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Curtailing Biopiracy of Traditional Medicinal Practices through an Effective Legal Framework in Uganda and Indonesia

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Abstract: Traditional medicine practice in Uganda and Indonesia is an essential storehouse of biocultural diversity, which forms the basis for primary health care services to around 80% of their respective populations. Biopiracy of such practices is a continuing menace, involving illegal use of patents by foreigners through appropriation of indigenous traditional health knowledge (THK) with no reciprocity in terms of benefit sharing. Statement of the problem lies in the legal gap whereby prevailing IP regimes underpinning individualistic Western values cannot offer adequate safeguards to the oral, collective nature of THK. The purpose of the research is to determine the efficacy of national and international laws to protect THK from biopiracy in Uganda and Indonesia. Adopting a doctrinal approach, statutes, international conventions, as well as court rulings, will be examined to determine the shortcomings in laws governing protection of THK. Results indicate that despite ratification of the CBD by the two countries, their domestic laws prove ineffective in the face of advanced bioprospecting. Conclusion drawn from the findings shows the need for enactment of sui generis laws as well as TKDL.

Keywords: Biopiracy, Indigenous Medicine, Traditional Knowledge, Indonesia, Uganda

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1. INTRODUCTION

Traditional herbal medicines in Uganda and Indonesia have been practiced for several centuries, reflecting the accumulated knowledge and experience in dealing directly with the biodiversity of the regions[1]. In Uganda, traditional medicines play a crucial role in sustaining life in the countryside, with the rate of doctors-per-citizen being 1:708, which surpasses the Western medicine statistics substantially. In the case of Uganda, the use of herbs in traditional medicine serves as a treatment for chronic diseases and even ordinary ailments, such as malaria, with hundreds of medicinal herbs existing in the region[2]. For instance, in Indonesia, the Tengger community embraces a philosophy based on the idea of harmony with nature and uses such

[1] Yulia, "The Protection of Traditional Knowledge under Indonesian Patent Law: Between Opportunities and Challenges," *Indonesian Journal of International Law* 18 (2020): 351–370.
[2] Ikechi Mgbeoji, *Global Biopiracy: Patents, Plants, and Indigenous Knowledge* (Vancouver: UBC Press, 2007).

herbs as Foeniculum vulgare for digestive purposes[3]. The integrative nature of these health systems believes that man cannot exist independently of the universe, whereby plants are more than just raw materials but rather beings with some spiritual connotations. In Indonesia, the medicinal knowledge is usually in the hands of shaman healers who operate freely among the masses without fear of revealing their secrets[4]. Meanwhile, in Uganda, TK acts as the community's identity and is transmitted orally within the culture. Both countries represent the biological richness of the Global South in which traditional health knowledge exists in the form of a living practice that is modified to fit contemporary environmental needs[5].

The presence of biopiracy in these countries is a contemporary manifestation of the appropriation of resources which was experienced during colonial times. In Indonesia, for example, firms from Japan, such as Shiseido, have faced accusations of patents based on their Javanese chilies and other forms of plants from the region without prior approval[6]. Moreover, the appropriation of the HN251 virus from Indonesia in order to create an antiviral medication demonstrated how there was an "asymmetric flow of biological resources," with these vaccines being sold to the country of origin at prices that are too expensive[7]. The introduction of Plant Breeder's Rights in Uganda is another threat, since this legislation promotes monopoly on plant varieties, discouraging farmers from cultivating local crops with better medicinal properties[8]. These practices are enabled by the existence of a worldwide patent system that undervalues indigenous cultures' intellectual property. Researchers from outside these regions use personal connections or publications from the colonial era to get their hands on THK[9]. In some cases, pharmaceutical "MegaCorps" use indigenous knowledge but do not give credit[10], thus undermining the motivation of these communities to provide THK for the greater good. This silent disease of biopiracy will further damage indigenous cultures, as young generations abandon traditional methods in favor of Western chemical medicines[11].

The first legal issue is that the existing system of intellectual property laws based largely on the TRIPS Agreement emphasizes the terms "novelty" and "non-obviousness" which preclude traditional knowledge from being protected under such laws[12]. As THK tends to exist orally and in the public domain for centuries, it does not meet the conditions of prior art

[3] Otim Enoch, "Legal Protection of Traditional Knowledge in Uganda: Development, Problems and Perspectives," *International Journal of Language, Literature and Culture* 4, no. 3 (2024): 1–10.

[4] Gargi Chakrabarti, "Vulnerable Position of Traditional Knowledge under IPR: Concern for Sustainable Development," *OIDA International Journal of Sustainable Development* 7, no. 3 (2014): 67–94.

[5] Sonja van Wichelen, "After Biosovereignty: The Material Transfer Agreement as Technology of Relations," *Social Studies of Science* 53, no. 4 (2023): 599–621.

[6] Andrew Ikhayere Imiefoh and Hassan A. Ismaila, "Intellectual Property Rights in the Creative Economy: Protecting Digital Content Creators in Nigeria and Uganda," *Afrocentric Legal Review* 1, no. 2 (2025): 83–98.

[7] Lucas Lixinski, "The Neocolonial Political Economy of Traditional Culture," *Journal of International Economic Law* 29, no. 1 (2026): 165–182.

[8] Paul Kuruk, "The Role of Customary Law under Sui Generis Frameworks of Intellectual Property Rights in Traditional and Indigenous Knowledge," *Indiana International and Comparative Law Review* 17 (2007): 67–118.

[9] Ritu Priya and Chris M. Kurian, "Regulating Access and Protecting Traditional Health Knowledge through Intellectual Property Rights? Issues from a Holistic Health Systems Perspective," *Science, Technology and Society* 23, no. 3 (2018): 504–529.

[10] Mukhlis Mukhlis, Raphael D. Jackson-Ortiz, Muwaffiq Jufri, Evis Garunja, and Paul Atagamen Aidonojie, "Rejection of Former Shia Community in Sampang Perspective on Human Rights Law: Discourse of Religious Rights and Freedom in Indonesia," *Lex Scientia Law Review* 7, no. 2 (2023): 959–94.

[11] Kingsley Eghonghon Ukhurebor and Paul Atagamen Aidonojie, "The Influence of Climate Change on Food Innovation Technology: Review on Topical Developments and Legal Framework," *Agriculture & Food Security* 10, no. 1 (2021): 50.

[12] Shagun Sharma, Pankaj Kumar, and Rohit Sharma, "Intellectual Property Rights Related to Medicinal Plants," in *Ethnopharmacology and OMICS Advances in Medicinal Plants*, vol. 2 (2024), 425–443.

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formulated in the written form and recognized by Western patent agencies as evidence that certain inventions were not invented but discovered. The same problem occurs in Uganda where the Industrial Property Act of 2014 protects only the conventional process of invention, while customary users can face charges of infringement. What sets apart this study is the comparative approach to studying two very different legal contexts one from East Africa and another from Southeast Asia in search of a universal protection mechanism. The purpose is to close the existing gap between existing international regulatory instruments and local conditions by offering a comprehensive doctrinal response to the problem. More precisely, the purpose of the research is to find out whether Traditional Knowledge Digital Libraries and sui generis regimes can be used to create an effective protective shield against exploitation of THK. One of the successful precedents will be the challenge made to the validity of turmeric and neem patents by India.

2. METHOD

The approach applied in carrying out the analysis is the doctrinal research method, which involves the critical examination of law and legal concepts, principles, and rules. The main sources used include the doctrinal materials obtained by thoroughly analyzing legislation, specifically the Ugandan Industrial Property Act (2014), Copyright and Neighboring Rights Act (2006), and the Indonesian Law Number 5 of 1994 and Regulation Number 56 of 2022 on Communal Intellectual Property. This is complemented by the examination of various international laws like the TRIPS Agreement, the Nagoya Protocol, and the CBD. The secondary materials on doctrines have been sourced from the reviewed literature of scholarly journals, WIPO reports, and conference proceedings related to biopiracy and indigenous health knowledge. The technique applied during the review process of the sources relied on deductive logic and content analysis, whereby the comparison was made between the existing laws and socio-cultural realities within the indigenous community. Horizontal and vertical synchronization of the data was done by considering any contradiction that exists between international obligations in regard to trade and national biodiversity conservation laws.

3. RESULT AND DISCUSSION

3.1. Indigenous Medicinal Practices in Uganda and Indonesia

The indigenous medicinal systems in Uganda and Indonesia exhibit a great dependence on biodiversity and the knowledge of their ancestors transferred through oral tradition[13].

Figure 1: Nexus concerning sacred traditional knowledge, biological resources and indigenous practices

[13] Yulia Yulia, Malahayati Rahman, Herinawati Herinawati, and Novita Novita, "Legal Protection of Traditional Medicine Knowledge as Intellectual Property of North Aceh Communities," *Queen Mary Journal of Intellectual Property* 13, no. 4 (2024): 407–421; Paul Atagamen Aidonojie, Hassan Ismaila, Eregbuonye Obieshi, and Omobolanle Omolola Ikpotokin, "Examining Human Rights Abuses on Religious, Cultural, and Political Intolerance in Nigeria," *Journal of Sustainable Development and Regulatory Issues* 3, no. 1 (2025): 78–94.

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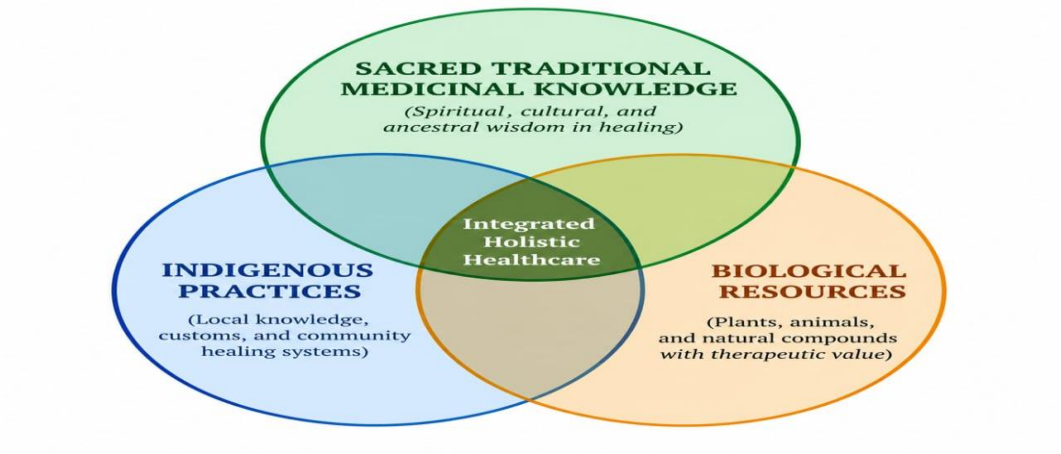

Source: Designed by authors based on data obtained

Traditional medicine in Uganda is very much relied upon by rural populations, where one traditional healer caters to 708 patients while one allopathic doctor serves 25,000 people. This system supplies basic healthcare to 80% of the population, dealing with ordinary diseases and conditions.[14] The use of flora from the local environment, like the Rytygynia species of Bwindi Impenetrable Forest, is common in Ugandan medicine, helping maintain the wellbeing of the community[15]. This traditional practice is integral to their culture, giving not only identity but sustenance to marginalized populations. One of the megadiversity countries in the world is Indonesia, which is home to around 20,000 medicinal plants[16]. The Tengger population in the eastern part of Java is an example of this megadiversity, having a philosophy about nature, which makes them believe that humans are inseparable from nature. Some of the medicinal plants used by the Tenggers include Foeniculum vulgare, which helps with respiratory and digestive disorders and Acorus calamus, known as Dringu, for its anticancer properties[17]. Shamans, who are the traditional healers in this society, have no problems sharing what they know with everyone.

Ninety percent of all the biological riches in the world come from the Global South, including Uganda and Indonesia; however, the intellectual contribution in these areas is not always appreciated[18]. THK in the Global South is an active phenomenon, which responds to environmental changes and socio-cultural processes. In Indonesia, the "Dispensary" campaign calls on people to set up their dispensary facilities at home in order to keep medicinal plants

[14] M. D. Nair, "Traditional Medicines and Medicinal Plants, and Their Protection Modalities from an Intellectual Property Rights Perspective," *Plant Genetic Resources* 3, no. 2 (2005): 314–319.

[15] Anindya Bhukta, *Legal Protection for Traditional Knowledge: Towards a New Law for Indigenous Intellectual Property* (Bingley: Emerald Group Publishing, 2020); Paul Atagamen Aidonojie, Esther Chetachukwu Aidonojie, Toyin Afolabi Majekodunmi, Eregbuonye Obieshi, and Adesoji Kolawole Adebayo, "The Competence and Authority of Midwives in Giving Birth without the Assistance of a Doctor in Nigeria," *Jambura Law Review* 5, no. 1 (2024): 150–82.

[16] Osikemekha Anthony Anani, Paul Atagamen Aidonojie, Esther Chetachukwu Aidonojie, and Gloria Anwuli Anani, "Current Methods in the Management and Disposal of Plastic Wastes During COVID-19 Pandemic," in *Plastic and the COVID-19 Pandemic: Innovative Solutions to Mitigate Plastic Pollution* (2024), 27–43.

[17] Cynthia M. Ho, "Biopiracy and Beyond: A Consideration of Socio-Cultural Conflicts with Global Patent Policies," *University of Michigan Journal of Law Reform* 39 (2005): 433–500.

[18] Emilda Kuspraningrum, Thohir Luth, Rachmad Safa'at Yuliati, and Harlinda Kuspradini, "The Conservation of Tengger Indigenous People's Traditional Knowledge of Biological Natural Resource-Based Disease Treatments," *Biodiversitas* 21, no. 11 (2020): 5040–5053.

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handy at all times[19]. Likewise, in Uganda, THK plays an important role in decision-making in rural settings. Even though there have been innovations in the field of medicine, the practice of traditional medicine persists due to the availability, affordability, and acceptability of the traditional healing methods. It is a common practice in most African countries that two-thirds of sick children with fever cases are treated using herbal medicines at home[20]. The same case is prevalent in Indonesia where Jamu herbal medicine is widely used by both city and village dwellers. This preference for herbal medicine stems from the idea that traditional remedies act faster than synthetic medicines and do not have adverse effects on patients[21].

This institutionalization can be observed from the activities of institutions such as the WHO, which considers THK as one of the options for health care. The Ugandan government has taken part in international agreements like the CBD in an attempt to comprehend the legal standing of its medicinal resources[22]. Indonesia, on the other hand, passed law number 5 in 1994 in order to comply with international standards of protecting biodiversity in its country. The connection between ecological protection and traditional medicinal knowledge is considered critical for both of these countries[23]. It is important for them to protect THK because their sustainability is crucial to their national strength.

3.2. Emergence of biopiracy Indigenous Medicinal Practices in Uganda and Indonesia

Biopiracy refers to the unlawful patenting of plants, genes, and other biological material that are native to another country without fair payment. Biopiracy is considered to be a "silent disease" since it does not leave any evidence until the patent is successfully secured in the developed nations of the Global North[24]. For example, the Japanese cosmetic firm, Shiseido, was accused of patenting formulations derived from Javanese chili without the consent of Indonesians. In addition, the extraction of HN251 virus from Indonesia for vaccine development emphasized an "asymmetric flow" of biological material[25]. The resultant vaccines were sold back to Indonesia at highly expensive rates[26]. THK is gaining significance among the global pharmaceutical industry as a means of reducing the time and costs associated with the development of medicine. According to the literature, 74% of plant drugs already available in the market have been found based on folklore investigation[27]. In Uganda, the introduction of

[19] Clare Morrison, Fran Humphries, and Charles Lawson, "A Regional Review of Genetic Resource Access and Benefit Sharing—Key Issues and Research Gaps," *Environmental Policy and Law* 51, no. 5 (2021): 273–296.

[20] Alan C. Hamilton, "Medicinal Plants, Conservation and Livelihoods," *Biodiversity and Conservation* 13, no. 8 (2004): 1477–1517.

[21] Osikemekha Anthony Anani, Kenneth Kennedy Adama, Paul Atagamen Aidonojie, and Okagbare Aregbor, "Zooplankton and Community Phytoplankton: Influence of Personal Care Products, Legislative Status, and Possible Remediation," in *Emergent Pollutants in Freshwater Plankton Communities* (2025), 80–93.

[22] Teshager Dagne, "Law and Policy on Intellectual Property, Traditional Knowledge and Development: Legally Protecting Creativity and Collective Rights in Traditional Knowledge-Based Agricultural Innovations," *Estey Journal of International Law and Trade Policy* 11, no. 1 (2010): 78–127.

[23] Mbelani Binga, "The Governance of Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions under the Congo's Legal System: What Best Way Forward?" *The Journal of Law, the Postgraduate Course of Kansai University* 96 (2019): 231–271.

[24] Graham Dutfield, "TRIPS-Related Aspects of Traditional Knowledge," *Case Western Reserve Journal of International Law* 33 (2001): 233–275.

[25] Paul Atagamen Aidonojie, Esther Chetachukwu Aidonojie, Godswill Owoche Antai, and Kelechi Onwubiko, "Criminal Law Perspectives on Medical Legal Issues in Telemedicine," *Journal of Justice Dialectical* 3, no. 2 (2025): 198–222.

[26] Sarah A. Laird, *Biodiversity and Traditional Knowledge: Equitable Partnerships in Practice* (London: Routledge, 2010).

[27] Michael Blakeney, "Protection of Traditional Knowledge by Geographical Indications," *International Journal of Intellectual Property Management* 3, no. 4 (2009): 357–374; Mukhlis Mukhlis, Muhammad

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the concept of Plant Breeder's Rights (PBR) via international trade agreements has come out to be a significant threat to TK in agriculture and medicine. Such acts grant monopoly power to any new variety of plants, thus making farmers less interested in varieties with medicinal values due to their superiority[28].

Biopiracy is legally justified by the patenting laws of the western countries, like the United States, where the criterion for granting a patent is "novelty" and "non-obviousness". Orally communicated knowledge from the indigenous population rarely qualifies as prior art unless it is in written form[29]. In the well-known instance of neem tree, it had been used for its therapeutic effects in India for more than 2,000 years; yet a patent was granted to an American company owing to the new method of extracting the chemical compound. However, the patent had finally been withdrawn following a decade-long lawsuit[30]. Nevertheless, there are still scores of other patents related to it in existence today. The colonial mind-set prevails in contemporary times in cases where biodiversity has been labeled as the "common heritage of mankind" in order to give free access to scientists from the north. After they are discovered in laboratory settings, these assets become some kind of intellectual property[31]. Medicinal plants such as "tapak dara" that are used to fight cancer are some of the biodiversity assets harvested in Indonesia for foreign markets at the expense of the local community[32]. In a similar scenario, THK in Uganda is acquired by other parties through personal contacts or colonization.

Biopiracy emerges as a result of the signing of the TRIPS agreement that compels developing countries like Uganda to implement western-style intellectual property laws. The TRIPS agreement has been described as intellectual imperialism because it favors commercial interests rather than cultural and spiritual aspects. Life forms being considered holy by native communities in Uganda and Indonesia, their culture makes them oppose any form of commercialization of life forms[33]. Economic factors compel them to ignore this aspect of culture for reasons related to globalization of trade. The inability to offer legal protection results in loss of cultural identity due to the use of commercial Western drugs by new generations.

Table 1: Emergence of Biopiracy in Indigenous Medicinal Practices

Mutawalli, Paul Atagamen Aidonojie, Zulhilmi Paidi, and Muhammad Saleh Tajuddin, "Democratic State Governance: The Urgency of Implementing Conventions in Constitutional Practices in Indonesia," *Fenomena* 23, no. 1 (2024): 1–14.

[28] Brendan M. Tobin, "Bridging the Nagoya Compliance Gap: The Fundamental Role of Customary Law in Protection of Indigenous Peoples' Resource and Knowledge Rights," *Law, Environment and Development Journal* 9 (2013): iv–26; Paul Atagamen Aidonojie, George Mulingi Mugabe, Ismaila Hassan, Obieshi Eregbuonye, Muwaffiq Jufri, Toluwalase T. Ajibade, Collins Ekpenisi, Mercy Okpoko, Michael Inagbor, Amos Godfrey Atim, Mu'adil Faizin, and Khalid Saleh Y. Alammari, "Beyond Culture: Balancing Culture and Gender Equality on the Legality of Polygamy in the Case of Women's Pro Bono Initiative v. Attorney General in Uganda," *African Journal of Law and Justice System* 5, no. 1 (2026): 175–93.

[29] Willy Kibet Chebii, John Kaunga Muthee, and Karatu Kiemo, "Sociocultural Conservation Strategies of Prioritized Medicinal Plants, Their Historical Context and Space for Integration," *African Journal of History and Culture* 15, no. 1 (2023): 11–21.

[30] Graham Dutfield, "Sharing the Benefits of Biodiversity: Is There a Role for the Patent System?" *Journal of World Intellectual Property* 5 (2002): 899–931.

[31] M. T. A. Diantaris, "Conservation Strategies for Endangered Ethnobotanical Species in Tropical Regions," *International Journal of Advanced Ethnobotany Research and Applications* 1, no. 1 (2024).

[32] Yewande Oluwajobi, "Protecting the Intellectual Property Rights of Private Entities in Outer Space," *Kampala International University Law Journal* 7, no. 2 (2025): 122–143.

[33] Collins Ekpenisi, Amos Godfrey Atim, Olawumi Odeyinka-Apantaku, Adelowo Stephen Asonibare, and Ntale Rogers, "Right of Nature in Africa: Assessing the Feasibility of Granting Legal Personhood to Rivers and Forests," *Kampala International University Law Journal* 8, no. 1 (2026): 16–34.

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Resource / Practice	Originating Region / Community	Entity Involved	Nature of Claim / Outcome
Javanese Chilies	Indonesia	Shiseido (Japan)	Patented formulations based on traditional medicinal properties without local consent.
HN251 Virus	Indonesia	US Lab (via WHO)	Virus sent for research; resulting vaccines were sold back to Indonesia at unaffordable prices.
Tapak Dara (Cancer Medicine)	Indonesia	Various (Global North)	Extracted for international cancer treatments without significant local benefit.
Plant Breeder's Rights (PBR)	Uganda	International Seed Corps	Use of IP laws to monopolize new plant varieties, discouraging the use of local medicinal varieties.
Neem Tree (Azadirachta indica)	India	W.R. Grace & Co. (USA)	Patented antifungal/insecticidal properties known for 2,000 years; later revoked after a 10-year legal battle.
Turmeric	India	University of Mississippi	Patented wound-healing properties; revoked after India provided written proof of prior traditional use.
Hoodia Plant	South Africa (San People)	CSIR / Pfizer	Patented as an appetite suppressant; San people only learned of it via a press release after the patent was granted.
Ayahuasca Vine	Amazon Basin	Loren Miller (USA)	Patented for its unique properties; faced major protests from indigenous groups and subsequent re-examination.
Basmati Rice	India / Pakistan	RiceTec (USA)	Patented as a "new" variety, threatening traditional export markets; parts of the patent were later cancelled.
Arogyapacha Plant	South India (Kanikar Tribe)	TBGRI (India)	Developed as 'Jeevani' drug; the community shared knowledge sacred to them in exchange for a portion of royalties.
Terminalia ferdinandiana	Australia (Aboriginal)	US Applicants	Patented for medicinal/food use; application withdrawn after objection based on 40,000 years of prior use.

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Sources: David[34], Otim[35], Cynthia[36], Anti[37], Ritu[38]

The chart clearly demonstrates the systemic misappropriation of biotic resources and indigenous knowledge by entities within the Global North. This includes situations such as plant breeders' rights in Uganda and the patenting of Javanese chili peppers in Indonesia, among others, without any consent from local communities.

3.3. Challenges of benefit-sharing and recognition of indigenous communities

The major difficulty involved in ensuring fair and equitable benefit-sharing is rooted in the inherent incongruity of the Western intellectual property regime and the indigenous community's practices. The knowledge base used to treat illnesses in traditional societies is usually collective and cumulative, thus making it impossible for an inventor to be named for a patent[39]. In the case of Uganda, existing legislation, such as the Industrial Property Act of 2014, focuses on the normal means of creation, which puts the customary user at risk of being guilty of misappropriation of their knowledge. States are required by the Nagoya Protocol to recognize customary laws and provide PIC; however, its application is lacking in both legal systems. It is problematic to ascertain who the rightful owners of the knowledge are because of the diversity of the indigenous people. For instance, medicinal plants such as Kava and Basmati rice can be used by many indigenous populations across international borders, thus making it challenging to allocate royalties among them[40]. In Indonesia, although the Indonesian government has endeavored to safeguard Community Intellectual Property through Government Regulation No. 56/2022, defensive actions are deemed inadequate against biopiracy.

The imbalance of power in favor of the "MegaCorps" from the Global North compared to Global South societies frequently causes an imbalance in terms of bargaining when contracts are negotiated. Compensation usually comes only when the firm has made some profit or been publicly criticized[41]. In the instance of the San tribe and Hoodia, the tribe was only aware of the patent through a press release, feeling as though "someone had stolen the family silver." Moreover, it is often culturally unethical for indigenous people to accept financial rewards because sharing would mean accepting the patent of cultural property[42]. The absence of

[34] David Conforto, "Traditional and Modern-Day Biopiracy: Redefining the Biopiracy Debate," *Journal of Environmental Law and Litigation* 19, no. 2 (2004): 357–397.

[35] Otim Enoch, "Legal Protection of Traditional Knowledge in Uganda: Development, Problems and Perspectives," *International Journal of Language, Literature and Culture* 4, no. 3 (2024): 1–32.

[36] Cynthia M. Ho, "Biopiracy and Beyond: A Consideration of Socio-Cultural Conflicts with Global Patent Policies," *University of Michigan Journal of Law Reform* 39, no. 3 (2006): 433–542.

[37] Anti Mayastuti and Hari Purwadi, "Protection of Indonesia's Biodiversity against Biopiracy through Adoption of Traditional Knowledge Digital Library," *IOP Conference Series: Earth and Environmental Science* 1438 (2025): 012066.

[38] Ritu Priya and Chris M. Kurian, "Regulating Access and Protecting Traditional Health Knowledge through Intellectual Property Rights? Issues from a Holistic Health Systems Perspective," *Science, Technology & Society* 23, no. 3 (2018): 504–529.

[39] Praditha Dewa Gede Edi, Rahayu Mella Ismelia Farma, Perbawa I Ketut Sukewati Lanang Putra, Paul Atagamen Aidonojie, and Adelowo Stephen Asonibare, "The Future of Bali's Kerauhan Tradition: Legal Pluralism, Reforms, and Conflict Adjudication Challenges," *Journal of Sustainable Development and Regulatory Issues (JSDERI)* 4, no. 1 (2026): 118–37.

[40] David Conforto, "Traditional and Modern-Day Biopiracy: Redefining the Biopiracy Debate," *Journal of Environmental Law and Litigation* 19 (2004): 357–396.

[41] Erma Rusdiana, Paul Atagamen Aidonojie, Muwaffiq Jufri, Mundu M. Mustafa, Godswill Owoche Antai, and Maria Edet Umo, "Enhancing Phyto-Conservation through Legal Frameworks for Climate Change Mitigation in Uganda and Indonesia," *Journal of Law and Sustainable Development* 14, no. 1 (2026): e04583.

[42] Ifeoma Chisomaga Korie, "Towards Attaining Self-Sufficiency in Organ Transplantation: A Comparative Study of the Ugandan and Nigerian Legal Framework," *Kampala International University Law Journal* 6, no. 2 (2024): 125–140.

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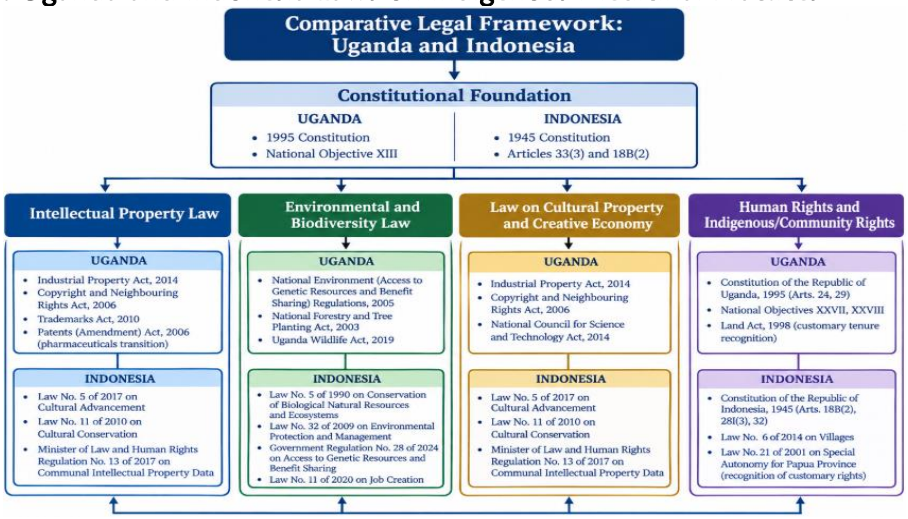
documentation and database in Uganda and Indonesia makes it easier for patent offices to issue rights on account of the absence of "prior art" in writing. In order to deal with this problem, the TKDL in India has succeeded in opposing more than 36 patents in Europe. Indonesia also seeks to follow the TKDL example in bringing together all genetic resource databases into one information system[43]. The danger in documenting confidential knowledge lies in exposing the confidential information to the public and hence facilitating piracy that it wants to prevent.

In addition, TRIPS-plus agreements advocated by both the US and EU countries tend to take away from the flexibility embedded within international law concerning the interests of developing countries. The agreements ensure that countries cannot design laws concerning patents with provisions for protection of local medicinal species or responding to any public health emergencies[44]. For example, in Uganda, there is a high rate of illiteracy among practitioners as well as ignorance about the rights related to IPs, which makes it difficult for the local population to influence the formulation of such laws. Unless there are stringent compliance measures at an international level, including origin disclosures in patent laws, indigenous populations will continue to face problems.

3.4. Legal Protection of Indigenous Medicinal Practices in Uganda and Indonesia

In Uganda and Indonesia, the legal protection of indigenous medicinal practices is rooted in constitutional mandates and sovereign rights over natural resources. These laws are therefore presented in a diagrammatical flow below.

Figure 1: Uganda and Indonesia Laws on Indigenous Medicinal Practices



Source: Design by authors based on data obtained

Under Article XXIII, the constitution of Uganda in 1995 states that it is mandatory on the part of the government to ensure that the natural resources and the fauna and flora in them are protected on behalf of the people[45]. Likewise, article 33(3) of the Indonesian constitution of 1945 states that the land, water, and natural resources in them are in the hands of the state

[43] Olaitan O. Olusegun and Lawrence Olawoye Taiwo, "Reimagining Mental Health Rights Protection in Nigeria: Legal and Institutional Dimensions," *Kampala International University Law Journal* 8, no. 1 (2026): 94–112.

[44] Willy Kibet Chebii, John Kaunga Muthee, and Karatu Kiemo, "The Governance of Traditional Medicine and Herbal Remedies in the Selected Local Markets of Western Kenya," *Journal of Ethnobiology and Ethnomedicine* 16, no. 1 (2020): 39.

[45] constitution of Uganda in 1995

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and are to be used for the greater benefit of the people[46]. This state control acts as the primary safeguard against the crime of biopiracy, in which biological material and the traditional knowledge that goes along with it is taken without permission. Further, the uniqueness of the traditional groups and their customary rights are recognized in the Indonesian constitution, as stated in article 18B(2). In both countries, medicinal use is considered an intangible resource, closely connected to the country's genetic resource. Protection of this resource will entail the need to deal with the overlapping issue of intellectual property, environment and human rights issues.

Uganda uses the National Environment (Access to Genetic Resources and Benefit Sharing) Regulations, 2005 as its major legal instrument for protecting information on medicines. The term "intangible component" under the regulations includes local knowledge, technology, and way of life associated with genetic resources[47]. The regulations, especially Regulation 10, aim to avoid biopiracy by requiring that access to the country's genetic resources can only be achieved if the collector gets a prior informed consent from the local community or the owner of the concerned genetic resource and enters into an "accessory agreement" with the same party. Also, Regulation 14 requires that a Materials Transfer Agreement (MTA) be entered into between the collector and the leading agency such as the Uganda National Council for Science and Technology. In addition, regulation 15 stipulates that all MTAs should have details regarding the quantities of the materials collected and also provide for the sharing of benefits that result from the research and development[48]. The benefits may include technology transfer, royalties and even joint ownership of intellectual property. However, the regulation faces difficulties when it comes to getting the real informed consent from the local communities through the complexity of administration as Regulation 13 provides that local government units to represent communities, which may lead to a disconnect between official consent and indigenous will.

The Uganda Industrial Property Act, 2014[49], provides other safeguards against biopiracy through regulating patentability. According to section 8(3)(c), methods for diagnosing or treating humans or animals shall not be considered patentable inventions. Importantly, section 21(8) states that patent application must indicate the source of genetic or biological resources and the related traditional knowledge utilized in the invention. When an invention is created using genetic resources that were accessed illegally, then the Minister is empowered to acquire proprietary rights, and in accordance with section 67, the Government will retain a share of at least twenty percent of such patents. Further, when the moral or public order is threatened, then the application can be withdrawn by the relevant authority[50]. However, one flaw that has been identified with the Act involves the exclusion of pharmaceutical products from patentability prior to 2016 and the authorization by the World Trade Organization. This is likely to reduce the chances of obtaining formal intellectual property rights protection on indigenous formulations of such drugs. The Copyright and Neighboring Rights Act, 2006 recognizes the inclusion of 'traditional folklore and knowledge' within its definition, stressing their communal aspects.

[46] Indonesian constitution of 1945

[47] Nahom M. Kebede, "Status of Ethiopian Intellectual Property Laws on the Protection of AI-Generated Agricultural Research Outputs," *Kampala International University Law Journal* 7, no. 1 (2025): 119–127.

[48] Aishatu Eleojo Adaji, "Rethinking Biotechnology Regulation in Nigeria: The Role of Open Science and Human Rights, Lessons from India," *Kampala International University Law Journal* 7, no. 1 (2025): 24–39.

[49] Uganda Industrial Property Act, 2014

[50] Jacques Kabano, Uche Nnawulezi, Amahoro S. Adeline, Faustin Ntwali, and Jean Vianney Mugisha, "Safeguarding Cultural Heritage: Protecting Traditional Knowledge in View of the Intellectual Property Framework in Rwanda," *Kampala International University Law Journal* 7, no. 2 (2025): 109–121.

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Indonesia's Patent Act (Act No. 13 of 2016)[51] shares similarities with Uganda's Patent Act regarding disclosure requirement, which aims at protecting the country against biopiracy. For instance, article 26(1) states that inventions based on genetic resources or traditional knowledge must indicate their origins in the description of the invention. The failure to follow this disclosure results in the invalidity of the patent application under article 132(1)(b). Similar to the Ugandan law, the Indonesian Patent Act does not grant patents for medical treatment methods under article 9. The latter provision ensures that such treatment methods will not be subjected to patenting. The 2014 Copyright Act (Act No. 28)[52], however, follows a distinct route concerning "traditional cultural expressions" where copyright belongs to the State according to article 38. Under this article, the State must inventory and conserve such TCEs, which refer to traditional ceremonies or fine arts created from leather, metal, and stones. The idea behind this policy was to protect the TCEs from being patented by other countries. Nevertheless, this state-owned copyright policy could deprive the source community of its rights. While article 38(3) requires that consideration shall be given to values of the custodians, it also restricts the community's right.

In addition to the above Indonesian laws concerning IP, Law No. 5 of 2017 on Cultural Advancement[53] specifies "traditional knowledge" and "traditional technology" as the main objects that should be protected. The mentioned terms include indigenous medicine and herbal compositions. The law interacts well with Law No. 11 of 2010 on Cultural Conservation and guarantees site management that will increase the economic benefits of the local population. Moreover, Law No. 20 of 2016 on Marks and Geographical Indications offers "a Right on Geographical Indications" of products created in special regions, characterized by the combined effect of natural resources and human influence and resulting in unique features. Thus, geographical indications can help defend traditional medicinal herbs, as this will protect them from biopiracy because the geographical indication does not belong to anyone else except those living in the region. In addition, Article 72 of the same law permits revoking a registered mark that is identical to folklore and other cultural heritage of the population. Thus, this legal act defends against commercial use of indigenous culture by other organizations or companies. However, the effectiveness of the laws discussed is associated with the development of "an integrated cultural data collection system". Lapses often arise from incomplete inventories, which leave undocumented medicinal practices vulnerable to exploitation. Without comprehensive registration, the "defensive protection" through centralized databases remains theoretically sound but practically insufficient in many remote regions.

A critical evaluation of both nations demonstrates that despite having developed and sophisticated legal framework mechanisms to tackle biopiracy challenges, there remain major gaps in terms of enforcement and empowerment of communities. Both countries adopt a state-centered legal mechanism in which the government acts as either the trustee or owner of community knowledge; for instance, the Indonesian government owns the TCE copyright while Uganda adopts the same policy for its biological resources. Such measures have the potential of driving indigenous healers out of the management process of such valuable knowledge. In the case of Uganda, there was a transitional period during which local discoveries lacked protection through patents due to pharmaceutical patentability[54]. The problem in the Indonesian case is associated with the need for the Custodian in the legal framework which may be controversial if the legality of the local institution remains undetermined[55]. In many cases, biopiracy occurs due to lack of enforcement of laws in contrast to grassroots where

[51] Indonesia's Patent Act (Act No. 13 of 2016)
[52] 2014 Copyright Act (Act No. 28)
[53] Indonesian laws concerning IP, Law No. 5 of 2017 on Cultural Advancement
[54] Chandra Prakash Kala, "Medicinal and Aromatic Plants: Boon for Enterprise Development," *Journal of Applied Research on Medicinal and Aromatic Plants* 2, no. 4 (2015): 134–139.
[55] Bhushan Patwardhan and Avinash Patwardhan, *Traditional Medicine: Modern Approach for Affordable Global Health* (Geneva: World Health Organization, 2005).

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people lack the necessary know-how to deal with PIC/MTA mechanisms. Lastly, there is the problem of "intangible component" of medicinal practice which does not comply with patent law until it is considered prior art.

3.5. Comparative analysis of both Laws

Legal regimes in both Uganda and Indonesia pursue a similar goal – safeguarding indigenous medicine knowledge from any unauthorized use for commercial gain, known as biopiracy. The laws in Uganda make extensive use of conservation legislation and industrial property laws, centering on PIC and material transfer agreements[56]. The laws in Indonesia have been drafted following the communal intellectual property regime, with the State being the main repository of TCEs. Both states place great importance on state sovereignty over the natural resources under the constitution[57]. Although the laws offer effective defenses, there remain difficulties in giving power to the source community.

Table 2: Comparative Analysis of Legal Protection Laws

Feature	Uganda Legal Framework	Indonesia Legal Framework
Constitutional Basis	National Objective XIII mandates the State to protect important natural resources, including fauna and flora, on behalf of the people.	Article 33(3) asserts that land, water, and natural resources are under the power of the State to be used for the greatest benefit of the people.
Disclosure of Origin	Section 21(8) of the Industrial Property Act requires patent applications to identify the origin of genetic resources or traditional knowledge used in an invention.	Article 26(1) of the Patent Law mandates that inventions derived from genetic resources or traditional knowledge must clearly state their origin in the description.
Ownership of Traditional Knowledge	The Copyright and Neighbouring Rights Act recognizes "traditional folklore and knowledge" as eligible for protection, often viewed as communal property.	Article 38 of the Copyright Law vests the Copyright of traditional cultural expressions directly in the State, which acts as the official custodian.
Access and Benefit Sharing	Regulation 10 of the Access to Genetic Resources Regulations requires a written Prior Informed Consent (PIC) and an Accessory Agreement with the community.	Law No. 13 of 2016 stipulates that benefit sharing and access to genetic resources must be exercised in accordance with national legislation and international treaties.
Exclusions from Patentability	Section 8(3)(c) excludes diagnostic, therapeutic, and surgical methods for treating humans or animals from being regarded as patentable inventions.	Article 9(b) prohibits patents for any method of examination, treatment, medication, and/or surgery applied to humans and/or animals.

[56] Kingsley Osinachi N. Onu and Ngozi Chinwa Ole, "Impacts of COVID-19 Pandemic on NDC Implementation Action Plan for the Agricultural Sector in Nigeria," *Kampala International University Law Journal* 6, no. 1 (2024): 278–298.

[57] Lydia Kirsen Ayilo and Tabu Lochupar Baroch Kumoi, "Legal Issues Concerning Customary Land Rights and State Legislation Conflict in Uganda and Cameroon," *Afrocentric Legal Review* 1, no. 1 (2025): 32–42.

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4. CONCLUSION

The two countries have devised thorough laws in terms of protecting their respective indigenous medicinal systems against biopiracy through state sovereignty of their biological diversity. The two states emphasize the mandatory origin requirement of patents in relation to the indigenous medicinal knowledge used in their inventions. While Uganda concentrates on Prior Informed Consent (PIC) and specific Material Transfer Agreement (MTA) between the collectors and the indigenous people, Indonesia applies a community intellectual property regime with the State as the custodian of the Traditional Cultural Expressions (TCE), which includes the medicines' rituals. These laws offer only a defensive mechanism and upon analysis, they show a trend towards state-centered control of indigenous medicinal knowledge, hence threatening the autonomy of indigenous healers. There is always some room for error with regards to the problem of getting the consent of inhabitants of the communal lands and also recording oral traditional knowledge. All in all, both laws clearly have strong intentions to protect themselves against biopiracy despite problems like site construction and lack of empowerment of the source communities.

For better legal protection, Uganda and Indonesia need to move toward an inclusive rights regime, where indigenous peoples get the power to become legal caretakers for themselves. Improving the cultural data collection mechanism becomes important for taking inventories of undocumented medicinal remedies so that defensive patenting can be done. The process related to obtaining PIC must be streamlined such that any benefit agreement reaches the source healers. It needs to be highlighted that Uganda must make sure that issues related to patenting of the formulations used in pharmaceuticals are resolved to protect itself. On the other hand, the State-held copyrights on the traditional cultural expressions should give priority to the values associated with the custodians. Legal awareness among indigenous practitioners is suggested so that they could use Material Transfer Agreements (MTAs) and Geographical Indications effectively. Alternative dispute resolution methods should be adopted by the court to resolve issues regarding traditional knowledge. Both nations can erect a robust shield against biopiracy by incorporating customary laws into national laws. While doing so, they can develop in a sustainable way and preserve the historical and social facets of their national life in collaboration with each other in all remote rural areas.

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