

Traditional Knowledge Management: Community Understanding and Government Strategic Steps to Strengthen Aceh's Economy

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Abstract

Policymakers worldwide find the idea of traditional knowledge as local wisdom intriguing. Traditional knowledge is derived from society's intellectual activities developed based on experience and observation. The people of Aceh, one of Indonesia's provinces, have diverse traditional knowledge related to geographical indications. It presents a potential for economic improvement. This study used empirical legal analysis methods with primary and secondary data to investigate the understanding and management of traditional knowledge in Aceh. The primary data were obtained through respondent interviews, while the secondary data were gathered through a literature study. The collected data was subsequently verified, categorized, reduced, checked for validity through Focus Group Discussions, and analyzed. The results show that the people of Aceh have minimal understanding of traditional knowledge supporting geographical indications. The considerable economic importance of regional indications and traditional knowledge was poorly understood. Furthermore, the district and Aceh governments lacked strategic measures for managing traditional knowledge, which could impede economic improvement. On a national level, Law Number 20 of 2016 on Trademark and Geographical Indications highlights that natural and human factors impact geographical indications. The Indonesian government had prepared Government Regulation Number 56 of 2022 on communal intellectual property has emphasized that traditional knowledge is an integral part of Communal Intellectual Property And, Minister Regulation of Law and Human Rights Number 13 of 2017 on Communal Intellectual Property Data states that traditional knowledge must be recorded and documented to avoid claims by outside parties and as a basis for the legal protection system for traditional knowledge. The regencies and Aceh governments' lack of strategic mechanisms for managing traditional knowledge may also hamper economic development.

Keywords: Aceh, economy, traditional knowledge.

A. Introduction

Traditional knowledge is an interesting topic of discussion due to the economic value inherent in this asset.¹ The development of regulations regarding traditional

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¹ Michelle McKemey et al., "Indigenous Knowledge and Seasonal Calendar Inform Adaptive Savanna Burning in Northern Australia," *Sustainability (Switzerland)* 12, no. 3 (2020), 1-18, DOI: 10.3390/su12030995.

knowledge at the international level is acknowledged in the Convention on Biological Diversity (CBD)², especially in Article 8j. The article mandates that each Party to the Convention, per national laws, should respect, preserve, and maintain the knowledge, innovations, and practices of indigenous people and local communities embracing relevant traditional lifestyles.³ Article 8j of the CBD further protects traditional knowledge through a *sui generis* system, allowing countries to self-regulate intellectual property protection based on specific needs.⁴ This system also recognizes communal rights by legally ensuring the fair distribution of benefits derived from indigenous innovations.

The Nagoya Protocol further recognizes the use of traditional knowledge through access and benefit-sharing mechanisms. Article 6, paragraphs (2) and (3) of the Nagoya Protocol affirms the sovereign right of States to enact legislative, administrative, and policy measures, consistent with national laws, that regulate access to traditional knowledge.⁵ In addition, the Nagoya Protocol requires states to recognize the rights of Indigenous people and customary laws that govern access to traditional knowledge, such as ensuring Prior and Informed Consent.

Within the World Intellectual Property Organization (WIPO), traditional knowledge comprises the know-how, skills, and practices developed, sustained, and transmitted from generation to generation within a community. It often forms a part of the cultural or spiritual identity.⁶ After more than two decades of discussions on protecting traditional knowledge, particularly related to genetic resources, an agreement was reached. Through intensive negotiations, the International Diplomatic Conference at WIPO Headquarters in Geneva ratified the Treaty on Intellectual Property, Genetic Resources, and Associated Traditional Knowledge on May 24, 2024.⁷ This treaty includes several key provisions: (1) increased transparency in the global patent system with mandatory global patent disclosures; (2) enhanced protection of genetic resources and traditional knowledge through the implementation of adequate sanctions; and (3) the creation of standardized and harmonized global regulations.⁸

² Sarah Laird et al., "Approach To Conservation and Equity in Science," *Science* 367, no. 6483 (2020): 1200–1202.

³ Evana Wright, *Protecting Traditional Knowledge: Lesson from Global Case Studies* (UK: Edwar Elgar Publishing, 2020), 6.

⁴ Yulia Yulia, "The Protection Of Traditional Knowledge Under Indonesian Patent Law: Between Opportunities And Challenges," *Indonesian Journal of International Law* 18, no. 3 (2021), 351-374, DOI: 10.17304/ijil.vol18.3.815.

⁵ Mrs. Yulia and Zinatul Ashiqin Zainol, "Melindungi Keanekaragaman Hayati Dalam Kerangka Protokol Nagoya," *Mimbar Hukum - Fakultas Hukum Universitas Gadjah Mada* 25, no. 2 (2014): 271, DOI: 10.22146/jmh.16084.

⁶ Teshager W. Dagne, "Intellectual Property and Traditional Knowledge," in *the Global Economy Translating Geographical Indications for Development* (New York: Routledge, 2015), 54.

⁷ Press Releases, Ambassador Guilherme, and De Aguiar Patriota, "WIPO Member States Adopt Historic New Treaty on Intellectual Property , Genetic Resources and Associated Traditional Knowledge," 2024, 6–9.

⁸ WIPO-IGC Report, "Basic Proposal for an International Legal Instrument Relating to Intellectual Property, Genetic Resources and Traditional Knowledge Associated with Genetic Resources," 2024.

Several countries, including Costa Rica, Kenya, Peru, and Zambia, have enacted laws to manage and protect traditional knowledge.⁹ Other countries specifically focus on protecting genetic resources, while some have collaborated at the regional level to protect traditional knowledge.¹⁰ For instance, 19 African Regional Intellectual Property Organization member states adopted the Protocol on the Protection of Traditional Knowledge and Cultural Expressions in 2010.¹¹ As a WIPO member country, Indonesia has participated in negotiations on the Treaty on Intellectual Property, Genetic Resources, and Associated Traditional Knowledge. At the same time, Indonesia is also attempting to establish *sui generis* regulations for traditional knowledge, although these have not yet been ratified.

Traditional knowledge refers to community information that has been used for centuries.¹² This information is transmitted orally or through traditional practices from generation to generation. Traditional knowledge also covers various aspects of life, including nature, agriculture, conventional medicine, arts, crafts, music, dance, and language.¹³ This forms an essential part of people's identities with strong historical, spiritual, and social values.

The uniqueness of traditional knowledge is evident in community experiences and practices carried out in daily life.¹⁴ These are influenced by the natural environment, such as weather patterns and adaptive strategies developed in response to changing conditions. Traditional knowledge of the community can further support the registration of geographical indications for products. Geographical indications are products and goods produced due to natural or human factors or a combination of both.¹⁵ The recognition of a geographical indication for a product can significantly contribute to the regional economy by enhancing the reputation, quality, and characteristics attracting consumer interest.

This study focused on traditional knowledge that supports geographical indications. Traditional knowledge comprising human experience and skills is one of the supporting factors for geographical indications: signs or labels indicating that a product originates from a specific region and possesses unique qualities, reputation, or characteristics.¹⁶ The community's traditional knowledge factor is

⁹ WIPO-IGC Report.

¹⁰ Rindia Fanny Kusumaningtyas et al., "Traditional Cultural Expression as an Embodiment of Indigenous Communities and Regional Identity (Semarang Indonesia Case)," *Journal of Indonesian Legal Studies* 8, no. 1 (2023): 45–92, DOI: 10.15294/jils.v8i1.63191.

¹¹ L Gebhardt and Du Plessis, "Examining The Challenges Of Intellectual Property Commercialisation On The Realisation Of The Swakopmund Protocol," *Journal of Namibian Studies* 1 (2023): 2197–5523.

¹² Hongrui Li et al., "Ethnobotanical Study of Medicinal Plants Used by the Yi People in Mile, Yunnan, China," *Journal of Ethnobiology and Ethnomedicine* 20, no. 1 (2024): 1–7, DOI: 10.1186/s13002-024-00656-1.

¹³ Dutfield, Graham, "Traditional Knowledge, Intellectual Property and Pharmaceutical Innovation: What's Left to Discuss?," in *The Sage Handbook of Intellectual Property* (UK: Sage Publisher, 2017), 654.

¹⁴ David Ludwig and Charbel N. El-Hani, "Philosophy of Ethnobiology: Understanding Knowledge Integration and Its Limitations," *Journal of Ethnobiology* 40, no. 1 (2020): 3–20, DOI: 10.2993/0278-0771-40.1.3.

¹⁵ Riccardo Crescenzi et al., "Geographical Indications and Local Development: The Strength of Territorial Embeddedness," *Regional Studies* 56, no. 3 (2022), DOI: 10.1080/00343404.2021.1946499.

¹⁶ Iwona Pomianek and Mariya Peneva, "The Role of GI Products or Local Products in the Environment — Consumer Awareness and Preferences In," 2022. 1-23.

essential in forming and developing products with exceptional qualities from a particular geographical area.

Geographical indication products include traditional food and drinks, handicrafts, medicines, and agricultural goods produced using conventional methods that have been tested and passed down from generation to generation.¹⁷ Aceh is an Indonesian province rich in geographical indication products influenced by the community's traditional knowledge.¹⁸ However, traditional knowledge of Aceh has not been well managed. It affects the characteristics and quality of geographical indication products. Geographical indication registration is a part of product promotion that can improve the regional economy.¹⁹ For instance, traditional knowledge about how to make *emping melinjo* (a kind of crackers made from *melinjo* seeds), *dendeng Aceh* (traditional meat jerky), woven bags made from *pandan* leaves, Aceh embroidery, traditional knowledge about how to farm nutmeg, coffee, rice, chocolate, durian, *jeruk giri matang* (a kind of ripe pomelo), *sale Pisang* (traditional Indonesian dried bananas).

Social change, technology, and urbanization further threaten the continuity of traditional knowledge.²⁰ Traditional knowledge is a source of income for people who face risks due to these changes.²¹ Therefore, managing traditional knowledge is crucial to ensure communities benefit from its utilization. This requires people's understanding of traditional knowledge management to participate in maintaining the preservation. Based on this premise, this study aims to explore (1) the understanding of traditional knowledge by the community that supports geographical indications in Aceh, (2) the strategic steps the government is taking in managing traditional knowledge supporting geographical indications, and (3) the management of traditional knowledge and geographical indications to encourage economic development in Aceh.

This study was conducted in Aceh using primary and secondary data. The sample was determined through purposive sampling to represent traditional knowledge management and geographical indications. The informants include the Head of the District Industry and Trade Service, the Head of the District Agriculture Service, the Agricultural Extension Center, and the community. Descriptive analysis provided a systematic, factual, and accurate description of traditional knowledge and geographical indications. The primary data was collected through structured

¹⁷ Emmanuel Kolawole Oke, "Rethinking Nigerian Geographical Indications Law," *Journal of World Intellectual Property* 25, no. 3 (2022), 746–752, DOI: 10.1111/jwi.12248.

¹⁸ Alif Muhammad Gultom and Sri Wartini, "Preserving Indigenous Cultures: Analyzing Geographical Indication Registration for Indigenous People Protection in Indonesia," *Journal of Judicial Review* 25, no. 1 (2023): 33, DOI: 10.37253/jjr.v25i1.7647.

¹⁹ Geographical indications are exclusive rights granted by the state to registered geographical indication rights holders, as long as they meet the requirements of characteristics, quality and reputation. See Trademark and geographical indication law.

²⁰ Michael J Balick, Paul Alan Cox, *Plants, People, and Culture: The Science of Ethno-botany*, 2nd Edition (New York: Garland Science, 2020), 18.

²¹ Flinzberger, Lukas, Yves Zinngrebe, and Tobias Plieninger. "Labelling in Mediterranean Agroforestry Landscapes: A Delphi Study on Relevant Sustainability Indicators." *Sustainability Science* 15, no. 5 (2020), 1369–1382, DOI: 10.1007/s11625-020-00800-2.

interviews and Focus Group Discussions. The secondary data was gathered through a literature study for comparative analysis. The collected data is further verified, categorized, reduced, and validated. In addition to primary data, the study utilized other comparative materials, such as legal documents and journals on related topics.

B. The Concept of Traditional Knowledge and Its Recognition in the Indonesian Constitution

1. The Concept of Traditional Knowledge and Ownership

Traditional knowledge refers to the skills and practices developed in a society through experience and interaction with the local environment²² transmitted from one generation to another.²³ This knowledge encompasses various aspects of life, including agriculture, health, education, arts, and culture. Traditional knowledge is closely tied to local contexts and specific environments. For instance, farming practices in one area differ significantly from those in another due to climate, soil, and local crop variations.

Ensuring access to traditional knowledge involves maintaining control in indigenous people's or local communities' hands while facilitating fair distribution of benefits.²⁴ This approach also opens access to conventional knowledge sources owned exclusively by communities for innovation and development.²⁵ Knowledge ownership was, therefore, a complex issue that also covered the rights of indigenous and local communities over skills and practices developed and inherited over centuries.²⁶

The issue of ownership and the determination of the custodian of traditional knowledge are crucial in defining the representation of a community in granting permission for its use.²⁷ Leaders of indigenous groups often seek recognition as custodians and guardians of traditional knowledge. Leaders of indigenous groups must have the capacity to ensure the sustainable management, and use of traditional knowledge, so that it provides great benefits for conservation, inclusive economic development, and community welfare.

²² Suresh Chand Rai, Prabuddh Kumar Mishra, "Traditional Ecological Knowledge and Resources Management: A Conceptual Framework," in *Traditional Ecological Knowledge of Resource Management in Asia* (Switzerland: Springer, 2022), 44.

²³ Martuwarra RiverOfLife et al., "Recognizing the Martuwarra's First Law Right to Life as a Living Ancestral Being," *Transnational Environmental Law* 9, no. 3 (2020): 541–68, DOI: 10.1017/S2047102520000163.

²⁴ Enninya S. Nwauche, "The Emerging Right to Communal Intellectual Property," *Marquette Intellectual Property Law Review* 19, no. 2 (2015): 220–44, <https://scholarshi.law.marquette.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1278&context=iplr>.

²⁵ Zaal Kikvidze, "Traditional Ecological Knowledge," in *Georgia: A Short History of the Caucasus* (London: Routledge, 2020), 11.

²⁶ Candra Irawan, "Protection of Traditional Knowledge: A Perspective on Intellectual Property Law in Indonesia," *The Journal of World Intellectual Property* 20, no. 2 (2017): 57–67, <https://onlinelibrary.wiley.com/doi/abs/10.1111/jwi.12073>.

²⁷ William W. Neher, "Contemporary Challenges to Traditional Ethics," *Communicating Ethically* 8, no. 4 (2020): 110–39, DOI: 10.4324/9780429342288-6.

The concept of ownership and property rights is a Western construct that did not readily apply to traditional systems or indigenous communities.²⁸ The idea of individual ownership within an intellectual property system is unfamiliar because such knowledge operates on a communal basis, making it difficult to identify individual owners.²⁹ Communities collectively owned traditional knowledge, comprising groups with a long history of residing in a particular area with distinctive culture, language, and practices.³⁰ Ownership of collective traditional knowledge means that it is not owned by individuals but by indigenous communities who inherit and develop it across generations.

Such ownership represents inclusive ownership. Morally, the traditional knowledge is owned or shared by the community of origin.³¹ This inclusive nature means all members have access to and the right to utilize traditional knowledge. Furthermore, this inclusivity implies that traditional knowledge is passed down collectively from generation to generation without any individual claim. These communities often maintain a profound connection with their natural environment. Collective ownership implies that such knowledge belongs not to a specific individual but to the community as a whole.³² These collective rights recognize that the body of wisdom has been developed and maintained through joint efforts spanning many generations.

Then, the state's position as custodian of traditional knowledge can also represent the community for several reasons. First, the state must control all natural resources as the highest authority and represent people's sovereignty, including law, politics and economics, as stipulated in Article 33 paragraph 3 of the Indonesian 1945 Constitution. Second, state control as a custodian must ensure equal distribution of benefits derived from the use of traditional knowledge. This aligns with exercising state sovereignty.

Furthermore, as custodians, the state needs to engage with communities in decision-making processes for using and protecting traditional knowledge. Such participation is essential to ensure that community interests and perspectives are respected and considered. Generally, respecting holders of traditional knowledge implies respecting their culture and practices.

²⁸ Zainul Daulay, "Legal Politics of Protection and Ownership of Communal Intellectual Property: A Study of Traditional Medicine Knowledge," *Journal Equity of Law and Governance* 2, no. 2 (2022): 123–31, DOI: 10.55637/elg.2.2.5764.123-131.

²⁹ Pérez Peña Oscar Alberto and Samia Sisa Castro Quishpi, "Challenges of the Protection of Traditional Knowledge through Intellectual Property in Ecuador," *Revista de Ciencias Sociales* 29, no. 1 (2023), 262-276, DOI: 10.31876/rcs.v29i1.39750.

³⁰ Irene Calboli, "Geographical Indications between Trade, Development, Culture, and Marketing: Framing a Fair(er) System of Protection in the Global Economy?," in *Geographical Indications at the Crossroads of Trade, Development, and Culture* (New York: Cambridge University Press, 2017), 11.

³¹ See article 5.2 Government Regulations Number 56 Year 2022.

³² Yulia Yulia, "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 (Multidisciplinary Research* 6, no. 2 (2023): 166–74, DOI: 10.52626/jg.v.

2. The Relationship of Traditional Knowledge and Geographical Indications

Traditional knowledge and geographical indications share a close relationship.³³ Traditional knowledge comprises cultural heritage and wisdom passed down through generations by the people of a region.³⁴ This includes knowledge about using natural materials, production techniques, craft skills, agricultural processes, and food processing that have been developed and refined over centuries.³⁵ A geographical indication also refers to a sign or name used to identify products from a specific geographical area that possess reputations, characteristics, or qualities related to the origin.³⁶

Both natural and human factors could influence geographical indications. Natural factors include soil type, altitude, and climatic conditions that affect production quality. Human factors comprise local wisdom, practices, and methods—including the selection of plant varieties—all developed within a particular cultural, social, and economic context. These factors influence how people produce goods and products—combining natural and human elements results in products with unique qualities specific to the place of origin that cannot be replicated elsewhere. This human influence helps prevent product similarities with those from other regions.

The relationship between traditional knowledge and geographical indications lies in the fact that traditional knowledge often forms the basis for recognizing geographical indications. Traditional knowledge encompasses understanding typical natural ingredients, unique production techniques, specific processing methods, and special skills inherent to a particular region or community.³⁷ This knowledge provides significant support in developing and recognizing geographical indications³⁸, and geographical names used to identify products from specific areas with special qualities, reputation, or characteristics associated with the respected area.³⁹

The importance of traditional knowledge in creating products with geographical indications further lies in the mastery of exceptional skills and

³³ G. Alandia et al., "Global Expansion of Quinoa and Challenges for the Andean Region," *Global Food Security* 26, no. March (2020): 100-129, DOI: 10.1016/j.gfs.2020.100429.

³⁴ Imam Hadi Sutrisno et al., "Documentation of the Traditional Alas Food in Southeast Aceh District, Indonesia," *Biodiversitas* 22, no. 8 (2021), 3243-3249, DOI: 10.13057/biodiv/d220818.

³⁵ V K Ahuja and Jupi Gogoi, *Protection of Traditional Knowledge and Geographical Indications with Special Reference to North-East India* (New Delhi: Hardboun, 2023), 270.

³⁶ Andrea Marescotti et al., "Are Protected Geographical Indications Evolving Due to Environmentally Related Justifications? An Analysis of Amendments in the Fruit and Vegetable Sector in the European Union," *Sustainability (Switzerland)* 12, no. 9 (2020), DOI: 10.3390/SU12093571.

³⁷ Susanne Normann, "Green Colonialism in the Nordic Context: Exploring Southern Saami Representations of Wind Energy Development," *Journal of Community Psychology* 49, no. 1 (2021): 77-94, DOI: 10.1002/jco.22422.

³⁸ Marescotti et al., "Are Protected Geographical Indications Evolving Due to Environmentally Related Justifications? An Analysis of Amendments in the Fruit and Vegetable Sector in the European Union."

³⁹ Rwitabrata Mallick, Gourav Kumar Singh, "Geographical Indication and Protection of Traditional Knowledge," in *Current Issues in Intellectual Property Rights with Special Focus on Patent and Copyright Law* (New Delhi: ABS Books Publisher, 2020), 7.

conventional techniques used to produce items of superior quality with unique characteristics specific to a region.⁴⁰ This traditional knowledge, which was often unwritten, was passed down orally or through practical experience from ancestors. Thus, it represents an asset engaging cultural identity and local heritage within communities.

Traditional knowledge expresses local traditions and information, while geographical indications denote natural products or conventional community information indicating product origin geographically. Therefore, traditional knowledge and geographical indications connect products with community wisdom limited geographically by region or locality.

Traditional knowledge possessed by local communities can play an essential role in developing geographical indications as follows:

a. Knowledge of raw materials and production

Local communities often have extensive knowledge about the raw materials used to produce regionally typical products and their production methods. They understand the types of plants, agricultural techniques, selection and preparation of raw materials, and production processes that influence product quality and characteristics. This traditional knowledge can be utilized to strengthen the relationship between the geographical factors of a region and its products.

b. Traditional methods and skills

Traditional knowledge also encompasses production methods and skills passed down through generations. This includes processing, fermentation, storage, or drying techniques necessary to create products with unique qualities and characteristics. Such knowledge contributes to the geographical identity of a product and can serve as a basis for applying for a geographical indication.

c. Environmental knowledge and geographical factors

Local people often profoundly understand their natural environment—including climate, soil conditions, or other geographic factors—that affect product attributes. They recognize how water quality, weather patterns, fertile soil, or other environmental elements provide specific advantages to products from their area. This knowledge aids in identifying links between geographic aspects and unique product characteristics.

d. Traditional management of natural resources

Local communities also maintain traditional systems for sustainable management of natural resources. Knowledge regarding appropriate harvest times, environmental stewardship practices, or unique plant varieties exemplifies traditional wisdom supporting product quality and sustainability. This is important in developing geographical indications that emphasize sustainable production practices and environmental conservation.

⁴⁰ Ai Tashiro, Yuta Uchiyama, and Ryo Kohsaka, "Impact of Geographical Indication Schemes on Traditional Knowledge in Changing Agricultural Landscapes: An Empirical Analysis from Japan," *Journal of Rural Studies* 68, no. May (2019): 46–53, DOI: 10.1016/j.jrurstud.2019.03.014.

In essence, traditional knowledge reflects local traditions, while geographical indications represent natural products or community-based knowledge demonstrating a product's geographic origin. Therefore, traditional knowledge and geographical indications connect products with community expertise that is geographically limited to specific regions or localities. And traditional community knowledge is a supporting factor for geographical indication products.

3. Recognition of Traditional Knowledge in the Indonesian Constitution

Recognition of traditional knowledge, among other things, can lead to a nation being acknowledged by other countries as one that respects and maintains traditional knowledge systems. Increasing the use of traditional knowledge and protecting traditional knowledge can serve as a driving factor for increasing regional income. Recognition of traditional knowledge holds important significance in maintaining the cultural identity of the people who are the owners of traditional knowledge and do not lose it along with the loss of that knowledge. In line with this, the protection of traditional knowledge has gained greater emphasis through recognition of the cultural identity and constitutional rights of indigenous peoples in the 1945 Constitution.

Traditional knowledge received recognition as a constitutional right in Article 18B paragraph (2) of the 1945 Constitution, which acknowledges and respects indigenous people and the conventional rights. This recognition and respect for community autonomy aim to address future challenges, particularly in response to the globalization process marked by liberalization.⁴¹ The impact of globalization and the exploitation of traditional knowledge cannot be managed solely by local communities. Still, the state must be the sovereignty authority over the territory.⁴² This study is correlated with the recognition and respect confirmed in Article 8j of the CBD. As confirmed in the Nagoya Protocol, the state held sovereignty over traditional knowledge within the territory. Additionally, Indonesia has ratified both international agreements in managing traditional knowledge.

Article 28I paragraph (3) of the 1945 Constitution further upholds cultural identity and the rights of customary communities correlating with developments over time and civilization. However, processes involving creation or development based on traditional knowledge have not yet received optimal legal protection under international or national law.⁴³ Therefore, Article 18B paragraph (2) and

⁴¹ Ni Putu Rai; Yulianti, Dewa Gede Sudika; Mangku, and Ni Ketut Sari Adnyani, "RECOGNITION OF SOCIETY RIGHTS IN TRADITION SPECIALLY IN TOURISM REGULATION BASED ON ARTICLE 18B PARAGRAPH (2) OF THE 1945 CONSTITUTION OF THE REPUBLIC INDONESIA," *Journal Equity of Law and Government* 1, no. 1 (2021): 68–76. DOI: 10.22225/elg.v1i1.3242

⁴² Reh Bungana Beru Perangin-angin, Ramsul Nababan, and Parlaungan G. Siahaan, "Perlindungan Pengetahuan Tradisional Sebagai Hak Konstitusional Di Indonesia," *Jurnal Konstitusi* 17, no. 1 (2020), 178-196 DOI: 10.31078/jk1718.

⁴³ Raden Muhammad Arvy Ilyasa, "Perlindungan Hukum Atas Pengetahuan Tradisional Indonesia Terhadap Praktek Biopiracy Dalam Rezim Hak Kekayaan Intelektual," *Gema Keadilan* 7, no. 3 (2020), 170-194, DOI: 10.14710/gk.2020.9544.

Article 28I paragraph (3) of the 1945 Constitution emphasize that customary communities' identity, cultural characteristics, and rights must be upheld alongside societal progress.

C. Traditional Knowledge of the People of Aceh to Support Geographical Indications

Traditional knowledge is crucial in preserving local culture and aiding local products in attaining geographical indication recognition.⁴⁴ This recognition protects products from counterfeiting and ensures that original products with unique qualities tied to the region of origin gain added value in national and international markets. Aceh is a rich area with various traditional knowledge of the community. Several examples of this knowledge support geographical indications.

1. Traditional Knowledge of Producing Agricultural Products

Gayo coffee is an Arabica variety grown in the Gayo area of Central Aceh, which stands out prominently. The Gayo people possess extensive knowledge and expertise in cultivating, selecting coffee beans,⁴⁵ and processing coffee. They are skills passed down through generations. Gayo coffee is famous for its distinctive taste and high quality.

Aceh's durian varieties, such as *Sawang*, *Beutong*, and *Tangse* are renowned for their distinctive taste.⁴⁶ These durians are known for their thicker flesh, yellowish-white color, small seeds, and large, rare spines on the fruit's skin. On average, this durian grows in plantation areas on hills or mountains with large trees.

Aceh Selatan nutmeg is another example; it is a spice widely used for flavoring and aroma in cooking. Traditional knowledge among the people of Aceh Selatan Regency encompasses planting, caring for, and processing nutmeg across generations.⁴⁷ This includes methods for selecting nutmeg seeds, planting techniques, fertilizing practices, harvesting procedures, and post-harvest processing unique to the region. Aceh Selatan nutmeg's quality and distinctive aroma are recognized as superior to other varieties-adding value and appeal to consumers seeking high-quality spices.

⁴⁴ Blakeney, M. "Protection of Traditional Knowledge by Geographical Indications," in *Traditional Knowledge, Traditional Cultural Expressions and Intellectual Property law in the Asia-Pacific Region* (UK: Kluwer Academic Publishers, 2009), 96.

⁴⁵ Yusya Abubakar et al., "Influence of Cultivars and Cultivation Land Slope on Sensory Quality of Gayo Arabica Coffee Pengaruh Kultivar Dan Kemiringan Hamparan Lahan Tanam Terhadap Mutu Sensoris Kopi Arabika Gayo" 12, no. 2 (2023): 156–68.

⁴⁶ C. R. Maranatha, N. Koimah, and J. Artika, "Keanekaragaman Morfologi Durian Lokal (Durio Zibethinus Murr) Di Aceh Tamiang, Indonesia," *Pros. SemNas. Peningkatan Mutu Pendidikan* 1 (2020): 586–89.

⁴⁷ Mohd Juliandi, "Pemetaan Rantai Nilai Pala Di Kabupaten Aceh Selatan (Mapping the Value Chain of Nutmeg in Aceh Selatan District)," *Jurnal Ilmiah Mahasiswa Pertanian* 7, no. 3 (2022): 276–83, www.jim.unsyiah.ac.id/JF

Traditional processing of *Sale Pisang* is another typical Aceh product processed using traditional techniques.⁴⁸ This smoking process not only serves to dry the bananas but also provides a distinctive aroma and taste of the product. This smoking process not only serves to dry the bananas but also provides a distinctive aroma and taste to the sale. The type of banana smoked and the wood used for smoking can affect the final aroma of the product.

Fish processing into *keumamah*, a typical people of Aceh food, involves a unique drying and smoking process, allowing the fish to last long and remain delicious.⁴⁹ This method reflects the adaptation of the people of Aceh to the coastal environment. It incorporates local herbs and spices that give the fish a distinctive flavor not found elsewhere.

Traditional planting and processing of *sigupai* rice in Aceh Selatan Regency maintains soil fertility and quality.⁵⁰ Natural rice processing without chemicals ensures a distinctive taste and texture. The use of local rice varieties adapted to the climate and soil conditions in Aceh Selatan Regency also forms part of traditional knowledge supporting geographical indications.

Jeruk giri matang from Bireuen Regency holds valuable geographical indications. This status represents the unique quality, characteristics, and reputation of the oranges grown in the region.⁵¹ Traditional knowledge in Bireuen Regency comprises planting, caring for, and post-harvest processing of *jeruk giri matang*, including superior variety selection, planting techniques, and care.

Pidie Regency's *emping melinjo*, a traditional food made from *melinjo* seeds, exemplifies another geographical indication. Traditional knowledge factors in Pidie Regency include processing *melinjo* seeds into chips by roasting, flattening, and sun-drying.⁵² It is a process passed down through generations that is characteristic of Pidie's *emping melinjo* production.

2. Traditional Knowledge and Handicraft

The people of Aceh also possess traditional knowledge of handicrafts. *Pucuk rebung* weaving is another traditional craft featuring distinctive motifs and patterns. The people of Aceh have expertise in weaving techniques, thread selection, and natural dyes used in creating *pucuk rebung* textiles. Recognition of

⁴⁸ Rinaldi Mirsa et al., "Space Transformation in Residential House Small Entrepreneurs Banana Sale," *International Journal of Engineering, Science and Information Technology* 1, no. 4 (2021): 41–50, DOI: 10.52088/ijesty.v1i4.167.

⁴⁹ Virna Muhardina and Tengku Mia Rahmiati, "Peningkatan Kualitas Dan Produktivitas Pangan Tradisional Aceh Ikan Keumamah Berskala Industri Rumah Tangga," *Qardhul Hasan: Media Pengabdian Kepada Masyarakat* 3, no. 2 (2017): 140, DOI: 10.30997/qh.v3i2.948.

⁵⁰ Ayu Lindasari, Cut Mulyani, and Yenni Marnita, "PENGAMATAN MUTU HASIL BEBER APA VARIETAS PADI (Oryza Sativa L) LOKAL ACEH" 21, no. 1 (2023): 1–10.

⁵¹ A. Sugiyatno et al., "Effect of Bud Position on the Seedling Growth of Five Citrus Species," *IOP Conference Series: Earth and Environmental Science* 1133, no. 1 (2023), 1–7, DOI: 10.1088/1755-1315/1133/1/012004.

⁵² Ferry N Fauzi et al., "Pemanfaatan Daun Melinjo Menjadi Keripik Sebagai Upaya Meningkatkan Sumber Daya Alam (Sda) Di Desa Kiara Payung" 01, no. 1 (2023): 1–5.

geographical indications for *pucuk rebung* weaving can promote this craft and ensure its authenticity.⁵³

Similarly, Aceh *songket* cloth involves complicated weaving techniques and requires high skills that were taught through generations. The patterns and motifs carry symbolic meaning and reflect Aceh's cultural identity. Using natural dyes derived from local plants is also part of traditional knowledge when creating Aceh *songket* cloth. The textile features unique designs and motifs with bright colors and complex geometric patterns.⁵⁴ The people of Aceh are skilled in weaving gold or silver threads on the cloth, making it highly valuable and appreciated. Recognition of *songket* can preserve this cultural heritage and promote the development of the Aceh industry.

Acehnese embroidered bags represent a blend of art, tradition, and creative economy within Acehnese society. The uniqueness of their motifs and manufacturing techniques makes these bags not only fashion products but also symbols of identity and local wisdom passed down through generations. Acehnese embroidered bags with various motifs have cultural values that reflect the life of the Acehnese people.

D. Community Understanding and Government Strategic Steps

1. Understanding Traditional Knowledge of the People of Aceh

Aceh has a long history as a trade center and hub for spreading Islam in Southeast Asia. The history enriches traditional knowledge through interactions with various cultures and civilizations. The glory of the Aceh Darussalam Kingdom contributed to the development of traditional science, art, and technology, which persisted to the present day. Its traditional knowledge also reflects strong Islamic values and includes agricultural systems optimizing land use with crop rotation and rotational planting techniques to maintain soil fertility.

A survey data from September 2023 shows that people in Aceh Utara Regency lacked awareness of traditional knowledge supporting geographical indications for economic improvement. The people have not recognized yet traditional knowledge without any examples. Understanding geographical indications includes recognizing, appreciating, and using the unique geographical characteristics of the region in producing certain goods or products. In this context, geographical indications are signs or markers suggesting a product originated from a particular geographical area with unique qualities, reputation, or characteristics associated with the region.

In contrast, interviews with people in Bireuen Regency revealed an existing understanding of traditional knowledge supporting geographical indications. This

⁵³ Oktaviani, Kafri Saniman Andi, and Putri Dahlia, "KECAMATAN BEBESAN KABUPATEN ACEH TENGAH Gayo Kerawang Souvenir Crafts in Bebesen Village , Bebesen District Is a Cultural Heritage That Is Still Operating Today Which Aims to Maintain the Culture of the Typical Gayo Community . Kerawang Gayo Departs From," *Journal of Craft Education, Craft Design and Creative Industries* 2, no. 2 (2023): 95–104.

⁵⁴ Fitriana Fitriana, Nurbaiti Nurbaiti, and Syifaur Rahmah, "Daya Tarik Konsumen Terhadap Tenun Songket Aceh Jasmani Di Aceh Besar," *Prosiding Pendidikan Teknik Boga Busana* 16 (2021): 1–6.

understanding was supported by forming the Geographical Indication Protection Society in Bireuen Regency, which registered the geographical indication for *Jeruk Giri Matang*. Generally, the people of Bireuen Regency know about typical regional products with geographical indications, recognizing products from the region with unique characteristics or qualities.

There has not been a public understanding of traditional knowledge supporting geographical indications in Pidie Regency. The community has not yet recognized the area's regional specialty products with potential geographical and environmental conditions. A few people can mention examples of geographical indication products related to traditional knowledge, such as feeling proud of the region's products and recognizing the geographical values and local identity. For example, the community preserves traditional knowledge by producing *emping melinjo* and teaching it through generations within families.

Traditional knowledge forms part of the ancestral heritage of Aceh and is preserved by customary institutions. In the Acehnese community, customary institutions such as *Majelis Adat Aceh* and *Mukim* are crucial in safeguarding customs and cultural heritage. *Majelis Adat Aceh* is an institution tasked with preserving and developing customs, arts, and culture in the province of Aceh. At the same time, *Mukim* maintains and preserves customs and cultural values inherited from ancestors, regulating community life according to customary law. This encompasses various aspects of daily life, including religious rituals, traditional ceremonies, and local customs.⁵⁵ Therefore, managing traditional knowledge requires the participation of these conventional institutions to assist the government in implementing strategic measures mandated by Government Regulation Number 56 of 2022 on communal intellectual property rights, including traditional knowledge.

The Aceh Government faces challenges in managing traditional knowledge that supports geographical indications because many people remain unaware of its significant economic value. Based on research data from September 2023, several factors influence the understanding among the Acehnese people regarding managing traditional knowledge as follows:

a. Lack of access to information

Many people lack sufficient access to information about how traditional knowledge can be capitalized as a source of income. They have limited opportunities to participate in training or programs that teach how to transform traditional knowledge into commercial products or services. Additionally, literature and documentation regarding traditional knowledge are scarce, which is often transmitted orally and poorly documented, making it difficult for younger generations or those outside traditional communities to

⁵⁵ Yulia Yulia and Herinawati Herinawati, "Customary Law of the Forest in North Aceh Regency," *Diponegoro Law Review* 7, no. 2 (2022): 328–43, DOI: 10.14710/dilrev.7.2.2022.328-343.

access. Local and national media rarely highlight the importance of traditional knowledge, resulting in low public awareness of its potential benefits.

b. The influence of modernization and globalization

Modernization and globalization affect the younger generation's interest in traditional knowledge. Traditional knowledge is often perceived as ancient or irrelevant within a modern economic context. These forces encourage lifestyle changes oriented toward popular culture and new technologies, eroding interest in outdated traditions. Modernization tends to replace traditional practices with more efficient new technologies but at the cost of losing valuable traditional knowledge. Furthermore, globalization drives urbanization, prompting many individuals to leave their villages and abandon traditional practices in pursuit of opportunities in cities.

c. Lack of support and infrastructure

There is insufficient support from government and private sectors for developing industries based on traditional knowledge, resulting in inadequate infrastructure for producing, marketing, and distributing such products. Government policies often fail to accommodate the needs of these industries—for example, by lacking capital assistance programs for small- and medium-sized enterprises (SMEs). Moreover, ambiguity or uncertainty surrounding regulations on intellectual property rights and protection mechanisms for traditional knowledge can discourage investors or industry players from committing resources.

Therefore, it is urgent that managing traditional knowledge be placed prominently on the Aceh Government's strategic agenda as an inseparable part of cultural identity. Many young people are unfamiliar with this heritage due to modernization and globalization's influence—forces that may trigger a decline in adherence to traditional values, causing them to be ignored or marginalized. Global media and entertainment introduce views that sometimes conflict with local traditions; this can shape perceptions negatively toward established cultural values and practices.

2. Government Strategic Steps in Managing Traditional Knowledge

The government has established Regulation Number 56 of 2022 on data collection on communal intellectual property rights. It includes data collection on traditional knowledge. Article 2 of this Regulation emphasizes that the protection, preservation, development, and adoption of traditional knowledge and geographical indications should correlate with the values contained in the Indonesian Constitution. Furthermore, Article 3 states that the state has an obligation to inventory, safeguard, and maintain communal intellectual property, including traditional knowledge and geographical indications. Heads of non-ministerial government institutions or regional governments carry out this responsibility.

Up to September 2023, the district government had not made strategic steps to accommodate the mandate of Government Regulation. Neither the Aceh provincial nor regency governments had developed specific programs for collecting data on traditional knowledge and geographical indications. This lack of initiative was particularly pronounced in Aceh Utara Regency and Pidie Regency, where even government officials responsible for managing traditional knowledge and geographical indications were unaware of the necessity for systematic data collection. In contrast, Bireuen Regency had taken proactive steps by establishing a Geographical Indication Protection Society to promote and facilitate the collection of geographical indication data.

The government recognizes the importance of traditional knowledge as both a cultural heritage and a valuable resource. This recognition includes formal acknowledgment of traditional knowledge and respect for the communities that hold it. Measures taken include legal recognition, establishing institutions responsible for protecting traditional knowledge, and the provision of cultural rewards to communities that preserve this information.

The World Intellectual Property Organization (WIPO) outlines two models for protecting traditional knowledge. The first is preventive protection, which aims to prevent the unauthorized granting of intellectual property rights over traditional knowledge by third parties without the consent or awareness of its owners. This form of protection affects patent registration processes by requiring disclosure of the origin of genetic resources or related traditional knowledge involved in an invention. The second model is positive protection, which can be implemented through two legal approaches: enhancing the effectiveness of existing intellectual property laws or enacting special regulations.⁵⁶ In this context, the Aceh Government could formulate regulations following Dutfield's framework, which includes⁵⁷ (1) using pre-existing regulations, (2) adding complementary rules, and (3) developing special regulations. Developing a dedicated legal framework to safeguard traditional knowledge from misuse and misappropriation is crucial; this may involve issuing governor's regulations or regional legislation.

The government should actively include communities that hold traditional knowledge in decision-making processes related to their heritage. Such participation requires inclusive consultation and community engagement in designing policies, regulations, or programs concerning traditional knowledge management. These approaches ensure that community interests are respected and that traditional knowledge is managed sustainably. Furthermore, government support is needed to build capacity within these communities through training, education, and technical assistance to strengthen understanding, documentation,

⁵⁶ Anik Bhaduri, "Communities as Inventors: Rethinking Positive Protection of Traditional Knowledge through Patents," *Journal of World Intellectual Property* 26, no. 3 (2023), 1-22, DOI: 10.1111/jwi.12279.

⁵⁷ Graham Dutfield and Uma Suthersanen, "Traditional Knowledge as Intellectual Property Subject Matter: Perspectives from History, Anthropology, and Diverse Economies," *SSRN Electronic Journal*, no. 418 (2024), 1-29, DOI: 10.2139/ssrn.4709231.

and management practices related to traditional knowledge. The primary objective is to empower communities to maintain, update, and transmit their traditional knowledge across generations.

Promoting awareness about traditional knowledge among broader society constitutes another critical governmental role. This promotion can be achieved through information campaigns, educational initiatives, awards programs, exhibitions, and cultural activities showcasing the richness and benefits of such heritage. Collaboration with various stakeholders—including communities holding traditional knowledge—is also essential for practical preservation efforts.

Increased awareness of the importance of traditional knowledge in environmental sustainability, biodiversity conservation, and alternative medicine has led to greater appreciation within some communities. Through education, advocacy, and intercultural dialogue efforts, people's understanding of traditional knowledge can be enhanced, ensuring its protection and promotion as an inseparable part of cultural heritage and a valuable societal resource. Communities possessing traditional knowledge must be actively engaged in decisions related to this knowledge and empowered to maintain, update, and transmit it to future generations.

In this context, the Aceh Government must promptly undertake mapping and comprehensive documentation of the traditional knowledge held by the people of Aceh, including agricultural practices, traditional medicine, crafts, and environmental information. The mapping and data collection process should be systematic and structured using written, audio, or visual formats to ensure sustainability and accessibility. This mandate aligns with the Government Regulation Number 56 of 2022, which recognizes traditional knowledge as an integral part of Communal Intellectual Property. Traditional knowledge is not only cultural heritage but also possesses economic and social value that can contribute to development; therefore, it must be protected against misuse or exploitation by unauthorized parties.

Furthermore, the Aceh Government needs to develop robust legal policies for managing traditional knowledge, including support for geographical indications. Law Number 20 of 2016 on Trademarks and Geographical Indications emphasizes that natural and human factors influence geographical indications. Traditional knowledge constitutes a human factor contributing to the quality and characteristics of a product—as stated in Article 1.6 of Law Number 20 of 2016 on Trademarks and Geographical Indications. For example, traditional farming methods or product processing methods determine the characteristics required for geographical indication products.

Therefore, it is urgent to conduct systematic data collection and recording of traditional knowledge as part of its management so that this knowledge can sustainably support geographical indication products. Additionally, Ministerial Regulation on Law & Human Rights Number 13 of 2017 concerning Communal Intellectual Property Data emphasizes that traditional knowledge must be recorded

and documented to prevent claims from external parties and serve as a basis for legal protection systems.

E. Management of Traditional Knowledge to Strengthen Aceh's Economy

The effective management of traditional knowledge can improve Aceh's economy significantly. The diverse traditional knowledge of the community in developing regional specialty products serves as an asset supporting the regional economy. Traditional knowledge about raw materials, production methods, and local skills forms the basis for developing unique Aceh products, adding considerable value. By leveraging this knowledge, the community creates superior products that appeal to both local and international markets, such as handicrafts, traditional textiles, traditional medicines, and special foods. This has opened new opportunities in the local economic sector and increased income levels.⁵⁸

Managing traditional knowledge also preserves cultural identity and local wisdom practices by keeping them alive and respected across generations. Traditional knowledge is an integral part of Aceh's cultural identity. During the Aceh Sultanate from the 16th to the 20th century, community-based traditional knowledge developed rapidly, reflecting both its culture's distinctiveness and the Acehnese people's high intellectual wealth. Additionally, managing traditional knowledge is urgent due to Aceh's geographical proximity to Malaysia and Singapore—regions characterized by significant cultural exchange between Acehnese people and Malay communities.

Using traditional knowledge in the sustainable management of natural resources plays a crucial role in harnessing the economic potential of sectors such as agriculture, fisheries, and natural crafts.⁵⁹ Knowledge of environmentally friendly farming methods, sustainable fishing techniques, and processing of natural materials into value-added products. This can increase the productivity and competitiveness of these sectors, contributing to regional economic growth.

Furthermore, managing traditional knowledge empowers local communities to develop and market unique products. Entrepreneurial initiatives flourish among these communities through businesses based on traditional knowledge with access to markets and necessary resources provided.⁶⁰ Through education and training, communities develop the skills and expertise to produce, market, and manage

⁵⁸ Mieke Yustia et al., "The Optimization of Geographical Indication Protection in The Realization of National Self-Sufficiency Optimalisasi Perlindungan Indikasi Geografis Dalam Mewujudkan Kemandirian Bangsa A . Introduction National Self-Sufficiency Is a Part of State Sovereign," *Pjih*, vol. 7 No., 2020, 85–101, DOI: 10.22304/pjih.v7n1.a5.

⁵⁹ Hariietta M AM, "Emerging Trends in the Generation, Transmission and Protection of Traditional Knowledge," *Indigenous Policy Journal*, 2019, 1–15, <http://www.indigenouspolicy.org/index.php/ipj/article/view/620%0Ahttp://www.indigenouspolicy.org/index.php/ipj/article/view/620/607>.

⁶⁰ Álvaro Dias et al., *Developing Sustainable Business Models: Local Knowledge Acquisition and Tourism Lifestyle Entrepreneurship*, *Journal of Sustainable Tourism*, vol. 31, 2023, 931–950, DOI: 10.1080/09669582.2020.1835931.

these businesses effectively. This generates local employment opportunities and increases incomes while reducing dependence on unsustainable economic activities.

Aceh's traditional knowledge, comprising herbal medicine, handicrafts, and specific agricultural techniques, forms the basis for developing unique and valuable local products. By processing local raw materials based on traditional knowledge, such as Gayo coffee or distinctive Aceh spices, the added value of products increases further, attracting broader market interest. Thus, traditional knowledge becomes a commodity that must be managed sustainably in improving the economy of the Acehnese people.

Traditional knowledge and cultural heritage have become major attractions for tourists interested in exploring and experiencing the richness of local culture in Aceh.⁶¹ By promoting cultural tourism based on traditional knowledge, Aceh can attract more tourist visits, contributing to the growth of the tourism sector. This includes building tourism infrastructure, developing tourist villages, cultural exhibitions, and promoting cultural festivals. By maintaining and developing traditional knowledge, Aceh can build a strong foundation for sustainable economic development, minimizing the negative impacts of globalization and modernization, which often threaten the sustainability of local culture.

Using traditional knowledge as a valuable economic asset, Aceh can stimulate the growth of the local economic sector, increase community incomes, and strengthen cultural and environmental sustainability. Community, government, and private sector participation is crucial to achieving optimal results. Unfortunately, the Aceh Government has not yet made strategic initiatives through excellent programs for managing traditional knowledge.

F. Conclusion

The people of Aceh still have a poor comprehension of traditional knowledge supporting geographical indications due to a lack of awareness of its economic importance. As a legacy from their predecessors, the people of Aceh cherish and uphold traditional knowledge, which includes ethical values, spirituality, and local wisdom. Practices of generational transfer preserve this knowledge. Urbanization, technological development, and societal change have all impacted the public's poor comprehension of this information. Therefore, economic potential and community rights to identify could be lost without organized and controlled management of traditional knowledge underlying geographical indications. The low registration rates for geographical markers show that the Aceh government has not proactively managed traditional knowledge in this area. Consequently, it reduced opportunities for promotion and economic improvement in Aceh. Therefore, to help define qualities and traits in applications for geographical indicator

⁶¹ Ruhyat Partasasmita, Nadya Timuria Cahyani, and Johan Iskandar, "Local Knowledge of the Community in Cintaratu Village, Pangandaran, Indonesia on Traditional Landscapes for Sustainable Land Management," *Biodiversitas* 21, no. 8 (2020): 3606–16, DOI: 10.13057/biodiv/d210825.

registration, the Aceh government must record and document traditional knowledge that supports geographical indications. The government must also create regional legislation to manage traditional knowledge related to geographical indications. While preserving the caliber and reputation of goods with geographical indicator status, such regulations or policies can impact production methods.

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