

Questioning the Potential of the Forthcoming WIPO's Diplomatic Conference on Intellectual Property and Genetic Resources: Endless Negotiations Coming to a Successful End?

Marie-Denise Vane*

ABSTRACT

In July 2022, Member States of the World Intellectual Property Organisation (WIPO) agreed to hold a Diplomatic Conference no later than 2024 to conclude an international instrument on genetic resources and associated traditional knowledge. This recent development could bring to an end more than 20 years of negotiations on the matter by the WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge, and Folklore. Indeed, genetic resources and associated traditional knowledge are left unregulated within the intellectual property system and open for misappropriation through Western intellectual property concepts like the public domain. As a result, indigenous and local communities have faced biopiracy and began to demand protection for their traditional knowledge. The draft instrument to be negotiated puts forward a new mandatory international standard of disclosure of origin in relation to genetic resources and associated traditional knowledge. Through an analysis of this proposal, this article questions its potential to become a successful tool to protect traditional knowledge related to genetic resources, reduce its misappropriation, and achieve transparency within the patent system. It will be argued that the proposed instrument may well represent a prudent compromise, but the protection it offers is neither effective nor inclusive and is lacking in ambition.

*LLM (LSE) '23. BCL/JD (McGill University) '21. The views expressed in this article are my own.

INTRODUCTION

In July 2022, Member States of the World Intellectual Property Organization (WIPO) agreed to hold a Diplomatic Conference no later than 2024 for an international instrument on genetic resources (GRs) and associated traditional knowledge (ATK) to be concluded.¹ This recent development could end more than 20 years of negotiations on the matter by the WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge, and Folklore (IGC). Established in 2000, IGC is one of many international fora where the protection of GRs and ATK is being discussed. Such discussions were prompted by the emergence and growth of bioprospecting activities² in developing countries. This resulted in the subsequent appropriation by researchers and companies, through the patent system, of GRs and ATK held by indigenous peoples and local communities (IPLCs), which has been described as ‘colonial theft’.³

¹ WIPO, ‘Assemblies of the Member States of WIPO 63rd Series of Meetings, List of Decisions – 2022’ (GA/63/22/Decisions/E, 2022), 8 <https://www.wipo.int/export/sites/www/about-wipo/en/assemblies/docs/brochure_a63_list_decisions.pdf> accessed 14 September 2023.

² One author defines bioprospecting as ‘the exploration of biological resources primarily for the development of genetic resources for their commercial value’: Susy Frankel, ‘Traditional Knowledge, Indigenous Peoples, and Local Communities’ in Rochelle Dreyfuss and Justine Pila (eds), *The Oxford Handbook of Intellectual Property Law* (Oxford University Press 2017) footnote 8.

³ Martin Fredriksson, ‘Dilemmas of Protection: Decolonising the Regulation of Genetic Resources as Cultural Heritage’ (2021) 27 *International Journal of Heritage Studies* 720, 722 <<https://doi.org/10.1080/13527258.2020.1852295>> accessed 14 September 2023.

Faced with this injustice, developing countries⁴ and IPLCs demanded control over access and use of their GRs and ATK. Notably, for IPLCs, the intellectual property system should enable them to prevent the unauthorised and illicit commercialisation of their traditional knowledge (TK).⁵ This led to the question of TK becoming arguably one of the most pressing issues in the intellectual property world and, thus, the ‘biggest policy and normative challenge’ faced by WIPO so far.⁶ IGC’s work in that context covers three related fronts: TK, GRs, and traditional cultural expressions. However, the forthcoming Diplomatic Conference will only address GRs and ATK. A draft instrument based on the ‘Chair’s Text’ initially prepared by Ian Goss, former Chair of the IGC,⁷ will form the ‘Basic Proposal’ for the Diplomatic Conference. It puts forward a new mandatory international standard of disclosure of origin (DoO) in relation to GRs and ATK.⁸ Through an analysis of this proposal, this article will question the

⁴ Indeed, biodiversity-rich countries where GRs are accessed from, sometimes referred to as provider countries as opposed to user countries, are generally developing countries: Jonathan Carr, ‘Agreements that Divide: Trips vs. CBD and Proposals for Mandatory Disclosure of Source and Origin of Genetic Resources in Patent Applications’ (2008) 18 *Journal of Transnational Law and Policy* 131, 139.

⁵ Naomi Roht-Arriaza, ‘Of Seeds and Shamans: The Appropriation of the Scientific and Technical Knowledge of Indigenous and Local Communities’ (1996) 17 *Michigan Journal of International Law* 919, 955–956.

⁶ Ahmed Abdel-Latif, ‘WIPO and the Traditional Knowledge Conundrum’ in Daniel F. Robinson, Ahmed Abdel-Latif and Pedro Roffe (eds), *Protecting Traditional Knowledge: The WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore* (Routledge 2017) 317. Nonetheless, the appropriateness of the IP system as a solution is itself a contentious issue, notably because its premises of individuality and exclusivity clash with the collective nature of indigeneity: Mauro Barelli, ‘The United Nations Declaration on the Rights of Indigenous Peoples: A Human Rights Framework for Intellectual Property Rights’ in Matthew Rimmer (ed), *Indigenous Intellectual Property: A Handbook of Contemporary Research* (Edward Elgar Publishing 2015) 48, 56.

⁷ IGC, ‘Chair’s Text of a Draft International Legal Instrument Relating to Intellectual Property, Genetic Resources and Traditional Knowledge Associated with Genetic Resources’ (Chair’s Text) (WIPO/GRTKF/IC/43/5, May 3, 2022) <https://www.wipo.int/edocs/mdocs/tk/en/wipo_grtkf_ic_43/wipo_grtkf_ic_43_5.pdf> accessed 14 September 2023.

⁸ IGC, ‘Annex, Draft International Legal Instrument Relating to Intellectual Property, Genetic Resources and Traditional Knowledge Associated with Genetic Resources’

draft instrument's potential to become a successful tool to protect TK related to GRs, reduce its misappropriation, and achieve transparency within the patent system.

Part II first contextualises the discussion by defining the notions of GRs and TK. It explores their current protection, or lack thereof, under international law as well as within the international intellectual property system and, more specifically, patent law. Part III introduces the issue of biopiracy to illustrate how global intellectual property mentalities facilitate misappropriation of GRs and ATK, which has harmful consequences on IPLCs' capacity to adequately use their TK.

In Part IV, IGC's work in the field of TK is discussed in addition to the evolution of its mandate and the process in relation to the 2024 Diplomatic Conference that is now underway. Finally, Part V focuses on the DoO requirement envisaged by the draft instrument and outlines its main characteristics. This final part analyses how the draft instrument supports the protection of TK related to GRs. However, many of its limitations are highlighted, namely the absence of monitoring mechanisms, the lack of IPLCs' mandatory participation in the process, and the avoidance of terminology relating to misappropriation. Ultimately, it is argued that the proposed instrument may well represent a prudent compromise, but the protection of GRs and ATK offered lacks effectiveness, inclusivity, and ambition. By aiming for a solution that would attract support in a Diplomatic Conference and avoid the most contentious

(Draft instrument) (WIPO/GRTKF/IC/SS/GE/23/4, September 8, 2023) art 3
<https://www.wipo.int/edocs/mdocs/tk/en/wipo_grtkf_ic_ss_ge_23/wipo_grtkf_ic_ss_ge_23_decisions.pdf> accessed 14 September 2023.

issues, the draft instrument ends up throwing the baby out with the bathwater. Part VI briefly concludes.

II. GRS, ATK, AND THEIR PLACE WITHIN THE INTERNATIONAL PATENT LAW SYSTEM

The draft instrument defines GRs as ‘genetic material of actual or potential value’, with genetic material referring to ‘any material of plant, animal, microbial or other origin containing functional units of heredity’.⁹ This mirrors the definition found in the Convention on Biological Diversity, a leading instrument addressing the protection of GRs in the context of environmental law.¹⁰ However, the draft instrument deliberately avoids defining TK. At present, no agreed definition exists at the international level. Nonetheless, WIPO’s documentation points to a ‘living body’ of ‘knowledge, know-how, skills, innovations, or practices’ ‘developed, sustained, and passed on from generation to generation’ collectively within IPLCs, who then act as its ‘guardian or custodian’. This ‘living body’ also forms part of their ‘cultural or spiritual identity’.¹¹

Among others, TK is associated with GRs. Indeed, IPLCs hold knowledge about ways to utilise and conserve natural resources. This can, in turn, be relied upon by scientists as a starting point to ‘isolate valuable active compounds within GRs’.¹² Since the use of TK significantly increases the chance

⁹ IGC, ‘Draft Instrument’ (n 8) art 2.

¹⁰ Convention on Biological Diversity (adopted 5 June 1992, entered into force 29 December 1993) 1760 UNTS 79, art 2.

¹¹ WIPO, ‘Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions’ (IP and GRs, TK and TCEs) (WIPO Publication No. 933E, 2020) 13, 20 <<https://www.wipo.int/publications/en/details.jsp?id=4504>> accessed 14 September 2023.

¹² WIPO, ‘IP and GRs, TK and TCEs’ (n 11) 18.

of developing marketable products from GRs such as plant samples,¹³ TK represents an inestimable asset for pharmaceutical companies. Corporate research and development activities are thus often linked to TK.¹⁴ Such appropriation of TK related to GRs contributes to their commercialisation outside of their country of origin and IPLCs that use them as part of their traditional lifestyle. In that way, IPLCs are guardians not only of their TK but also of the very GRs that are the subject of that knowledge.¹⁵

Several international instruments, therefore, seek to protect IPLCs and their TK in relation to GRs. First, the Convention on Biological Diversity establishes that access to GRs rests on states per their sovereign rights over them and needs to be granted on mutually agreed upon terms, subject to prior informed consent, with achievement of fair and equitable benefit sharing.¹⁶ In relation to IPLCs, it provides that their ‘knowledge, innovations and practices’ in relation to ‘the conservation and sustainable use of biological diversity’ should be respected, preserved, and maintained by states. IPLCs’ approval and involvement as well as benefit sharing should also be sought.¹⁷ The Nagoya Protocol on Access and Benefit Sharing to the Convention on Biological Diversity (‘Nagoya Protocol’) implements those aspects of the Convention on Biological Diversity. States must make sure that GRs used within their jurisdiction, and ATK, are accessed

¹³ Chidi Oguamanam, ‘Pressuring “Suspect Orthodoxy”: Traditional Knowledge and the Patent System’ in Matthew Rimmer (ed), *Indigenous Intellectual Property: A Handbook of Contemporary Research* (Edward Elgar Publishing 2015) 320.

¹⁴ Anthony CK Kakooza, ‘Indigenous Knowledge: Bridging with Modern Medicine’ in Srividhya Ragavan and Amaka Vanni (eds), *Intellectual Property Law and Access to Medicines: TRIPS Agreement, Health, and Pharmaceuticals* (Routledge 2021) 446.

¹⁵ Richard G Tarasofsky, ‘The Relationship between the TRIPs Agreement and the Convention on Biological Diversity: Towards a Pragmatic Approach’ (1997) 6 *Review of European, Comparative and International Environmental Law* 148, 150.

¹⁶ Convention on Biological Diversity (n 10) art 15.

¹⁷ Convention on Biological Diversity (n 10) art 8(j).

pursuant to other states' domestic requirements over mutually agreed terms, prior informed consent, and fair and equitable benefit sharing.¹⁸ Some have, however, criticised the Nagoya Protocol for subordinating IPLCs' rights to states' sovereign will. Each state is left free to choose whether to regulate access to its biological resources and whether to allow the exploitation of resources without the consent of IPLCs.¹⁹

Second, the International Treaty on Plant Genetic Resources for Food and Agriculture protects TK through the concept of 'farmers' rights'. It encourages states to take national measures promoting the protection of TK relating to plant GRs for food and agriculture, the equitable sharing of benefits arising from their use, and IPLCs and farmers' participation in national decisions affecting them.²⁰

Third, the United Nations Declaration on the Rights of Indigenous Peoples represents the most important international instrument on indigenous peoples' rights, although it is not legally binding. It clearly links their cultural rights and TK, including TK related to GRs, to their intellectual property rights.²¹ Indeed, article 31 provides that they have the right to 'maintain, control, protect, and develop their intellectual property over such [...] traditional knowledge'.²² Additionally, because TK associated with GRs relates to resources found on indigenous ancestral lands, protection of that TK responds to rights of

¹⁸ Nagoya Protocol on Access and Benefit Sharing to the Convention on Biological Diversity (adopted 29 October 2010, entered into force 12 October 2014) UNEP/CBD/COP/DEC/X/1 (Nagoya Protocol) arts 5-7.

¹⁹ Fredriksson (n 3) 724-725.

²⁰ International Treaty on Plant Genetic Resources for Food and Agriculture (adopted 3 November 2001, entered into force 29 June 2004) 2400 UNTS 303, art 9.

²¹ Barelli (n 6) 61.

²² United Nations General Assembly, 'United Nations Declaration on the Rights of Indigenous Peoples' (UNDRIP) (2 October 2007) Resolution A/RES/61/295, art 31.

indigenous peoples in relation to those lands and resources.²³ Finally, one could link claims to TK and its protection through intellectual property to the right to self-determination found, for example, in article 3 of the United Nations Declaration on the Rights of Indigenous Peoples. IPLCs should be enabled to pursue their own economic, technological, and cultural development,²⁴ which can be affected by the unauthorised use of their TK.²⁵

Does the international intellectual property system similarly promote IPLCs' right to exercise control over their TK? The obvious answer is that it does not.²⁶ The remainder of this section evaluates this claim and addresses the perception of GRs and ATK within the intellectual property system.

Knowledge, in and of itself, is not patentable because patents involve the application of such knowledge to create an invention, and not merely 'abstract ideas', 'discoveries', or 'laws of nature'.²⁷ Similarly, GRs are not intellectual property when they are simply part of nature without human intervention involved. By contrast, inventions based on GRs and ATK, or developed using them, can be protected through patents.²⁸

Patents are negative and exclusive rights entitling the owner to decide who will 'produce, distribute, import, or license a protected good or technological

²³ Barelli (n 6) 59; See for example UNDRIP (n 22) art 25.

²⁴ Laurence R Helfer and Graeme W Austin, *Human Rights and Intellectual Property: Mapping the Global Interface* (Cambridge University Press 2011) 447-448.

²⁵ Barelli (n 6) 58.

²⁶ Tarasofsky (n 15) 150.

²⁷ Frankel (n 2) 778.

²⁸ WIPO, 'IP and GRs, TK and TCEs' (n 11) 24.

process' for a set period of time.²⁹ Patent regimes are national, but the overarching intellectual property framework is to be found in the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).³⁰ Adopted during the establishment of the World Trade Organization (WTO), TRIPS is seen as the most important international instrument on intellectual property rights. It created the first set of minimum protection rules in that area that are all at once comprehensive, enforceable, and *de facto* global; states also ought to implement them domestically.³¹ However, TRIPS does not protect TK, and there is otherwise no international intellectual property instrument providing such protection. This means that there is no minimal standard of protection of TK that must be met by states in their national laws pursuant to TRIPS.

Although it is silent on TK and does not explicitly mention GRs, TRIPS addresses biotechnology patenting. As a general rule, product and process patents must be available for inventions 'in all fields of technology'.³² However, TRIPS's article 27.3(b) permits, but does not mandate, states to exclude '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' from patentable subject matters. There is also a requirement that plant

²⁹ Keith E Maskus, 'Trade-Related Intellectual Property Rights' in Martin Daunton, Amrita Narlikar, and Robert M Stern (eds), *The Oxford Handbook on The World Trade Organization* (Oxford University Press 2012) 395.

³⁰ Although this article addresses GRs and ATK in relation to patents, it should be noted that TRIPS's effects go beyond patents, since the agreement concerns all forms of IP rights.

³¹ Maskus (n 29) 394–396.

³² TRIPS, Annex 1C of the Marrakesh Agreement Establishing the World Trade Organization (adopted 15 April 1994, entered into force 1 January 1995, as amended on 23 January 2017) 1869 UNTS 299, art 27.1.

varieties benefit from protection.³³ This effectively concerns GRs when one recalls the definition of the term per the Convention on Biological Diversity. In 2001, the WTO Ministerial Conference announced the Doha Work Programme, a new round of negotiations on WTO rules. It instructed the TRIPS Council to ‘examine, *inter alia*, the relationship between the TRIPS Agreement and the Convention on Biological Diversity, the protection of traditional knowledge and folklore’.³⁴ Indeed, TRIPS makes biotechnological inventions widely available for patenting through article 27.3(b), but neither addresses prior informed consent or fair and equitable benefit sharing issues nor recognises states’ sovereignty over their GRs.³⁵ Discussions at the WTO have, therefore, also involved the possibility of mandating DoO in relation to GRs and ATK. The same has been considered with regard to disclosure of evidence of prior informed consent and fair and equitable benefit sharing. These discussions have additionally involved incorporating such a requirement into TRIPS itself to align it with the Convention on Biological Diversity.³⁶

Parallel to the possibility of patenting inventions involving GRs and ATK is the concept of the public domain. It refers to any intellectual material that was never, or is no longer, protected by intellectual property rights, and so is available to be used freely by the public.³⁷ It is a construction of the intellectual

³³ TRIPS (n 32) art 27.3(b).

³⁴ WTO, ‘Doha Ministerial Declaration’ (WT/MIN(01)/DEC/1, November 20, 2001) para 19, <https://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.htm> accessed 14 September 2023.

³⁵ Maskus (n 29) 414.

³⁶ Tania Voon, ‘The World Trade Organization, the TRIPS Agreement and Traditional Knowledge’ in Matthew Rimmer (ed), *Indigenous Intellectual Property: A Handbook of Contemporary Research* (Edward Elgar Publishing 2015) 71.

³⁷ IGC, ‘Note on the Meanings of the Term “Public Domain” in the Intellectual Property System with Special Reference to the Protection of Traditional Knowledge and Traditional Cultural Expressions/Expressions of Folklore’ (Note on the Meanings of the

property system that reflects its hypocrisy.³⁸ The intellectual property regime recognises results of 'formal knowledge systems' as property, but labels products of 'informal, traditional systems' as common heritage to mankind.³⁹ However, the notion of the public domain is alien to IPLCs. Indeed, knowledge may be shared and, in that sense, intentionally be made public. However, it does not entail an acceptance by its holders that it will be used unrestrictedly or contradictorily with their culture and values: 'the knowledge is public, but not the domain of all'.⁴⁰ Despite this contestation, TK is deemed part of the public domain. As Ruth L Okediji puts it, this amounts to 'appropriation under the guise of the public domain'.⁴¹ Despite the legitimacy of protection being recognised in the international instruments previously discussed, TK is being '*de facto*' considered 'as freely usable and appropriable'.⁴² However, whether or not TK is part of the public domain is a matter of national determination. Some countries have effectively passed laws granting rights over TK, thus removing it from the public domain.⁴³

In addition to enabling TK's misappropriation, the notion of the public domain limits the possibility of rights-based protection for TK. An invention

Term 'Public Domain') (WIPO/GRTKF/IC/17/INF/8, 24 November 2010) Annex, 1-2, 7, https://www.wipo.int/edocs/mdocs/tk/en/wipo_grtkf_ic_17/wipo_grtkf_ic_17_inf_8.pdf accessed 14 September 2023.

³⁸ IGC (n 37) 19.

³⁹ Roht-Arriaza (n 5) 929.

⁴⁰ Frankel (n 2) 776-777.

⁴¹ Ruth L Okediji, 'Traditional Knowledge and the Public Domain' (Centre for International Governance Innovation Papers No 176, June 2018) 4.

⁴² Carlos M Correa, 'Access to Knowledge: The Case of Indigenous and Traditional Knowledge' in Gaëlle Krikorian and Amy Kapczynski (eds), *Access to Knowledge in the Age of Intellectual Property* (Zone Books 2010) 241.

⁴³ Correa (n 42) 242.

must be ‘new’, ‘involve an inventive step’, and be ‘capable of industrial application’ to be patentable.⁴⁴ The first requirement of novelty is particularly relevant here. The invention must not be known ‘in the body of existing knowledge in the relevant technical field’.⁴⁵ Therefore, this requirement will not be fulfilled if the claim on which the invention is based was already known to the public. It will, in that case, consist of prior art. Prior art represents anything already ‘known or disclosed before the date of the patent application’s filing’, whether it has been ‘published, publicly used, or orally disclosed’.⁴⁶ Protection of TK through the current intellectual property regime may be difficult to obtain in light of this requirement, should one conceive TK as knowledge held collectively and shared among IPLCs’ members, or sometimes with the public as just mentioned.⁴⁷ At the same time, a different kind of protection may be possible through this exclusion from patentability.⁴⁸ This will be discussed later in the article. Moreover, TK might not satisfy the second requirement of non-obviousness. It mandates that the invention not be ‘evident or obvious to a person skilled in the art’.⁴⁹

Although many international instruments promote the protection of GRs and ATK in relation to IPLCs, the international intellectual property regime remains silent on this issue. Instead, it enables the grant of patents on inventions based on GRs and ATK. Through the notion of the public domain, it facilitates

⁴⁴ TRIPS (n 32) art 27.1.

⁴⁵ Mira Burri, ‘Cultural Heritage and Intellectual Property’ in Francesco Francioni and Ana Filipa Vrdoljak (eds), *The Oxford Handbook of International Cultural Heritage Law* (Oxford University Press 2020) 471.

⁴⁶ *ibid.*

⁴⁷ Indeed, this vision gives TK a longstanding public character which equates it to prior art. However, TK as public within IPLCs or consciously shared does not mean that it is not considered sacred for them: IGC (n 37) 2.

⁴⁸ Burri (n 45) 472.

⁴⁹ Burri (n 45) 471.

the appropriation of TK and its exclusion from rights-based protection. The next section explores the impact of this *status quo* on IPLCs.

III. MISAPPROPRIATING THE IN-APPROPRIABLE: THE ISSUE OF BIOPIRACY

Daniel F Robinson describes patent-based biopiracy as the ‘patenting of (often spurious) inventions based on biological resources and/or traditional knowledge that are extracted without adequate authorisation and benefit sharing from other (usually developing)⁵⁰ countries, indigenous or local communities’.⁵¹ This term thus denotes exploitation and injustice.⁵² Biopiracy, then, broadly speaking, refers to the misuse or misappropriation of GRs and ATK.⁵³ One could refer to the ‘unjust enrichment of *outsiders*’ who obtained a benefit through patent law at the expense of IPLCs.⁵⁴ However, misappropriation can be enabled by

⁵⁰ Although cases of biopiracy typically involve developing countries, some IPLCs are located in developed countries such as Canada, Australia, and the United States (US): Daniel F Robinson, ‘Biopiracy and the Innovations of Indigenous Peoples and Local Communities’ in Peter Drahos and Susy Frankel (eds), *Indigenous Peoples' Innovation: Intellectual Property Pathways to Development* (ANU Press 2012) 81.

⁵¹ Daniel F Robinson, *Confronting Biopiracy: Challenges, Cases and International Debates* (Earthscan 2010) 21.

⁵² Robinson, ‘Biopiracy and the Innovations of Indigenous Peoples and Local Communities’ (n 50) 77.

⁵³ Margo A Bagley, ‘Of Disclosure ‘Straws’ and IP System ‘Camels’: Patents, Innovation, and the Disclosure of Origin Requirement’ in Daniel F Robinson, Ahmed Abdel-Latif and Pedro Roffe (eds), *Protecting Traditional Knowledge: The WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore* (Routledge 2017) 87-88.

⁵⁴ Stephen R Munzer and Kal Raustiala, ‘The Uneasy Case for Intellectual Property Rights in Traditional Knowledge’ (2009) 27 *Cardozo Arts and Entertainment Law Journal* 37, 76.

bioprospecting even when prior informed consent and fair and equitable benefit sharing are respected. In some instances, companies have gained interest in IPLCs' TK and sought partnerships in good faith. These companies then disclosed the TK to start a patent application process for an invention based on it, but thereafter lost interest or went bankrupt. This, thus, results in the TK now being accessible to third parties without any means of protection or control.⁵⁵

Therefore, equity concerns play an important role in the debate over TK's protection.⁵⁶ In addition to the exclusionary effect of the intellectual property regime, under which TK is not protected by intellectual property rights, patent obtention further excludes IPLCs by allowing third parties to indirectly obtain rights over their TK.⁵⁷ This can block IPLCs from commercialising their own competing products.⁵⁸ Moreover, GRs and ATK play an important cultural role for IPLCs and should thus be regarded as their cultural heritage. Their decontextualisation through commercialisation by third parties represents an economic injustice as much as a cultural violation.⁵⁹

The well-known case of the Oubli berry illustrates this situation. It was initially used by a Gabonese people to nurse infants and make them 'forget' their mother's milk. An American researcher decided to observe this traditional

⁵⁵ Kakooza (n 14) 457-458. It must be mentioned that successful stories of partnerships and profits-redistribution exist, see for example: Munzer and Raustiala (n 54) 455-457.

⁵⁶ Correa (n 42) 238.

⁵⁷ Daniel Gervais, 'TRIPS, Doha and Traditional Knowledge' (2003) 6 *Journal of World Intellectual Property* 403, 408.

⁵⁸ Gillian N Rattray, 'The Enola Bean Patent Controversy: Biopiracy, Novelty and Fish-And-Chips' (2002) 1 *Duke Law & Technology Review* 1, 1-8.

⁵⁹ Fredriksson (n 3) 722-723.

practice. Their university obtained a European patent⁶⁰ and three US patents⁶¹ when they isolated and reproduced the protein derived from the Oubli berry, which is said to be a thousand times sweeter than sugar and capable of being used as a natural low-calorie sweetener. However, this was done with no recognition or fair and equitable benefit sharing given to the people of Gabon. Moreover, because the protein is now reproduced in laboratories, researchers do not need to collect and cultivate the plant on site. This thus leaves Gabon and its IPLCs totally out of the equation. Since this misappropriation, members of this Gabonese community have lost their source of income. Prices for natural products derived from the Oubli berry fell due to the patented product.⁶² This thereby illustrates that such behaviour from third parties effectively endangers the livelihood and cultural practices of IPLCs concerned.⁶³ Many other examples of alleged biopiracy can, additionally, be found in the literature.⁶⁴

It is true that a patent can be invalidated to correct the injustice. In the case of turmeric, a US patent was granted to turmeric powder in recognition of its wound-healing properties.⁶⁵ This patent, however, was subsequently challenged and revoked. It was demonstrated that the so-called invention consisted of prior art, being already known as TK in India.⁶⁶ However, this was

⁶⁰ Patent 684,995.

⁶¹ Patents 5,326,580, 5,346,998 and 5,527,555.

⁶² WIPO, 'Key Questions on Patent Disclosure Requirements for Genetic Resources and Traditional Knowledge' (Key Questions on PDRs for GRs and TK) (WIPO Publication No. 1047E/19, 2020) 10, <https://www.wipo.int/edocs/pubdocs/en/wipo_pub_1047_19.pdf> accessed 15 September 2023.

⁶³ Kakooza (n 14) 459.

⁶⁴ See for example: Robinson, *Confronting Biopiracy: Challenges, Cases and International Debates* (n 51).

⁶⁵ Patent 5,401,504.

⁶⁶ WIPO, 'IP and GRs, TK and TCEs' (n 11) 23.

the result of a lengthy legal battle financed by the Indian government.⁶⁷ Not all IPLCs have those means, or can hope, to receive such support,⁶⁸ thereby rendering opposition procedures impractical. This has therefore led some to argue that ‘prevention is better than cure’ and to call for reform of the patent system.⁶⁹

Indeed, the patent regime enables biopiracy through its conceptualisation of TK as part of the public domain.⁷⁰ TK is being misappropriated despite being supposedly incapable of private ownership, and precisely because it is understood as publicly available for use. A balance over the protection of TK must then be sought within the intellectual property system to resolve an apparent tension. If TK is left unprotected, IPLCs as holders of that TK are not rewarded but exploited; however, if TK is overprotected through the granting of rights, potential for innovation is limited since the scope of the public domain as a foundation on which innovation is built is reduced.⁷¹ Nevertheless, TK as public domain might not be so alien to its protection. As seen in Part II, protection may not be possible through commodification. Protection might, nonetheless, be possible through preventing such commodification.⁷² Since TK associated with GRs is considered prior art, it should not be capable of appropriation through patents. Such exclusion of third parties is precisely what some IPLCs wish for.⁷³ A mandatory DoO requirement for inventions based on

⁶⁷ John Reid, ‘Biopiracy: The Struggle for Traditional Knowledge Rights’ (2009) 34 *American Indian Law Review* 77, 90.

⁶⁸ Marko Berglund, ‘The Protection of Traditional Knowledge Related to Genetic Resources: The Case for a Modified Patent Application Procedure’ (2005) 2 *SCRIPT*-ed 206, 208.

⁶⁹ Kenneth J Armour and Peter S Harrison, ‘Poisons and Politics – Indigenous Rights and IP Protection’ (2007) 29 *World Patent Information* 255, 257.

⁷⁰ Correa (n 42) 241.

⁷¹ Reid (n 67) 78.

⁷² Voon (n 36) 78.

⁷³ Okediji (n 41) 4.

GRs and ATK could go some way in achieving this protection. Through IGC's work and the upcoming Diplomatic Conference, an international consensus is on the verge of being reached on the matter. The next section turns to this undergoing process.

IV. IGC'S MANDATE: MORE THAN 20 YEARS OF NEGOTIATION AND NOW ON THE HIGHWAY TOWARDS A DIPLOMATIC CONFERENCE

WIPO is built on Western values and promotes Western intellectual property laws.⁷⁴ However, with almost universal membership, it must find ways to involve developing countries and be receptive to their specific concerns. Incorporating TK's protection in its agenda is the representation of such effort.⁷⁵ From 1998, WIPO undertook fact-finding missions on TK and its relation to intellectual property, which eventually led to the creation of IGC. Since it was initially perceived as a 'forum for discussion',⁷⁶ it published numerous informative pieces of literature on TK and related issues, as well as fostered policy discussions. WIPO also helped develop search systems to provide information on TK to be used in patent examinations. For example, the International Patent Classification

⁷⁴ Sara Bannerman, 'The World Intellectual Property Organization and Traditional Knowledge' in Matthew Rimmer (ed), *Indigenous Intellectual Property: A Handbook of Contemporary Research* (Edward Elgar Publishing 2015) 83, 87-88.

⁷⁵ Abdel-Latif (n 6) 318-319. Another perception is that this process rather perpetuates IPLCs' subjugation to, and marginalisation from, the only 'modern' legal system: Bannerman (n 74) 88, 93-94.

⁷⁶ Wend Wendland, 'The Evolution of the IGC from 2001 to 2016: An Insider's Perspective' in Daniel F Robinson, Ahmed Abdel-Latif, and Pedro Roffe (eds), *Protecting Traditional Knowledge: The WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore* (Routledge 2017) 34, 37.

used by patent examiners to find technical information was expanded to include more data on TK.⁷⁷

The focus changed in 2009 when IGC was tasked with developing one or more international instruments. Text-based negotiations began in 2010, which had a designated aim to provide *sui generis* protection for TK with an instrument specifically designed and adopted to address the issue.⁷⁸ Wend Wendland, director of WIPO's TK Division, views this shift as mirroring the high ambitions of *demandeurs* countries⁷⁹ to achieve a binding and normative outcome. *Non-demandeurs* countries, however, argued that draft proposals and negotiations were premature because a common understanding of essential questions was still lacking.⁸⁰ Over the past decade, WIPO has indeed pursued its information and consultation activities in parallel with text-based negotiations. From another perspective, it is also questionable whether an instrument of international law can ever constitute an appropriate means of addressing issues pertaining to IPLCs' sovereignty over their TK. This is because the global legal system was formed 'by and for sovereign states and colonial empires' and contributed historically to IPLCs' disempowerment. Indeed, since international conventions are implemented through national laws, the state is thereby seen as the 'only legitimate source of law'.⁸¹ This presupposes the supremacy of states' independence and self-agency over that of IPLCs situated within sovereign nations. Ultimately, since

⁷⁷ WIPO, 'IP and GRs, TK and TCEs' (n 11) 36.

⁷⁸ WIPO, 'IP and GRs, TK and TCEs' (n 11) 36, 44.

⁷⁹ WIPO Member States are divided on the question of protection of GRs, TK and traditional cultural expressions. In that context, *demandeurs* countries refer to those arguing the need for binding international instruments on the matter whereas *non-demandeurs* have resisted the introduction of new international intellectual property rules: Wendland (n 76) 31.

⁸⁰ Wendland (n 76) 31-32, 34, 37.

⁸¹ Fredriksson (n 3) 726.

it is the state that possesses authority over matters related to IPLCs' interests independently of indigenous laws, the protection of GRs and ATK through international law perpetuates this hierarchy.

In terms of substance, deliberations over protection have evolved around two approaches: positive and negative/defensive. On the one hand, positive protection involves IPLCs acquiring intellectual property rights over their TK as an intellectual asset⁸² and controlling access to its use through, for example, prior informed consent and fair and equitable benefit sharing.⁸³ On the other hand, negative or defensive protection is about preventing third parties to the communities from illegitimately acquiring such rights.⁸⁴ Current negotiations involve three different draft texts mirroring the three items discussed at IGC. The draft provisions in relation to TK and traditional cultural expressions contemplate granting positive protection to IPLCs through moral and economic rights.⁸⁵

In relation to GRs, the draft instrument aims to prevent the erroneous patenting of inventions based on GRs and ATK that do not meet requirements of novelty and inventiveness;⁸⁶ it thereby involves defensive protection. Such protection responds to the IPLCs' vision of TK as the subject of guardianship responsibilities, rather than as an object of ownership claims.⁸⁷ It also provides timeless protection which should, in theory, be privileged over time-limited

⁸² WIPO, 'IP and GRs, TK and TCEs' (n 11) 22.

⁸³ Kakooza (n 14) 453-454.

⁸⁴ WIPO, 'IP and GRs, TK and TCEs' (n 11) 22.

⁸⁵ WIPO, 'Draft Provisions/Articles for the Protection of Traditional Knowledge and Traditional Cultural Expressions, and IP & Genetic Resources'
<https://www.wipo.int/tk/en/igc/draft_provisions.html#consultations> accessed 12 July 2023.

⁸⁶ IGC, 'Draft Instrument' (n 8) art 1(b).

⁸⁷ Frankel (n 2) 763.

protection like that offered by patents.⁸⁸ Discussions on GRs have involved disclosure requirements related to not only the source of GRs and ATK, but also evidence of prior informed consent and fair and equitable benefit sharing. A previous draft text on GRs considered positive protection in that sense.⁸⁹ The current draft instrument is less ambitious in many other ways, as will be argued in the next section. Nonetheless, it will form the basis for negotiations at the Diplomatic Conference.

A binding international instrument might be reached after almost 25 years of negotiations and uncertainty as to whether IGC would produce a binding treaty or merely soft recommendations. Nevertheless, it is important to note that Diplomatic Conferences typically aim to conclude multilateral treaties.⁹⁰ IGC met in a Special Session in early September 2023. They considered the latest proposal — the Chair’s Text — and any other delegations’ proposals with a view to further harmonising the draft text. IGC agreed on revisions to substantive articles of the Chair’s Text, although most of the text remains unchanged. They transmitted a revised version to the Preparatory Committee to the Diplomatic Conference to be considered as the final draft instrument. A Diplomatic Conference hosted by South Africa will then be held no later than 2024. Negotiations will be dedicated

⁸⁸ Munzer and Raustiala (n 54) 52, 58.

⁸⁹ IGC, ‘Consolidated Document Relating to Intellectual Property and Genetic Resources’ (Consolidated Document) (WIPO/GRTKF/IC/43/4, March 31, 2022) art 4.2
<https://www.wipo.int/edocs/mdocs/tk/en/wipo_grtkf_ic_42/wipo_grtkf_ic_42_facilitators_text_grs_rev_2.pdf> accessed 14 July 2023.

⁹⁰ WIPO, ‘WIPO Member States Approve Diplomatic Conferences for Two Proposed Accords’ (2022)
<https://www.wipo.int/pressroom/en/articles/2022/article_0009.html> accessed 14 July 2023.

to the adoption of the draft instrument's proposal for a new mandatory international DoO requirement in relation to GRs and ATK.⁹¹

V. WOULD THE DRAFT INSTRUMENT'S ADOPTION BRING IGC'S ENDLESS NEGOTIATIONS ON GRs AND ATK TO A SUCCESSFUL END?

i. The draft instrument's proposal

In addition to preventing the grant of erroneous patents, the draft instrument aims to enhance the 'efficacy, transparency and quality' of the patent system regarding GRs and ATK.⁹² This transparency measure takes the form of a new DoO requirement in relation to GRs and ATK. It would be mandatory,⁹³ but non-retroactive subject to existing national legislation.⁹⁴ An applicant would now have to disclose the country of origin of the GRs (i.e., the country from which they were obtained and that possesses them in *in situ* conditions) and/or the IPLC that provided ATK.⁹⁵ If this information is not known or does not

⁹¹ WIPO, 'IGC Special Session Summary' <https://www.wipo.int/diplomatic-conferences/en/genetic-resources/news/2023/news_0003.html> accessed 13 September 2023. See also: WIPO, 'List of Decisions – 2022' (n 1).

⁹² IGC, 'Draft Instrument' (n 8) art 1.

⁹³ IGC, 'Draft Instrument' (n 8) arts 3.1–3.2. The word 'shall' is used whereas a previous draft text referred to 'shall/should': IGC, 'Consolidated Document' (n 89) art 4.

⁹⁴ IGC, 'Draft instrument' (n 8) art 5.

⁹⁵ IGC, 'Draft instrument' (n 8) arts 2, 3.1–3.2. See also: IGC, 'Chair's Text' (n 7) Notes on article 3. The notes prepared by Ian Goss, the Chair's Text's drafter, on some of the Chair's Text's provisions remain relevant and will be published as an information document for the Diplomatic Conference. Furthermore, the draft instrument is sensible to the protection of confidential information (art 3.6), but information about a material's location is itself confidential and represents an important trade secret which a DoO requirement threatens: Maskus (n 29) 415. This might be a legitimate concern about any DoO, although further discussion on this goes beyond the scope of this article. The focus is on the proposal rather than general arguments in favour or against DoO.

apply, any source of the GRs and/or ATK needs to be disclosed.⁹⁶ Examples are GRs obtained in high seas or if an IPLC wishes for anonymity.⁹⁷ If the information is completely unknown, a declaration to that effect is required instead.⁹⁸ Such an exception is perceived as essential to ensuring fairness and legal certainty for patent applicants who legitimately do not possess the relevant information.⁹⁹ However, this should arise only in exceptional circumstances, such as destruction of the relevant documentation by *force majeure*.¹⁰⁰

The draft instrument likewise seeks to counteract the issue of determining which provider country or IPLC would have a valid claim in respect to the GRs or ATK when they could have been accessed in multiple territories and through many IPLCs. It is explained that the requirement points to ‘the country from which that GR was actually obtained (of which there can only be one in respect of each GR)’ and the precise ‘holder of that knowledge from which it was accessed or learned’.¹⁰¹ In that sense, and as will be developed further in this last part, the draft instrument heavily relies on patent applicants’ good faith and authenticity. With that point in mind, the solution envisaged seems satisfying in relation to GRs because a patent applicant can retrace the specific country from which the GRs were obtained from its supply chain. However, a fairness issue may arise in relation to IPLCs. If the ATK is *shared* by many, and seen as collectively held rather than individually or even communally *owned*, why should

⁹⁶ IGC, ‘Draft instrument’ (n 8) arts 2, 3.1-3.2.

⁹⁷ IGC, ‘Chair’s Text’ (n 7) Notes on article 3.

⁹⁸ IGC, ‘Draft instrument’ (n 8) art 3.3.

⁹⁹ Martin A Girsberger, ‘Transparency Measures under Patent Law Regarding Genetic Resources and Traditional Knowledge: Disclosure of Source and Evidence of Prior Informed Consent and Benefit-Sharing’ (2004) 7 *Journal of World Intellectual Property* 451, 476.

¹⁰⁰ IGC, ‘Chair’s Text’ (n 7) Notes on article 3.

¹⁰¹ *ibid*.

only one IPLC be acknowledged in the patent application? This flaw might, however, turn out to be in line with IPLCs' approach to TK. Indeed, it focuses the protection on the disclosure of the TK itself, rather than on all IPLCs concerned. As already discussed, IPLCs' relationship with TK is one of guardianship, rather than ownership.¹⁰² As such, an international instrument providing for a DoO requirement in relation to TK which only ensures that its use is disclosed is not unsuitable. This is so even though every IPLC could have provided it.

The draft instrument does not make mention of any geographical limitations. In comparison, a previous negotiating text included a provision on reciprocity. Although parties could have chosen to mandate disclosure only for GRs and ATK emanating from other Parties to the instrument,¹⁰³ the draft instrument makes protection global. Nonetheless, the scope of protection is delimited, with disclosure applying only to inventions 'materially' or 'directly' based on GRs and/or ATK.¹⁰⁴ Disclosure is thus required only when GRs and/or ATK were 'necessary or material to the development of the claimed invention', and the latter 'depend[s] on the specific properties' of the GRs and/or ATK.¹⁰⁵ Since a causal link must exist that renders the GRs and ATK indispensable to make the invention,¹⁰⁶ this trigger implies the narrowest scope possible and focuses on the invention itself. If the disclosure was related to the 'utilisation' of GRs and ATK, then it could encompass anything used during the research and

¹⁰² Frankel (n 2) 763.

¹⁰³ IGC, 'Consolidated Document' (n 89) art 7.

¹⁰⁴ IGC, 'Draft instrument' (n 8) arts 3.1-3.2. The choice of words has yet to be agreed upon.

¹⁰⁵ IGC, 'Draft instrument' (n 8) art 2.

¹⁰⁶ IGC, 'Chair's Text' (n 7) Notes on article 3.

development phase. This, however, would make the scope of the instrument too wide insofar as it would burden patent applicants.¹⁰⁷ It was therefore instead stressed that any DoO requirement should not have to be fulfilled with ‘unreasonable time and effort’.¹⁰⁸ This respects TRIPS’s requirement that conditions for the ‘acquisition or maintenance’ of intellectual property rights consist of ‘reasonable procedures and formalities’.¹⁰⁹

Compatibility with TRIPS is overall an important issue.¹¹⁰ A procedural DoO requirement that consists of a mandatory formal step in the patent process rather than of a patentability condition does not represent a direct conflict with TRIPS.¹¹¹ TRIPS’s silence on the matter can indeed be interpreted as mandating the issuance of patents without an additional substantive requirement. Article 27.1 would then represent a closed list of patentability requirements.¹¹² However, others take the view that mandatory DoO would not result in a conflict: states are permitted to offer more protection than what the instrument is set for, and, thus, to go over what can be seen as minimum patentability criteria.¹¹³ Accordingly, national laws could legitimately require patent applicants to disclose GRs and ATK’s origin as an additional condition for an invention to be patentable. Exceeding TRIPS’s minimum standards in this way would advantage IPLCs in their claim for GRs and ATK’s protection. This view is at odds with an

¹⁰⁷ Donna O Perdue, ‘Patent Disclosure Requirements Related to Genetic Resources: The Right Tool for the Job?’ (2017) 36 *Biotechnology Law Report* 285, 293.

¹⁰⁸ IGC, ‘Chair’s Text’ (n 7) Notes on article 3.

¹⁰⁹ TRIPS (n 32) art 62.1.

¹¹⁰ Claudio Chiarolla, ‘Intellectual Property from a Global Environmental Law Perspective: Lessons from Patent Disclosure Requirements for Genetic Resources and Traditional Knowledge’ (2019) 8 *Transnational Environmental Law* 503, 517.

¹¹¹ Oguamanam (n 13) 331.

¹¹² Girsberger (n 99) 465.

¹¹³ Frankel (n 2) 774.

understanding of intellectual property protection as benefiting the holders of intellectual property rights'. Nonetheless, for the very first time, more protection could mean less protection for those 'traditional beneficiaries' of the regime¹¹⁴ as well as the new category of beneficiaries, IPLCS. In any case, the draft instrument's requirement is procedural in nature. Revocation is not a consequence of non-disclosure or erroneous disclosure, except in cases of fraud. Additionally, the substantive content of the disclosure is not examined.¹¹⁵ The proposal, therefore, seems in accordance with TRIPS.¹¹⁶

Finally, in relation to non-compliance, patent applicants must be given an opportunity to rectify incomplete or incorrect disclosures before any sanction can be applied.¹¹⁷ Dispute mechanisms must be put in place, and the choice of appropriate, effective, and proportionate sanctions is left to national legislators.¹¹⁸ It could thus encompass sanctions in civil, administrative, or criminal law, a stay in the application until compliance or deemed withdrawal in cases of non-compliance. However, as mentioned, revocation is not a possible consequence unless there has been fraudulent intent.¹¹⁹ This could encourage apathy towards DoO. Indeed, the patent will only be rendered enforceable if an additional breach

¹¹⁴ Abdel-Latif (n 6) 321.

¹¹⁵ IGC, 'Draft Instrument' (n 8) arts 3.5, 6.3–6.4. See: WIPO, 'Key Questions on PDRs for GRs and TK' (n 62) 23.

¹¹⁶ Though one issue remains for some commentators through TRIPS's article 27.1 and the prohibition on discrimination. Patents must be available and patent rights enjoyable 'without discrimination' as to the field of technology. A DoO of GRs and ATK targets biotechnological inventions dependent on GRs which for some amounts to discrimination: Dominic Muyldermans, 'Genetic Resources, Traditional knowledge and Disclosure Obligations: Some Observations from the Life Science Industry' in Daniel F Robinson, Ahmed Abdel-Latif, and Pedro Roffe (eds), *Protecting Traditional Knowledge: The WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore* (Routledge 2017) 233.

¹¹⁷ IGC, 'Draft Instrument' (n 8) arts 3.4, 6.2.

¹¹⁸ IGC, 'Draft Instrument' (n 8) arts 6.1, 6.5.

¹¹⁹ IGC, 'Draft Instrument' (n 8) arts 6.3–6.4.

of the law beyond non-disclosure is committed and caught by patent authorities. Therefore, the perspective of profiting from an invention materially or directly based on GRs and/or ATK without opening the door to fair and equitable benefit sharing agreements might outweigh the risk of refraining from disclosing GRs and ATK's origin. It is argued that only invalidation of non-compliant patent applications would be a proper deterrent.¹²⁰ Others object that, on the contrary, only the absence of such possibility would avoid unwanted post-grant uncertainty¹²¹ and ensure that fair and equitable benefit sharing arrangements can be carried out.¹²²

ii. Harmonisation and recognition: two important achievements

The proposal found in the draft instrument and outlined above accomplishes two main markers of progress. First, it harmonises currently diversified national DoO requirements. Second, by establishing a new international standard, it contributes to the recognition of TK related to GRs as valuable prior art held by IPLCs.

Some thirty countries have already adopted legislation on DoO for patents involving GRs and ATK.¹²³ Companies and researchers around the world already need to comply with such a requirement in some countries to obtain a patent. Nonetheless, national and regional laws currently differ in terms of scope, triggers, and consequences for non-compliance. For example, some countries

¹²⁰ Carr (n 4) 153.

¹²¹ Bagley (n 53) 97.

¹²² IGC, 'Chair's Text' (n 7) Notes on article 6.

¹²³ WIPO, 'Disclosure Requirements Table' (1 December 2022)

<https://www.wipo.int/export/sites/www/tk/en/docs/genetic_resources_disclosure.pdf> accessed 15 September 2023.

address DoO of GRs but not of ATK. Those are mostly European countries like Belgium, Denmark, and Germany that might not have an important IPLCs' presence. Others only mandate DoO of GRs and ATK originating in their own territory. This negates protection for IPLCs located in different countries, but from which GRs and ATK could originate.¹²⁴ Some require disclosure of evidence of prior informed consent and fair and equitable benefit sharing while others do not. The language regarding sanctions is also not uniform, from silence on specific repercussions, to a variety of options going from revocation to fines. The same divergence applies to triggers.

Establishing a binding international minimum threshold to be met by states, therefore, helps reduce the current heterogeneity in patent disclosure requirements as well as consequences for non-compliance. This, in turn, renders protection more effective¹²⁵ and enhances legal certainty.¹²⁶ However, the draft instrument results in harmonisation rather than uniformity. Indeed, it adopts a flexible approach. The established minimum international standard allows significant latitude in national implementation. For example, the draft instrument subjects the revocation of a patent for a failure to disclose evidence of fraudulent intent.¹²⁷ Apart from this new rule, states are asked to implement 'appropriate, effective and proportionate legal, administrative, and/or policy measures' when an applicant fails to disclose the GRs and ATK' origin.¹²⁸ Post-grant revocation is now generally prohibited, but states are still left free to choose from a range of

¹²⁴ Chiarolla (n 110) 514.

¹²⁵ Chiarolla (n 110) 506.

¹²⁶ Bagley (n 53) 98.

¹²⁷ IGC, 'Draft Instrument' (n 8) arts 6.3–6.4.

¹²⁸ IGC, 'Draft Instrument' (n 8) art 6.1.

appropriate sanctions as already discussed. Another example is that ATK was defined in a previous draft text,¹²⁹ whereas the current draft instrument leaves it to national interpretation.¹³⁰ Certainty might be gained from an internationally agreed upon definition of TK¹³¹ but, as Susy Frankel points out, TK's understanding may vary among IPLCs. This supports the position of refraining from defining the term in detail at the international level.¹³² Nonetheless, it could be broadly contextualised. For example, instead of being listed as a term to be decisively defined in the instrument, the preamble could still 'recognise' TK. It could mirror the way WIPO generally refers to TK while specifying that TK may be understood differently across IPLCs. This would provide guidance while allowing scope for differentiation in compliance at the national level.¹³³ Indeed, a lack of guidance and uniformity adds to the argument made by some that a new DoO requirement would only add uncertainty within the patent system and thereby reduce investments and innovation.¹³⁴

At the same time, the draft instrument's flexibility might be precisely the only way to reach a consensus at this point in the negotiations. Permitting state differentiation in an international instrument on the protection of GRs and ATK also appears inevitable as the subject area is so closely related to IPLCs. Individual countries are better placed than the international community to assess national circumstances and regulate local needs because there exists an important diversity among IPLCs. For instance, Amnesty International reports that people self-identifying as Indigenous are spread across more than 90 countries and belong to

¹²⁹ IGC, 'Consolidated Document' (n 89) art 1.

¹³⁰ See: IGC, 'Chair's Text' (n 7) Notes on article 2.

¹³¹ Voon (n 36) 73.

¹³² Frankel (n 2) 768.

¹³³ *ibid.*

¹³⁴ Muyldermans (n 116) 235.

more than 5000 different indigenous peoples.¹³⁵ Moreover, an instrument aiming for international homogeneity would contradict the approach of the current intellectual property system, which is to subject intellectual property laws to state sovereignty while providing for an overarching framework through TRIPS. The draft instrument follows this balance. It allows for discretion in national implementation of the new mandatory DoO requirement. However, triumphing over *non-demandeurs* countries' lasting opposition, the forthcoming establishment of such a norm inevitably signifies an international consensus that the intellectual property system should contribute to the protection of GRs and ATK. In any case, the proposed international requirement undoubtedly provides both 'a floor and a ceiling' on the scope of protection. This ultimately contributes to certainty and will even result in 'a ratcheting back of some of the most onerous national provisions', thus signifying harmonisation.¹³⁶

The draft instrument also represents an international declaration of TK as prior art, and most importantly, as needing to be recognised as such and, thus, not open for misappropriation. The current disclosure requirement asks that a patent applicant shares the invention 'in a manner sufficiently clear and complete for the invention to be carried out by a person skilled in the art'.¹³⁷ Disclosing the source of GRs and ATK is usually not mandated under this conventional duty of disclosure because this information is not needed to enable the invention.¹³⁸ Transparency as central to the patent system is then about enabling comprehensiveness of the proposed invention. Disclosure goes at the core of patents' justification when it is about scientific and technological progress and

¹³⁵ Amnesty International, 'Indigenous peoples' <<https://www.amnesty.org/en/what-we-do/indigenous-peoples/>> accessed 14 September 2023.

¹³⁶ Bagley (n 53) 98.

¹³⁷ TRIPS (n 32) art 29.1.

¹³⁸ Chiarolla (n 110) 511.

ensuring further innovation.¹³⁹ However, it is also about fairness and justice. Disclosure implies that the intellectual property system will not tolerate granting a monopoly for an invention that already exists.¹⁴⁰ An additional DoO of GRs and ATK relates in that way to the existing condition of novelty. It would enable relevant prior art to be considered by patent examiners, ensuring that patents are not granted where there is a lack of novelty.¹⁴¹ Therefore, the additional proposed DoO distances itself from effectiveness justifications to further promote fairness.

Indeed, acknowledgment in and of itself matters. The connection between TK and the alleged patentable invention as the final marketable product must be disclosed and scrutinised. Moral recognition is an objective given for the protection of TK.¹⁴² In that sense, imposing a mandatory DoO requirement can represent a ‘clear political sign’ from the international community.¹⁴³ Arguably, the draft instrument signals that recognition must be at the centre of the international approach to patent applications in relation to GRs and ATK. TK that is material to an invention must be openly linked back to its holders. However, as will be argued in the remainder of this article, the draft instrument might not go further than signalling such recognition, falling short of achieving protection.

¹³⁹ WIPO, ‘Key Questions on PDRs for GRs and TK’ (n 62) 10.

¹⁴⁰ Graeme Laurie, ‘Should There Be an Obligation of Disclosure of Origin of Genetic Resources in Patent Applications? – Learning Lessons from Developing Countries’ (2005) 2 SCRIPT-ed 265, 269.

¹⁴¹ WIPO, ‘Key Questions on PDRs for GRs and TK’ (n 62) 12.

¹⁴² Correa (n 42) 248.

¹⁴³ Girsberger (n 99) 477.

iii. Lack of ambition nonetheless: the draft instrument's failure to achieve effective and meaningful TK protection

The Chair's Text's introductory remarks mentioned that an international instrument on GRs and ATK would aim to achieve a balance between the rights and interests of GRs' users and those of providers and TK's holders. Effectively, according to the current draft instrument's preamble, it would be to their mutual benefit. This can be questioned considering that, in many ways, both the Chair's Text and the draft instrument appear less ambitious than a previous negotiating text, the Consolidated Document. The latter was nonetheless given up in anticipation of the Diplomatic Conference. This indicates a strategic move by Member States. Expectations of *demandeurs* countries are lowered in the hope of gaining the support of *non-demandeurs* on the basic DoO proposal and, thus, achieving successful negotiations through a binding outcome. However, this results in significant regression in the substantive content of the negotiating text. The draft instrument does not mandate monitoring mechanisms from national patent offices or at the international level that would ensure accuracy in disclosure or at least an effective opportunity for scrutiny by developing countries and IPLCs. The draft instrument also does not include IPLCs as stakeholders with explicit special interests and mandatory participating rights in the DoO process, albeit their central role in the overall discussion on GRs and ATK. Moreover, any language on misappropriation is completely removed from the draft instrument which negates the clear connection that exists between patent law and biopiracy.

This section discusses those limitations in turn.

A. A lack of monitoring mechanisms

The draft instrument specifies that patent offices shall have no obligation to verify the authenticity of the disclosed information.¹⁴⁴ Parties are also merely encouraged to develop information systems on GRs and ATK.¹⁴⁵ Establishing, operating, and updating databases indeed generate significant procedural and time costs.¹⁴⁶ It is comprehensible that the proposal does not mandate it, as it wishes to be cautious on creating overly burdensome transaction costs and aims for practical and easy implementation.¹⁴⁷ However, without verification and monitoring of disclosure, DoO is less effective in increasing transparency and tracking GRs' use.¹⁴⁸ Moreover, without information systems, developing countries and IPLCs might not be informed about patent applications involving the use of GRs and ATK with which they are connected.¹⁴⁹

Databases should, therefore, be considered a necessary tool to complement a DoO. They represent documented evidence of TK as prior art.¹⁵⁰ India's Traditional Knowledge Digital Library, established in 2001, is one example of such registers used by patent examiners worldwide to search for prior art. The delegations of Canada, Japan, the Republic of Korea, and the US have already recommended the implementation of a one-click database search system. Each

¹⁴⁴ IGC, 'Draft Instrument' (n 8) art 3.5.

¹⁴⁵ IGC, 'Draft Instrument' (n 8) art 7.1.

¹⁴⁶ WIPO, 'Key Questions on PDRs for GRs and TK' (n 62) 53.

¹⁴⁷ IGC, 'Chair's Text' (n 7) Notes on article 1.

¹⁴⁸ Alison Hoare and Richard Tarasofsky, 'Asking and Telling: Can "Disclosure of Origin" Requirements in Patent Applications Make a Difference?' (2007) 10 *Verwaltungsgerichtsordnung mit Nebengesetzen* 149, 158.

¹⁴⁹ WIPO, 'Key Questions on PDRs for GRs and TK' (n 62) 47-48.

¹⁵⁰ Oguamanam (n 13) 327.

participating Member State would maintain a national database accessible through a central WIPO Portal Site by patent examiners and authorised parties only.¹⁵¹ This was presented as an alternative to a DoO requirement but would prove helpful as a complementary measure. While the Consolidated Document mentioned this proposal,¹⁵² the draft instrument only allows the possibility of it being discussed later by the Assembly of the Parties.¹⁵³ It is submitted that this is an oversight. A central and independent database like the WIPO Portal Site would provide immediate ‘authority, completeness and ease of searching’.¹⁵⁴ At the very least, the draft instrument should mandate the development of national information systems.

Furthermore, it is said that patent examiners are not asked to verify disclosures for two reasons: because they do not possess the inherent expertise, and because doing so would create unreasonable processing delays.¹⁵⁵ This offers a compelling argument for databases insofar as their use can reduce the burden on patent examiners should they be asked to verify the information disclosed.¹⁵⁶ Also, making the information available, through a database, to designated authorities in provider countries and to representatives of ILPCs would allow

¹⁵¹ IGC, ‘Joint Recommendation on the Use of Databases for the Defensive Protection of Genetic Resources and Traditional Knowledge Associated with Genetic Resources’ (WIPO/GRTKF/IC/31/6, 23 August 2016) <https://www.wipo.int/edocs/mdocs/tk/en/wipo_grtkf_ic_31/wipo_grtkf_ic_31_6.pdf> accessed 14 September 2023.

¹⁵² IGC, ‘Consolidated Document’ (n 89) art 10.4.

¹⁵³ IGC, ‘Draft Instrument’ (n 8) art 7.3(d).

¹⁵⁴ Armour and Harrison (n 69) 257-258.

¹⁵⁵ IGC, ‘Chair’s Text’ (n 7) Notes on article 3.

¹⁵⁶ Carr (n 4) 149.

scrutiny from them. This could present a satisfying alternative to an obligation placed on patent offices.

Nonetheless, this proposal presents several difficulties. First, databases and their facilitated access may increase the risk of appropriation of the displayed TK. Second, their creation is expensive and complicated by the abundance of TK. Finally, they involve a fairness issue when IPLCs are invited to share their TK without receiving monetary compensation in return.¹⁵⁷

Regardless, these concerns can be addressed. Disclosure of GRs and ATK through the DoO requirement or databases has been described as a double-edged sword.¹⁵⁸ Sharing TK might be inconsistent with its secret and sacred nature for IPLCs.¹⁵⁹ Additionally, TK is part of the public domain and is free to use once shared. However, a database accessible worldwide but exclusive to patent examiners could mitigate the risk of misappropriation. Moreover, while these databases might not directly financially benefit IPLCs, they can empower them. This can be done by drawing attention to relevant TK and attracting interest for potential partnerships, as well as fair and equitable benefit sharing agreements,¹⁶⁰ promoting equity and innovation.

However, since the Diplomatic Conference might firmly oppose mandating national databases and the creation of a WIPO Portal Site, an alternative exists in the form of required disclosure. This can come in many forms. Possible options could include disclosure of information accompanied by an

¹⁵⁷ Reid (n 67) 92-94.

¹⁵⁸ Munzer and Raustiala (n 54) 81-82.

¹⁵⁹ Kakooza (n 14) 452.

¹⁶⁰ Oguamanam (n 13) 329.

applicant's declaration as to its accuracy and due diligence in research. Likewise, accompanied documentary information, such as international certificates of origin, could be a viable alternative.¹⁶¹ This should be specified in the draft instrument, especially since mandating disclosure would enhance the credibility of the information made public.

B. Out of sight, out of mind: IPLCs' absence in the draft instrument

The participation of IPLCs in IGC's work has been a constant preoccupation. This is important as the interests of the other groups involved — namely developed countries, developing countries, private industry, and non-governmental organisations — might conflict with those of IPLCs.¹⁶² Furthermore, since WIPO is involved in a top-down process that will affect IPLCs, WIPO has a responsibility towards IPLCs to ensure their voices are heard.¹⁶³ With that concern in mind, IGC's sessions start with panel presentations from IPLC representatives. The WIPO Voluntary Fund for Accredited Indigenous and Local Communities was also established in 2005 to finance their presence.¹⁶⁴ However, IPLCs are not fully integrated: while observers like them may participate in debates at the invitation of IGC's Chair, only delegations from WIPO Member States can submit proposals, amendments or motions, and vote

¹⁶¹Joshua D Sarnoff and Carlos M Correa, 'Analysis of options for implementing disclosure of origin requirements in intellectual property applications' (UNCTAD/DITC/TED/2005/14, 2006) 46 <https://unctad.org/system/files/official-document/ditcted200514_en.pdf> accessed 14 September 2023.

¹⁶²Owen Morgan, 'Assessing the Work of the WIPO IGC' (2014) 36 *European Intellectual Property Review* 319, 320-321.

¹⁶³Morgan (n 162) 322.

¹⁶⁴WIPO, 'IP and GRs, TK and TCEs' (n 11) 47.

on them.¹⁶⁵ This makes it difficult for IPLCs to correct their absence from the draft instrument.

The preamble of the Consolidated Document reaffirmed obligations deriving from the United Nations Declaration on the Rights of Indigenous Peoples and countries' commitment to achieve its objectives. It mentioned IPLCs' 'rights' over GRs and ATK. This previous draft text also included instances of IPLCs' participation that Parties were to respect,¹⁶⁶ and even considered economic compensation for concerned IPLCs as a post-grant sanction for non-compliance.¹⁶⁷ Finally, it affirmed the priority of the United Nations Declaration on the Rights of Indigenous Peoples in cases of conflict.¹⁶⁸ IPLCs were, therefore, placed at the forefront of any agreement to be reached on GRs and ATK: they were viewed as important actors to be consulted and respected. In contrast, the draft instrument only acknowledges the United Nations Declaration on the Rights of Indigenous Peoples in its preamble. Apart from that, IPLCs are mentioned in the document to mandate their disclosure as a source of ATK, as well as to suggest their consultation for the establishment of databases and access safeguards.

IPLCs should instead be integrated in national DoO processes. For now, the draft instrument merely recommends that countries develop information systems and appropriate safeguards for their access 'in consultation' 'where applicable' with IPLCs and other stakeholders, 'taking into account their national circumstances'.¹⁶⁹ Soft and ambiguous language like this provides greater leeway

¹⁶⁵ WIPO, 'General Rules of Procedure of WIPO' (*WIPO*, 2023) rules 24 and 39 <https://www.wipo.int/policy/en/rules_of_procedure.html> accessed 12 July 2023.

¹⁶⁶ IGC, 'Consolidated Document' (n 89) arts 5, 8.1, 10.3, 14.

¹⁶⁷ IGC, 'Consolidated Document' (n 89) art AL.T 8.2(b)(iii).

¹⁶⁸ IGC, 'Consolidated Document' (n 89) art 12.3.

¹⁶⁹ IGC, 'Draft instrument' (n 8) art 7.1-7.2.

for states to omit IPLCs' involvement because it establishes no strict obligations. This, nonetheless, represents an improvement from the Chair's Text, which only mentioned 'relevant stakeholders' without explicitly referring to IPLCs.¹⁷⁰ However, the draft instrument could mandate, rather than encourage, consultation in the collection of information that will enter a database when a country chooses to establish one. Notably, it should be ensured that IPLCs' prior informed consent is sought;¹⁷¹ it could also be required that IPLCs have access to databases. As stated by WIPO itself, efforts should be made to put in place a 'fair and transparent engagement process for all stakeholders to bring credible expertise, and integrate and balance various domestic priorities'.¹⁷² Yet, since the current draft instrument timidly ignores IPLCs, this thereby directly contradicts the importance they have been said to have by IGC in the negotiating process.

C. Misappropriation: not an issue anymore?

The draft instrument should address misappropriation. Trust in the patent system needs to be restored because it is seen as a canal for misappropriation.¹⁷³ While putting an end to TK's misappropriation is ultimately about empowering IPLCs,¹⁷⁴ it is also about the 'credibility, legitimacy and universality' of the intellectual property regime itself.¹⁷⁵ WIPO identifies preventing the 'unauthorized or inappropriate uses of TK [...] by third parties' and ensuring 'that the intellectual innovation and creativity embodied in TK [...]

¹⁷⁰ IGC, 'Chair's Text' (n 7) art 7.1.

¹⁷¹ WIPO, 'Key Questions on PDRs for GRs and TK' (n 62) 53.

¹⁷² WIPO, 'Key Questions on PDRs for GRs and TK' (n 62) 56.

¹⁷³ Hoare and Tarasofsky (n 148) 161.

¹⁷⁴ Roht-Arriaza (n 5) 965.

¹⁷⁵ Abdel-Latif (n 6) 320.

are not wrongly used' as important objectives of its work.¹⁷⁶ However, the draft instrument does not directly address misappropriation, as other international instruments already cover it.¹⁷⁷ In its preamble, the instrument merely recognises the 'potential role' that the patent system could play in the protection of GRs and ATK. It, therefore, lacks a clear and overarching vision that would link the patent system to biopiracy and create symbolic accountability. In comparison, this protection was an objective of the Consolidated Document.¹⁷⁸ It also defined 'misappropriation' and 'unauthorized use'¹⁷⁹ and recognised prior informed consent, mutually agreed terms, and countries' sovereign rights over their GRs in its preamble. Accordingly, the Consolidated Document touched on the possibility of incorporating issues of entitlement to GRs and ATK in the disclosure requirement.¹⁸⁰ This is entirely absent from the draft instrument.

For Ian Goss, the Chair's Text's drafter, preventing misappropriation will be an ultimate result of the proposal.¹⁸¹ Notably, clear rules and procedures would ensure predictability and certainty for potential investors, and enhance the likelihood of them involving IPLCs and developing countries through prior informed consent and fair and equitable benefit sharing.¹⁸² This could foster a change in attitudes and diminish 'free-riding incentives' to use GRs and ATK without obtaining authorisation or providing compensation.¹⁸³ This optimism, however, ought to be doubted. These advantages might not derive solely from a

¹⁷⁶ WIPO, 'IP and GRs, TK and TCEs' (n 11) 20.

¹⁷⁷ IGC, 'Chair's Text' (n 7) Notes on article 1.

¹⁷⁸ IGC, 'Consolidated Document' (n 89) art 2.

¹⁷⁹ IGC, 'Consolidated Document' (n 89) art 1.

¹⁸⁰ IGC, 'Consolidated Document' (n 89) art 4.2.

¹⁸¹ IGC, 'Chair's Text' (n 7) Notes on article 1.

¹⁸² Berglund (n 68) 218–219.

¹⁸³ Chiarolla (n 110) 510–511.

DoO requirement, as it does not address misappropriation through evidence of prior informed consent and fair and equitable benefit sharing. Indeed, an invention may arise from biopiracy and fail to satisfy the legal and ethical considerations of prior informed consent and fair and equitable benefit sharing, despite meeting the requirement of novelty.¹⁸⁴ In that way, a mere defensive DoO does not address biopiracy concerns: it promotes recognition as already discussed, but it does not ask whether IPLCs' rights are respected. As such, the draft instrument's impact on IPLCs is, at best, symbolic and, at worst, non-existent. IGC has unambiguously abandoned his ethical agenda of 'measuring the "rightfulness" of conduct to obtain/use' GRs and ATK.¹⁸⁵

This approach reflects a clear compromise in favour of *non-demandeurs* countries that firmly opposed the DoO requirement from the beginning.¹⁸⁶ Moreover, as WIPO's funding comes from patent holders, this means that any outcome seen as significantly detrimental to them will not be easily reached.¹⁸⁷ The draft instrument thus illustrates IGC's lack — or loss — of ambition to the benefit of wanted consensus. Nonetheless, since a successful compromise will be welcomed in light of the prolonged unsuccessful nature of negotiations, there is an inevitable need to accommodate powerful *non-demandeurs* countries, such as the US, Canada, Japan, the Republic of Korea, and, initially, the EU and Switzerland.¹⁸⁸ Their opposition could prevent the establishment of international norms protecting GRs and TK. Indeed, it would be of little help for IPLCs if the

¹⁸⁴ Robinson, 'Biopiracy and the Innovations of Indigenous Peoples and Local Communities' (n 50) 81.

¹⁸⁵ Laurie (n 140) 268.

¹⁸⁶ Abdel-Latif (n 6) 321.

¹⁸⁷ Abdel-Latif (n 6) 324.

¹⁸⁸ Abdel-Latif (n 6) 321.

only ratifiers are developing countries who are less likely to engage in biopiracy from the outset.¹⁸⁹

Nevertheless, with that concern in mind, two amendments could be made to the draft instrument to make it a useful tool against misappropriation. A DoO requirement could enable developing countries and IPLCs to more easily monitor the use of their GRs and ATK. This is especially if the measure was coupled with a central database and the DoO was notified to a central entity, such as WIPO.¹⁹⁰ This was suggested in section V(iii)(A). Indeed, patent applicants can better know the provenance of GRs and ATK they use.¹⁹¹ In the same way, countries where GRs are located and ILPCs are best suited to verify compliance with national legislation on access to GRs and ATK.¹⁹² A DoO requirement could, then, reassure developing countries and IPLCs, and ‘encourage broader access and collaboration and effectively enhance cross-border innovative activity’.¹⁹³

Furthermore, a way to limit the current scope of disclosure to sources of information, while supporting developing countries and IPLCs in monitoring the use of GRs and ATK, would be to require more precise information. For example, the country of origin could be complemented by naming the precise locality and including maps or georeferenced coordinates. A step further would be to ask for ‘sources that sold or otherwise supplied GRs, the identity of any party that was consulted for access to GRs, local names for accessed material’.¹⁹⁴

¹⁸⁹ Morgan (n 163) 324.

¹⁹⁰ Hoare and Tarasofsky (n 148) 160.

¹⁹¹ Bagley (n 53) 92-93.

¹⁹² Girsberger (n 99) 484, 486.

¹⁹³ Bagley (n 53) 94.

¹⁹⁴ Perdue (n 107) 288.

This still only relates to GR's and ATK's origin, without mandating disclosure of evidence of compliance with prior informed consent and fair and equitable benefit sharing. However, the DoO requirement would then better meet concerns related to prior informed consent and fair and equitable benefit sharing.

VI. CONCLUSION

GRs and ATK are offered protection through various international instruments. However, they are left unregulated within the intellectual property system and open for misappropriation through Western intellectual property concepts like the public domain. As a result, IPLCs have faced biopiracy and began to demand protection for their TK. One international response has been IGC's creation. Negotiations that have lasted for many years might come to an end with the 2024 Diplomatic Conference on the draft instrument's proposal for a new mandatory DoO requirement in relation to GRs and ATK.

The draft instrument's approach might well be a sensible and cautious one. While a DoO becomes unavoidable, flexibility in national implementation is allowed. At the same time, the creation of essential tools required to translate this new requirement into effective and meaningful protection of TK is contingent upon national will. By avoiding confrontational issues that risk attracting the strongest opposition, it loses sight of the underlying objective of such a DoO requirement. This objective, the *raison d'être*, of IGC's negotiations for the past two decades, has been the protection of GRs and ATK. The draft instrument represents a compromise that dangerously leans towards benefiting more users of GRs and ATK. In this way, it falls short of achieving balance between the interests of provider countries and IPLCs and user countries.

The intellectual property system must, however, live up to its universalist aspirations and, consequently, meaningfully adapt itself.¹⁹⁵ It must find ways to raise IPLCs to the status of ‘critical partners in innovation and beneficiaries therefrom’.¹⁹⁶ More than being mere holders of a valuable TK, IPLCs must be seen as ‘indigenous innovators’;¹⁹⁷ their ‘traditional contribution’ to a given innovation must be recognised.¹⁹⁸ The patent system must adapt, if not to grant positive intellectual property rights to IPLCs, then to ensure that such rights are not wrongfully granted to others. The draft instrument submitted for consideration at the Diplomatic Conference falls short of achieving this goal.

¹⁹⁵ Abdel-Latif (n 6) 319.

¹⁹⁶ Oguamanam (n 13) 333.

¹⁹⁷ Peter Drahos and Susy Frankel, ‘Indigenous Peoples’ Innovation and Intellectual Property: The Issues’ in Peter Drahos and Susy Frankel (eds), *Indigenous Peoples’ Innovation: Intellectual Property Pathways to Development* (ANU Press 2012) 28.

¹⁹⁸ Robinson, ‘Biopiracy and the Innovations of Indigenous Peoples and Local Communities’ (n 50) 91.