories?' (*Books and Ideas*, June 2012) http://www.booksandideas.net/A-New-Indigenous-Question-in.html accessed 13 March 2016
[399] United Nations Permanent Forum on Indigenous Issues, Study on the treatment of traditional knowledge in the framework of the United Nations Declaration on the Rights of Indigenous Peoples and the post-2015 development agenda' (2 February 2015) UN Doc. E/C.19/2015/4
[400] 1789 Déclaration des Droits de l'Homme et du Citoyen
[401] Preamble of the 1946 Constitution

Constitution and the 2004 Charter for the Environment.[402] The Preamble of 1958 Constitution affirms the principle of self-determination of France's peoples. The Preamble states:[403]

"The French people solemnly proclaim their attachment to the Rights of Man and the principles of national sovereignty as defined by the Declaration of 1789, confirmed and complemented by the Preamble to the Constitution of 1946, and to the rights and duties as defined in the Charter for the Environment of 2004.

By virtue of these principles and that of the self-determination of peoples, the Republic offers to the overseas territories which have expressed the will to adhere to them new institutions founded on the common ideal of liberty, equality and fraternity and conceived for the purpose of their democratic development."

The French overseas territories apply the constitutional principles of the Republic, including Article 1. Article 1 of the Constitution states: "*France shall be an indivisible, secular, democratic and social Republic. It shall ensure the equality of all citizens before the law, without distinction of origin, race or religion. It shall respect all beliefs. It shall be organised on a decentralised basis."*

However, some concerns might be highlighted when it comes to overseas territories and their local communities. The Constitutional Council (*Conseil Constitutionnel*), the highest constitutional authority, applies the principle of indivisibility to overseas territories. It was during an important decision that the Constitutional Council rejected the notion of "Corsican people", considering that the Constitution only recognises French unity composed of all French citizens without any distinction of origin, race or religion.[404] The Constitutional Council considered that Corsica, which asked for its independence, is an integral part of the Republic, which its status must respect the indivisible principle and respect the equality between citizens.[405] It was upon this basis

[402] 2004 Charter for the Environment http://www2.assemblee-nationale.fr/langues/welcome-to-the-english-website-of-the-french-national-assembly#Environment
[403] 1958 French Constitution, Preamble http://www2.assemblee-nationale.fr/langues/welcome-to-the-english-website-of-the-french-national-assembly
[404] Décision 91-290 D.C of 9 May 1991, Statut de la Corse
[405] Michel Bernard, 'Les statuts de la Corse' (2002) Cahiers du Conseil constitutionnel n° 12 (Dossier : Le droit constitutionnel des collectivités territoriales) http://www.conseil-constitutionnel.fr/conseil-constitutionnel/francais/nouveaux-cahiers-du-conseil/cahier-n-12/les-statuts-de-la-corse.52101.html

that the Constitutional Council acknowledged the constitutional value of the principle of unity. Hence, the principle of indivisibility stated in Article 1 applied to peoples and protect the principle of unity.

However, the same decision held that the 1958 Constitution distinguishes the French people from the overseas peoples, to whom is recognised the right of self-determination.[406] It seems to be a contradiction. How to balance the principle of indivisibility and the unity of the French people with rights of overseas peoples? This contraction has been addressed with the introduction of Article 72-3 of the 1958 Constitution. This Article says:

The Republic shall recognise the overseas populations within the French people in a common ideal of liberty, equality and fraternity.

Hence, overseas peoples are considered as a component of the French people. However, the use of "overseas populations" leads to more confusion as it refers to "a group of persons geographically determined by their overseas situation".[407]

Regarding minorities, France always makes reservations when it comes to recognise them. Hence, any reservation to a treaty would be motivated under this statement: "*the Government of the Republic declares, considering the first Article of 1958 Constitution that Article X has not ground for applying as regard the Republic*".[408] For instance, France still not ratified ILO Convention 169.

2. The non-ratification of the ILO Convention 169

ILO Convention 169 is the only binding international legal instrument concerning native and indigenous peoples which recognises their collective rights and their right to self-determination.[409] In ratifying this Convention, States will guarantee the cultural

[406] François Luchaire, 'La France d'Outre-mer et la République' (2007) 123 Revue française d'administration publique 399

[407] Gallianne Palayret, 'Overseas France and Minority and Indigenous Rights: Dream or Reality?' (2004) International Journal on Minority and Group Rights 221

[408] Gwénaële Calvès, 'Il n'y pas de race ici' Le modèle français à l'épreuve de l'intégration européenne' (2002) 17 Critique Internationale 186

[409] ILO 'Convention No 169 concerning Indigenous and Tribal Peoples in Independent Countries' (adopted 27 June 1989, entered into force 5 September 1991) 1650 UNTS 383

integrity of native peoples living on their territories, which by refusing its ratification France seems not to recognise.[410]

Two reasons justify the reluctance to ratify this convention, which are motivated by the principle of the indivisibility of the French Republic and of the equality of all citizens before the law.[411] Firstly, the French government argues that the ratification of this Convention will be incompatible with the French Constitution of 1958, more particularly with Articles 1 and 2. The government considers that people who live in a traditional way such as native peoples must be considered to have the same level of equality as other French citizens.[412] The second argument raised by the French government against the recognition of collective rights is related to the principle of positive discrimination. Ratifying this convention would advantage some peoples through positive discrimination and would challenge constitutional principles promoted by the French Constitution, which France always avoids. The only positive discrimination policy implemented by France has concerned gender equality policies in order to promote women's participation in decision-making and elections.[413] It has been also remarked that France has fears concerning recognising minorities and indigenous rights for its indigenous populations for practical and theoretical reasons.[414] These reasons have been developed by some commentators such as François Garde.[415] Some values, traditions and customs held by indigenous peoples are contrary to French law, international conventions and human rights in general. For instance, infanticide have been practised in some Amerindian communities, which is totally reprehensible within the French penal system.[416] Some customs might be also contrary to democracy; for instance, chiefs possess hereditary rights and privileges which are not acceptable within a democratic system. Finally, France has continuously rejected the terms of "indigenous" or "autochthonous" as referred to in the CBD. Using the term "indigenous and local communities" would be ambiguous and

[410] ibid
[411] Gallianne Palayret, 'Overseas France and Minority and Indigenous Rights: Dream or Reality?' (2004) International Journal on Minority and Group Rights 221
[412] ibid
[413] Marie Boéton, 'Discrimination positive en France' (2003) Tome 398, Etudes 175
[414] Gallianne Palayret, 'Overseas France and Minority and Indigenous Rights: Dream or Reality?' (2004) International Journal on Minority and Group Rights 221
[415] F. Garde, 'Les Autochtones et la République' (1999) 15 Revue Française de Droit Administratif 10
[416] Gallianne Palayret, 'Overseas France and Minority and Indigenous Rights: Dream or Reality?' (2004) International Journal on Minority and Group Rights 221

unconstitutional according to French law, as it refers to a specific category of people.[417]

Furthermore, the French reluctance in the ratification of ILO Convention 169 affects families and their economic life in regard to the borders established between French Guiana, Suriname and Brazil. For instance, a number of families in French Guiana which were scattered during the colonisation and before the implementation of borders have been separated by the river banks. For instance, Kalina peoples of French Guiana are separated from other members of their community located in Surinam, Guiana and Venezuela which makes any kind of exchange difficult.[418] Thus the ratification of ILO Convention 169, specifically Article 32, will solve this issue by the recognition of the establishment of cross-border relations.[419] This Article states:

"*Governments shall take appropriate measures, including by means of international agreements, to facilitate contacts and co-operation between indigenous and tribal peoples across borders, including activities in the economic, social, cultural, spiritual and environmental fields*".

The Convention also tackles the important issue of the demarcation of indigenous peoples' territories. This is a process which identifies the location and perimeters of the lands of native peoples and draws it materially on the ground. In this matter, the Convention sets governments to: "*take steps as necessary to identify the lands which the peoples concerned traditionally occupy, and to guarantee effective protection of their rights of ownership and possession*."[420] And Article 14-3 states that "*adequate procedures shall be established within the national legal system to resolve land claims by the peoples concerned.*"

Refusing to ratify this Convention put these communities in legal uncertainty and allows France to avoid answering questions about the fundamental rights of indigenous peoples such as the questions about property, civil and political rights, the

[417] Catherine Aubertin and Geoffroy Filoche, 'La création du parc amazonien de Guyane : redistribution des pouvoirs, incarnations du « local » et morcellement du territoire' in Aubertin C. and Rodary E. (eds) *Aires Protégées : espaces durables ?* (Marseille IRD, 2008) 163
[418] International Work Group for Indigenous Affairs, 'French Guiana' (2014) p 142 http://www.iwgia.org/images/stories/sections/regions/latin-america/documents/IW2014/IW2014FrenchGuyana.pdf
[419] ILO 169 Article 32
[420] ILO 169 Article 14-2

use of ancestral lands, the use of resources and cultural transmission to future generations.[421]

In 2013, French Guiana Senator Mr Jean-Étienne Antoinette reopened the debate concerning the ratification of the ILO Convention 169 by France.[422] He asked in writing that the Minister of Foreign Affairs specify the reasons of the absence of ratification. The Senator argued that native peoples are affected by a situation of social, economic and environmental distress resulting in suicides. He highlighted that suicide rate in the indigenous communities is higher than in mainland France. The binding character of the Convention and its ratification by France would be a great hope for these peoples wishing for a better integration into the Republic and for the respect of their rights and traditions.[423] The Minister of Foreign Affairs, Laurent Fabius, answered on 26th December 2013 and clearly reaffirmed that France will not ratify the Convention.[424] According to the principle of indivisibility of the French Republic which prohibits the implementation of different legal regimes for different citizens and the creating of categories of peoples with different rights, no legal measures concerning autochthonous peoples can be taken.[425] Although France does not ratify the Convention, France is an important actor within the United Nations as it cooperates actively on the topic of indigenous peoples and is committed to negotiations. The Minister argued that the French government had adopted ambitious policies favouring of indigenous peoples, especially in overseas territories.[426] Indeed, France adopted measures to insure the full participation of native peoples in the decision-making of their lifestyles.[427] It took in consideration cultural traditions, promoted the teaching of languages and local cultures, and protected native peoples' lands.[428]

[421] Committee on Racial Discrimination discusses situation in France, Guatemala and Bosnia and Herzegovina with NGOs (Committee on the Elimination of Racial Discrimination, 28 April 2015)
[422] Sénat, 'Ratification de la Convention numéro 169 de l'Organisation international du travail relative aux peuples indigènes et tribaux' (December 2013) http://www.senat.fr/questions/base/2013/qSEQ131209601.html accessed 21 June 2016
[423] ibid
[424] ibid
[425] ibid
[426] ibid
[427] ibid
[428] Sénat, 'Ratification de la Convention numéro 169 de l'Organisation international du travail relative aux peuples indigènes et tribaux' (December 2013) http://www.senat.fr/questions/base/2013/qSEQ131209601.html accessed 21 June 2016

3. Criticism and recommendations

The general approach taken by French authorities has been widely questioned by organisations such as the French Human Rights League (*Ligue des droits de l'homme*).[429] By refusing to implement collective rights for native peoples in its constitutional principles, France maintains indigenous peoples in a social, economic and cultural stalemate.[430] The recognition of cultural differences influences the principle of equality. The recognition of collective rights of native people might be an effective protection against disparities created by national authorities. As discussed above, unemployment, suicide, lack of health care and academic failure affect indigenous peoples.[431]

Further, the general approach taken by France has been also widely questioned by the United Nations General Assembly.[432] The Office of the United Nations High Commissioner for Human Rights (*OHCHR*) rendered a UN report on the 27th August 2010 recommending that France shall take all the necessary legislative measures for the ratification of the Indigenous and Tribal Peoples Convention.[433] The UN report criticised Frances' policy of refusing to give a fair protection to indigenous peoples and keeping them in stalemate. 22 States ratified this Convention including 15 countries in South America and Central America which shows the isolated position of France in this region.[434]

Although France has not implemented a distinct status for French Guianese indigenous peoples, the French Constitution developed a specific status for the New Caledonia overseas territory located in the Pacific Ocean and for its settled indigenous community of Kanak peoples.[435] Since the Noumea Accords signed in May 1998, France promised to grant to New Caledonia key measures such as a transfer of

[429] Committee on Racial Discrimination discusses situation in France, Guatemala and Bosnia and Herzegovina with NGOs (Committee on the Elimination of Racial Discrimination, 28 April 2015) http://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=15898&LangID=E accessed 3 June 2016

[430] ibid

[431] ibid

[432] United Nations General Assembly (UNGA) Report of the Committee on the Elimination of Racial Discrimination (August 2010) UN Doc. A/65/18 p61 http://www.refworld.org/docid/4ef1977f2.html accessed 5 June 2016

[433] ibid

[434] International Labour Organisation, 'Ratifications of C169' http://www.ilo.org/ accessed 11 June 2016

[435] Félicien Lemaire, 'L'Outre-mer, l'unité et l'indivisibilité de la République' (2012) 35 Nouveaux Cahiers du Conseil constitutionnel

administrative powers from metropolitan France to local authorities; the recognition of Kanak culture, practices and identity; a change of its constitutional status; and an eventual emancipation of New Caledonia after a referendum on self-determination in 2018.[436] The Agreement recognised the importance of taking into account the identity of the Kanaks peoples in developing the future political framework, and this recognition comes with a specific legal status based on customary law.[437] These measures previously undertaken by France enhance the legal security of indigenous communities and should be adopted for French Guianese indigenous communities. Additionally, France should take into example its neighbour's legal context, Brazil, which recognised its indigenous peoples, such as the Quilombola peoples, and conferred to them lands rights into the Constitution of 1988.[438]

In short, France prefers to promote in an excessive way the notion of national unity instead of recognising collective rights for the native peoples of overseas territories who wish for the recognition of their cultural differences and their territorial rights. Thus, France is still reluctant to ratify ILO Convention 169, which would require the modification of the French Constitution. Indeed, the ratification supposes the creation of a specific category of people for Amerindians. It is evident that the signing and the ratification of this Convention would allow the solving of numerous issues that face the native peoples of French Guiana. However, France does not seem ready to make this change yet.

V. French Guiana and bioprospecting activities

As stated in the introduction, due to its exceptional biodiversity, rich ecosystem and TK associated to biological resources, French Guiana has received the attention of researchers conducting bioprospecting activities.[439] In this section, some examples of bioprospecting activities will be addressed highlighting the excellent ground that

[436] Nic MacLellan, 'The Noumea Accord and Decolonisation in New Caledonia' (1999) 34 The Journal of Pacific History 245

[437] Alan Berman, 'The Noumea Accord: Emancipation or Colonial Harness?' (2001) 36 Texas International Law Journal 277

[438] Cultural Survival Quarterly Magazine, 'Quilombos and Land Rights in Contemporary Brazil' (December 2001) https://www.culturalsurvival.org/publications/cultural-survival-quarterly/brazil/quilombos-and-land-rights-contemporary-brazil accessed 10 July 2016

[439] Thomas Burelli, 'La Bioprospection dans l'Outre-mer français : opportunités et limites des dispositifs de régulations émergents dans l'Outre-mer français' (2013) 4 RRJ 1747

French Guiana can provide for researchers working on biodiversity, diseases, drug discovery and cultural diversity.

For instance, public organisations such the Pasteur Institute of French Guiana has an important role for research and for the public health, actively participating in the improvement of population life, the broadcasting of knowledge and the fight against infectious diseases.[440] The National Center for Scientific Research (*CNRS*) is also settled in French Guiana, aims to carry out research, developing scientific information, contributing to the promotion and application of research results.[441] The French Agricultural Research and International Cooperation Organisation (*CIRAD*) is present in French Guiana since 40 years and has the purpose to conduct research and development on the knowledge and the management of natural resources. Its work mainly concern the functioning of tropical forest ecosystem and its biodiversity, wood and cultivated plants.[442] The French Institute for Exploitation of the Sea (*IFREMER*), the Institute for Development Research (*IRD*) and Guiana University carry out also research in French Guiana.[443]

The sampling and collection of natural resources might sometimes have environmental impacts, such as the overexploitation of biodiversity resources or natural resource depletion.[444] Some examples already exist in French Guiana and have been pointed out by researchers and academics:[445]

1. Bioprospecting cases

Aniba rosaeodora or the rosewood tree, a tropical tree species of South America, has been an important resource in French Guiana in the 1930s and has been overexploited due to its essential oil.[446] Rosewood oil contains the substance called linalool, which is

[440] Institut Pasteur de la Guyane http://www.pasteur-cayenne.fr/presentation-ipg/directeur-ipg/le-mot-du-directeur/ accessed 3 July 2016
[441] CNRS web-site, Overview CNRS http://www.cnrs.fr/en/aboutcnrs/overview.htm accessed 29 July 2016
[442] CIRAD web-site,CIRAD in French Guiana http://antilles-guyane.cirad.fr/aux-antilles-et-en-guyane/guyane accessed
[443] 'Research and Education in French Guiana' http://www.enseignementsup-recherche.gouv.fr/cid89540/tour-d-horizon-de-la-recherche-scientifique-en-guyane.html accessed
[444] Marie Fleury, Christian Moretti and Didier Béreau, 'Usage des ressources forestières en Guyane : de la tradition à la valorisation' (2003) Rev. For. Fr. LV 291
[445] ibid
[446] ibid

used in shampoos, soaps, lipsticks, perfumes, lotions and moisturizers.[447] As a result, this plant has been categorised as an endangered species which led to the end of its exploitation and commercialization in French Guiana.[448]

Mourera fluviatilis is a tropical plant from north-eastern South America which has a significant role in the food chain. Exploitation of this plant by a French cosmetic company raised concerns by the local population in 2005, worried about losing this resource. A patent was granted for the invention for *Mourera fluviatilis* extracts and cosmetic preparations containing plant extracts.[449] Since this case, French industries are careful when they have access to genetic resources, and the implementation of a clear and comprehensive framework ensuring a peaceful exploitation of resources would help industries to avoid being accused of biopiracy.[450]

French Guianese resources have been exploited by French cosmetic industries in using botanical resources and plant species to develop cosmetic products, active ingredients, formulae, creams and make up. Thus, TK plays an important role in the development of these cosmetic products. As a result, patents related to Guianan resources have been issued and some examples might be emphasised:[451]

Oil of *Carapa* containing an *Andiroba* extract has been patented for cosmetic use by the Yves Rocher Laboratory, the laboratory of the worldwide French cosmetic brand Yves Rocher.[452] Originally this oil was used by local communities for repelling mosquitos and lice and possesses anti-inflammatory and antifungal proprieties. However, the oil has been patented for the treatment of cellulite.

Another plant located mainly in French Guiana called *Bocoa prouacensis* has been patented by a French cosmetic company. The patent was granted to Clarins

[447] Cosmetic Info web-site 'Linalool' http://www.cosmeticsinfo.org/ingredient/linalool accessed 1 September 2016
[448] Marie Fleury, Christian Moretti and Didier Béreau, 'Usage des ressources forestières en Guyane : de la tradition à la valorisation' (2003) Rev. For. Fr. LV 291
[449] Espacenet Patent search (EPO web-site) https://worldwide.espacenet.com/publicationDetails/biblio?CC=US&NR=2003129150A1&KC=A1&FT=D&ND=4&date=20030710&DB=EPODOC&locale=en_EP accessed 13 August 2016
[450] Guillaume Odonne and Damien Davy, 'Disparités et ambiguïté de l'accès aux ressources biologiques en Guyane française' (2014) 5 ELOHI 171
[451] Marie Fleury, Christian Moretti and Didier Béreau, 'Usage des ressources forestières en Guyane : de la tradition à la valorisation' (2003) Rev. For. Fr. LV 291
[452] EP0872244 (European Publication server) https://data.epo.org/publication-server/rest/v1.0/publication-dates/20040707/patents/EP08722*44NWB1/document.pdf

Laboratories, the worldwide French luxury cosmetic company, for a cosmetic invention containing *Bocoa prouacensis* as an anti-aging skincare treatment. [453]

All these patent examples have received strong criticism from French practitioners such as G. Filoche, M. Fleury, C. Moretti and D. Béreau, arguing that due to the lack of comprehensive French legislation, an absence of specific measures and lack of authority in ensuring the access to these resources complies with norms, overexploitation of resources related to patents issued for these resources occurred.[454]

2. The recent case of *Quassia amara*

A more recent case of bioprospecting activity in French Guiana might be mentioned. This came out at the beginning of 2016 and involved a French public body, the Institute for Development Research *(L'Institut de recherche pour le développement, IRD)*.[455] IRD is a French public science and technology establishment under the joint supervision of the Ministry of Higher Education and Research and the Ministry of Foreign and European Affairs. It works in many countries conducting research projects related to environmental, health, poverty and migration issues. The Institute contributes to the improvement of "social, economic and cultural development of southern countries".[456] The IRD has been accused by the human rights organisation "Fondation Danielle Mitterrand France Liberté" of biopiracy activities conducted in French Guiana.[457] The organisation accused the IRD of having isolated from a tropical plant, the *Quassia amara*, a small tree native to Central and South America, a molecule named *Simalikalactone E* (SkE). This molecule is particularly promising for the treatment of malaria and some types of cancers. Amazonian and creole communities use this plant widely in traditional medicine as an antimalarial remedy. *Simalikalactone E*, which can be extracted from the plant *Quassia amara*, can be used as a medicament, in particular in the prevention and treatment of malaria, and also in reducing the transmission of

[453] EP1461011 Espacenet Patent search (EPO web-site) https://worldwide.espacenet.com/publicationDetails/biblio?DB=EPODOC&II=0&ND=3&adjacent=true&locale=en_EP&FT=D&date=20040929&CC=EP&NR=1461011A2&KC=A2 accessed 31 August 2016

[454] Geoffroy Filoche, 'Domestic biodiplomacy: Navigating between provider and user categories for genetic resources in Brazil and French Guiana' (2013) Int. Environ. Agreements 177

[455] Elisabeth Pain, 'French institute agrees to share patent benefits after biopiracy accusations' (*Science mag*, 10 February 2016) http://www.sciencemag.org/news/2016/02/french-institute-agrees-share-patent-benefits-after-biopiracy-accusations accessed

[456] Institut de Recherche pour le Développement France https://en.ird.fr/ accessed 5 September 2016

[457] Elisabeth Pain, 'French institute agrees to share patent benefits after biopiracy accusations' (*Science mag*, 10 February 2016) http://www.sciencemag.org/news/2016/02/french-institute-agrees-share-patent-benefits-after-biopiracy-accusations

malaria.[458] The French institute applied for the patent and the European patent was granted on March 4th 2015 by the European Patent Office (*EPO*) for the molecule *Simalikalactone E* and use thereof as a medicament. However, opposition to this patent was filed in December 2015 by the human rights organisation Fondation Danielle Mitterrand France Liberté, claiming that the invention infringed numerous Articles of the EPC, from Article 52 to 57.

2.1. The opposition to the patent

The patent particularly infringes exceptions to patentability and novelty conditions embedded in Article 53(a) and 54 of the EPC:

- Article 53(a) states that European patents shall not be granted in respect of: inventions the commercial exploitation of which would be contrary to *"ordre public"* or morality; such exploitation shall not be deemed to be so contrary merely because it is prohibited by law or regulation in some or all of the Contracting States;

This Article aims to avoid "riot or public disorder, or to lead to criminal or other generally offensive behaviour".[459]

- Article 54 states that (1) an invention shall be considered to be new if it does not form part of the state of the art. (2) The state of the art shall be held to comprise everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing of the European patent application.

The organisation challenging the patent argues that, due to its disrespect for conventional standards related to research activities involving ILCs, the access and use of their TK, the patent exploitation is contrary to morality. The patent exploitation may

[458] 'Simalikalactone E (SKE), A New Weapon in the Armamentarium of Drugs Targeting Cancers that exhibit constitutive activation of the Erk pathway' (*Pubfacts*, December 2012) http://www.pubfacts.com/detail/23518796/Simalikalactone-E-SkE-a-new-weapon-in-the-armamentarium-of-drugs-targeting-cancers-that-exhibit-cons accessed 15 September 2016

[459] Guidelines for Examination in the European Patent Office, Part G Patentability 'Matter contrary to "*ordre public*" or morality' http://www.epo.org/law-practice/legal-texts/html/guidelines/e/g_ii_4_1.htm accessed 2 October 2016

induce public disorder and could threaten confidence in the relationship between ILCs and researchers. [460]

Firstly, researchers lean on international, national and local sources in defining moral and of conventional standards through ILO Convention 169 (Article 7(1));[461] CBD Article 8(j); Nagoya Protocol Article 5 and 7; United Nations Declaration on the Rights of Indigenous Peoples Article 31;[462] European Union regulation;[463] and French national regulation.[464] By exposing these legal provisions they explain the importance of TK held by indigenous and local communities, their right to control it and the conventional approach that researchers must follow when they use this knowledge or knowledge associated with genetic resources. In other words, it shows conventional standards related to morality regarding relationships between researchers and indigenous peoples. It also pointed out that holders of such knowledge should be subject of PIC before any access or use of this knowledge. They also must be informed about the nature of the research project, its objectives, eventual risks and advantages.[465]

Opponents of the patent claim that the development of the innovation was based on TK of ILCs of French Guiana, and complain about the lack of evidence of PIC from the indigenous communities.[466] The development of the medicament would not have been

[460] Patent Opposition EP2443126 "SIMALIKALACTONE E AND USE THEREOF AS A MEDICAMENT" Page 15

[461] Article 7(1) "*The peoples concerned shall have the right to decide their own priorities for the process of development as it affects their lives, beliefs, institutions and spiritual well-being and the lands they occupy or otherwise use, and to exercise control, to the extent possible, over their own economic, social and cultural development. In addition, they shall participate in the formulation, implementation and evaluation of plans and programmes for national and regional development which may affect them directly*."

[462] Article 31 "*Indigenous peoples have the right to maintain, control, protect and develop their cultural heritage, traditional knowledge and traditional cultural expressions, as well as the manifestations of their sciences, technologies and cultures, including human and genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs, sports and traditional games and visual and performing arts. They also have the right to maintain, control, protect and develop their intellectual property over such cultural heritage, traditional knowledge, and traditional cultural expressions*."

[463] Regulation (EU) No 511/2014 Of the European Parliament and of the Council of 16 April 2014 on compliance measures for users from the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in the Union [2014] OJ L 150/59, Preamble 5, 21, 22 and 24 http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32014R0511&from=FR accessed 2 October 2016

[464] Law No 2006-436 4th April 2006

[465] Patent Opposition EP2443126 "SIMALIKALACTONE E AND USE THEREOF AS A MEDICAMENT"

[466] Patent Opposition EP2443126 "SIMALIKALACTONE E AND USE THEREOF AS A MEDICAMENT"

possible without the contribution of local communities. This idea has been clearly stated by Petra Ebermann:[467]

"*Once a pharmaceutical drug is derived from the use of a certain plant that has been identified with the help of members of a traditional knowledge community, an active contribution to the invention is given. The traditional group has developed their medication due to their own needs. It therefore constitutes a contribution that is in itself valuable. This contribution is essential to the development of the final drug. Without the contribution the development of the drug would probably not have taken place or the development would have been delayed considerably. The development of the exact same drug by other means, e.g. mass or random screening, is unlikely and would - if at all - occur at considerably higher costs*"

In addition, the patent would possibly restrict access to *Quassia Amara* by local communities which have been using it as a medicinal plant for decades.[468] Traditional medicines developed by French Guiana's local communities have been also used in other countries such as Colombia and Costa Rica and are less expensive than conventional medicine. Any restriction or ban of this plant might threaten local community medicinal knowledge and might lead to health and economic issues.[469] The opponents assert that, in excluding local communities who participated to the research, the IRD and its researchers did not share benefits arising from the innovation. Thus the Fondation Danielle Mitterrand, Thomas Burelli and Cyril Costes strongly classified the development of the innovation as act of "biopiracy".[470] Regarding the novelty, they consider that documents have shown that *Quassia Amara* component was already known having antimalarial proprieties and used in the treatment of malaria before the development of the invention.[471] Hence, according to

[467] Petra Ebermann, *Patents as Protection of Traditional Medical Knowledge: A Law and Economics Analysis* (Cambridge: Intersentia, 2012) 125

[468] Patent Opposition EP2443126 "SIMALIKALACTONE E AND USE THEREOF AS A MEDICAMENT"

[469] Patent Opposition EP2443126 "SIMALIKALACTONE E AND USE THEREOF AS A MEDICAMENT" page49 50

[470] Patent Opposition EP2443126 "SIMALIKALACTONE E AND USE THEREOF AS A MEDICAMENT" Page 50

[471] See Stéphane Bertani, Simalikalactone D, molécule issue de la pharmacopée traditionnelle amazonienne : activité antipaludique et mécanisme d'action, Thèse de Doctorat de l'Université Pierre & Marie Curie - Paris 6 École Doctorale B2M (2006) ; Stéphane Bertani, Geneviève Bourdy, Irène Landau, J.C. Robinson, Ph. Esterred, Eric Deharo, 'Evaluation of French Guiana traditional antimalarial remedies' (2005) Journal of Ethnopharmacology 98, p. 45-54 ; Muriel Vigneron, 'Ethnopharmacologie quantitative : contexte d'usage et caractérisation de quelques traitements antipaludiques en Guyane française' (2003) DEA Environnement tropical et valorisation de la biodiversité, Université Antilles-Guyane ; Muriel

these opponents, novelty and patentability conditions have not been satisfied and the patent granted by the EPO must be revoked.[472]

2.2. The response of the IRD

One month after the patent opposition filed by the Fondation Danielle Mitterrand, an article from a French independent newspaper *Mediapart* came out in January 2016 entitled 'Des chercheurs français sur le paludisme accusés de biopiraterie' (In English: 'French researchers accused of biopiracy')[473] which led to a growing public interest in this case. Two days after the publication of the article the IRD protested via a letter from its Chairman,[474] who expressed his concerns about the allegation raised by the Fondation Danielle Mitterrand and the newspaper article. According to the Chairman, the newspaper article could threaten long-term research conducted by researchers and academics on a public health issue, specifically the identification of new anti-malaria molecules. In addition, he wondered why no preliminary dialogue had been carried out between the Fondation and the IRD before the patent opposition was filled, envisaging a common fight for the access to essential medicines. The Chairman reaffirmed the worldwide role of the Institute, counting more than 2 000 collaborators and 56 research centres around the world working on global development issues. IRD researchers improve treatments, access to healthcare and have settled in a reliable framework with local scientific partners. Through the letter, the IRD Chairman calls on the French government to implement a rational legal framework for practices and researches which will be embodied by the Biodiversity Bill and commit the IRD to providing the required access (and the benefit-sharing) arising from the patent to local populations. He adds that the IRD has an active role in the area of bioethics and in the application of the Nagoya Protocol for the recognition of knowledge of local populations.[475]

Vigneron, Xavier Deparis, Eric Deharo, Geneviève Bourdy, 'Antimalarial remedies in French Guiana: A knowledge attitudes and practices study' (2005) Journal of Ethnopharmacology 98, p. 351–360

[472] Patent Opposition EP2443126 "SIMALIKALACTONE E AND USE THEREOF AS A MEDICAMENT"

[473] Jade Lindgaard, 'Des chercheurs français sur le paludisme accusés de biopiraterie' *Mediapart* (25 January 2016)

[474] Jean Paul Moatti, 'Lettre du président-directeur général de l'IRD à la fondation France Libertés' (*Institut de Recherche pour le Développement*, 27 January 2016) http://www.ird.fr/toute-l-actualite/actualites/actualites-generales/lettre-du-president-directeur-general-de-l-ird-a-la-fondation-france-libertes accessed 12 June 2016

[475] ibid

Additionally, in February 2015 the IRD proposed the establishment of a joint protocol for benefit-sharing arising from the patent *Simalikalactone E* anticipating the Biodiversity Bill and moving the debate forward.[476] This protocol will address the following proposition to French Guianan authorities:[477]

- The fair and equitable sharing of results arising from the research and any benefits ensuing from the patent exploitation;
- The commitment of information and awareness of the research to local populations;
- A common commitment to guarantee logistics and valuable conditions allowing access to concerned populations who would possibly need the new antimalarial medicine arisen from the patent.

So far, as long as the patent opposition has not been examined, it is too early to take part in this debate. However, this debate shows the potential tensions between balancing researches conducted by academics and scientists in the discovery of new molecules and medical treatments, and on the other hand the potential knowledge held by local communities and their role in the discovery. This might explain the strong position of French Guiana: "*On the one hand, as a decentralized region, Guiana seeks to take prerogatives relating to ABS issues away from the State. On the other hand, it seeks to make effective its user role as a French territory by benefiting from the national scientists and firms*".[478]

VI. The Biodiversity Law

1. Overview

With the adoption of the draft bill entitled *The bill for biodiversity regrowth, nature and landscapes* 2016 was particularly favourable towards French biodiversity and its protection. Indeed, since 2014 France has been committed to modernising its environmental legislation with the adoption of *The draft bill for biodiversity regrowth,*

[476] 'L'IRD va proposer aux autorités guyanaises un protocole d'accord conjoint pour le partage des avantages issus du brevet SkE' (*Institut de Recherche pour le Développement*, 5 February 2016) https://www.ird.fr/toute-l-actualite/actualites/communiques-et-dossiers-de-presse/cp-2016/l-ird-va-proposer-aux-autorites-guyanaises-un-protocole-d-accord-conjoint-pour-le-partage-des-avantages-issus-du-brevet-ske/(language)/fre-FR accessed 7 February 2016

[477] ibid

[478] Geoffroy Filoche, 'Domestic biodiplomacy: Navigating between provider and user categories for genetic resources in Brazil and French Guiana' (2013) Int. Enviro. Agreements 177

nature and landscapes, which was presented in March 2014 and aimed to transform biodiversity governance by the creation of new rules and institutions.[479] The key measures of the bill include: the creation of the first French agency committed to the protection of biodiversity; implementing the Nagoya Protocol into French domestic legislation; enacting fundamental principles concerning environment protection; protecting endangered species and environmentally sensitive areas; banning neonicotinoid pesticides; setting up national biodiversity committee; implementing measures to prevent and curb invasive exotic species; developing knowledge of biodiversity; prohibiting the patenting of living organisms i.e. products stemming from what are essentially biological processes.[480] After the definitive approval of the draft bill by the French Parliament on the 20th July 2016 and the Constitutional Council on the 4th August 2016, the law was published in the French Official Journal on the 9th August 2016. This adoption intervened after the United Nations Climate Change Conference in Paris in 2015 and before the Thirteenth meeting of the Conference of the Parties to the Convention on Biological Diversity in December 2016.[481] According to French Government, thanks to the adoption of the law, the Minister of Ecology, Ségolène Royal said France will set "a clear example in terms of environmental excellence"[482] and it will "create a new harmony between the nature and human beings".[483] Despite this considerable step made by the French government, it is relevant to remark that the adoption of the draft was characterised by its slowness and the vagueness of its language.[484] The law is divided in seven parts: Fundamental principles; Biodiversity governance; French Agency for the Biodiversity; Resource water policy governance; Access to genetic resources and the fair and equitable sharing of

[479] Thomas Burelli, 'La France et la mise en œuvre du protocole de Nagoya : Analyse critique du dispositif d'accès aux ressources génétiques et de partage des avantages (APA) dans le projet de loi français relatif à la biodiversité' (2014) 14 Vertigo – La Revue électronique en Sciences de l'Environnement

[480] French Government web-site, 'Reclaiming biodiversity, nature and landscapes' (22 August 2016) http://www.gouvernement.fr/en/reclaiming-biodiversity-nature-and-landscapes accessed 29 August 2016

[481] 'Loi biodiversité : ratification du protocole de Nagoya sur la lutte contre la biopiraterie' (21 January 2016) http://www.developpement-durable.gouv.fr/Loi-biodiversite-ratification-du.html accessed 22 March 2016

[482] French Government web-site, 'Reclaiming biodiversity, nature and landscapes' (22 August 2016) http://www.gouvernement.fr/en/reclaiming-biodiversity-nature-and-landscapes accessed 3 September 2016

[483] Audrey Garric and Martine Vallo, 'Ce que contient le projet de loi sur la biodiversité' *Le Monde* (24 March 2015)

[484] Thomas Burelli, 'La France et la mise en œuvre du protocole de Nagoya : Analyse critique du dispositif d'accès aux ressources génétiques et de partage des avantages (APA) dans le projet de loi français relatif à la biodiversité' (2014) 14 Vertigo – La Revue électronique en Sciences de l'Environnement

benefits arising from their utilisation; Natural areas and species protection; Landscapes.[485] In accordance with the research of this case study, only the part concerning the French Agency for Biodiversity and access to genetic resources will be addressed in this last section.

2. The French Agency for Biodiversity

The French Agency for Biodiversity is a central measure introduced by Article L131-1 of the law, having the task to work for a better fauna and flora conservation, raising awareness of citizens on the biodiversity and strengthening knowledge and research in this area.[486] The agency is a public institution created by the State and will be run by the 1st January 2017.

The purpose of this agency is to answer environmental stakes, such as the loss of biodiversity and the destruction of ecosystems. The agency intends to make the protection of biodiversity a source of sustainable development and innovation by supporting environmental projects. The implementation of the agency is committed to strengthening and renewing public policies in favour of biodiversity. The law explicitly refers to biopiracy under Article L131-8-4°: "The French Agency for Biodiversity fights against biopiracy".

This future agency aims to answer to protection and the valuation stakes of aquatic and marine biodiversity in France, in mainland France and overseas territories. Several national bodies will join the agency, such as the National Federation of National Parks (*Fédération nationale des parcs nationaux*), the Agency of the protected marine areas (*Agence des aires marines protégées*) and the National Office of the water and the aquatic areas (*Office national de l'eau et des milieux aquatiques*).

The draft planned the possibility to organise partnerships with public services, associations, communities and socioeconomic actors. It will be spread to both

[485] Law No 2016-1087 8 August 2016 on the biodiversity regrowth, nature and landscapes (Legifrance web-site) https://www.legifrance.gouv.fr/eli/loi/2016/8/8/DEVL1400720L/jo#JORFSCTA000033016243 accessed 14 September 2016

[486] 'Les députés votent la création de l'Agence pour la biodiversité' *Le Monde* (18 March 2015)

mainland France and overseas territories. It will have the ability to create regional biodiversity agencies.[487]

The agency will bring its technical support and expertise in the implementation of biodiversity policies. It will represent France within European and international authorities; dealing with the implementation of European regulations and directives, international agreements and cooperating with the French Development Agency (*Agence Française de Développement*, AFD) and the French Facility for Global Environment (*Fonds Français pour l'Environnement Mondial*, FFEM). The agency will provide a financial support, particularly regarding projects in favour of biodiversity and the well-balanced of water resource management. Finally, it will follow up access to genetic resources and the fair and equitable of benefit-sharing scheme and compensation measures infringing biodiversity.[488]

Overall, the Agency will contribute to the conservation, the management and the restauration of biodiversity, in the development of biodiversity knowledge, to the well-balanced and sustainable management of waters.

3. The new regime on ABS

3.1. Terms and language

Implementing CBD and Nagoya Protocol objectives into this title is a strong sign from the State of willingness to monitor bioprospecting abuses and support the preservation and sustainable use of biodiversity.

This title starts by providing definitions of various concepts, such as 'the use of genetic resources', 'sharing of benefits', 'collection', wild species', 'domestic species', 'living communities' or 'inhabitants' communities', and 'traditional knowledge associated with genetic resources'.[489] Some criticism might arise when it comes to giving a definition of TK. For instance, while the definition compares TK to something old and

[487] Biodiversity Law Article L131-8
[488] Biodiversity Law Article L131-9
[489] Biodiversity Law Article L.412-4

continuous, practitioners consider that TK is more dynamic than old, builds on experience and adapt itself to changes.[490]

Another criticism concerns the definition of 'the use of traditional knowledge related to genetic resources'.[491] The article defines this only by the terms 'study and the promotion'. However, what does "study and promotion" refer to? According to Thomas Burelli, this is a broad definition which French jurisprudence might supplement afterwards.[492]

Concerning the definition of 'living communities' or "inhabitants' communities' (*Les Communautés d'habitants*), the lawmaker defines this:[493]

"*Any inhabitants community which traditionally use natural resources for its livelihoods and which presents a particular interest for the preservation and the sustainable use of biodiversity*".

The lawmaker tries to implement the notion of indigenous peoples given by the CBD. This definition has been awaited due to the reluctance of French government to use the notion of "indigenous peoples" or "autochthonous peoples" to categorise peoples in its territories. For practitioners, this definition is "restrictive" and "unsatisfactory". It restricts the recognition of the inhabitants' communities to the traditional use of natural resources for their livelihoods. However, every society traditionally uses its own natural resources, such as farming and breeding. In addition, this definition might discriminate against other living communities who do not use traditionally their natural resources. This is the case of peoples who have been colonised by developed countries. Although they are not using their resources, they still want to be recognised as indigenous peoples due to their history with the territory and the preservation of

[490] Thomas Burelli, 'La France et la mise en œuvre du protocole de Nagoya : Analyse critique du dispositif d'accès aux ressources génétiques et de partage des avantages (APA) dans le projet de loi français relatif à la biodiversité' (2014) 14 Vertigo – La Revue électronique en Sciences de l'Environnement

[491] Biodiversity Law Article L. 412-4, 2° *Utilisation de connaissances traditionnelles associées aux ressources génétiques : leur étude et leur valorisation*

[492] Thomas Burelli, 'La France et la mise en œuvre du protocole de Nagoya : Analyse critique du dispositif d'accès aux ressources génétiques et de partage des avantages (APA) dans le projet de loi français relatif à la biodiversité' (2014) 14 Vertigo – La Revue électronique en Sciences de l'Environnement

[493] Biodiversity Law Article L. 412-4, 4° *Communauté d'habitants : toute communauté d'habitants qui tire traditionnellement ses moyens de subsistance du milieu naturel et dont le mode de vie présente un intérêt pour la conservation et l'utilisation durable de la biodiversité*

their social and cultural structures and practices.[494] Besides, using this expression instead of "indigenous peoples" or "autochthonous peoples" might be an open door to recognising other communities which might not be indigenous. Considering its colonial past the French government clearly has difficulty recognising the notion of indigenous peoples in its territory. The government's reasoning is an absolute nonsense with certain legal realities. It shows the ideological stubbornness of French authorities.[495]

In March 2016, the term 'autochthonous' was mentioned in the draft bill and added to the definition of 'living communities', being defended by Chantal Berthelot, Member of the National Assembly who represents French Guiana. According to her the mention of the term 'autochthonous' was the "first historical step towards the recognition of French Guiana autochthonous peoples".[496] Nonetheless, in spite of the mobilisation of several politicians in the discussion, the term 'autochthonous' has, due to constitutionality reasons (Article 1 of the French Constitution), been removed from the final version of the law.[497]

Concerning the "sharing of benefits",[498] is the fair and equitable sharing of benefits arising from the utilisation of genetic resources and traditional knowledge. This is seen as the researches and enhancements as well as the benefits resulting from their commercial or non-commercial use. The State will exercise its sovereignty over these resources. The sharing of benefits can consist of: the enrichment or preservation of biodiversity *in situ* and *ex situ* conservation; the conservation of traditional knowledge related to genetic resources; contributions to local development of sectors related to sustainable use of genetic resources or traditional knowledge; the collaboration, the cooperation or the contribution to researches activities, educational activities, transmission of skills or transfer of technology.

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[494] 'La France et la mise en œuvre du protocole de Nagoya : Analyse critique du dispositif d'accès aux ressources génétiques et de partage des avantages (APA) dans le projet de loi français relatif à la biodiversité' (2014) 14 Vertigo – La Revue électronique en Sciences de l'Environnement

[495] 'La France et la mise en œuvre du protocole de Nagoya : Analyse critique du dispositif d'accès aux ressources génétiques et de partage des avantages (APA) dans le projet de loi français relatif à la biodiversité' (2014) 14 Vertigo – La Revue électronique en Sciences de l'Environnement

[496] Chantal Berthelot, 'Communique de presse - Une soirée historique à l'Assemblée nationale ?' (*France Libertés*, 7 mars 2016) http://www.france-libertes.org/IMG/pdf/cp_c.berthelot_-_les_communautes_autochtones_de_guyane_reconnues.pdf accessed 2 April 2016

[497] 'Loi biodiversité : enfin un cadre pour la lutte contre la biopiraterie en France' (*Pressenza International Press Agency*, 4 August 2016) http://www.pressenza.com/fr/2016/08/loi-biodiversite-enfin-un-cadre-pour-la-lutte-contre-la-biopiraterie-en-france/ accessed 15 September 2016

[498] Biodiversity Law Article L.412-4, 3°

The new biodiversity law has some holes as it does not take enough in account the consent of native peoples when companies try to use their TK. It is said also that the penal regime could be more dissuasive.[499]

To conclude, the new draft shows some limitations: among them the unclear definitions given by the legislator. Other limits will be demonstrated in the following section.

3.2. ABS measures

The scope of the new law includes: the access to genetic resources and their use and the use of traditional knowledge related to genetic resources. A number of exclusions are specified. Thus, the new law does not apply to human genetic resources, to genetic resources taken outside French national territory and its zones, or to genetic resources covered by international conventions such as the CBD.

The law plans two procedures according the nature of the activities intended by the users: a declaratory procedure or authorisation procedure. Hence if the users want to have access to genetic resources, knowledge of biodiversity and conservation without any commercial purpose, the user will be subject to a declaratory procedure. Conversely, if researches have for other purposes, users will be subject to an authorisation procedure.

The declaratory procedure is embedded in Article L412-7-1 and refers to the access for non-commercial research purposes. However, the terms mentioned "without any commercial purpose" might be seen as very broad. Indeed, what is a commercial purpose and what is not? For instance, it is said that a patent application does not have a commercial purpose because any product commercialisation has not been done.[500]

It is Art. L. 412-8-1 which sets out the authorisation procedure and its grounds for refusals.

[499] France Libertés, 'Plaidoyer 2014' http://www.france-libertes.org/Plaidoyer.html

[500] Thomas Burelli, 'La France et la mise en œuvre du protocole de Nagoya : Analyse critique du dispositif d'accès aux ressources génétiques et de partage des avantages (APA) dans le projet de loi français relatif à la biodiversité' (2014) 14 Vertigo – La Revue électronique en Sciences de l'Environnement

Concerning the authorisation procedures related to the use of traditional knowledge associated with genetic resources, TK are developed in a specific section which could show "a significant awareness by the authorities for the protection of immaterial cultural heritage of local communities."[501] The use of TK would need the approval of the administrative authority.

The new law also plans the nomination of a legal entity under public law in each inhabitant's community to organise the consultation with one or several community holders of TK associated with genetic resources.[502] This measure might be questionable. Therefore, this initiative is based on the idea that the autochthonous communities are not able to contract or negotiate with TK users. Some practitioners argue that this law considers autochthonous communities as legally incapable.[503] The legal entity will be in charge of the autochthonous communities' consultation and different steps are described for it:[504] Identifying inhabitants' communities and ensuring that they have appropriate representative structures; determining information modalities for the inhabitants of concerned communities; processing, whenever it is necessary, the consultation of any institution at the communities' request; ensuring communities participation and seeking consensus; writing the progress of the consultation and their result of the benefit sharing. As a result, the legal entity grants or refuses, partially or fully, the use of TK associated with genetic resources and it will be the entity in charge in respect of the ABS agreement. If any breaches of the agreement appear, the legal entity will be able to bring justice to the case.[505]

This nomination might have some advantages. The aim is to protect communities and rebalance asymmetric relationships between researchers and native peoples.[506] It

[501] ibid

[502] Article 412-10 *Un décret désigne, dans chaque collectivité où est présente une communauté d'habitants définie au 4° de l'article L. 412-4, une personne morale de droit public chargée d'organiser la consultation de la ou des communautés d'habitants détentrices de connaissances traditionnelles associées aux ressources génétiques, dans les conditions définies aux articles L. 412-11 à L. 412-14.*

[503] Thomas Burelli, 'La France et la mise en œuvre du protocole de Nagoya : Analyse critique du dispositif d'accès aux ressources génétiques et de partage des avantages (APA) dans le projet de loi français relatif à la biodiversité' (2014) 14 Vertigo – La Revue électronique en Sciences de l'Environnement

[504] Biodiversity Law Article L.412-11

[505] Biodiversity Law Article L. 412-12-I and Art. L.412-14-II

[506] Thomas Burelli, 'La France et la mise en œuvre du protocole de Nagoya : Analyse critique du dispositif d'accès aux ressources génétiques et de partage des avantages (APA) dans le projet de loi français relatif à la biodiversité' (2014) 14 Vertigo – La Revue électronique en Sciences de l'Environnement

might lead to the development of a confident relationship between researchers and autochthonous peoples and the development of an expertise in consultation. However, commentators argue that this nomination recalls the colonialism system of controlling the resources of colonial peoples in the name of their protection. Nonetheless, native peoples have demonstrated their capacity to organise themselves, to federate their members and build legal devices. This happened in New Caledonia with the Kanak peoples. On the 26th April 2014, the Kanak Charter was proclaimed, creating a legal framework for the recognition of Kanak peoples, their values and customs while coexisting with French common rules.[507] This proves that native peoples can determine themselves and their legal status without the nomination of a legal entity. Commentators such as Thomas Burelli suggest that native members could join an association, a labour union or any other legal entity.[508] Another suggestion would be the recognition of the separate legal personality of these communities, such as in New Caledonia. Courts recognised the separate legal entity of New Caledonian clans.[509]

The law also introduces control and sanctions mechanisms.[510] For instance, the use of genetic or TK resources by users must respect Article 4 of the European Regulation on compliance measures for users from the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in the Union.[511] This Article says:[512]

"*Users shall exercise due diligence to ascertain that genetic resources and traditional knowledge associated with genetic resources which they utilise have been accessed in*

[507] 'La Charte du Peuple Kanak a été proclamée' (*Sénat coutumier de la Nouvelle-Calédonie*) http://www.senat-coutumier.nc/le-senat-coutumier/actualites/61-la-charte-du-peuple-kanak-a-ete-proclamee accessed 9 October 2016

[508] Thomas Burelli, 'La France et la mise en œuvre du protocole de Nagoya : Analyse critique du dispositif d'accès aux ressources génétiques et de partage des avantages (APA) dans le projet de loi français relatif à la biodiversité' (2014) 14 Vertigo – La Revue électronique en Sciences de l'Environnement

[509] Lafargue, R., 2014a, 'The unity of the republic vs. living together on the same land', The Journal of Legal Pluralism and Unofficial Law, [En ligne] URL : http://dx.doi.org/10.1080/07329113.2014.902651

[510] Biodiversity Law Article L. 415-3-1-I

[511] Regulation (EU) No 511/2014 Of the European Parliament and of the Council of 16 April 2014 on compliance measures for users from the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in the Union [2014] OJ L 150/59 http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32014R0511&from=FR accessed 8 December 2016

[512] Regulation (EU) No 511/2014 Of the European Parliament and of the Council of 16 April 2014 (ibid) Article 4

accordance with applicable access and benefit-sharing legislation or regulatory requirements, and that benefits are fairly and equitably shared upon mutually agreed terms, in accordance with any applicable legislation or regulatory requirements."

"*For the purposes of paragraph 1, users shall seek, keep and transfer to subsequent users: the internationally-recognised certificate of compliance, as well as information on the content of the mutually agreed terms relevant for subsequent users; or where no internationally-recognised certificate of compliance is available, information and relevant documents on".*[513]

The draft plans the repeal of Article L. 331-15-6 of the French Environment Code, which means the repeal of the APS regime for the French Guiana Amazonian Park. All the efforts made since 2006 in order to implement the AbS regime into the National Park Charter and adopted on 18th April 2013 would be challenged by this new law. A general regime would be adopted and applied in the whole country, and the special ABS regime applying to French Guiana and its national park would be removed. Some practitioners such as Thomas Burelli consider it would be a waste of the existing regime.[514]

Finally concerning the collection of genetic resources, the law defines this as "a set of samples of genetic resources gathered and stored, held by public or private bodies". In the case of collection of genetic resources or genetic resources associated to TK, due to the non-retroactivity of the law, the law will be applied only to the access granted after the implementation of the law and new collections thereafter.[515]

VII. Summary

Overall, French legal vacuum maintains uncertainties for researchers and industries who have worries regarding carry out research and sampling of biological resources in French Guiana, complicating their work due to the fear of being wrongly accused of biopiracy. Bioprospecting activities are still ongoing and some patents are being issued. The latest case of bioprospecting in French Guiana (*Quassia Amara*) illustrated the

[513] ibid
[514] Thomas Burelli, 'La France et la mise en œuvre du protocole de Nagoya : Analyse critique du dispositif d'accès aux ressources génétiques et de partage des avantages (APA) dans le projet de loi français relatif à la biodiversité' (2014) 14 Vertigo – La Revue électronique en Sciences de l'Environnement
[515] Biodiversity Law Article L412-6

conflict between the advancement of research and medical development and the respect of TK holders who might have a crucial role in this advancement. It pointed out the need to adopt an extensive legal framework and apply the Nagoya Protocol. Despite legal vagueness, France has exceptional biodiversity and the presence of indigenous communities in its territory makes France an asset for itself, for the European Union and for the Latin American continent. If France recognises only one population, indigenous communities exist in French overseas territories, often settled before French colonialism, and they still keep their traditional lifestyles, such as the Amerindians in French Guiana, Kanaks in New Caledonia and Polynesians in French Polynesia, each holding TK associated with biodiversity.[516] Hence France has a propitious situation regarding TK and TK associated with genetic resources. However few measures have been undertaken to protect indigenous peoples and the access to genetic resources in overseas territories. New Caledonia and French Guiana are, due to the implementation of rules regarding the access to genetic resources, exceptions. Concerning French Guiana, indigenous peoples are too often forgotten in the consultation mechanism and a few measures have been made to strengthen the rights of indigenous peoples to access their land and resources. The only legal document which recognizes their particular lifestyle and practices is the law of April 14th 2006 relating to *National parks, marine natural reserves and regional natural reserves* and to the creation of the French Guiana Amazonian Park, shifting prerogatives to regional authorities through decentralization. Concerns remain for the ratification of two important international legal instruments: the ILO Convention No 169 and the Nagoya Protocol. However, the new bill introduced by the French Government and its adoption in August 2016 brought significant changes into French domestic legislation.

The new biodiversity law authorises the government to ratify the Nagoya Protocol and undertakes its international commitment. In the continuation of the Rio Convention and the Nagoya Protocol, this law plans a regime on ABS in France. It will fight against biopiracy and guarantee the sharing of profits resulting of the economic exploitation of genetic resources.

[516] Thomas Burelli, 'Les chemins tortueux de la mise en œuvre de la Convention sur la Diversité Biologique dans l'Outre-mer français' (2013) 1 RJE 31

CHAPTER 6. Conclusion

By promoting in an excessive way constitutional principles such as the principle of indivisibility (Article 1 French Constitution), current French domestic legislation seriously limits the recognition of indigenous peoples living in French overseas territories. The French tradition of ignoring issues related to indigenous peoples has led to the development of legal uncertainty, and in return global organisations called on France to undertake domestic political action, particularly with the ratification of the ILO Convention 169. Although some measures have been enacted in New Caledonia recognising the specific status of the Kanak community, these actions rarely happen in the French legal framework. Overall, France does not address specific solutions associated with indigenous peoples and is still hesitant to use the term 'indigenous peoples' or 'native peoples' in their legal texts, preferring to refer them as 'living communities' or 'inhabitants' communities'.

Due to the absence of a regime on access and benefit-sharing in France, French overseas territories (New Caledonia, French Polynesia and French Guiana) developed their own rules to regulate and monitor the access to genetic resources. As a result, French overseas territories are characterised by incomplete and heterogeneous regimes regarding access to genetic resources which fragment their decentralised regulation. French government action in this regard, concerns only the creation of the French Guiana Amazonian Park adopted by the law on *National parks, marine natural reserves and regional natural reserves* in 2006. Despite this legislative framework, it only covers the National Park which represents just 40% of the territory of French Guiana. Thus, bioprospecting activities conducted in the national park must follow requirements and conditions introduced by the National Park Charter.

Numerous bioprospecting activities have been carry out in French Guiana, including the exploitation of natural resources by public bodies, university and cosmetic laboratories. The exploitation of these resources allows for the application for patents in the development of medical treatments, cosmetic products and new innovations

related to biodiversity. In reality some of these have been controversial, causing environmental damages, and have been denounced by practitioners.

Hopefully the Biodiversity law adopted in the summer of 2016 will bring changes and France will finally have a homogeneous legal framework for access and benefit-sharing for both metropolitan France and overseas territories through the ratification and implementation of the Nagoya Protocol. Thus, this law will introduce equal protection for genetic resources users and overseas indigenous and local communities, holders of the resources. The Biodiversity law also covers important aspects of biodiversity preservation and the fight against biopiracy, strengthening rules and implementing new institutions such as the French Agency for Biodiversity.

This case study has illustrated the difficult task, despite the broader recognition of the need to a regime addressing ABS by the international community, of implementing international measures into national domestic legislation. The loss of biodiversity and knowledge became a new issue addressed and recognised in several institutional forums. The genetic resources and associated knowledge of indigenous peoples are of significant value for the understanding of traditional livelihoods, the environment, science, well-being, and their contribution to the live of humanity. This recognition has been reflected in the establishment of international conventions, protocols, guidelines and environmental policies, in an attempt to regulate bioprospecting activities and protect indigenous interests. In this context, indigenous peoples have found support from the UN, WIPO and other bodies in participating and defining their rights, thus giving more visibility and attention to indigenous needs. However, this research demonstrated some limitations inherent in IPRs regimes in the protection of TK. Despite the work and the involvement of the CBD in the protection of TK and preservation of biodiversity, this protection depends on governments adopting effective frameworks protecting indigenous peoples within their domestic regulation.

This research reflected the balance of rights between environmental law and intellectual property law, highlighted the potential tensions between these two areas of law and stressed the importance of global cooperation. Alternative protections of indigenous knowledge have been proposed by the world community with the development of an international *sui generis* system. Digital technologies, such as

databases as a way to document knowledge, are another approach to protecting indigenous heritages, ensure the transmission to future generations and preventing its misappropriation by outsiders. Any documentation shall take into account the involvement of indigenous peoples in the implementation of such documentation, as well as their consent for its disclosure. However, these initiatives have been contested in recent years by the representatives of indigenous people. According to them, the best way to protect and safeguard biodiversity and TK would be in the assertion of the right of self-determination. This would also allow indigenous peoples to develop their own IP mechanisms to monitor their knowledge. The introduction of human rights commitments into current IP rights regimes might challenge IP law, pushing companies and industries to be responsible in commercialising their products in a way which might promote environmental justice.

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