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Fostering the Protection of Intellectual Property, Genetic Resources and Traditional Knowledge for Sustainable Development <u>Kariuki Muigua^{*}</u>

Abstract

This paper critically examines the need to protect intellectual property, genetic resources and traditional knowledge. The paper argues that protecting intellectual property, genetic resources and traditional knowledge is vital in fostering Sustainable Development. The paper discusses the role of intellectual property, genetic resources and traditional knowledge in the Sustainable Development agenda. It also examines the progress made towards protecting intellectual property, genetic resources and the challenges thereof. In addition, the paper proposes reforms towards fostering the protection of intellectual property, genetic resources and traditional knowledge for Sustainable Development.

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1.0 Introduction

Intellectual Property refers to creations of the mind including inventions, designs, literary and artistic works, performances, plant varieties, and names, signs and symbols¹. The term intellectual property has also been described an umbrella term used to cover specific laws that are loosely united in their efforts to manage the relationships between an idea and the tangible expression of that idea². Intellectual property is usually protected in law by various means including patents, utility models, copyright, trademarks, industrial designs, and trade secrets³.

The *Convention on Biological Diversity*⁴ defines genetic resources as any material of plant, animal, microbial or other origin containing functional units of heredity of actual or potential value⁵. Genetic resources have also been defined as parts of biological materials that contain genetic information of value; and are capable of reproducing or being reproduced⁶. These resources include material of plant, animal, or microbial origin, such as medicinal plants, agricultural crops and animal breeds⁷.

Tradition Knowledge refers to ideas, innovations and practices of indigenous and local communities around the world⁸. Traditional knowledge has also been defined as a living body of knowledge that is developed, sustained and passed on from generation to

¹ World Intellectual Property Organization., 'Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions' Available at <u>https://www.wipo.int/edocs/pubdocs/en/wipo_pub_933_2020.pdf</u> (Accessed on 11/12/2024)

² Anderson. J., 'Indigenous Knowledge and Intellectual Property Rights' *International Encyclopedia of the Social & Behavioral Sciences*, 2nd Edition, 2015

³ Ibid

⁴ The Convention on Biological Diversity, 5 June 1992 (1760 U.N.T.S. 69)

⁵ Ibid, article 2

⁶ World Intellectual Property Organization., 'Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions' Op Cit ⁷ Ibid

⁸ United Nations Educational, Scientific and Cultural Organization., 'Traditional Knowledge' Available at <u>https://uis.unesco.org/en/glossary-term/traditional-knowledge</u> (Accessed on 11/12/2024)

generation within a community, often forming part of its cultural or spiritual identity⁹. It has been noted that traditional knowledge is usually developed from experience gained over centuries, adapted to local cultures and environment, and transmitted orally from generation to generation¹⁰. Traditional knowledge usually forms part of the traditional lifestyle of indigenous and local communities who act as its custodians¹¹.

Intellectual property, genetic resources and traditional knowledge are vital in the Sustainable Development agenda¹². Protecting them is therefore key in ensuring Sustainable Development. This paper critically examines the need to protect intellectual property, genetic resources and traditional knowledge. The paper argues that protecting intellectual property, genetic resources and traditional knowledge is vital in fostering Sustainable Development. The paper discusses the role of intellectual property, genetic resources and traditional knowledge in the Sustainable Development agenda. It also examines the progress made towards protecting intellectual property, genetic resources and traditional knowledge and the challenges thereof. In addition, the paper proposes reforms towards fostering the protection of intellectual property, genetic resources and traditional knowledge for Sustainable Development.

2.0 The Role of Intellectual Property, Genetic Resources and Traditional Knowledge in Sustainable Development

Intellectual property, genetic resources and traditional knowledge play a pertinent role in Sustainable Development. Stronger intellectual property is crucial in unlocking most

⁹ World Intellectual Property Organization., 'Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions' Op Cit

¹⁰ United Nations Educational, Scientific and Cultural Organization., 'Traditional Knowledge' Op Cit

¹¹ World Intellectual Property Organization., 'Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions' Op Cit

¹² Ibid

of the Sustainable Development Goals (SDGs). For instance, it has been noted that stronger intellectual property protection creates an environment that supports innovation and sustainable practices by encouraging inventors and creators to come up with solutions that fit right into the SDGs¹³. Various forms of intellectual property such as patents, utility models, copyrights, and registered designs can protect inventions and contribute to innovation in many different fields connected to the SDGs including food security, climate action, renewable energy, education and healthcare¹⁴.

Enhancing the protection of intellectual property can accelerate climate action promoting the development of green technologies and environmentally friendly innovations. Further, it has been noted that there is a strong link between the legal regime for intellectual property protection and the transfer of technologies that mitigate the effects of climate change¹⁵. Harnessing intellectual property can therefore bolster climate action through the development of green and climate friendly innovations and enhancing technology transfer among countries. Intellectual property is also vital in promoting the development and uptake of renewable sources of energy which are key in the Sustainable Development agenda. Renewable sources of energy including solar power, wind power, hydropower, geothermal energy are environmentally friendly and can aid in fostering Sustainable Development and promoting climate change mitigation and adaptation¹⁶. Fostering the protection of intellectual property through patents can enhance the development of renewable energy by advancing innovations such as solar panels, wind turbines and other sustainable technologies such as grid integration or tidal energy that

¹³ Cserkuti. A., 'The Power of Intellectual Property in Achieving the Sustainable Development Goals' Available at <u>https://www.patentrenewal.com/post/the-power-of-intellectual-property-in-achieving-the-sustainable-development-</u>

goals#:~:text=For%20example%2C%20patents%20and%20IP,nurturing%20SDG%202%20and%2012). (Accessed on 12/12/2024)

¹⁴ Ibid

 ¹⁵ Moradi. Z., Heydari. B., & Arshadi. M., 'Role of Intellectual Property Rights on Reduction of Climate Change' Available at <u>https://www.isjq.ir/article_150128.html?lang=en</u> (Accessed on 12/12/2024)
 ¹⁶ Mohtasham. J., 'Review Article: Renewable Energies' *Energy Procedia*, 74 (2015) 1289 – 1297

are crucial in harnessing renewable energy towards ensuring affordable, reliable, sustainable, and modern energy for all¹⁷.

Intellectual property can also foster food security¹⁸. It can enhance the development of new crops, tools and technologies, such as innovative pesticides or gene-edited crops that can adapt to the impacts of climate change¹⁹. Intellectual property protection encourages researchers and innovators to find better ways to grow crops, inventing new technologies and sustainable farming practices towards ensuring food security²⁰. Intellectual property is also crucial in fostering good health and well-being by supporting the development of medical technologies and pharmaceuticals²¹. According to the World Health Organization (WHO), strong intellectual property protection is crucial both to the control of standards and access to medicines and an incentive for the development of new pharmaceuticals and health care products²². Fostering the protection of intellectual property through copyrights can also safeguard educational resources therefore helping advancements in providing quality education all over the world²³.

Genetic resources are also vital in fostering Sustainable Development. For example, it has been noted that genetic resources continue to sustain the livelihoods of millions of people

¹⁷ Cserkuti. A., 'The Power of Intellectual Property in Achieving the Sustainable Development Goals' Op Cit

¹⁸ Ibid

¹⁹ Protecting Intellectual Property., Available at <u>https://croplife.org/our-work/protecting-intellectual-property/</u> (Accessed on 12/12/2024)

²⁰ Cserkuti. A., 'The Power of Intellectual Property in Achieving the Sustainable Development Goals' Op Cit

²¹ Ibid

²² World Health Organization., 'Intellectual Property and Trade' Available at <u>https://www.who.int/health-topics/intellectual-property#tab=tab_1</u> (Accessed on 12/12/2024)

²³ Cserkuti. A., 'The Power of Intellectual Property in Achieving the Sustainable Development Goals' Op Cit

all over the world including indigenous and local communities²⁴. Further, it has been observed that a majority of the world's population heavily relies upon plant-based traditional treatments for primary healthcare²⁵. Genetic resources are also crucial in the development of new crop and plant varieties that can adapt to the impacts of climate change²⁶. In addition, the biotechnology industry is constantly harnessing genetic resources including living organisms towards developing pharmaceuticals, cosmetics, and crop protection agents²⁷. Genetic resources are therefore vital for Sustainable Development since they play a crucial role in meeting basic human food and nutritional needs, alleviating poverty by sustaining livelihoods, ensuring the delivery of ecosystem services, such as pollination and pest and disease regulation, and enhancing good health and well-being through medical discoveries²⁸.

Traditional knowledge is also at the heart of Sustainable Development. It has been noted that traditional knowledge has diverse dimensions, encompassing agricultural, architectural, ecological, environmental, scientific, technical, medical, and biodiversity-related knowledge that can be harnessed for Sustainable Development²⁹. Various forms of traditional knowledge such as knowledge about traditional medicines, traditional hunting and fishing techniques, knowledge about animal migration patterns and water management have been utilised by indigenous and local communities for many centuries

²⁴ United Nations Development Programme., 'ABS is Genetic Resources for Sustainable Development' Available at <u>https://www.undp.org/publications/abs-genetic-resources-sustainable-development</u> (Accessed on 12/12/2024)

²⁵ Ibid

²⁶ Ibid

²⁷ Ibid

²⁸ Food and Agriculture Organization of the United Nations., 'Genetic Resources' Available at <u>https://www.fao.org/genetic-resources/en</u> (Accessed on 12/12/2024)

²⁹ United Nations., 'Role of Intellectual Property Rights in Promoting Africa's Development: The Case Studies on Intellectual Property Policymaking and Implementation in Promoting Agriculture in Africa' Available

https://www.un.org/osaa/sites/www.un.org.osaa/files/files/documents/2024/publications/the_role_ of_intellectual_property_rights_in_promoting_africas_development.pdf (Accessed on 12/12/2024)

ensuring their survival while protecting the environment³⁰. It has been noted that indigenous knowledge and traditional practices are rooted in a deep understanding of and respect for the environment and ecological systems and promote sustainable use of natural resources towards Sustainable Development³¹. Traditional knowledge and indigenous practices have a minimal impact on the environment and are highly adaptive to ecological changes, fostering healthy and resilient ecosystems³². Traditional knowledge has been identified as fundamental for sound environmental governance, combating climate change and realizing the ambitious vision of the United Nation's 2030 Agenda for Sustainable Development³³. Harnessing traditional knowledge is therefore crucial in achieving Sustainable Development.

Intellectual property, genetic resources and traditional knowledge are therefore key in fostering Sustainable Development. It is therefore vital to protect these vital resources in order to accelerate the Sustainable Development agenda.

3.0 Protecting Intellectual Property, Genetic Resources and Traditional Knowledge: Opportunities and Challenges

Protecting intellectual property, genetic resources and traditional knowledge is vital for Sustainable Development. For instance, it has been noted that recognition of intellectual property rights over traditional knowledge held by indigenous peoples and local communities particularly traditional knowledge associated with biodiversity and genetic

³⁰ World Intellectual Property Organization., 'Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions' Op Cit

³¹ United Nations Development Programme., 'Indigenous Knowledge is Crucial in the Fight against Climate Change – here's why' Available at <u>https://climatepromise.undp.org/news-and-stories/indigenous-knowledge-crucial-fight-against-climate-change-heres-why (Accessed on 12/12/2024)</u> ³² Ibid

³³ International Labour Organization., 'Sustainable Development Goals: Indigenous Peoples in Focus' Available

https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@ed_emp/@ifp_skills/documents/p ublication/wcms_503715.pdf (Accessed on 12/12/2024)

resources is an important step in actualising Sustainable Development³⁴. The World Intellectual Property Organization (WIPO) notes that indigenous peoples, local communities, and governments especially in developing countries are increasingly demanding intellectual property protection for traditional forms of creativity and innovation, which, under the conventional intellectual property system, are generally regarded as being in the public domain, and therefore free for anyone to use. However, it has been noted that a public domain status for traditional knowledge opens these forms of knowledge to unwanted misappropriation and misuse³⁵. For instance, a traditional cure for a particular disease could be harnessed by a pharmaceutical company and the resulting invention patented by that company to the detriment of an indigenous or local community that is the custodian of such knowledge³⁶. Further, an indigenous folk song can be adapted and copyrighted, without any acknowledgement of the indigenous community which created the song and without sharing the accruing monetary benefits with the community³⁷. It is therefore evident that traditional knowledge can be subject to misappropriation and misuse to the detriment of indigenous and local communities. As a result, it has been argued that there is need for stronger protection of traditional knowledge through intellectual property rights for Sustainable Development³⁸.

Intellectual property protection can bolster the cultural identity of indigenous and local communities, and give them greater say in the management and use of their traditional knowledge³⁹. Protecting traditional knowledge through intellectual property regimes

³⁴ Phillips. F.K., 'Intellectual Property Rights in Traditional Knowledge: Enabler of Sustainable Development' Available at <u>https://utrechtjournal.org/articles/10.5334/ujiel.283</u> (Accessed on 13/12/2024)

³⁵ World Intellectual Property Organization., 'Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions' Op Cit

³⁶ Ibid ³⁷ Ibid

 ³⁸ World Intellectual Property Organization., 'Intellectual Property and Traditional Knowledge' Available at https://www.wipo.int/edocs/pubdocs/en/tk/920/wipo_pub_920.pdf (Accessed on 13/12/2024)
 ³⁹ Ibid

places value on such knowledge therefore helping strengthen cultural identity of indigenous and local communities and enhancing the use of traditional knowledge to achieve social and development goals including sustainable agriculture, confronting climate change, access to health, sound management of natural resources including water, and conservation of biodiversity⁴⁰. It is therefore imperative to enhance protection of traditional knowledge through intellectual property rights⁴¹. Stronger protection of traditional knowledge through intellectual property rights is vital in excluding unauthorized use of such knowledge by third parties and preserving it from negative uses that may erode it or negatively impact the culture and customs of communities that have developed suck knowledge⁴².

Protecting genetic resources through intellectual property rights is also crucial for Sustainable Development⁴³. It has been noted that since genetic resources are encountered in nature, they do not fall under the classification of intellectual property⁴⁴. Genetic resources are not creations of the human mind and therefore, they cannot be directly protected as intellectual property⁴⁵. Genetic resources are often subject to access and benefit-sharing regulations in line with the international frameworks defined by the *Convention on Biological Diversity*⁴⁶ and its *Nagoya Protocol*⁴⁷. The Convention on Biological Diversity seeks to foster the conservation of biological diversity, the sustainable use of its

⁴⁰ Ibid

⁴¹ Chatterjee. I., 'Intellectual Property Rights and Traditional Knowledge-Indian Perspective' Available at <u>https://www.manupatra.com/roundup/363/articles/ipr%20and%20traditional%20knowledge.pdf</u> (Accessed on 13/12/2024)

⁴² Ibid

⁴³ World Intellectual Property Organization., 'Intellectual Property and Genetic Resources' Available at <u>https://www.wipo.int/edocs/pubdocs/en/wipo-pub-rn2023-5-10-en-intellectual-property-and-genetic-resources.pdf</u> (Accessed on 13/12/2024)

⁴⁴ Ibid

⁴⁵ Ibid

⁴⁶ The Convention on Biological Diversity, 5 June 1992 (1760 U.N.T.S. 69)

⁴⁷ 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., Available at <u>https://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf</u> (Accessed on 13/12/2024)

components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources⁴⁸. The Nagoya Protocol on the other hand seeks to ensure 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, and by appropriate funding, thereby contributing to the conservation of biological diversity and the sustainable use of its components as envisaged under the Convention on Biological Diversity⁴⁹.

Despite genetic resources being protected through access and benefit-sharing regimes including the Convention on Biological Diversity and the Nagoya Protocol, it has been noted that inventions based on or developed using genetic resources and associated traditional knowledge are eligible for protection through the intellectual property regime either through a patent or through other intellectual property rights⁵⁰. For instance, intellectual property rights can enhance protection of genetic resources through preventing patents from being granted over inventions based on or developed using genetic resources which do not fulfill the existing patent requirements of novelty and inventiveness⁵¹. Further, by fostering intellectual property rights, it is possible to disqualify patent applications that do not comply with obligations under the Convention on Biological Diversity including those related to free, prior and informed consent (FPIC), mutually agreed terms, fair and equitable benefit-sharing, and disclosure of origin⁵².

Protecting genetic resources and traditional knowledge through intellectual property rights therefore provides numerous opportunities for Sustainable Development.

⁴⁸ The Convention on Biological Diversity., article 1

⁴⁹ 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., Op Cit

⁵⁰ World Intellectual Property Organization., 'Intellectual Property and Genetic Resources' Op Cit

⁵¹ World Intellectual Property Organization., 'Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions' Op Cit
⁵² Ibid

However, it has been noted that traditional knowledge is often misappropriated and misused under the intellectual property regime including through patenting of indigenous medical remedies and copyrighting of indigenous folk songs to the detriment of indigenous and local communities⁵³. Further, intellectual property rights over genetic resources including patents on seeds or pharmaceutical products make access to such products more difficult especially for the poor⁵⁴. In light of these challenges, there is need to foster harmony between intellectual property, genetic resources and traditional knowledge for Sustainable Development.

4.0 Conclusion

It is imperative to foster the protection of intellectual property, genetic resources and traditional knowledge for Sustainable Development. This is vital in preventing illegal access and use of genetic resources and traditional knowledge to the detriment of indigenous and local communities who rely on these resources for their livelihoods⁵⁵. In order to achieve this goal, it is necessary to foster synergies between intellectual property, genetic resources, and traditional knowledge⁵⁶. For example, the *Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)*⁵⁷ establishes a legal framework towards promoting effective and adequate protection of intellectual property rights, and ensuring that measures and procedures to enforce intellectual property rights do not themselves become barriers to legitimate trade. Fostering synergies between the TRIPS Agreement and the Convention of Biological Diversity can enhance the protection of

⁵³ World Intellectual Property Organization., 'Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions' Op Cit

⁵⁴ Ecological Institute., 'Intellectual Property Rights on Genetic Resources and the Fight Against Poverty' Available at <u>https://www.ecologic.eu/11982</u> (Accessed on 13/12/2024)

⁵⁵ Center for International Environmental Law., 'Genetic Resources, Traditional Knowledge and Intellectual Property Rights: Promoting Synergies for Sustainable Development' Available at <u>https://www.ciel.org/Publications/iprights.pdf</u> (Accessed on 13/12/2024) ⁵⁶ Ibid

⁵⁷ World Trade Organization., 'Agreement on Trade-Related Aspects of Intellectual Property Rights' Available at <u>https://www.wto.org/english/docs_e/legal_e/27-trips.pdf</u> (Accessed on 13/12/2024)

intellectual property, genetic resources and traditional knowledge including through ensuring legal access to genetic resources and traditional knowledge, preventing traditional knowledge and genetic resources from being misused or misappropriated, ensuring the disclosure of the origin of genetic resources and traditional knowledge, fostering the right of free, prior and informed consent (FPIC) for indigenous and local communities in respect of the use of genetic resources, and preventing intellectual property rights such as patents from being granted in respect of naturally occurring genetic resources, biological discoveries or biological inventions⁵⁸.

There has been progress towards fostering synergies between intellectual property, genetic resources and traditional knowledge. The WIPO *Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge*⁵⁹ seeks to achieve this goal by enhancing the efficacy, transparency and quality of the patent system with regard to genetic resources and traditional knowledge associated with genetic resources⁶⁰; and preventing patents from being granted erroneously for inventions that are not novel or inventive with regard to genetic resources and traditional knowledge associated with genetic resources⁶¹. The Treaty sets out disclosure requirements and mandates applicants of patents based on genetic resources to disclose the country of origin of the genetic resources or the source of the genetic resources⁶². Further, where a patent application is based on traditional knowledge associated with genetic resources, applicants are required to disclose the Indigenous Peoples or local community who provided the traditional knowledge or the source of the traditional knowledge associated with genetic resources⁶³. The Treaty also requires all contracting states to put in place appropriate,

⁵⁸ Center for International Environmental Law., 'Genetic Resources, Traditional Knowledge and Intellectual Property Rights: Promoting Synergies for Sustainable Development' Op Cit

⁵⁹ World Intellectual Property Organization., 'Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge' Available at <u>https://www.wipo.int/edocs/mdocs/tk/en/gratk_dc/gratk_dc_7.pdf</u> (Accessed on 13/12/2024) ⁶⁰ Ibid, article 1 (a)

⁶¹ Ibid, article 1 (b)

⁶² Ibid, article 3.1 (b)

⁶³ Ibid, article 3.2

effective and proportionate legal, administrative, and/or policy measures to address cases where applicants fail to comply with the disclosure requirements stipulated under the treaty⁶⁴. The WIPO Treaty represents a major milestone towards promoting synergies between intellectual property, genetic resources and traditional knowledge. It is therefore vital to implement the Treaty in order to foster the protection of intellectual property, genetic resources and traditional knowledge.

Fostering the protection of intellectual property, genetic resources and traditional knowledge is therefore a pertinent ideal that can be actualized.

⁶⁴ Ibid, article 5

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