Research Article

Traditional Medicine Knowledge as Communal Intellectual Property in Aceh: How to Protect It and the Role of Women

Yulia[1*], Jamaluddin[1], Temitope Oloko[2], Aydan Mammadova[3]
[1]Faculty of Law, Universitas Malikussaleh, Indonesia
[2]Faculty of Law, Lagos State University, Nigeria
[3]Faculty of Law, Baku State University, Azerbaijan
[*]yulia@unimal.ac.id

ABSTRACT

Traditional medicinal knowledge is part of traditional knowledge and is also recognized as communal intellectual property, as stipulated in Article 18B paragraph (2) of the Indonesian Constitution concerning the traditional rights of communities, and Article 28I paragraph (3) of the Constitution regarding respect for cultural identity and the rights of traditional communities.This study aims to analyze the protection of traditional medicinal knowledge as communal intellectual property in Aceh and the role of women in managing traditional medicinal knowledge in Aceh. This research employs a qualitative method with an empirical legal approach, using both primary and secondary data. Primary data were collected through structured interviews with respondents and informants.The findings indicate that there is currently no protection for traditional medicinal knowledge as communal intellectual property (CIP) in Aceh, as it has not yet been documented or recorded. The Acehnese community preserves traditional medicinal knowledge orally, passing it down to the next generation within their families particularly among women who manage herbal recipes making this knowledge highly vulnerable to loss and difficult to protect from biopiracy. Women hold a strategic role as managers, inheritors, and innovators in the development of traditional medicinal knowledge, whether through family healing practices, customary rituals, or community-based treatments.

Keywords: **Traditional Medicine Knowledge; Communal Intelectual Property; Woman; Aceh.**

A. INTRODUCTION

The rise of indigenous peoples in recent decades and their ability to exploit the law gives them an advantage (Dutfield & Suthersanen, 2024). They seek to benefit from the commercial use of their traditional medicinal knowledge by pharmaceutical industries. The issue of various aspects of protecting traditional medicinal knowledge are proposed in securing the rights of traditional communities (Ray, 2023). In the development of IGC GRTKF meetings, various countries submitted proposals for the protection of traditional knowledge which also includes traditional medicinal knowledge. The WIPO has suggested technical proposals on databases and registries of traditional knowledge (Fredriksson, 2021). In fact, some countries including India, Panama, Peru, and Venezuela document TK in the form of databases or registries (Oguamanam, 2025).

On the one hand, issue the development of the pharmaceutical industry which uses traditional medicinal knowledge in their medicinal products which generates high economic value (Herrera-

Feijoo et al., 2023). On the other hand, issue the use of traditional medicinal knowledge is a human heritage that can be used by everyone because it is in the public domain (Fredriksson, 2023).

Traditional medical knowledge has social, cultural, and scientific value in the maintenance of health, and in the prevention, diagnosis, and improvement or treatment of physical and mental illnesses. Increased commercial and scientific interest in traditional medicine has led to a demand for better recognition, respect, preservation, and protection of traditional medical knowledge (WIPO, 2015). Traditional medicinal knowledge is medicinal knowledge that is processed traditionally and passed down from generation to generation based on beliefs and customs, whether magical or traditional knowledge (Mayo, León, & Villamar, 2024). In traditional medicine knowledge, there is a process of creating or recreating materials found in nature into healing media. This becomes unfair to the holders of traditional medicinal knowledge who have preserved and maintained it, when it is used by other parties for financial gain without permission and contribution.

The WIPO Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge (GRATK Treaty) adopted on 24 May 2024 requires each patent applicant to indicate the country of origin of the genetic resources used and the indigenous or local community that provided the associated traditional knowledge. This treaty is a deliberate action to avoid biopiracy in the international system.

The pharmaceutical industry in Indonesia utilises local medicinal plants such as turmeric, Curcuma xanthorrhiza (temulawak), Andrographis paniculata (sambiloto), Centella asiatica (pegagan), red ginger (jahe merah), and Phyllanthus niruri (meniran) to produce health supplements, standardised herbal medicines, and phytopharmaceutical products (Sholikhah, 2016). Meanwhile, the cosmetics industry develops products based on herbal extracts such as aloe vera, bengkoang, coconut oil, citronella oil, betel leaf extract, as well as traditional aromatherapy ingredients including sandalwood, agarwood, and patchouli. This transformation demonstrates a process of commercialization and industrialization of traditional knowledge that was previously communal, non-commercial, and transmitted orally through cultural practices (Yulia & Zainol, 2014). This has called an urgency to immediately provide protection on Indonesian traditional knowledge.

In the context of pengetahuan tradisional, Indonesian has legal framework should provide comprehensive protection for communal IP including pengetahuan obat tradisional. Article 4 Government Regulation no. 56/2022 concerning Communal Intellectual Property emphasizes that communal intellectual property consists of traditional cultural expressions, traditional knowledge, genetic resources, indications of origin and potential geographical indications (Roisah, 2015).

The issue of protecting traditional medicinal knowledge is also related to the presence of

women who contribute to the protection and sustainability of traditional medicines (Li et al., 2024). Indonesian women as citizens have equal rights and responsibility in the protection and utilisation of traditional medicinal knowledge. This is related to the equality of women's rights in political, economic, social and cultural sectors under the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) 1979 (Purwanti et al., 2021). Then in the 1995 UN Conference on Women in Beijing, which set the agenda for worldwide efforts for gender equality and women's empowerment in the sectors of education, health, political engagement and access to economic resources. Furthermore, it is also confirmed in Target 5 of the 2015 SDG Agenda, which aims to achieve gender equality and empower women in education, work and political participation (Asadullah, Webb, & Islam, 2024). The 1945 Constitution also recognizes the traditional rights of the community. In Acehnese society, women are responsible for family health and spend more time caring for the sick. The skill of preparing traditional medicine is usually passed down orally from mother to daughter. Women not only prepare remedies for family health care such as for fever, wounds, postpartum recovery, skin diseases, or coughs but also serve as providers of medicinal services within their communities. This is interesting to further examine the role of women in the health sector, as has been emphasized in the 1995 UN Conference on Women in Beijing and the 1979 CEDAW, especially the role of women in managing traditional medicinal knowledge in Aceh so that it does not become extinct and is not used by irresponsible outside parties.

Studies on the protection of traditional medicinal knowledge have been carried out by Madhavan regarding innovation and ownership of traditional medicine in Tibet. The study concludes that holders of traditional medicinal knowledge tend to become victims of volatile market forces and rarely obtain a fair share of the added value generated through commercialization, due to weak bargaining power as well as limited social capital and technological capacity. Meanwhile, the existing patent system does not recognize "new methods" in "diagnosis" and "treatment," nor traditional knowledge, even though it is precisely in these areas that most experience-based innovation occurs in Tibetan medical practice. Therefore, the government needs to take this issue into account when formulating intellectual property regulations (Madhavan, 2017).

Studies have also been carried out by Kurnianingrum, who concludes that the protection of traditional medicinal knowledge has been addressed in several intellectual property regulations. However, the scope of protection within the intellectual property system remains insufficient to prevent the increasing cases of misappropriation by foreign entities. Furthermore, the role of the state in safeguarding traditional medicinal knowledge can be implemented through several measures, including regulatory development, the establishment of a national database, the formulation of benefit-sharing

mechanisms, and the regulation of access to traditional medicinal knowledge (Kurnianingrum, 2018).

Martini's et al study on the protection of traditional medicinal knowledge within the Sasak community in West Nusa Tenggara concludes that a regional regulation specifically governing a protection scheme for Sasak traditional medicinal knowledge is necessary to prevent acts of misappropriation. Thus, a legal gap still exists, as there is no sui generis legislation that provides comprehensive protection for traditional medicinal knowledge (Martini, Haq, & Sutrisno, 2017).

Disemadi's et al study concludes that the intellectual property system used to protect traditional knowledge and Indonesia's biological resources cannot function effectively, because the philosophical values of Indonesian society rooted in collectivism and spirituality are incompatible with the individualistic principles inherent in the intellectual property regime. Therefore, alternative protective measures are required, such as developing legal provisions aligned with the cultural principles and needs of the relevant local communities, creating documentation not for patent purposes but for preserving traditional cultural practices, and establishing an appropriate benefit-sharing mechanism that reflects the realities and conditions of the respective indigenous and local communities (Disemadi et al., 2024).

Based on previous studies conducted by Madhavan, Kurnianingrum, Martini et al., and Disemadi on the protection of traditional medicine, the main focus has been on normative and institutional aspects, such as intellectual property law regimes, sui generis protection models, access and benefit-sharing mechanisms, and biopiracy prevention. In contrast, this study links the protection of traditional medicinal knowledge with the role of women.

There have also been studies on the role of women in traditional medicine by Voeks regarding the protection of traditional medicinal knowledge involving gender perspectives in Northeast Brazil. The findings of this study are that women possess more extensive knowledge regarding the identification and medicinal use of plants compared to men. This higher level of understanding among women is attributed to several factors: the historically gendered division of space and labor, the greater potential for identifying and collecting medicinal plants in anthropogenic environments, and the role of women as primary providers of healthcare within the family (Voeks, 2007). A similar study was conducted by da Costa in Brazilian communities, which demonstrated that cognition and the distribution of ethnobotanical knowledge are influenced by gender structures. Women showed higher values in plant knowledge repertoires, whereas men's plant knowledge appeared more heterogeneous, indicating a lower level of information sharing among them. The social networks among women were more interconnected, reflecting a higher degree of knowledge exchange, and included a greater number of central individuals who likely play a key

role in maintaining the cohesion and continuity of knowledge within the community (da Costa, Guimarães, & Messias, 2021).

Research on the role of gender in biodiversity knowledge in Mexico has been conducted by Chambers, who concludes that there are significant differences between women's and men's knowledge regarding biodiversity and conservation. In the Bajío region of Mexico, gendered knowledge emerges because men and women within households are responsible for different tasks and, in some cases, manage separate plots of land. Moreover, as increasing economic pressures compel men to work away from their communities for extended periods, women have increasingly become the primary agricultural decision-makers (Chambers & Momsen, 2007).

However, studies that have been carried out by Voeks, da Costa et al., and Chambers indicate that women often possess richer and more structured knowledge regarding the identification and use of medicinal plants compared to men. However, these studies remain situated within the domains of anthropology, ethnobotany, and social science, without linking their findings to the legal protection dimension of traditional medicinal knowledge owned and transmitted by women.

Therefore, this study introduces a new perspective that has not been widely explored in previous research, namely the linkage between the protection of traditional medicinal knowledge and the role of women as the primary holders, transmitters, and custodians of such knowledge within the community. This dimension demonstrates that traditional medicinal knowledge is not only a legal and cultural entity, but also a component of social structure that is strongly shaped by gender relations, particularly in the context of Aceh. This paper will analyze the protection of traditional medicinal knowledge as communal intellectual property in Aceh, with a particular focus on the role of women in managing traditional medicinal knowledge as communal intellectual property in Aceh.

B. RESEARCH METHODS

This research is qualitative research with an empirical legal approach, which uses primary data and secondary data. The research location was carried out in Aceh as one of the areas where people's lives are inseparable from traditional medicinal knowledge. Primary data collection was carried out through structured interviews, which were submitted to respondents and informants. The determination of respondents and informants was carried out using purposive sampling, namely selecting samples that were related and could represent this research, namely women involved in making traditional medicine and the district government. Then, to test the validity and completeness of the empirical data, a Focus Group Discussion was also carried out. The literature study was carried out as a secondary data collection method as a basis for analyzing the protection of traditional medicinal knowledge and the role of women in Aceh.

This research was carried out in five research stages, namely: first, conducting literature studies and preparing research instruments. Second, analysis of literature data and preparation of hypotheses for the protection of traditional medicinal knowledge and the role of women in Aceh. Third, conducting a survey/mapping/field study to obtain data on community traditional medicine knowledge and the role of women in Aceh. Fourth, empirical data analysis, namely through verification, clustering and analysis of field data. Fifth, evaluation of program implementation, preparation of draft reports and research outputs.

Secondary data and empirical data from research results are categorized in a simple taxonomy process that concerns several important issues and topics. Data that has been collected and has gone through the verification, categorization and reduction stages will be checked for data validity. This researcher also used comparative materials from journal articles written by previous researchers on related themes. Data analysis is an activity in research in the form of conducting studies or reviewing the results of data processing which is assisted by previously obtained theories. The results of this analysis will be written into reports and research outputs.

C. RESULTS AND DISCUSSION

1. National Legislation for Traditional Knowledge

Article 18.B paragraph (2) of the 1945 Indonesian Constitution states that the State recognizes and respects customary law community units and their traditional rights as long as they are still alive and in accordance with the development of society and the principles of the Unitary State of the Republic of Indonesia, which are regulated in law (Roisah, 2017). Then it is also confirmed in Article 28.I paragraph (3) the 1945 Indonesian Constitution that the cultural identity and rights of traditional communities are respected in line with developments over time and civilization. Therefore, what is emphasized is that recognition is not only the organizational unit but also includes or "along with its traditional rights" which can be in the form of traditional medicinal knowledge owned by the Acehnese people.

Protection of traditional knowledge, including knowledge of traditional medicines within the framework of intellectual property, has been accommodated in Law No 13/2016 concerning Patents (the Indonesian Patent Law No. 13/2016) (Adhiyatma & Roisah, 2020). Article 26 paragraph (1) of the Indonesian Patent Law No. 13/2016 states that if an invention is related to and/or derived from genetic resources and/or traditional knowledge, the origin of the genetic resources and/or traditional knowledge must be stated clearly and correctly in the description. Paragraph (2) further emphasizes that information about genetic resources and/or traditional knowledge is determined by official institutions recognized by the government. Then in paragraph (3) it is emphasized that the sharing of results

and/or access to the use of genetic resources and/or traditional knowledge is carried out in accordance with the provisions of laws and regulations and international agreements in the field of genetic resources and traditional knowledge (Irawan, 2017).

Indirect protection of traditional knowledge can be covered through intellectual property rights, where every patent registration must comply with the provisions as stated in Article 26 of of the Indonesian Patent Law No. 13/2016. Substantively, Article 26 of of the Indonesian Patent Law No. 13/2016 requires patent applicants who use genetic resources (GR) and/or traditional knowledge (TK) to disclose their origin (Raharjo & Roisah, 2021). The purpose is to prevent biopiracy and to provide recognition as well as potential economic benefits to holders of traditional rights. This provision is in line with the WIPO GRATK Treaty 2024 and the Access and Benefit Sharing (ABS) principle under the Nagoya Protocol (Samsithawrati et al., 2025). However, the article has yet to establish a mechanism that can provide benefit sharing for holders of traditional knowledge. Although a database is available on the Directorate General Intellectual Property website for data collection and recording, the amount of recorded data remains limited. In addition, many holders of traditional knowledge in indigenous communities are still unaware of their rights and the provisions of Article 26 of the Indonesian Patent Law No. 13/2016 (Prabandari et al., 2020).

However, direct protection of traditional knowledge cannot be done because traditional knowledge has the following incompatibilities:

a. The requirement for novelty is not met, traditional knowledge, especially traditional medicine, is passed down from generation to generation so it is not known who discovered it and when it was discovered.
b. The inventive step is not fulfilled because traditional medicines are often discovered accidentally and developed based on experience passed down from generation to generation without following modern steps, so it is difficult to prove the inventive step.
c. It is difficult to fulfill the requirement of "applied in industry" because traditional medicinal knowledge does not have commercial content so it is difficult to describe the application of this knowledge in industrial activities.

Therefore, traditional knowledge needs to be inventoried and recorded in a communal intellectual property database so that it can become prior art in patent examinations as stipulated in Article 26 of the Indonesian Patent Law No. 13/2016 (Geofrey & Roisah, 2020).

The protection of traditional knowledge, particularly in the field of medicine, may create opportunities for irresponsible parties to perform acts of misappropriation (Nair, 2023), so an active role of the government is needed to collect data and register traditional knowledge as an act of defensive protection as emphasised in Government Regulation No. 56/2022. The goal of the defensive protection is to prevent the use of

protected communal intellectual property by other parties without the knowledge and permission of the owner of the communal intellectual property (Roisah et al., 2025). By recording and storing traditional knowledge in a database it is feasible to avoid exclusive claims by people or companies over knowledge that has been handed down over generations and hence avoid biopiracy.

The presence of Government Regulation No. 56/2022 on communal intellectual property confirms that traditional knowledge is communally owned, has economic worth, and still maintains the moral, social and cultural values of the nation. The communal nature refers to how traditional knowledge, particularly traditional medicinal knowledge, is shared, transmitted and controlled by the community collectively (Yulia et al., 2025). Traditional knowledge reflects the values, beliefs, practices accepted by community members, and strengthens feelings among them.

Moral rights under Government Regulation No. 56/2022 are inclusive. These rights include: the right of ownership over communal intellectual property belonging to the community; the right to protection against misuse, namely the prohibition of claiming or falsifying communal intellectual property of the community; and the right to protection against disparagement or degradation, which safeguards the value and dignity of communal intellectual property.

The concept of inclusive moral rights is defined as being able to involve parties who are committed to caring for, guarding, maintaining, developing and using (Purwanto, Mangar, & Alamanda 2024). Inclusive moral rights are guaranteed by the community of origin, which have economic benefits for the people of the community of origin and are valid indefinitely (Palar, Rafianti, & Muchtar, 2023). This matter shows that there is a combination of moral rights and economic rights in the protection of intellectual property.

Article 3 Government Regulation No. 56/2022 rights to communal intellectual property are held by the state, and the state is obliged to inventory, safeguard and maintain communal intellectual property. Therefore, recording of communal intellectual property is carried out by the Minister, Minister/head of non-ministerial government agency, and/or Regional Government in accordance with their authority as in Article 13 of Government Regulation No. 56/2022. Furthermore, in Article 14 of Government Regulation No. 56/2022 states the applications for recording communal intellectual property can be submitted by the community of origin or regional government to the Minister or Minister/head of non-ministerial government institutions.

In Article 28 of Government Regulation No. 56/2022, the government through Ministers, Ministers/heads of non-ministerial government institutions, and/or Regional Governments have the obligation to inventory, safeguard and maintain intellectual property which can be done through: (i) Preventing exploitation of intellectual property that is not in accordance with the value, meaning, identity of communal intellectual property, and/or social institutions that apply in

the community of origin; (ii) Mediation and/or advocacy or legal issues related to communal intellectual property; and/or (iii) Diplomacy with other countries.

The use of communal intellectual property is also regulated in Article 33 of Government Regulation No. 56/2022 which states that everyone can utilize communal intellectual property contained in the Indonesian communal intellectual property information system by stating the community of origin of the communal intellectual property, while maintaining the value/meaning/identity of communal intellectual property, and paying attention to the values that live within the host community. Utilization of this knowledge for commercial purposes must obtain permission in accordance with statutory provisions. In the event that communal intellectual property is sacred, confidential, and/or firmly held, the use of communal intellectual property must obtain permission from the community of origin. This rule is related to Article 26 of the Indonesian Patent Law No. 13/2016 which states that the use of traditional knowledge must state all information clearly in the patent description (Roisah, 2006).

The recording of traditional knowledge is carried out with the aim of preserving and protecting the collective knowledge of indigenous peoples and their rights therein including traditional knowledge, registration aims to provide information that makes it possible to defend the interests of indigenous peoples whose collective knowledge is concerned (Hananto & Prananda, 2019). Electronic recording of communal intellectual property through databases of ministries/non-ministerial government agencies and Regional Governments which are integrated with the Indonesian communal intellectual property information system. Application for recording communal intellectual property (Article 14 Law and Government Regulation No. 56/2022): (i) Community of origin to the minister, minister/head of non-ministerial government institution, or Regional Government; or (ii) Regional Government to the Minister or minister/head of non-ministerial government agency. Then the minister, minister/head of non-ministerial government agency, or regional government records communal intellectual property based on the results of the study.

Administrative requirements for recording traditional knowledge include: registration request form; description; supporting data; and a written statement of support for protection, preservation, development and utilization efforts signed by the Regional Government. The description at least contains the name of traditional knowledge; community of origin; traditional forms of knowledge; region/location; types of traditional knowledge; and documentation in audio and/or visual form (Article 21 and 22 Law and Government Regulation No. 56/2022).

In connection with the recording of Communal Intellectual Property, Article 7 of the Regulation of the Minister of Law and Human Rights No. 13/2017 mandates that an inventory shall be carried out by the Minister, which may be undertaken in cooperation with

ministries/agencies and/or Regional Governments. The inventory may be conducted through: field or feasibility studies; completion of administrative requirements; submission for the determination of inventory results; and/or exchange of data. Data that have been inventoried shall be recorded in the central database as stipulated in Article 14 of the Regulation of the Minister of Law and Human Rights No. 13/2017. The central database shall be implemented electronically, as provided in Article 13 of the same Regulation.

The recording of Communal Intellectual Property in the central database shall, at a minimum, contain: the name, form, and nature of the CIP; the custodian; the area or location of the CIP; a description of the CIP; documentation of the CIP; and other supporting data (Kusuma & Roisah, 2022). The central database shall be open to the public as regulated under Article 15 of the Regulation of the Minister of Law and Human Rights No. 13/2017, and may therefore be accessed by external parties, unless otherwise determined by the Minister. Should any party object to the recording of Communal Intellectual Property in the central database, such party may submit an objection as provided in Article 16 of the Regulation of the Minister of Law and Human Rights No. 13/2017 (Wijaya, Kusnadi, & Hadi, 2024).

Thus, data collection and recording of traditional knowledge through the communal intellectual property data integration system implemented in Indonesia is expected to become a solid foundation for protecting communal intellectual property in Indonesia. Defensive protection of communal intellectual property is used to defend the rights of the home community against misuse, fraud, fraud or misrepresentation, and theft or piracy (Dharmawan, 2017) Then also positive protection can be carried out in the form of legal action under the Indonesian Patent Law No 13/2016, Government Regulation No. 56/2022, and the Regulation of the Minister of Law and Human Rights No. 13/2017 are a firm step by the Indonesian government in protecting and preserving communal intellectual property (Wahyuni & Suryasaladin, 2023).

2. Traditional Medicinal Knowledge As Communal Intellectual Property

Indigenous peoples, as part of Indonesian society, have distinctive characteristics in the attribution of rights to objects, as is known in the concept of property rights (Liu et al., 2022). Traditional knowledge, including traditional medicinal knowledge, is an object in the form of knowledge (an intangible object) which, within indigenous communities, is recognized under private rights, collective rights, and communal rights (Lopez, 2023). These rights differ from those found in intellectual property rights, which are classified solely into absolute rights and relative rights (Anugerah & Santoso, 2022).

Traditional medicine constitutes part of the knowledge of indigenous peoples that may be subject to collective rights and communal rights, bearing in mind that traditional knowledge does not emerge instantaneously (Dutfield, 2017). The

collective rights of indigenous peoples over traditional knowledge are rights that inherently attach to a particular indigenous community as a result of cultural heritage passed down from generation to generation (Hossain & Ballardini, 2021). These rights are intrinsic to indigenous peoples under a kinship system and are based on genealogical links. Collective rights are collective in character, meaning that they are collectively owned by all members of the community and not individual persons (Yulia, 2023). Communal rights are rights in things governed by indigenous peoples through a kinship system based on territorial principles or genealogical-territorial principles. They exist because to the tight interaction between indigenous people and the knowledge, culture and natural resources that they sustainably manage (Xia, 2023).

The major features of the collective rights to traditional knowledge are the following (Yulia et al., 2020):

a. These rights are communal in nature, meaning that they belong to a group and not individuals, and each member of the community has equal rights and responsibility to protect, develop and use such information.
b. Not individually transferable, since the rights are intrinsic to the community and cannot be sold or transferred to third parties by a person without the approval of the community.
c. They are inter-generational, i.e. these rights are passed on from one generation to another and act as identity and cultural asset for future generations.
d. Containing the meaning of serving as a means for the conservation of nature and the sustainable use of biological resources.
e. Non-market oriented.

Accordingly, traditional medicinal knowledge is part of the traditional knowledge owned by a community inhabiting a particular territory (Salī, 2020). Traditional medicine has been included into the health system of indigenous people in Indonesia, particularly the Acehnese community. Traditional medicinal knowledge is a collective knowledge produced and preserved for generations within indigenous groups of a certain region or culture (Baez, Ramos, & Vasquez, 2024). Communal intellectual property: The traditional knowledge of medicine of a particular indigenous group or community as a whole.

3. Women and Traditional Medicinal Knowledge

Women are very crucial in sustainable development (Nikolaou et al., 2019). They have a unique expertise and experience in comprehending the social, economic and environmental concerns that plague their communities (Adefare et al., 2024). Women also have capabilities that can be employed to advance the concepts of sustainable development, including poverty reduction, environmental protection and sustainable management of natural resources (Guaita-Fernández et al., 2024).

Women also act as local wisdom conservators and environmental guardians, due

to their knowledge of plants, traditional medicinal plants and sustainable practices (Pontes et al., 2024). Biodiversity also comes in the form of a wealth of knowledge about the environment that local residents and communities have (Shisia, Ateng, & Nelima, 2018). Local wisdom contains: understandings from nomadic ancestors about food, medicinal plants and domestic animals; symbiotic relationship with the ecosystem; awareness of ecosystem structure and function of particular species; as well as the geographic range of the species.

In order to conserve biodiversity and limit its degradation, indigenous peoples can and must play a leading role in the global response to climate change (Dawson et al., 2021). This must be especially emphasized with regard to indigenous women who play an important role as stewards of natural resources. The increased involvement of indigenous peoples and indigenous women emphasises the value of their knowledge even more (Zurita-Gallegos et al., 2023).

Women had significantly higher knowledge of medical plants and plants with medicinal and food purposes and suggested that women's ethno-botanical knowledge was related to culinary expertise (Jahangeer et al., 2024). In the context of traditional medicine knowledge and medical practices, many women produce traditional remedies to treat ailments and this information is handed down to their children and grandchildren.

Women have a vital part in traditional medicine in the society as a collection of medicinal ingredients, processor of medication or a medical practitioner. They also become custodians of family and community health, tending to their families with traditional medicinal knowledge (Mensah et al., 2024). Women are the primary carers in the family, especially when it comes to the care of children and ailing family members. They care for their family in practical and therapeutic methods using traditional medicinal knowledge.

The Dayak Ngaju tribe in Borneo, women sando' or balian, use forest-based remedies such as belalai gajah leaves (Clinacanthus nutans) and ulin tree bark along with healing rituals in their practice of traditional healing. The women are considered to have a spiritual link with the forest guardian spirits, which increases the perceived efficacy of the cures they produce (Az-Zahra et al., 2021).

In Bali, balian usada (traditional healers) are often women who are experts in Usada palm-leaf manuscripts carrying prescriptions from tropical herbs and healing mantras . They have a crucial role in providing healthcare to rural areas especially in relation to maternal care, baby care and postnatal recovery (Muderawan et al., 2020).

In Papua, the Dani tribe women use medicinal plants from the Papua highlands, such as gembili leaves (Dioscorea esculenta) and mengkudu root (Morinda citrifolia) to cure wounds and skin diseases. They are also traditional birth attendants (mama dukun) who aid in childbirth and newborn care (Wahyudi et al., 2024)

Women's roles in traditional medicine Examples in other countries In India women in rural areas have a vital part in traditional birthing, postnatal care and the use of ayurvedic treatments such as ashwagandha (Withania somnifera) for maternal recovery. Their knowledge has been transmitted from generation to generation and is a component of community-based healthcare founded on Ayurvedic and Unani traditions (Sabar, 2023)

For instance, indigenous groups such as the Nahua and Zapotec in Mexico have traditional female midwives (partera tradicional) who employ a mix of abdominal massage techniques (sobada), herbal medicines like ruda (Ruta graveolens), and prayer to aid in childbirth (Mahecha-Ruiz et al., 2024).

In Haiti, Manbo (female Vodou priestesses) combine herbal medicine with Vodou spiritual activities, employing herbs such as zèb a fè (Lippia alba) for fever and mapou (Ceiba pentandra) in healing ceremonies (Galvin et al., 2023)

Traditional medicine in regard to reproductive health such as usage of plants for menstrual difficulties, pregnancy or delivery is directed towards women. This expertise is often passed down from generation to generation in women's societies. Therefore, in many situations women play an important role in the preservation of traditional knowledge and healing practices (Kazembe, 2008) because they are often responsible for the teaching and transmission of medicinal knowledge to the next generation, particularly in the household and family environment.

4. The Existence Of Traditional Medicinal Knowledge In Aceh

Aceh is an area rich in traditional medicinal knowledge. The people of Aceh have long known and used plants with medicinal properties to treat health problems. This is proven by two books written during the Aceh sultanate and one translation of an Arabic book. First; The oldest discussion regarding medicine and the organs of the human body was written by Sheikh Abdussalam in 1208 Hijriah. Second; regarding medicine in some of the contents of the book Tajul Muluk (King's Crown) which was compiled by Sheikh Ismail Aceh during the time of Sultan Ibrahim Mansur Syah in 1837-1870 AD. Third; The manuscript was translated by Sheikh Abbas Kutakarang from the Arabic manuscript, namely Kitaburrahmah Fitthibbu Walhikmah in 1266 to 1270 Hijriah. Apart from that, various traditional medicines have been used by the people of Aceh for generations in various districts.

Aceh is consisted of 23 regions, 18 regency namely: Aceh Barat, Aceh Barat Daya, Aceh Besar, Aceh Jaya, Aceh Selatan, Aceh Singkil, Aceh Tamiang, Aceh Tengah, Aceh Tenggara, Aceh Timur, Aceh Utara, Bener Meriah, Bireuen, Gayo Lues, Nagan Raya, Pidie, Pidie Jaya, Simeulue, and 5 cities namely: Banda Aceh city, Langsa city, Lhokseumawe city, Sabang city, and Subulussalam city. North Aceh Regency is also rich in potential for traditional medicines such as making concoctions for

coughs, broken bones, sprains, fever, itching and ringworm. The herbs used in Tanah Luas subDistrict are: Peacock Leaves, Moringa Leaves, Black Seunijuk Leaves, Henna/Henna Leaves, Broken Nutmeg Leaves, and others (Afriza, 2017). These traditional medicines are already produced in packages and sold on the market (Jailani & Rasyidah, 2015). Lhoksukon subDistrict, there are plant parts that are used which are grouped into leaves, stems, flowers, roots, tubers, fruit, sap, seeds and rhizomes (Ceriana & Shinta, 2020).

Aceh Besar Regency, the community still closely maintains its culture in postnatal care by using types of medicinal plants used in potions. Various types of plants are used in postnatal medicinal concoctions in the greater Aceh community. The use of plants as medicinal ingredients in postnatal treatment is related to the belief in their efficacy. People believe that medicinal herbs in post-natal treatment can speed up the healing of wounds in the uterus (Ramadhani et al., 2023). The use of the telang plant (*Clitoria ternatea*) is used to lower blood glucose levels, prevent neurodegenerative diseases and depression and function as a hepa-toprotective agent (Zakiah et al., 2022).

The people of Aceh Jaya Regency also have strong regional culture that has been passed down from generation to generation in traditional medicine using natural ingredients. People use plants around the house to make medicines, such as hibiscus leaves, harto leaves, melur leaves, kapok leaves, kedondong fence leaves, distance leaves, sembung leaves, coconut flowers and so on. The balakacida plant is used to treat wounds by squeezing it and placing it on the injured area. The hibiscus plant (*Hibiscus rosa sinensis Linn*) is usually used to treat fever by squeezing it and rubbing it on the body. Sea man leaves are used by the people of Aceh Jaya as the first treatment to cure smallpox. Usually sea man leaves are kneaded in water, and the water is used to bathe people who have smallpox. A mixture of dried starfruit (*asam sunti*) with shallots and salt is kneaded by adding a little water, then filtered, and the filtrate is drunk to treat people who are possessed. Water henna leaves are used to treat boils, by squeezing or crushing water henna leaves and placing them directly on the part of the body affected by the boil (Zahara, 2016).

Southeast Aceh Regency, the people still believe and have passed it down from generation to generation using traditional medicine. The use of various animals and plants as traditional medicine is obtained from community plantations and the forests of Mount Lauser Park. The use of animals such as earthworms to reduce fever, Kedu chickens to treat malaria, leeches to treat toothache, goose-bumps as a medicine for rheumatism and shortness of breath, squirrels to treat diabetes and typhus, land snails to treat sprains, water snails to treat measles, millipedes to treat skin diseases, lizards to treat festering ears (Sulastri, Syafruddin, & Ar Rasyid, 2023). The use of Chinese henna plants to treat excessive menstruation or abnormal menstruation. The white lily plant is used to treat

sprained hands and feet. The brown mistletoe plant is used to treat jaundice. The noni plant is used to treat rheumatic pain. Taro plants are used to treat stomach acid (Yasir & Asnah, 2017).

Central Aceh Regency, people use traditional medicine with various types of plants found in the area. The galangal plant is used to treat various health problems, including treating coughs, nausea, swollen boils and as an anti-toxin such as poisoning. The galangal plant has the benefit of treating inflammation throughout the body, reducing the risk of chronic diseases, such as rheumatoid arthritis and intestinal disease. Betel plant to treat vaginal discharge or fungus on the genitals, relieve muscle spasms and relieve snoring (*Revelation firmana*). Spice plants such as turmeric, ginger, hot pepper, awasacih, bungle, lebe, kaffir lime, and sweet jara are used to make post-natal matah powder and param (Rizky, Gunawan, & Manningtyas, 2025).

Pidie Regency, people use traditional medicine from various plants. The Jatropha plant is used as a post-natal decoction and the sap of the Jatropha tree is used to treat external wounds. The peacock plant is used to treat coughs. The coffee mistletoe plant is used to treat gout, cholesterol and the heart. The Peugagan plant is used to treat wounds and cancer. The reed plant is used to treat heartburn, nosebleeds, and postpartum herbal mixture (Viena, 2018).

Aceh Tamiang Regency, people use various plants as ingredients for traditional medicine. Turmeric rhizomes are used to lower blood pressure, stomach ache, cure malaria, and menstrual disorders (Nufus, 2022). The sembung plant is used to treat headaches, colds, fever, diabetes and flatulence.

West Aceh Regency, people carry out traditional medicine using various plants found in plantations and forests. Zig zag leaves (*Pedilanthus tithymaloides*) are used by the community to treat cuts. The broken bone plant (*Euphorbia turicalli*) is used to treat people who have been poisoned by spleen and scorpion bites (Agustina & Abdiah, 2023).

In the city of Banda Aceh, people use celery plants (*Apium graveolens*) to lower blood pressure, lower total cholesterol levels, and treat stomach ulcers. Moringa leaves are used to prevent stomach ulcers, digestion and are anti-inflammatory. Moringa leaves are also used to treat malnutrition, especially for toddlers and mothers breastfeeding (Ceriana, Verawati, & Maskur, 2023). With the availability of traditional medicines derived from various plants in Aceh, the people of Aceh are still interested in using traditional medicines.

The existence of traditional medicinal knowledge in Aceh is inseparable from the pivotal role of women in healthcare and community-based healing practices. Within the realm of traditional medicine, Acehnese women are often recognized as female healers, traditional midwives, or caregivers, who possess extensive knowledge of medicinal plants, natural formulations, and therapeutic practices deeply rooted in cultural traditions and religious values.

5. The role of women in protecting traditional medicinal knowledge in Aceh

From the past to the present, Acehnese women have played a significant role in the struggle for justice, peace and development in their region (Husin, 2015). Acehnese women play an important role in preserving and enriching cultural heritage and in overcoming modern challenges, which strengthens their position as the backbone of Acehnese society.

Traditional medical knowledge in Aceh is not only a cultural treasure but also a rich source of local knowledge on natural remedies that have the potential to support holistic community health. Aceh is a region with a long history and great natural wealth. Knowledge of traditional medicine is now an intrinsic part of everyday life and a culture that is rich in local understanding. In Aceh, over the years, traditional medical knowledge has become not only a technique of treatment, but a symbol of cultural continuity and a valuable treasure of our ancestors. The knowledge of traditional medicine in Aceh is a manifestation of deep link between humans, nature and life in a cultural framework containing many traditions and spiritual values.

In Aceh, traditional medicine has been long used, including treatments based on local belief and generation knowledge. In truth, the people of Aceh have long applied medicinal plants and traditional medicine as a manner of curing all kinds of diseases and maintaining holistic health. These activities are not merely a way of healing, but also a kind of local wisdom and cultural identity which are the products of natural observation and the experience of generations.

But the concept of traditional Acehnese medicine is not only as a technique of treatment. This is also reflected in the rich cultural character and variety of Aceh society. Acehnese women play an important role in preserving, developing and distributing traditional medicinal knowledge in Aceh, which has good repercussions for the health and welfare of the people. Women have an important role in the conservation and protection of the sustainability of these traditional medicinal practices which are an integral part of the cultural legacy of Aceh.

Not only are Acehnese women the principal actors in the practice of traditional medicine, they also have a significant role in the legal protection of traditional medicine. In conservation women safeguard and conserve natural resources such as medicinal plants, herbal formulations and processing procedures to ensure their availability and sustainability in household gardens, customary woods and agricultural areas. Women are the main persons that maintain the continuity of raw supplies for traditional medicine (Nelly et al., 2024).

In the context of preservation as cultural heritage, women are actively involved in the documentation, transfer and acknowledgement of traditional medicinal knowledge as part of the intangible cultural heritage. The transfer of this knowledge to the next generation is a significant part played by Acehnese women who are commonly known as traditional midwives (dukun

beranak) or female healers (tabib perempuan) (Fuadi, 2015).

Regarding the protection of communal intellectual property rights, women act as legal subjects within their communities, taking part in the recording, registration, and utilization of traditional medicinal knowledge. Although the documentation of Aceh's communal intellectual property remains limited, some cultural assets have been officially recorded, such as the Pucoek Oen Nilam motif from Aceh Jaya, the Bunga Situnjuang motif from South Aceh, the traditional wedding stage (Pelaminan Adat) from South Aceh, the Pisang Dua Mu motif, and the Kande motif from North Aceh, as a result of the interview (Zulfianda, 2023). The documentation and registration of such cultural assets cannot be separated from the role of Acehnese women, even though the formal recording of traditional medicinal knowledge has not yet been carried out. Accordingly, the roles of Acehnese women extend across all three domains, as evidenced by the findings derived from the interviews.

The in-depth knowledge and experience that women have in the collection, processing and use of traditional medicines forms a vital foundation in preserving and continuing these practices in a sustainable manner. Through their role as keepers of passed down knowledge, women not only maintain the continuity of local culture, but also provide sustainable health solutions for their communities. This is as the result of an interview of traditional medicine maker in North Aceh Regency, that: "I have been making traditional medicine for almost 30 years, the knowledge of which comes from my grandmother. I used to help my grandmother make traditional medicine, but after my grandmother died, I have continued making traditional medicine until now (Nurhayati, 2023)". There are several other women in Aceh Regency who still continue to make traditional medicine today because they pass on the knowledge from their families from generation to generation to their children and grandchildren.

Then also the results of an interview of traditional medicine maker in Bireuen Regency, stated that: "I have been working in making traditional medicine, massage and tattoos since 1980. At that time, I often helped my mother provide ingredients for make traditional medicine. Then as time went on my mother was old, so I made the traditional medicine (Maryani, 2023)".

The results of an interview with of traditional medicine maker in Pidie Jaya Regency, show that she is the same as women in other districts who continue their parents' business in making traditional medicine. She has been involved in making traditional medicine for almost 45 years, including treating tattoos and massaging broken bones. There are still many women in Pidie Jaya who are involved in the business of making traditional medicine and practicing Rajah to treat illnesses (Halimahtussakdiah, 2023).

Women in Aceh Besar District still carry out traditional healing businesses. The results of interviews of traditional medicine makers in Aceh

Besar Regency, show that they have been making traditional medicines for generations in their family. For decades they have been making medicine and massaging people with broken bones like people who have had traffic accidents. They look for medicinal ingredients from forests and plantations based on orders from people seeking treatment (Salbiah & Murni, 2023).

Interviews at Aceh Jaya Regency also still many women who create traditional medicine and treat the ailment using Rajah. They hold and transfer traditional medicine knowledge through oral and practical experiences from one generation to another. They also utilise knowledge of traditional medicine to create successful therapeutic mixtures, using proven traditional recipes handed down from their ancestors (Nurma, Kamariah & Habsah, 2023).

The essential function of women, for example in the administration of medicinal plants, which is difficult to replace. The analysis of traditional use of plants by the community indicates the intimate association between women and medicinal plants in forest settings. Women's expertise and experience in the collection, preparation and use of traditional medicines. In Aceh women are often the primary custodians of traditional medicinal knowledge, using inherited knowledge and practical experience to discover, harvest and manage powerful medicinal plants. Women's knowledge on natural resources for traditional medicine is improved by daily experience and active participation in the natural environment of Aceh (Rosma & Maryati, 2023).

Women as household managers and active members of the community become guides in the application of traditional medicine in daily practice. They use available traditional remedies to care for their families and communities based on their knowledge and experience (Ti & Asma, 2023).

Women have a good understanding of traditional medicinal knowledge. The results showed that networks among women were more connected, indicating greater information exchange, with more central individuals, who played a role in unifying and maintaining traditional medicinal knowledge in the community. Women's great contribution in linking drug knowledge with community culture. Women continue to play an important role in maintaining the cultural heritage of traditional medicine today. Under current global biocultural changes, a better understanding of the relationship between traditional knowledge and plants is essential to enhance and improve the quality of life. And it is a positive action in protecting traditional medicinal knowledge, local medicinal plants, and the environment in which they grow, depend and act.

In protecting traditional medicinal knowledge there are also obstacles in Aceh. In particular, women do not directly experience obstacles in protecting traditional medicinal knowledge. However, in general the obstacles faced in protecting traditional medicinal knowledge in Aceh are:

a. The treatment methods and ingredients used in various regions vary for a disease, and are not carried out in writing so it is quite difficult to inventory traditional medicines in Aceh;
b. The use of traditional medicinal ingredients is not cultivated so that abundant natural resources can become extinct in Aceh;
c. There is no database related to traditional medicinal knowledge of the Aceh Provincial Government, so currently valid data is urgently needed to protect the wealth of traditional knowledge, especially regarding traditional medicine in Aceh;
d. The community does not yet have a high level of awareness in protecting and preserving traditional medicine as communal intellectual property in Aceh.

Based on this, considering the strategic role of women, regional governments can collect data and record traditional medicinal knowledge, support and include women in protecting traditional medicinal knowledge in Aceh.

D. CONCLUSION

Protection of traditional medicinal knowledge as communal intellectual property is very important to prevent inappropriate misuse and exploitation due to modernization, urbanization and social change. Protection of communal intellectual property also prevents the cultural identity of the community that owns it from being lost in line with the extinction of traditional knowledge, including knowledge of traditional medicine. Women play an important role in maintaining local traditions and wisdom in the sustainable knowledge of traditional medicine in Aceh.

The role of women in protecting and transmitting traditional medicinal knowledge is very significant. They are responsible for the teaching, collection, and use of that knowledge in home and community contexts. Women also play a key role in maintaining community solidarity, managing natural resources sustainably, and fighting for gender equality in access to traditional medicinal knowledge.

The Aceh regional government needs to immediately collect data and record traditional medicinal knowledge in order to prevent misuse and preserve it by including women as one of the figures in this struggle. With the recognition and inclusion of women in protecting traditional medicinal knowledge, they can become agents in promoting the preservation of traditional medicinal knowledge as a cultural identity as well as communal intellectual property of society in the future.

REFERENCES

JOURNALS

Adefare, T., Adeola, O., Mogaji, E., Nguyen, N. P., & Mogaji, S. A. (2024). Empowering women agriculture entrepreneurs: banks' role in achieving sustainable development goals. *International Journal of Bank Marketing,42*(4),692–724. https://doi.org/10.1108/IJBM-03-2023-0128

Adhiyatma, M. T., & Roisah, K. (2020). Legal

Protection for Traditional Medicine Knowledge of Paliasa Leaves in Traditional Community of South Sulawesi Through Intellectual Property Regime. *Law Reform*, *16*(2),290–306. https://doi.org/10.14710/lr.v16i2.33782

Afriza, N. (2017). Penyembuh Tradisional Di Gampong Rawa Kecamatan Tanah Luas Kabupaten Aceh Utara (Pendekatan Antropologi Kesehatan). *Aceh Anthropological Journal, 1*(1), 21-43 https://doi.org/10.29103/aaj.v1i1.358

Agustina, E., & Abdiah, B. (2023). Potensi Tanaman Pekarangan Rumah Battra (Pengobat Tradisional) Desa Paya Dua Aceh Barat Sebagai Obat Penawar Racun Filum Arthropoda. *Prosiding Seminar Nasional Biologi, Teknologi dan Kependidikan,11*(1),90–98. https://jurnal.ar-raniry.ac.id/index.php/PBiotik/article/view/19165

Anugerah, O. B., & Santoso, B. (2022). Perlindungan Hukum Pada Obat Tradisional di Daerah Karo Berdasarkan Prespektif Hak Kekayaan Intelektual. *Notarius*,*15*(1),133–146. https://doi.org/10.14710/nts.v15i1.46030

Asadullah, M. N., Webb, A., & Islam, K. M. M. (2024). SDG 4 mid-point challenge: Fixing the broken interlinkages between education and gender equality. *International Journal of Educational Development*, 106, 1–13. https://doi.org/10.1016/j.ijedudev.2024.103015

Az-Zahra, F. R., Sari, N. L. W., Saputry, R., Nugroho, G. D., Sunarto, S., Pribadi, T., & Setyawan, A. D. (2021). Traditional knowledge of the Dayak Tribe (Borneo) in the use of medicinal plants. *Biodiversitas, 22*(10),4633–4647. https://doi.org/10.13057/biodiv/d221057

Baez, M. L. B., Ramos, S. M., & Vasquez, E.d.V. Traditional Medicine in Latin America: a holistic approach to health. *Community and Interculturality in Dialogue, 4*, 120. https://doi.org/10.56294/cid2024120

Ceriana, R., & Shinta, D. S. (2020). Studi Pemanfaatan Tumbuhan Berkhasiat Obat di Kecamatan Lhoksukon Kabupaten Aceh Utara. *Health and Contemporary*, *1*(1), 1–4. https://ejurnal.seminar-id.com/index.php/hytech/article/view/87

Ceriana, R., Verawati, V., & Maskur, M. (2023). Pengetahuan Masyarakat Desa Doy Kecamatan Ulee Kareng Kota Banda Aceh tentang Obat Tradisional. *Jurnal Mitra Pengabdian Farmasi, 2*(2), 48–53. https://ejurnal.akfar-mandiri.ac.id/index.php/abdimas/article/view/40

Chambers, K. J., & Momsen, J. H. (2007). From the kitchen and the field: Gender and maize diversity in the Bajío region of Mexico. *Singapore Journal of Tropical Geography*,*28*(1),39–56. https://doi.org/10.1111/j.1467-9493.2006.00275.x

da Costa, V. F., Guimarães, M. F. M., Messias, M. C. B. (2021). Gender differences in

traditional knowledge of useful plants in a Brazilian community. *PLoS ONE*, *16*(7), 1–16.https://doi.org/10.1371/journal.pone.0253820

Dawson, N. M., Coolsaet, B., Sterling, E. J., Loveridge, R., Gross-Camp, N. D., Wongbusarakum, S., Sangha, K. K., Scherl, L. M., Phan, H. P., Zafra-Calvo, N., Lavey, W. G., Byakagaba, P., Idrobo, C. J., Chenet, A., Bennett, N. J., Mansourian, S., & Rosado-May, F. J. (2021). The role of indigenous peoples and local communities in effective and equitable conservation. *Ecology and Society*, *26*(3) 19-39. https://doi.org/10.5751/ES-12625-260319

Dharmawan, N. K. S. (2017). Protecting Traditional Balinese Weaving Trough Copyright Law : Is It Appropriate ? *Diponegoro Law Review*, *2*(1), 57–84. https://doi.org/10.14710/dilrev.2.1.2017.57-84

Disemadi, H. S., Alhakim, A., Silviani, N. Z., & Febriyani, E. (2024). Intellectual property synergies: merging halal certification with Indonesian communal intellectual property rights laws. *Legality: Jurnal Ilmiah Hukum*, *32*(1),16-32. https://doi.org/10.22219/ljih.v32i1.30143

Dutfield, G. (2017). The emerging but incoherent international law of traditional knowledge protection. *Journal of World Intellectual Property*,*20*(6),144–159. https://onlinelibrary.wiley.com/doi/abs/10.1111/jwip.12085

Dutfield, G., & Suthersanen, U. (2024). Traditional Knowledge as Intellectual Property Subject Matter: Perspectives from History, Anthropology, and Diverse Economies. *Queen Mary Law Research Paper*, 418. https://doi.org/10.2139/ssrn.4709231

Fredriksson, M. (2021). Dilemmas of protection: decolonising the regulation of genetic resources as cultural heritage. *International Journal of Heritage Studies*, *27*(7), 720–733.https://doi.org/10.1080/13527258.2020.1852295

Fredriksson, M. (2023). India's Traditional Knowledge Digital Library and the Politics of Patent Classifications. *Law and Critique*, *34*(1),1–19. https://doi.org/10.1007/s10978-021-09299-7

Fuadi, T. M. (2015). Mengkontruksi Kearifan Lokal Dalam PengobatanTradisional Reproduksi Oleh Dukun Bayi Di Aceh. *Prosiding Seminar Nasional Biotik*, *3*(1), 279–283.https://jurnal.ar-raniry.ac.id/index.php/PBiotik/article/view/2699

Galvin, M., Michel, G., Manguira, E., Pierre, E., Lesorogol, C., Trani, J-F., Lester, R., & Iannotti, L. (2023). Examining the Etiology and Treatment of Mental Illness Among Vodou Priests in Northern Haiti. *Culture, Medicine and Psychiatry, 47*(3), 647–668. https://doi.org/10.1007/s11013-022-09791-44

Geofrey, M. J. C., & Roisah, K. (2020). Patenting

Deal in Indonesia : Article 20 of The Patent Law in The Political Perspective of International Trade Law. *Law Reform*, *16*(1),19–31. https://doi.org/10.14710/lr.v16i1.30302

Guaita-Fernández, P., Martín, J. M. M., Navarrete, S. R., & Puertas, R. (2024). Analysis of gender-based violence in the context of the sustainable development goals. *Sustainable Development*, *3*(3), 4946-4958. https://doi.org/10.1002/sd.2940

Hananto, P. W. H., & Prananda, R. R. (2019). The Urgency of Geographical Indication as A Legal Protection. *Law Reform*, *15*(1), 62–84. https://doi.org/10.14710/lr.v15i1.23355

Herrera-Feijoo, R. J., Morocho, L., Vinueza, D., Lopez-Tobar, R. M., & Chicaiza-Ortiz, C. (2023). Use of medicinal plants according to the ancestral knowledge of the indigenous peoples of the Yacuambi Canton, Zamora Chinchipe-Ecuador. *Green World Journal*, *6*(3) 1-17. https://doi.org/10.53313/gwj62063

Hossain, K., & Ballardini, R. M. (2021). Protecting Indigenous Traditional Knowledge Through a Holistic Principle-Based Approach. *Nordic Journal of Human Rights, 39*(1), 51–72.https://doi.org/10.1080/18918131.2021.1947449

Husin, A. (2015). Acehnese Women Struggle for Peace and Justice: Challenges and Opportunities. *ICR Journal, 6*(3), 318–335. https://doi.org/10.52282/icr.v6i3.314

Irawan, C. (2017). Protection of traditional knowledge: A perspective on Intellectual Property Law in Indonesia. *Journal of World Intellectual Property*, *20*(2), 57–67. https://onlinelibrary.wiley.com/doi/abs/10.1111/jwip.12073

Jahangeer, M., Awan, M. S., Awan, M. S., Minhas, R. A., Saleem, M. M., Ali, U., & Sudhzoi, A. (2024). Ethnoveterinary utilization of medicinal plants in Ghamot National Park Western Himalayas of Azad Jammu and Kashmir, Pakistan. *Ethnobotany Research and Applications, 28*(8). https://doi.org/10.32859/era.28.24.1-17

Jailani, J., & Rasyidah, R. (2015). Inventarisasi Tanaman Yang Di Gunakan Sebagai Obat Penyakit Kulit Di Gampong Alue Kecamatan Nisam Kabupaten Aceh Utara. *Journal Biology Education*, *4*(1), 186–206. https://ojs.serambimekkah.ac.id/jurnal-biologi/article/view/156

Kazembe, Z. T. (2008). Some Cultural Aspects of Traditional Medicine, Traditional Religion and Gender in. *The Rose Croix Journal*, *5*, 36–49. https://53c6d244da20b8bd88b9-d371a9a8dcda56907487b76ea494763b.ssl.cf5.rackcdn.com/vol5_36_49_kazembe.pdf

Kurnianingrum, T. P. (2018). Pelindungan Hukum Atas Pengetahuan Obat Tradisional. *Kajian*, *23*(2), 111–128. https://doi.org/10.22212/kajian.v23i2.1877

Kusuma, P. H., & Roisah, K. (2022). Perlindungan Ekspresi Budaya Tradisional Dan Indikasi

Geografis : Suatu Kekayaan Intelektual Dengan Kepemilikan Komunal. *Jurnal Pembangunan Hukum Indonesia*, *4*(1), 107–120. https://doi.org/10.14710/jphi.v4i1.107-120

Li, H., Huang, C., Li, Y., Wang, P., Sun, J., Bi, Z., Xia, S., Xiong, Y., Bai, X., & Huang, X. (2024). Ethnobotanical study of medicinal plants used by the Yi people in Mile, Yunnan, China. *Journal of Ethnobiology and Ethnomedicine*,*20*(22),1–7. https://doi.org/10.1186/s13002-024-00656-1

Liu, L., Li, H., Tan, G., & Ma, Z. (2022). Traditional Chinese herbal medicine in treating amenorrhea caused by antipsychotic drugs: Meta-analysis and systematic review. *Journal of Ethnopharmacology*,289(6),675-700. https://doi.org/10.1016/j.jep.2022.115044

Lopez, S. J. (2023). Book Review: Protecting Traditional Knowledge: Lessons from Global Case Studies. *Nordic Journal of Human Rights*,41(1)123-125. https://doi.org/10.1080/18918131.2023.2196816

Madhavan, H. (2017). Below the radar innovations and emerging property right approaches in Tibetan medicine. *Journal of World Intellectual Property*, 20, 239–257. https://doi.org/10.1111/jwip.12084

Mahecha-Ruiz, L. C., Bravo-Avilez, D., Manzanero-Medina, G. I., Dávila, M. A. V., & Rendón-Aguilar, B. (2024). Giving Birth in the Mountains: Plants and Practices in Reproductive Health of Zapotec Women in Northern Oaxaca, Mexico. *Ethnobiology and Conservation,13*(23),1–26. https://doi.org/10.22201/iia.9688374911p.1985

Martini, D., Haq, H., & Sutrisno, B. (2017). Perlindungan Hukum Terhadap Pengetahuan Obat-Obatan Tradisional Dalam Rezim Hak Kekayaan Intelektual (HKI) Indonesia (Studi Pada Masyarakat Tradisional Sasak). *Jurnal Hukum Dan Peradilan*,*6*(1),67–90. https://doi.org/10.25216/jhp.6.1.2017.67-90

Mayo, S. M., León, A. C., & Villamar, A. A. (2024). Dialogue of Knowledge in Traditional Herbal Medicine in Mé'pháá and Tu'un savi Indigenous Peoples in The Mountain of Guerrero Mexico. *Blacpma: Boletin Latinoamericano y Del Caribe de Plantas Medicinales y Aromaticas*, *23*(3), 410–436. https://doi.org/10.37360/blacpma.24.23.3.29

Mensah, A. B. B., Asuo, S. B., Mensah, K. B., Okyere, J., Kulasingam, S., Virnig, B., & Clegg-Lamptey, J. N. (2024). Utilisation of traditional medicine among women diagnosed with breast cancer in Ghana: a descriptive phenomenological study. *BMC Complementary Medicine and Therapies*, *24*(1),1–11. https://doi.org/10.1186/s12906-024-04364-x

Muderawan, I. M., Budiawan, I. M., Giri, M. K. W., & Atmaja, I. N. B. (2020). Usada: The Ethnomedicine of Balinese Society. *International Journal of Ayurvedic and*

Herbal Medicine 10(6), 3893–3905. DOI:10.31142/ijahm/v10i6.04

Nair, V. (2023). Resilience Measures for Fair and Equitable Benefit Sharing of Traditional Knowledge. *International Journal of Advanced Research*, *11*(05), 152–155. https://doi.org/10.21474/ijar01/16862

Nelly, C., Fitriyana, L., Santi, T. D., & Saudah, S. (2024). Diversity Of Traditional Vegetables And Spices As Local Food Security for the Gayo Tribe, Aceh, Indonesia. *Biodiversitas, 25*(12),4699–4711. https://doi.org/10.13057/biodiv/d251206

Nikolaou, E., Papavasileiou, V., Andreadakis, N., Xanthacou, Y., Matzanos, D., Stefoudi, F., & Kaila, M. (2019). The Contribution of Women in Local Sustainable Development. *Journal of Advances in Humanities and Social Sciences, 5*(2), 1327-1332. https://doi.org/10.20474/jahss-5.2.5

Nufus, C. A. I. (2022). Etnobotani Tumbuhan Obat Di Desa Banai Karang Baru Aceh Tamiang Aceh. *Journal of Social Research, 1*(11),263-276. https://doi.org/10.55324/josr.v1i11.302

Oguamanam, C. (2025). The WIPO Treaty on Genetic Resources and Associated Traditional Knowledge: A Negotiating, Contextual and Conceptual Appraisal. *Boston University International Law Journal,43*(2)1-42. https://www.bu.edu/ilj/files/2025/09/Oguamanam-Final-Formatted-43.2.pdf

Palar, M. R. A., Rafianti, L., & Muchtar, H. N. (2023). Inclusive rights to protect communal intellectual property: Indonesian perspective on its new government regulation. *Cogent Social Science*s, *9*(2). https://doi.org/10.1080/23311886.2023.2274431

Pontes, T. M., Merçon, J., Binnqüist, C.L., Cerdán, C. R., Palma, G.I., Moreno, D.G., Hernández, M. S., & Morales, H. (2024). Embroidering care and reciprocity: contributions to food sovereignty by feminist peasant women from the mountains of Veracruz, Mexico. *Frontiers in Sustainable Food Systems*, 8(March), 1–19.https://doi.org/10.3389/fsufs.2024.1294043

Prabandari, A. P., Hananto, P. W. H., Lestari, S. N., & Roisah, K. (2020). The legal protection of intellectual property rights toward the maritime scientific researches in Indonesian seas. *AACL Bioflux*, *13*(3), 1437–1444. https://bioflux.com.ro/docs/2020.1437-1444.pdf

Purwanti, A., Wijaningsih, D., Mahfud, M. A., & Setiawan, F. A. (2021). Assessing Fishery Legislation for Gender Equality and Empowerment in Fishery. *Diponegoro Law Review*,*6*(4),172–190. https://doi.org/10.1007/s13437-019-00181-z.Food

Purwanto, G. H., Mangar, I., & Alamanda, A. E. (2024). Implementasi dan Bentuk Perlindungan Hukum terhadap Hak Pemulia Tanaman di Indonesia. *Jurnal Pembangunan Hukum Indonesia*, *6*(3),

376–393. https://doi.org/10.14710/jphi.v6i3.376-393

Raharjo, R. B. P., & Roisah, K. (2021). Hak Akses Kesehatan Masyarakat Terhadap Hak Paten Produk Farmasi. *Jurnal USM Law Review*,*4*(2),604–613. https://doi.org/10.26623/julr.v4i2.3231

Ramadhani, S., Nurdin, A., Fitria, U., Dinen, K. A., & Kurnia, R. (2023). Tradisi Pengobatan Tradisonal Meurajah di Gampong Cucum Aceh Besar. *Public Health Journal, 1*(2), 1-10.https://teewanjournal.com/index.php/phj/article/view/265

Ray, S. (2023). Weaving the links: Traditional knowledge into modern science. *Futures*, 145.https://doi.org/10.1016/j.futures.2022.103081

Rizky, A. F., Gunawan, A., & Manningtyas, R. D. T. (2025). Model Lanskap Permukiman Tradisional Masyarakat Gayo, Kabupaten Aceh, Provinsi Aceh. *Jurnal Lanskap Indonesia*,*17*(1),122–129. https://doi.org/10.29244/jli.v171i1.59252

Roisah, K. (2006). Perlindungan Hukum Terhadap Kekayaan Intelektual Tradisional. *Masalah-Masalah Hukum*, *35*(3), 354–364. https://eprints.undip.ac.id/6743/

Roisah, K. (2017). Legal Politics of Protection of Indonesian Tradtional Cultural Expression / Folklore. *Diponegoro Law Review*, *2*(1), 185–202. https://doi.org/10.14710/dilrev.2.1.2017.185-202

Roisah, K., Rahayu, R., Al Asy'arie, M. A. H., Mitskaya, E., & Wahyudi, B. F. H. (2025). Empowering Cultural Communities in Protecting Traditional Expressions : Legal Challenges in The Digital Age. *Diponegoro Law Review*,*10*(2),134–156. https://doi.org/10.14710/dilrev.10.2.2025.134-156

Roisah, K. (2015). Kebijakan Hukum "Tranferability" Terhadap Perlindungan Hak Kekayaan Intelektual di Indonesia. *Law Reform*, *11*(2), 241-254. https://doi.org/10.14710/lr.v11i2.15772

Sabar, N. (2023). Empowering Women's Health : Ayurveda's Holistic Approach to Menstrual Harmony, Fertility and Menopause. *Partners Universal International Innovation Journal (PUIIJ)*, *1*(6), 177-180. https://doi.org/10.5281/zenodo.10421293

Salī, P. F. S. (2020). Protecting Traditional Knowledge: An Analysis of the Pacific Regional Framework for the Protection of Traditional Knowledge and Expressions of Culture. *Victoria University of Wellington Law Review, 51*(4), 559-596. https://doi.org/10.26686/vuwlr.v51i4.6699

Samsithawrati, P. A., Dharmawan, N. K. S., Putra, M. A. P., & Sawitri, D. A. D. (2025). Traditional Knowledge and Traditional Cultural Expressions as Communal Intellectual Property : Are They Protected Under the WIPO Treaty on Intellectual Property, Genetic Resources, and Associated Traditional Knowledge 2024 ?. *Jurnal Pembangunan Hukum Indonesia Hukum*,*7*(1),1–26.

https://doi.org/10.14710/jphi.v7i1.1-26

Shisia, E. ., Ateng, B. A., & Nelima, F. (2018). Linkages Between Sustainable Biodiversity and Cultural Values : A Case Study of Ramogi Hill Forest and Its Environment. *Journal of Economics Amd Sustainable Development*,*9*(12),82–93. https://www.iiste.org/Journals/index.php/JEDS/ article/view/43144

Sholikhah, E. N. (2016). Indonesian medicinal plants as sources of secondary metabolites for pharmaceutical industry. *Journal of the Medical Sciences*, *48*(4), 226–239. DOI: 10.19106/JMedSci004804201606

Sulastri, S., Syafruddin, S., & Ar Rasyid, U.N. (2023). Jenis-Jenis Penyakit yang Diobati Menggunakan Satwa sebagai Obat Tradisional oleh Masyarakat di Sekitar Taman Nasional Gunung Leuser (TNGL) Kecamatan Ketambe Kabupaten Aceh Tenggara. *Jurnal Ilmiah Mahasiswa Pertanian*,*8*(3),565-573. https://jim.usk.ac.id/JFP/article/view/25414/12924

Viena, V. (2018). Biodiversitas tumbuhan obat oleh masyarakat Gampong Pulo Seunong Kecamatan Tangse Kabupaten Pidie. *Elkawnie: Journal of Islamic Science and Technology*, *4*(1), 89-100. https://jurnal.ar-raniry.ac.id/index.php/elkawnie/article/view/3027

Voeks, R. A. (2007). Are women reservoirs of traditional plant knowledge? Gender, Ethnobotany and Globalization in Northeast Brazil. *Singapore Journal of Tropical Geography*, *28*(1), 7–20. https://doi.org/10.1111/j.1467-9493.2006. 00273.x

Wahyudi, W., Djitmau, D. A., Dwiranti, F., Sagrim, M., & Manuhua, D. (2024). Roles of local food and knowledge of indigenous communities during pandemic COVID-19 at three districts across West Papua Province, Indonesia. *Asian Journal of Ethnobiology, 7*(1), 1-12. https://doi.org/10.13057/asianjethnobiol/y070101

Wahyuni, T. D., & Suryasaladin, R. (2023). Tinjauan Hukum Pembagian Royalti Paten Atas Invensi Melalui Hubungan Dinas Dengan Instansi Pemerintah. *Jurnal Pembangunan Hukum Indonesia*, *5*(1), 11–28. https://doi.org/10.14710/jphi.v5i1.11-28

Wijaya, A. U., Kusnadi, S. A., & Hadi, F. (2024). Konsep Keadilan Sosial Dalam Regulasi Pengetahuan Tradisional Untuk Menjamin Hak Komunal Di Indonesia. *Jurnal Pembangunan Hukum Indonesia*, *6*(2), 281–300. https://doi.org/10.14710/jphi.v6i2.281-300

Xia, N. (2023). Intellectual property protection for traditional medical knowledge in China's context: A round peg in a square hole? *Medical Law Review*, *31*(3). https://doi.org/10.1093/medlaw/fwad006

Yasir, M., & Asnah, A. (2017). Pemanfaatan Jenis Tumbuhan Obat Tradisional Di Desa Batu Hamparan Kabupaten Aceh Tenggara. *JESBIO, 6*(2), 83–90.https://jurnal.ar-raniry.

ac.id/index.php/biotik/article/view/4039

Yulia, Y., Rahman, A., Faisal, F., & Sari, E. (2020). Protection of Traditional Knowledge of Indonesian Society in the Field of Medicines: in the Development of Pharmaceutical Industry Technology. *Intellectual Property Rights Review*, *3*(2), 221–226. https://repository.unimal.ac.id/6694/1/IPR%20Review.pdf

Yulia, Y., & Zainol, Z. A. (2014). Melindungi Keanekaragaman Hayati Dalam Kerangka Protokol Nagoya. *Mimbar Hukum*, *25*(2), 271. https://doi.org/10.22146/jmh.16084

Yulia, Y., Herinawati, H., Jannah, R., & Safina, S. S. (2025). Traditional Knowledge Management: Community Understanding and Government Strategic Steps to Strengthen Aceh's Economy. *Padjadjaran Jurnal Ilmu Hukum*, *12*(1), 113-136. https://jurnal.unpad.ac.id/pjih/article/view/55587

Yulia, Y. (2023). The urgency of protecting traditional knowledge of medicines as communal intellectual property of the Aceh community Urgensi perlindungan pengetahuan obat tradisional sebagai kekayaan komunal masyarakat Aceh. *Jurnal Geuthèë: Penelitian Multidisiplin, 6*(2),166-174. https://doi.org/10.52626/jg.v6i2.262

Zahara, N. (2016). Kajian Etnobiologi Tanaman Obat Masyarakat Meunasah Rayeuk, Lamno Kabupaten Aceh Jaya. *Prosiding Seminar Nasional Biotik, 5*(1), 1-23. https://doi.org/10.22373/pbio.v5i1.2175

Zakiah, N., Munira, M., Halimatussakdiah, H., Nasir, M., & Frengki, F. (2022). Edukasi Masyarakat Tentang Pemanfaatan Pekarangan Sebagai Apotek Hidup dan Pembagian Tanaman Obat di Desa Bayu Kecamatan Darul Imarah Kabupaten Aceh Besar. *Jurnal Pengabdian Aceh*, *2*(4), 194-199.https://jpaceh.org/index.php/pengabdian/article/view/153

Zurita-Gallegos, R.M., Bastidas-Arauz, M. B., Saeteros-Hernandez, A.M., Chávez, R. H. H., & Cardenas-Moyano, M. Y. (2023). The indigenous bioculture of the Pungalá Parish of Ecuador an approach to their culinary and medicinal heritage. *Journal of Ethic Food*, *11*(6), 1-15. https://doi.org/10.1186/s42779-023-00219-x

ONLINE SOURCE

WIPO. (2015). Intellectual Property and Traditional Medical Knowledge. Retrieved from https://www.wipo.int/edocs/pubdocs/en/wipo-pub-rn2023-5-6-en-intellectual-property-and-traditional-medical-knowledge.pdf

INTERVIEWS

Halimahtussakdiah, H. Traditional Medicine Maker in Pidie Jaya Regency. Aceh: 16 September 2023

Maryani, M. Traditional Medicine Maker in

Bireuen Regency. Aceh: 12 September 2023

Nurhayati, N. Traditional Medicine Maker in North Aceh Regency. Aceh: 4 October 2023

Nurma, N., Kamariah, K., & Habsah, H. Traditional Medicine Maker in Aceh Jaya Regency. Aceh: 16 October 2023

Rosma, R., & Maryati, M. Traditional Medicine Maker in West Aceh. Aceh: 18 October 2023

Salbiah, S., & Murni, M. Traditional Medicine Makers in Aceh Besar Regency. Aceh: 15 October 2023

Ti, C., & Asma, A. Traditional Medicine Maker in East Aceh Regency, Aceh: 20 September 2023

Zulfianda, C. Secretary of the Office of Industry, Trade, Cooperatives, and Small and Medium Enterprises, Aceh Utara. Aceh: 10 September 2023