

Nature Harmony and Local Wisdom: Exploring *Tri Hita Karana* and Traditional Ecological Knowledge of the Bali Aga Community in Environmental Protection

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Abstract: Environmental pollution has evolved into a global issue that affects all humans can feel. The most frequent cause is a massive land conversion that neglects the negative effects on the surrounding environment. The Bali Aga indigenous people in Trunyan and Tenganan villages have optimism about preventing a global ecological crisis by maintaining their customary forests. This study examines how the Bali Aga Indigenous people in Trunyan and Tenganan villages maintain their traditional ecological knowledge (TEK), their views on life, and how social institutions impact local wisdom, practices, and unique knowledge. Qualitative research methods—observation, in-depth interviews, and literature reviews—tracked and processed data. The research discovered a belief in *Tri Hita Karana*, prioritizing human balance with God and nature. The presence of binding customary law (*Awig-awig*) demonstrates the belief of the Bali Aga community in managing the forest and preserving its environment. The *Awig-awig* customary law has been implemented in both villages through diverse natural resource management techniques. It is further supported by their knowledge of the various plant species and their responsibilities in maintaining the ecosystem. Amid a global ecological crisis, the findings indicate that the *Awig-awig* or customary law plays a significant role in preserving the environment.

Keywords: Bali Aga; Environment sustainability; Traditional Ecological Knowledge; *Tri Hita Karana*.

Abstrak: Pencemaran lingkungan telah menjadi masalah global yang dampaknya bisa dirasakan oleh seluruh manusia yang ada di dunia ini. Penyebab yang paling umum ditemui di antaranya yaitu karena terjadi alih fungsi lahan yang cukup besar, tanpa memperhatikan dampak buruk terhadap lingkungan sekitarnya. Dalam kondisi kritis di mana dunia mengalami krisis ekologi, ada sebuah harapan yang dilakukan oleh masyarakat adat Bali Aga di desa Trunyan dan Tenganan dalam pemeliharaan hutan adat sebagai upaya preventif terjadinya krisis ekologis yang meluas. Penelitian ini menelusuri bagaimana pengetahuan ekologi (TEK) masyarakat Adat Bali Aga desa Trunyan dan Tenganan, bagaimana pandangan hidupnya, apa saja institusi sosial yang mempengaruhi kearifan lokal itu tetap terjaga, seperti apa praktiknya, dan apa pengetahuan khas yang dimiliki masyarakatnya. Penelusuran dan pengolahan data yang dilakukan menggunakan metode penelitian kualitatif melalui observasi, wawancara mendalam, dan kajian literatur. Hasil penelitian menemukan bahwa terdapat keyakinan pada *Tri Hita Karana* yang mengutamakan keseimbangan manusia dengan Tuhan dan alam. Keyakinan itu kemudian termanifestasi dengan kehadiran hukum adat yang mengikat (*Awig-awig*) masyarakat Bali Aga dalam mengolah dan memelihara hutan dan lingkungannya. Hukum adat *Awig-awig* telah diimplementasikan di kedua desa tersebut dengan berbagai praktik pengelolaan sumber daya alami. Hal tersebut juga didukung oleh pengetahuan masyarakat lokal tentang aneka jenis tumbuhan dan fungsinya untuk menjaga ekosistem keberlangsungan kehidupan. Kesimpulan yang didapat adalah *Awig-awig* atau hukum adat memiliki peranan yang sangat penting secara fungsional, untuk menjaga kelestarian lingkungan hidup di tengah krisis ekologi yang bersipat global.

Kata Kunci: Bali Aga; Keberlanjutan lingkungan; Pengetahuan Ekologi Tradisional; *Tri Hita Karana*.

1. Introduction

Various communities worldwide are concerned with environmental pollution (Rakatama & Pandit, 2020). It is quite reasonable, as the impact is not restricted to one country that causes environmental damage, but many people worldwide feel it. In highlighting this issue, scientists believe that, if permitted to continue, environmental damage has reached a critical and dangerous stage (Noviana, Kurniaman, & Dewi, 2020). The next generation will suffer from extinction and global warming if environmental pollution remains largely unregulated. Therefore, humans must be able to change their destructive attitude toward the environment to preserve their existence as the dominant creatures on Earth (Ayoob, Gupta, & Bhat, 2008). More strict management of raw materials in the natural environment where humans live is needed to prevent a severe ecological crisis caused by industrial activities and other human actions (Kementerian Lingkungan Hidup dan Kehutanan Republik Indonesia, 1988).

Traditional ecological knowledge (TEK) is one of the efforts to mitigate environmental harm. This knowledge consists of procedures or practices for humans and indigenous communities or customs to treat nature (Berkes, 1993). Contrary to modern reason, TEK is positioned as an alternative to discuss ecological issues linked to the variety of local wisdom already inhabited (Berkes, 1993). TEK is cumulative knowledge and beliefs handed down from generation to generation, emphasizing the relationship between living creatures (including humans) and their environment (Berkes, 1993).

Many researchers have investigated traditional ecological knowledge (TEK), focusing on anthropology, ethnobotany, ethnozoology, conservation, and traditional ecology, including Tomalin (2016), Gottlieb (2006), and Dalton and Simmons (2010). Using a religious perspective, the three researchers investigated the ecological crisis. In their research, they concluded that the creed of divinity (biodivinity) is not always a human religious principle when it comes to becoming an environmental activist (environmentalist). Based on previous research, a person's motivation to conserve the environment is not always based on their religious beliefs (Tomalin, 2016).

The relationship between indigenous society and the natural environment has been the subject of extensive research in Indonesia. Husnul Qodim (2013), for instance, investigated the environmental protection efforts in Kuta Village, Ciamis Regency. He discovered that the customary forest is still preserved due to forest zoning systems, such as sacred cover areas and restrictions, so "taboo" or forbidden to be cultivated by humans. Similarly, in his research, Kusnaka Adimiharja (2009; 1992) claims that the traditional knowledge possessed by the people of the Mount Halimun Area is the basis for caution in modern agricultural systems, which are suspected to be the cause of the environmental crisis. The balance of the natural environment is maintained through their traditional knowledge.

The Bali Aga indigenous people are a well-known community group with a tradition of ecological sustainability. Various researchers, including Haribawa et al. (2020), Mutia et al. (2019), Prajanwardhi et al. (2021), and Wijana et al. (2020), have examined the survival of the Bali Aga indigenous community from ecological, sociological, and religious perspectives. However, the researchers left one paradigm, traditional ecological knowledge, to be examined in this study.

In general, all the above researchers explained that the most significant aspect of environmental management studies is the interaction between indigenous peoples and the ecology itself. Therefore, the theory of traditional ecological knowledge describes the mutual interaction between indigenous peoples and the environment. In the 1990s, traditional ecological knowledge gained widespread attention and popularity. It is a result of increasing awareness of the need to incorporate biocultural systems, specifically the integration of biological, environmental, and social sciences. In addition, the notion is that managing and conserving the environment and natural resources should not rely solely on modern science but also integrate traditional ecological knowledge (Mitchell, Setiawan, & Rahmi, 2000).

The theory of traditional ecological knowledge applies to indigenous communities. Indigenous peoples or communities are residents who continue to practice traditions over a long period handed down from generation to generation and continuously live in the same environment. Thus, there is a

continuous history and culture of the indigenous community, including their belief systems, principles, behavior, and numerous practices derived from their historical experience (Iskandar & Ellen, 2004).

According to Berkes, traditional ecological knowledge is a collection of knowledge, practices, and beliefs developed through adaptive processes and passed culturally from generation to generation regarding the relationship between living things (including humans) and their environment (Berkes, 2017). Generally, this collection of knowledge is applied in local management systems governed by social institutions imbued with a worldview or a specific belief. Traditional ecological knowledge is a way of knowing that is dynamic, experiential, and able to adapt to change. TEK is an attribute of societies with historical continuity in utilizing local resources. These are generally non-industrialized or less technologically oriented societies, with a large percentage of indigenous people (Berkes, 1993).

Berkes adds an analytical framework to investigate traditional ecological knowledge, also known as a complex knowledge-practice-belief system. Berkes argues that traditional ecological knowledge comprises four levels of analysis. The first is local knowledge of the land, the diversity of animals and plants, and the relationship between species and their physical environment. This category includes knowledge of land zoning systems and archaic astronomical knowledge about managing natural resources and land. This knowledge is an empirical method or way of understanding, not only information or knowledge. This knowledge cannot be acquired through literature. It must be gained through experience constrained by space and time. The second is practices, such as land and natural resources management: practices, tools, and techniques. In addition, the management of sacred sites, and rituals in managing customary forests, yards, etc., are also regulated. The third is social institutions consisting of rules, norms, customs, mythologies, ancestral proverbs, symbol systems, taboos, and culture that influence traditional ecological knowledge. Regarding the final point, life perspectives and religious philosophies represent all levels of environmental analysis. This view of life is the basis of all traditional ecological knowledge.

In this research, a set of theories developed by Berkes will be utilized to examine the reciprocal relationship between the Bali Aga indigenous people and their ecological environment. Therefore, this study aims to investigate the ecological knowledge (TEK) of the Bali Aga Indigenous people in the Trunyan and Tenganan villages and their view of life, the social institutions that influence local wisdom, their practice, and their specific knowledge in maintaining natural sustainability.

2. Method

The authors employ qualitative methods for this research. Primary data sources are compiled from the field (field research), while secondary data sources are obtained from the literature. In addition, this study utilized participatory observation, in-depth interviews, and a review of the relevant literature to acquire its data. According to Bogdan and Tylor, participatory observation is a period of intense social interaction between the researcher and the subject in the subject's environment (Bogdan & Tylor, 1992). Two villages of the Bali Aga indigenous people, Trunyan Village and Tenganan Village, were observed six months between January and June 2022. In the meantime, informants and natives of the two villages were interviewed in detail. The informants were selected as the sample and purposefully based on their competence. This study's informants included indigenous community leaders or elders, such as indigenous elders, *kuncen* (gatekeepers), indigenous leaders, and members of other communities. Lastly, a literature review provides data in texts related to traditional ecological knowledge theories, conducted research, institutions associated with indigenous peoples, and NGOs (non-governmental organizations) concerned with indigenous peoples and environmental preservation.

3. Result and Discussion

The Bali Aga Indigenous People

The Bali Aga community is considered a society that does not get much attention or influence from the Majapahit Javanese Hindu tradition (Utama, 2016). Several traditions in Bali Aga prove it—for example, one of the funeral traditions known as *ngaben* in Trunyan Village. If, in general, the funeral is carried out by burning the bodies, the bodies were left in an open space under a tree *Taru Menyan* (Menyan tree) (Aridiantari, Lasmawan, & Suastika, 2020).

The Bali Aga who did not submit to the Majapahit kingdom generally inhabited several mountain areas, including Sembiran, Sidetapa, Cempaga, Tigawasa, Buleleng Regency, Pendawa, Dausa, Trunyan in Bangli Regency, and Pagringsingan, Karangase Regency (Pemerintah Kabupaten Karangasem, 2022). Even though a number of these villages are classified as a single 'Bali Aga' group, there are many differences and unique characteristics, such as customary leadership structures, local ecological knowledge in managing natural resources, funeral traditions, and other religious practices (Wartayasa, 2018).

This fact shows the differences between Bali Aga and Balinese Hindus. For Bali Aga people, Bali Hindus are migrant people who came to Bali after the Majapahit kingdom collapsed and invaded. Bali Aga society also follows strict customs (Kusumo, 2022). Bali Aga's culture differs from Bali's. Bali Aga existed before Majapahit arrived in Bali in 1343 AD, hence the difference (Pemerintah Desa Sidetapa, 2022). Bali Aga culture has its character despite Majapahit Hindu syncretism. Reuters lists five characteristics: First, Bali Aga people do not burn the dead. Second, they do not recognize caste. Third, they do not consult Brahman Priests. Fourth, their prayers do not use mantras or sacred words. Fifth, they do not choose leaders based on education or intelligence (Reuter, 2017).

Specifically, Dharmayuda explained the characteristics of Bali Aga. First, Bali Aga is governed by groups of Kubayan, Kebau, and Senggukan rather than a single village head. Second, aligning with Reuter, they have no caste. Third, their land system arrangement is called Druwe Desa land. Fourth is their dialect difference from Balinese. Fifth, Hindu influence is not very strong in Bali Aga society. Sixth, they do not cremate corpses (Dharmayudha, 1995).

Balinese Hindus and Bali Aga live harmoniously despite their cultural differences. The concept of *Tri Hita Karana* generates this harmony. Balinese life philosophy emphasizes harmony and balance to promote moderation in relationships with others, God, and nature (Yhani & Supastri, 2020). Literally, *Tri Hita Karana* comes from the Sanskrit language: *Tri* means three, *Hita* means happy, joyful, and contented, *Karana* means a cause. So, *Tri Hita Karana* is a concept of harmony that causes humans to find happiness. In a way, *Tri Hita Karana* is the key to a happy life for Balinese people, which includes three aspects: *prahyangan* (heaven), which constructs the relationship between man and God; *pawongan* (people), which constructs human relations with one another; and *palemahan* (nature) which regulates human relations with nature or where they live (Yhani & Supastri, 2020).

The Bali Aga Indigenous People of Trunyan Village

In general, the origins of Trunyan village are recounted in a story or narrative that has been handed down through the generations. This aspect of speech is a category of what is known as traditional knowledge. According to Berkes, traditional ecology generally refers to environmental knowledge passed down from generation to generation within local communities (Berkes, 1993).

Based on the official website of Trunyan Village, their lineage can be traced back to Dalem Solo, also known as Ratu Sakti Pancering Jagat, who married Dewi Danu, also known as Ratu Ayu Pingit Dalam Dasar (Pemerintah Desa Terunyan, 2022). As described previously, Dewi Danu later became known as the ruler of Lake Batur. Ratu Gede Dalam Dasar was born due to the marriage of Ratu Sakti Pancering Jagat and Ratu Ayu Pingit. They became the rulers of Lake Batur, and the Banjar Jaba-caste residents of Trunyan are believed to have descended from them (Danandjaja, 1980). James Danandjaja stated that the Trunyan people prefer to be referred to as "Bali Mula" instead of "Bali Aga." They would appreciate being referred to as Balinese descendants (Danandjaja, 1980). The term "Bali Aga"

has a negative connotation among Balinese people in general, specifically as a reference to those who are untouched by civilization, impolite, and considered "stupid people." This additional pejorative connotation prevents the Trunyan people from being called "Bali Aga."

Trunyan Village is located on the east side of Lake Batur's relatively expansive stretch. Lake Batur's beauty is felt firmly upon boarding the boat. Upon observing the lake, it appeared as if people were in a relatively large container. This attractiveness has two sides of mountainous scenery, which is quite beautiful. Trunyan Village is located at the bottom of Mount Abang's eastern slope, which lies to the east. To the east, there is also a mountain view that is no less beautiful, one of the mountains considered sacred by the Bali Aga people, namely Mount Api Batur, which has an altitude of 1717 meters above sea level.

Mount Batur can appear beautiful when viewed from Trunyan village due to the condition of its east-facing crater slopes. When Mount Batur is actively spewing its molten lava, the village of Kedisan, one of the Bali Aga villages in Kintamani, can be threatened by this volcano. The Bali Aga people of Kedisan must therefore worship Mount Batur to calm its envious anger. Due to the condition of Mount Batur, which practically faces the village of Trunyan, this volcano is not a significant threat to the villagers of Trunyan. Lake Batur is the only threat that they face.

Trunyan People's View of Life

Like the Balinese, the Trunyan people generally believe in *Tri Hita Karana* as the view of life. This ideology constitutes Trunyan's ethics and life order. For instance, serving *canang* or offerings is a type of prayer ritual and respect for nature. The concept of *Tri Hita Karana* is from Hindu Faith (Pangasih & Asvitasari, 2016). The Trunyan prefer to be called Bali Mula or Balinese descendants. It means there are differences in basic principles regarding *prahyangan* (heaven) concepts, the human relationship with God, and Hindu society in general.

The Trunyan people have kept their ancestral faith alive despite total denial. It can be seen from the position of the highest deity worshiped by the Trunyan people. In addition, the *penjor* (a symbol of mountain or prosperity) was not installed in religious customs for Galungan and Kuningan, Hindu holidays. It appears that this distinctiveness is not specific to the Trunyan. Because on the way to Bali Aga Village, the others showed the same characteristics.

Moreover, due to the proximity of villages to Mount Batur and Lake Batur, the Trunyan people have the belief or lifestyle that divinity resides in Lake Batur, as compared to worshiping a divinity that exists and resides on Mount Batur. It aligns with Berkes's claim that "worldviews include belief systems and cultural ethics that influence environmental perceptions" (Berkes, 2017). A person's point of view concerning the environment is always comprised of their environmental ethics and belief system. It aligns with the Trunyan people's belief system and environmental ethics, which state that if the environment is dangerous, the proper response is to worship it and respect its inhabitants to achieve safety. In contrast, worship is unnecessary if the environment is not damaged. Therefore, the Trunyan people are more afraid of Dewi Ayu Pingit within the seabed or Dewi Danu, who resides on Lake Batur, than Lingga Yoni, one of Lord Shiva's incarnations who resides on Mount Batur (Danandjaja, 1980).

Community Myths and Traditional Ecology Knowledge in Trunyan

According to residents, Trunyan Village derives its name from the Taru Menyan tree, an endemic species. Based on the myth, the tree occurred prior to the settlement of the indigenous Trunyan people. The village chief, I Nengah Sudina, stated that the Taru Menyan is eleven centuries old, or 1,100 years old. It is also believed that the Taru Menyan once produced a strong fragrance that could be smelled on the entire island of Bali and Java. The incense trees become neutral by placing the bodies around the Taru Menyan. In addition, during the royal period, corpses were placed around it so that the smell would not attract other kingdoms to Trunyan Village.

In addition to the Taru Menyan, numerous other varieties of plants, such as Buka trees, sugar palm trees, cypress trees, and other vines, are believed to only grow on the cliffs of Abang Hill.

Additionally, there are floras in Trunyan Village that were traditionally used as medicine. According to Tiwari et al., knowledge about plant medicines is a form of traditional knowledge (Tiwari, Prasad, & Nath, 2011). Similarly, the Trunyan people continue to use these medicinal plants (Sudirga, 2012). People of Trunyan utilize traditional medicine due to their belief in the sacredness of local flora. According to residents, traditional medicine is an effective treatment for various diseases. They believe their ancestors utilized herbal medicine because they were taught the subject for a long time.

The Bali Aga Indigenous People of Tenganan Village

Tenganan Customary Village is in the administrative area of the Manggis sub-district, Karangasem Regency. Tenganan Customary Village is in Karangasem Regency's Manggis sub-district. According to Tenganan Village's monograph, 1,044 people and 338 heads of families exist. There are also 530 men and 514 women. Even though they dressed as Hindus, the Tenganan Indigenous people do not accept caste. Hindu Dharma from the Indra sect is Tenganan's faith (Pemerintah Kabupaten Karangasem, 2022; Wijana & Gusti Agung Nyoman Setiawan, 2020). Because of its proximity to Nyuh Gading beach, Tenganan village's average temperature is 28-30° at noon. The Tenganan Customary Village's tropical climate averages 1,500-2,000 mm per year (Sumunar, Suparmini, & Setyawati, 2017).

The historical background of the Customary Village, according to the indigenous elder, I Nyoman Sadra, no one knows precisely the history of this village. It is because a great fire hit the Customary Village of Tenganan in 1841. Finally, the history of the origins of this Customary Village is passed down from generation to generation through speech. This historical knowledge is one of the forms and characteristics of traditional ecological knowledge spoken in the mother tongue (Bicker, Ellen, & Parkes, 2003). There is no official document that records the history of this village. If anything, they know the mythical story about the God Indra, who descended from the sky to defeat a king named Mayadenawa.

It is said that a king named Mayadenawa ruled in the Bedhulu area. The king had a very evil temper and did not believe in the existence of God. So, it made God angry in heaven. Then the God Indra was sent to deal with the bad behavior of Mayadenawa. The war ensued, and, of course, the God Indra won. Wars have caused much bloodshed. So it is necessary to hold a purification ceremony because blood is considered impure. The name of the ritual is *aswa medanyadya*. The God Indra will sacrifice a horse named Oncesenawa as an offering. Oncesenawa fled due to the horse's strength and knowledge that it would be sacrificed. Then, the God Indra instructed *Wong Paneges* (people) to hunt down it. They also went to look for the horse towards the east. Sadly, the horse's corpse was discovered. To this day, a horse stone can be found on the hillside adjacent to the village of Tenganan. *Jaran* is the name of this rock because it resembles a horse. *Jaran* means horse.

In short, the report from *Wong Paneges* regarding the death of the horse, finally, the god Indra awarded them an area as appreciation for their efforts to find Oncesnawa. The God Indra gave the area on condition that as far as the horse carcass is smelled. Then, *Wong Paneges* insists that the carcass be cut up and spread as far as possible in all directions so that the smell of the horse carcass could be broadly detected. In response to this scenario, the God Indra stated, "Enough! Do not go too far!" This region is sufficient to satisfy your needs, said the God Indra to them (INS, Personal Communication, June 5, 2022). This area, bestowed by the God Indra, grew and became the Tenganan Pegringsingan Customary Village. This village has a total land area of 951.995 hectares, which is divided into three utilization zones: forests, fields, and settlements.

In addition, Tenganan Village has a unique product with a profound meaning, namely, Gringsing Cloth. It is distinctive of the Tenganan people's inventions and efforts. Based on the most recent legend, the name of the Tenganan Pegringsingan Customary Village is derived from the name of the textile produced by the villagers of Tenganan, namely the Gringsing cloth. The Gringsing fabric is created by hand. Consequently, producing a single piece of it requires a considerable amount of time. The estimated duration of production is between one and two years. It depends on the complexity of its pattern (Pemerintah Kabupaten Karangasem, 2022).

Tenganan People's View of Life

One of the characteristics of their cultural product, the Gringsing Cloth, expresses the Tenganan people's perspective on life differently. Etymologically, Gringsing is comprised of two syllables: 'Gering,' which means ill, and 'sing', which means not. *Tri Hita Karana* is comprised of three essential elements. The concept represented by the Gringsing fabric is *Tri Hita Karana*. It is due to the profound philosophical significance of the Gringsing fabric. This manufacturing technique is called engineering double a tie by combining threads directed forward and to the side. This Gringsing fabric is famous for its Tri Datu pattern, which consists of yellow, black, and red. The coloring ingredients are derived exclusively from plant and tree-based natural pigments. For instance, the blossoms of the white *Baccaurea racemose* tree are combined with the roots to obtain a red color. Candlenut fruit oil is combined with powdered or wood ash water to obtain a yellow color. The technique for making the Gringsing cloth conveys that, as humans, we must maintain a balance between the three essential elements of existence to avoid suffering and pain.

Anyone can wear the Gringsing cloth, not just members of specific communities or those with customary people. Therefore, it is natural for the people of Tenganan to trade this fabric as a commodity. In the past, only women were permitted to create the Gringsing cloth because they spent more time at home than males, who worked primarily in the fields (Padmasani, 2016). Nonetheless, observational evidence indicates that males also create it, as no customary law dictates who is responsible for weaving. Even though the Gringsing cloth is extremely expensive, costing up to millions of rupiah, it has nothing to do with social stratification. The people wearing Gringsing cloth do not reflect social status. It aligns with the concept of harmonious people in *Tri Hita Karana* (human relations with others). Except for the indigenous Tenganan people, who have no concept of caste, no other indigenous group in the region is absent.

Until now, the indigenous people of Tenganan still adhere to the teachings of *Tri Hita Karana* in their daily lives, especially in *pawongan* (people) aspect (human's relationship with nature). It can be seen through the maintenance of a clean environment, the preservation of dense customary forests, and the use of plants as colors for fabric, one of the measures taken to prevent chemical contamination of the environment.

The Awig-awig and Nature Management in Tenganan

The *Awig-awig* customary law is an essential aspect of life in Tenganan Village. The concept of the *Awig-awig* has been utilized for decades in environmental maintenance and traditional forest conservation. Indigenous people of Tenganan have historically accepted its customary law because it plays a crucial role in disaster mitigation efforts (Suparmini, Setyawati, & Sumunar, 2013).

The *Awig-awig* rule guides the indigenous people of Tenganan village to act following a system of agreed-upon values and ethical principles (Sumarjo, 2018). The *Awig-awig*, strongly held by the indigenous Tenganan community, prohibits the tree's fall unless the tree dies of natural causes. In addition, it is forbidden for them to harvest fruit from their trees or those of the village. The prohibited fruits include durian, *Pangium edule* Reinw, candlenut (*Aleurites moluccana*), and Wild Breadfruit tree (*Artocarpus elasticus*) (Sumunar et al., 2017). The fruits that have been mentioned can only be harvested after they have fallen to the ground.

If violators chop wood or pick fruit, they will get a penalty, take the price of the wood or fruit, and pay for it. Tourists who pick the four forbidden fruits will be fined ten *catu* (25 kg of rice) and required to pay for the item they took. Tourists who pick eight forbidden fruits face numerous fines. 50% of item and fee payments will be distributed to the complainant and 50% to the village (Sumunar et al., 2017).

In order to preserve plant diversity, Tenganan Indigenous people cannot sell *injuk* (thatch palm). However, selling it as souvenir wristbands is legal because this handicraft requires a little thatch palm (W, Personal Communication, June 6, 2022). Thus, it is permitted. It aims to ensure that palm trees

keep sustainable. One of the Tenganan Pegringsingan Customary Village's main crops is sugar palm fruit. In Kangin Hill, south of Tenganan Village, the palm tree dominates.

In addition to being dominated by palm trees, the customary forest also contains other trees still in good condition. The trees are banyan, lamtoro (*Leucaena leucocephala*), hibiscus, ficus, mango, coconut, frangipani, acacia, durian, mahogany, and java plum. Those trees are mostly located on the outskirts of the village (Satari, 2015). In addition to trees with big branches, there are also shrubs, such as the thorny pandanus that was frequently used for ceremonies in the past, chili trees, rice, corn, and vegetable plants grown in gardens and rice fields.

Moreover, residents of Tenganan also maintain fauna as a form of animal resource management. During the TEK observation of Tenganan indigenous people regarding animals, the animals such as dogs, buffaloes, and chickens were encountered. There are numerous wild animals and primates in the forest, which the residents believe must be protected and not disturbed. According to Komang, a villager, the Tenganan people frequently perform purification rituals in the customary forest to avoid conflicts with these primates (Satari, 2015).

In addition to selling and advising, the *Awig-awig* also regulates that wine and brown sugar are forbidden to make for Tenganan people. They are also forbidden to make bricks. This prohibition prevents fuel waste of excessive use of firewood. In the *Awig-awig*, they are also prohibited from using the indigo plant because the Gringsing cloth dyeing uses natural blue dyes. Therefore, Tenganan residents often seek indigo plants outside the village for blue color processing in Gringsing cloth production (Sumunar et al., 2017).

The Tenganan indigenous people's plant preservation efforts aim to protect Kangin Hill's springs. Water nurtures life. The forest's ecological role as a water provider is maintained. As an informal social institution that regulates Indigenous forest preservation, the *Awig-awig* can raise their knowledge of forest conservation. Based on Wijana's research, the people of Tenganan Pegringsingan think the forest is sacred because it is God's wealth and must be preserved (Wijana & Gusti Agung Nyoman Setiawan, 2020).

The *Awig-awig* has meticulously regulated the indigenous Tenganan's management of natural resources. First, Tenganans do not cut down living trees. These methods allow for the correct maintenance of ecosystems. In addition, customary forests can maintain their plant diversity and function as natural freshwater reservoirs for the survival of the Tenganan people (Wijana & Gusti Agung Nyoman Setiawan, 2020). Second, even if the tree is deceased, those wishing to cut it must consult the indigenous Elders to verify the truth. The Krama Adat will contemplate granting a logging permit if the tree in concern is dead. This statement was also confirmed by the villager, Komang, whom the researchers met while slaughtering buffalo. He disclosed that "only deceased trees may be cut down, and even then, they must be approved by the indigenous elders before a cutting ritual is performed" (K, Personal Communication, June 4, 2022). Third, only newlyweds can cut down living trees on their land for building supplies. Tenganans call it *Tumapung* (landed). It must still be approved by Tenganan Village's indigenous elders (Sumunar et al., 2017). Fourth, Krama Desa and Krama adat may cut down trees to fix Tenganan Village temples that are discussed in *faruman dese* or village forums. Even if a tree is on private land, a forum decision must be carried out. I Nyoman Sadra said: "Tenganan Village is Indigenous land. Even if, for example, there is private land and the Indigenous village needs something, then the Indigenous village has the right to take it" (K, Personal Communication, June 4, 2022). Fifth, even though the tree is on private land, the Tenganan Customary Village people cannot pick fruit. As stated above, customs authorities will fine violators. Tenganans cannot sell, mortgage, or use the land as security for Bank credit. Tenganan Village is all customary land. For those found to have committed a violation, their land will be confiscated by customs and evicted from the custom village (Sumunar et al., 2017).

4. Conclusion

The Bali Aga people continue to adhere to and uphold the teachings of *Tri Hita Karana* in their everyday lives. *Tri Hita Karana* is one of the Hindu teachings that guide humans to create a balanced

and harmonious existence between their relationship with God (*Prahyangan*), their relationship with fellow humans (*Pawongan*), and their relationship with nature (*Palemahan*). As an indigenous community, the ecological knowledge and local wisdom of the Bali Aga are still well preserved, particularly in the Customary Villages of Trunyan and Tenganan. The *Tri Hita Karana* teachings underpin the practice of environmental protection or conservation in managing natural resources. For the Bali Aga people, particularly the Trunyan and Tenganan indigenous peoples, the forest is a divine gift; therefore, it is extremely sacred and must be protected. The impacts of the Bali Aga community's excellent forest management are regulated by the *Awig-awig*, and affect preserving the function of well-maintained sources, preserving a rich diversity of flora, and preserving a variety of animal species that inhabit both villages. It is expected that future research will be able to address the limitations of the current study, namely its exclusive focus on qualitative research methodologies to examine the traditional ecological knowledge of the Bali Aga community in the villages of Trunyan and Tenganan.

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