



A Journal of Culture, English Language, Teaching & Literature

ISSN 1414-3320 (Print), ISSN 2502-4914 (Online)

Vol. 23 No.2; December 2023

Copyright © Soegijapranata Catholic University, Indonesia

Sumbanese's Traditional Ecological Knowledge (TEK): *Warung Hupu Liku* Ritual and Ecological Ethics

¹B. Retang Wohangara, ²Ridwan Sanjaya, and ³Benny D. Setianto

¹Doctoral Program in Environmental Science, and English Department, Faculty of Language and Arts,
Soegijapranata Catholic University, Semarang, Indonesia

²Doctoral Program in Environmental Science, and Information System, Faculty of Computer Science,
Soegijapranata Catholic University, Semarang, Indonesia

³Doctoral Program in Environmental Science, and Law Department, Faculty of Law and
Communication, Soegijapranata Catholic University, Semarang, Indonesia

¹retang@unika.ac.id, ²ridwan@unika.ac.id, ³benny@unika.ac.id

Sumbanese's Traditional Ecological Knowledge (TEK): *Warung Hupu Liku* Ritual and Ecological Ethics

¹B. Retang Wohangara, ²Ridwan Sanjaya, and ³Benny D. Setianto

¹retang@unika.ac.id, ²ridwan@unika.ac.id, ³benny@unika.ac.id

¹Doctoral Program in Environmental Science, and English Department, Faculty of Language and Arts, Soegijapranata Catholic University, Semarang, Indonesia

²Doctoral Program in Environmental Science, and Information System, Faculty of Computer Science, Soegijapranata Catholic University, Semarang, Indonesia

³Doctoral Program in Environmental Science, and Law Department, Faculty of Law and Communication, Soegijapranata Catholic University, Semarang, Indonesia

Abstract: Traditional communities have long been recognized as actors practicing nature-friendly behaviors. They are commonly deemed the champion of sustainable lifestyles. Since the 1980s, there has been a call to learn the so-called Traditional Ecological Knowledge (TEK) embraced by traditional communities. One of the reasons is that the issues of climate crises should be addressed and tackled from various corners. This article attempts to delineate a TEK, an ecological ritual practiced by the traditional community living on the island of Sumba. The ritual, called WHL (*warung hupu liku*, which means giving the rope tips back [to nature]), could give us an idea of how the community perceives their relationship with natural surroundings, which in turn, exposes their ecological ethics. Primary research data were collected through interviews with four experts of Sumbanese culture/environmental activists and two ritual speakers (*wunang*). The research reveals that WHL ritual portrays the Sumbanese's worldview of the human-nature relationship. WHL gives an idea of the Sumbanese ecological ethics, covering reciprocity with nature, mutual respect, modesty in consumption, and sustainable use of natural resources. Because Indonesia is rich in TEK, this time-enduring knowledge and practice should be exposed as a valuable contribution to ecological discourses and policies. The discussion on Sumbanese WHL suggests that traditional and modern approaches could work in tandem to address current environmental issues.

Key words: TEK, ritual, ecological ethics

Abstrak: Pengakuan bahwa komunitas tradisional adalah pihak yang hidup bersahabat dengan alam telah berlangsung lama. Komunitas ini disebut sebagai yang paling menonjol dalam menjalani gaya hidup berkelanjutan. Sejak 1980s, muncul seruan untuk mempelajari apa yang disebut Pengetahuan Ekologis Tradisional (PET) yang dimiliki oleh komunitas-komunitas tradisional. Salah satu alasan yang mendasari

kebutuhan ini adalah bahwa masalah-masalah yang ditimbulkan oleh perubahan iklim perlu diselesaikan dengan berbagai cara. Artikel ini mencoba menjelaskan salah satu bentuk PET, yaitu sebuah ritual ekologis yang dipraktekan oleh komunitas tradisional yang ada di pulau Sumba. Ritual yang dinamai Warung Hupu Liku (mengembalikan ujung tali [ke alam]) ini dapat memberi gambaran bagaimana komunitas tersebut memandang hubungannya dengan alam sekitarnya. Ritual ini sekaligus menjelaskan etika ekologis komunitas bersangkutan. Data primer penelitian diperoleh melalui wawancara dengan empat orang budayawan Sumba dan aktivis lingkungan, serta dua orang pemimpin ritual (wunang). Penelitian ini mengungkapkan bahwa etika ekologis orang Sumba adalah: hubungan resiprokal manusia dengan alam, rasa hormat mendalam terhadap alam, kecukupan kebutuhan, dan penggunaan sumber daya alam secara berkelanjutan. Indonesia kaya dalam hal PET, dan jenis pengetahuan yang diperoleh dalam rentang waktu yang lama ini perlu diungkap karena berpotensi memberi sumbangan dalam wacana dan kebijakan ekologis. Diskusi mengenai ritual WHL orang Sumba ini menyarankan agar pendekatan tradisional dan modern perlu bergandengan tangan untuk menyasar masalah-masalah lingkungan saat ini.

Kata kunci: PET (Pengetahuan Ekologis Tradisional), ritual, etika ekologis

INTRODUCTION

Like any other traditional communities in other parts of the world, Sumbanese traditional communities fully believe that humans and the environment are two interdependent entities. The quality of human life and that of the environment affect both ways. In other words, a healthy environment ensures humans' well-being, while environmental crises necessarily put the quality and sustainability of human life at stake (Jain, 2012, p. 14). This worldview allows the communities to situate nature as a partner, and even go further by giving human attributes to nature; nature having feelings of anger, sorrow, or even pain. In his hypothetical proposition, biophilia, Wilson E.O. promotes the idea that human beings bear the innate tendency to emotionally affiliate with other forms. The tendency to make a connection with nature is instrumental to their physical and mental well-being (Byrne, 2010). This sense of affiliation with other creations might help to explain the close affinity of human and non-human beings (including nature). Since nature is a partner, an entity with humans who share things in common, then human beings should shoulder the moral responsibility to take care and conserve nature itself. Shilling (2018, p. 13) summarizes the shared belief of aboriginal people covering the bonding among all members of the group, reverence for nature, human's relationship to nature beyond the economic profit, collective ownership of land, and a previous generation's responsibility to provide a healthy world for the next generation. The belief of the Aboriginals is envisioned to be like the Sumbanese because both are dealing with communities' sustainability.

Responding to ongoing ecological crises at present, there are calls to save nature by adopting more sustainable ways of living. The UN World Commission on Environment and Development's report, *Our Common Future* (1987), for instance, highlights the global-scale environmental problems caused by poverty and non-sustainable ways of consumption and production. The commission, urging people to take necessary measures to tackle the problems, defines sustainable development as the "development that meets the needs of the present without compromising the ability of the future generations to meet their own needs" (WCED, 1987, p. 8).

Making an effort to sustainable ways of lives is related to the Encyclical Letter *Laudato Si* part 14, where Pope Francis (2016) calls all parties to have ecological dialogues and conversations, and position the environmental crises as common issues. Also, in part 146 of the Letter, the Pope specifically mentions the importance of engaging the indigenous communities as valuable dialogue partners.

Indigenous knowledge was once marginalized when it came face to-face with the hegemony of western production of knowledge. During the 1950-1960s, for instance, indigenous knowledge was considered to be “inefficient, inferior, and an obstacle to development,” (Agrawal, 1995, p. 413). In scientific conversations, ‘the traditional’ and ‘the modern/the West’ are in a binary opposition. The first was associated with local, primitive, irrational, while the latter: universal, modern, scientific/rational. For Agrawal (1995), this dichotomy is contra-productive. What is necessary for him is to give access to indigenous people to contribute into the development narratives. All types of knowledge should engage in conversations to tackle the challenges posed by social and environmental issues at the present time (Yanou et al., 2023). Instead of contradicting the sources of knowledge, it is much more significant to tap possible collaborative measures for common well-being. Concerning ecology, one sub-category of indigenous knowledge gaining more relevance is the so called *Traditional Ecological Knowledge* (TEK).

TEK research in Indonesia, for example in Sumba, are rather limited. The four research-based articles that could be identified and worth mentioning here are first: Ariando & Limjirakan (2019) examining the TEK of PET orang Suku Laut *Orang Suku Laut* community (Indonesian Sea Nomads) in the Province of Riau Kepulauan in responding climate changes. The researchers have a conclusion that the ecological life and practices of this community is weakening due to climate variability, marginalization, governmental policies, globalization, and social and economic conditions. They call for collaborative acts between the community and other parties to develop adaptation to climate changes.

The second is the one carried out among the Cerekeng people in south Sulawesi by Akhmar et al. (2022). They find out that forests in this area is still managed in sustainable ways. Cerekeng people still consider forests as sacred sites having spiritual dimensions, of which should be treated with reverence. Unfortunately, their TEK is endangered due to legal uncertainty in forest management and the presence of mining in the area.

The third research is conducted by Stacey et al. (2008) from Charles Darwin University, Australia. Their research goal is to find the condition of whale shark and the fisherman community of Bajo-Timor in Nusa Tenggara Province. The whale shark species is most likely to survive for the following three reasons: 1) the community possesses customary law forbidding people to hunt whale sharks, 2) the absence of need to hunt the species for commercial purposes, and 3) the absence of adequate technology to catch the whale sharks.

The fourth one is the research carried out by Sumarwati (2022) who investigates the PET of the community residing in the slope of Gunung Lawu regarding food security of non-rice crops. She identifies the people's folklore concerning with the origins of vegetables and corn, the taboos on planting rice, ethical values, and practices which are closely related to ensuring the sustainability of natural resources.

Different from the previously mentioned research, this present research-based article is an attempt to recognize an ecological ritual, a form of TEK practiced by the traditional community

in the island of Sumba. This ritual is named *Warung Hupu Liku*, which literally means putting back the rope tips [to nature]. This ritual might give readers an idea of how the community understands their relationship with nature, which in turn, exposes their ecological ethics.

LITERATURE REVIEW

A. Traditional Ecological Knowledge

A subcategory of traditional knowledge, TEK, also named IEK- Indigenous Ecological Knowledge (McCarter 2014) or "native science" (Cajete, 2018, p.15), is explained in various definitions. It is an act of "rediscovering our spiritual and naturel connection to nature" (Shilling, 2018b, p. 9); Berkes (2012) provides a thorough definition of TEK, stating that, it refers to, "a cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmissions, about the relationship of living beings (including humans) with one another and with their environment" (p. 7). Thus, as the name suggests, TEK refers to traditional communities' ecological perceptions and adaptive practices transmitted through generations as a result of dynamic interactions with their surroundings.

Once marginalized in scientific discussions (Agrawal, 1995), TEK started gaining serious attention in 1980s when ethnobiologist carried out researches on local species and identify them using emic perspectives (Casi et al., 2022). At the same time, there was an urgent need to make use of different sources of knowledge and solutions to deal with social and ecological issues. TEK then claims its place as one relevant source to respond to climate changes, especially in natural resource management, and building resilience. TEK and 'modern' knowledge should be complementary by building partnership and consensus to create a more adaptive and sustainable management of natural resources (Moller et al., 2004). In addition, giving access to TEK for contributions is an act of recognition of the traditional communities relevance in solving various ecological problems (Erickson et al., 2022).

TEK provides insights and knowledge related to sustainable living and has been lived and developed by traditional communities for a long period of time. It is not merely theoretical knowledge. TEK is more as an empirical way of living (McGregor, 2004). Gadgil et al. (1993) asserts that indigenous communities have developed handed-down awareness of the importance of preserving natural resource to ensure the survival of the coming generations. TEK is a rich source of long-tested and creative ideas and practices in dealing with nature (Berkes, 2012). It offers natural resource management strategies (Fernandez-Giminez, 2000; Sinthumule, 2023); developing adaptive capacities to ever-changing environment (Ruiz-Mallén dan Corbera, 2013). Having those capacities, TEK then could offer significant contributions to conservation and sustainability management.

TEK covers a wide array of dimensions such as types of skills and knowledge, cultural and social identities, kinds of process for knowledge acquisition. Houde (2007) offers TEK typology categorized into 6 inter-related faces, namely, 1) Factual observation, classification, and system dynamics; 2) Management system; 3) Factual knowledge regarding past and current uses of the environment; 4) Ethics and values; 5) TEK as a vector of cultural identity; and 6) Cosmology. This paper focusses more on discussing the faces of numbers 4, 5, and 6.

B. Ritual

TEK is encoded in various forms including by means of ritual performance. Ritual is commonly associated with religious, sacred activities, of which Blasi (1985) calls ritual as a form of the religious mentality. It is an act of communication which functions as a form of social control and ecological necessity (McGraw & Krátký, 2017). It serves to symbolically deliver particular messages and ideologies through words, gestures, and behaviors. Ritual then is an enactment of cultural beliefs and values as well.

Simms & Stephens (2005) argue that rituals are appealing for investigation for they contain a group's traditions, beliefs, values, and identity. In terms of formality and execution, ritual can be grouped into "low-context and high-context rituals" (Simms & Stephens, 2005, p. 98). Low-context rituals are carried out in more spontaneous, less formal, and personal ways. Its execution is not planned or announced in advance. The "high context" one is characterized as being highly organized, controlled, and formalized. A high-context ritual is performed only at specific events and contexts, and with special preparations, and in many cases, led by specialists. Formality is also shown by the language used. Ritual language is often a rigidly organized set of expressions and gestures, a kind of communication usually understood by a limited number of people (Bell, 1992). McDowell (1983) insists that a ritual constitutes 3 inter-related aspects, those are, accessibility, formality, and efficacy. Accessibility refers to the questions like who is given the access to participate or lead a particular ritual. Formality is related to a particular language use, ritual objects, or place and time for ritual performance, while efficacy has something to do with the ritual function. Every ritual is performed to meet certain goals.

C. Ecological Ethics

Human beings possess the capacity to be self-reflective and weigh their thoughts and deeds. The term *homo sapiens* itself imply that human beings are creatures with wisdom and conscience (Holmes, 2003). For Sternberg & Gluck (2019), wisdom, morality, and ethics are closely related. Wisdom refers to the ability to accommodate people's points of view and use dialogical perspectives to achieve a common good. Morality and ethics, which generally refer to values and principles of right and wrong, are integral parts of wisdom.

Ecological ethics, often being used interchangeably with environmental ethics, are used to designate "the study of what humans, individually and corporately, ought to value, ought to be, and ought to do in relationships with all other beings and elements in the biosphere" (An. Eyclopedia.com, 2023). Kortner narrows the term down by defining ecological ethics as "the moral principles of human dealings with nature and its resources (2016, pp. 2-3).

METHOD

This article is based on phenomenological research. Phenomenological research tries to descriptively explain the essence of a phenomenon in the form of, among others, an individual or group's experiences. This kind of research is useful in understanding how people give meaning to their experience. In the research process, a researcher practices the so-called, bracketing. It is a technique to temporarily suspend the researcher's assumptions and biases about a phenomenon being studied. By doing so, the research could have a space for more objective investigation of the phenomenon under study (Cresswell, 2003, p.15). This WHL research is qualitative study with interpretivism paradigm.

Research data was collected through observation and interviews. The researcher observed the ritual in 2013 and the informants for interviews are six people including WHL ritual practitioner (*wunang*), Sumbanese cultural experts (*ama bhokulu*), and NGOs activists concerning with environment and culture. These informants were singled out as the best sources of research information since they usually get involved in ritual performances and possess better knowledge of cultural practices and environmental issues in the given community.

The interviewees were recruited by using the snowball sampling method. The online interview was conducted in the afternoon and evening during the period of January and May 2023. Each interview took place for about 30 minutes. Secondary data were obtained from existing audio-video documentation and relevant reviews of literature. One ritual practitioner also sent the researcher a video recording on the ritual prayer chanted during the ritual. Some other complementary data are in the form of photo documentation taken by the researcher himself in 2013.

RESULTS AND DISCUSSION

WHL is performed after the bulding of a house if completed, of which in the eastern Sumbanese language is metaphorically described as *Bha na tinjang-ka na puala-na; bha na mbukut-ka na rauna*” (when the trunk [of a tree] was finally erected, and the leaves had covered [to create shade]. Before performing the WHL ritual, a small ritual is actually carried out before people cut trees and ropes in the forest. The purpose is *pamalangung* (to greet and ask for permission from) those dwelling in and protecting the forest, portrayed as *dha ma riri mata-dha; dha ma maluawa-bhanggi-dha* (those with sharp eyes and broad-sized waists). The people hope to gain access to harvest trees and ropes they need for building a new house. Cutting trees and forestry ropes are considered to be *mbana* an act of generating heat. Therefore, the heat should be cooled down by ritual and prayer. WHL is a high-context ritual since it is well-planned and executed, lead by ritual specialists, and involving the public for ritual celebration. Figure 1 gives an idea about the high-context nature of WHL ritual. The two ritual performers, who were in a discussion with a spectator, were wearing ritual attires: traditional woven cloth and headscarf. In front of them were palm leaf containers of betel-nuts offered to the ancetors, coconut shell containers of water used to clean and cool things down, and food for the ancestors. A much bigger palm leaf container is to place the building material leftover.



Figure 1:
Ritual Speakers Preparing WHL Ritual

While the ritual is carried out in the local language, Kambiará, the audience requires special knowledge to thoroughly understand the meanings of utterance since the language registers used are highly metaphorical. As Fox asserts in his edited book on the ritual languages in eastern Indonesia, ritual language in this region is characterized by dyadic composition, canonical and parallel structures, and metaphorical forms. The words in the context of ritual are believed to be the words of ancestors. Ritual language is used, among others, to convey advice, instruction, prayer, or anxieties (1988).

One important aspect of every ritual is its efficacy, the performance for certain goals (McDowell, 1983). WHL ritual aims to achieve at least three (3) goals. The first goal is to ask for blessing from the creator, *na ma maringu, na ma malala* (the One who could cool down things). It is also an expression of gratitude to the nature that provides building materials. The materials are indeed free gifts from nature since the people do not plant and take care of the trees and plants in the forest (informants 1 and 2). The second one is to purify people from something unclean (informants 4 and 6). Sumbanese people fully understand that they are dependent on nature, and therefore, utilizing forest resources is unavoidable. However, this state of dependence brings them to an awareness: they actually take something they do not really deserve; something they do not compensate with their sweat.

WHL ritual is then necessary to cleanse people in the community from undesirable consequences. The informants 1 and 6 describe that WHL is an act of *paluhuya na ma paita* (eliminating bitterness). The last goal is to symbolically return wood and rope tips, which are not used anymore for the house construction to natural world. To conclude the ritual, the ritual leaders (*wunang*) and his assistants will climb a hill nearby to place the leftovers under the shade of a tree. The *wunang* says a prayer that the wood and rope tips could go back to their nature, to the place with fertile soil and abundant water, so as to multiply for the need for the generations to come (informants 1 and 2). Figure 2 nicely captures the communal tie of different generations. WHL ritual mirrors the responsibility of the old generation to ensure that the natural resources should be used with care for the interest of the future generations.



Figure 2:
Ritual Performance and Young Spectator

The performance of WHL ritual may offer insights into the ecological ethics of the traditional community of the eastern Sumbanese people. This form of TEK is what Körtner (2016) defines as the moral principle of human beings in dealing with nature and its resources. Delving into the worldview and practices surrounding WHL ritual performance, the ecological

ethics of the given community can be categorized into 4 moral values and principles, namely, reciprocity, reverence, moderation in need, and sustainable ways of living.

A. Reciprocity

Reciprocity is defined as "the act of giving benefits to another in return for the benefits received" (Molm et al., 2007, p. 199). This term is widely used such as in the areas of economy, psychology, and culture. Human-nature reciprocity is the basic element of people's worldview from various communities (Ojeda et al., 2022). For Varanasi (2020), the philosophy of reciprocity with nature should become the focus of those focussing their attention "to achieve a better and brighter future for our planet" (p. 189). Kimmerer (2018) informs that indigenous/traditional communities believe that human beings and nature always engage in the acts of giving. This moral principle of 'giving to each other' (*gift economies*), which is in contradiction to the lust of exploiting nature as commodity and property, develops reciprocity culture, which shapes "humans to have a moral, spiritual, and material responsibility to reciprocate the gifts received" (p. 29). The principle of reciprocity or *papapangu* (equilibrium) is obviously manifested in WHL ritual. This ritual is an act of taking and giving; not only taking resources from nature for the well being of human beings but also a material and spiritual giving back to nature in forms of giving prayer, slaughtering animals, offering betel nut, and sometimes, precious objects like small cuts of gold/silver (*kawadhak*), and food (*wua-nja uhhu*).



Figure 3:
Offering Food and Betel Nuts as an act of Reciprocity

According to Mazzocchi (2020), ritual and offerings reinforce the people's kinship with nature. For informant 3, nature gives life and deeply affects the whole aspects of human existence. Consequently, human beings should pay back and express their gratitude to nature. Figure 3 signifies the community's principle of reciprocity. Food (rice and small cuts of chicken) and betel nuts are for the exchange of the gifts, i.e. wood and rope, given by nature.

On human beings' responsibility to nature, Metcalfe & Game (2014) bring up the concept of ecological being, that is, the paradigm shift from humans as the subjects, center of existence and the non-humans as the objects existing to serve the needs of subjects to the recognition of human and non-human co-existence. This understanding echoes Leopold's land ethics arguing that mankind should transform their roles from land conquer to ordinary citizen, a similar position like the other creatures (Zhao, 2016). Having this ecological awareness, human beings then will assume more genuine responsibility to their other partners of being. Reciprocity in

WHL ritual positions human beings and nature on the same level. It implies that all bear responsibility for each other's existence. This mutual responsibility causes human beings to hold reverence for nature. Treating nature with reverence is an important value embraced by traditional community in their dealings with nature.

B. Reverence

As mentioned before, in relationship with nature, traditional communities consider nature as their equal beings, conscience contradicting anthropocentrism that insists the central positions of human beings in the universe (Pamukkale, 2021). Here, the ecological ethics of the traditional communities is at the opposite end of the western ethics. The western ethics, bearing human arrogance (anthropocentric chauvinism), have been the root of current ecological crises (Rajesh & Rajasekaran, 2019). In the axiology of traditional communities, the biotic and the non-biotic provide necessary conditions for mutual survival. Since human beings require non-humans for existence, the necessary condition is to pay respect to their non-human partners.



Figure 4:
Leftover wood and rope tips under shade of a tree

WHL ritual is the manifestation of Sumbanese traditional community's respect to nature, c.q. forest and its resources. After making use of forest products to build a house, the leftover building materials should be treated with care. The ritual leader's assistant will lay them under the shade of a tree (see figure 4). Though some still use firewood for cooking, it is taboo to burn the leftover forest materials. As the informant 2 informed, "even if there is no WHL ritual performance, such materials will never be used as firewood."

C. Moderation in Need

WHL ritual displays the principle of moderation in need. It is a message of having self-control in satisfying humans' needs. Human beings should carefully weigh what they want and need. The ritual is an expression that "I have served my need. It is already enough. The rest should be delivered back to the place they belong to" (informant 3). The idea of moderation in need is well summarized in the saying: *pitti rakka pa pitti-mu* (you take things that do not surpass your needs). The reason for having this life wisdom is based on the principle of gift economy. The Sumbanese traditional community is fully aware that nature, including the forest, supplies their needs. They reap what they do not sow. This coincides with informant 1, who says "what we harvest from the forest is not what we have poured our sweat off. We do not create them."

WHL ritual is concluded as a reflective performance. It teaches Sumbanese to practice self-restraint and moderation, the ecological ethics preventing human beings to see nature as mere commodity. By doing so, they do not justify themselves blindly exploit nature. Why do traditional communities have the scale of “it is already enough for us”? Again, the principle of gift economy. When someone gives you a gift, you take it with gratitude.

D. Sustainable Ways of Living

One of the reasons to learn TEK is that this knowledge system is claimed to offer time-testing models of best practices in sustainable ways of living, something that really matters at the present time. UN World Commission on Environment and Development, issuing a report titled *Our Common Future* defines sustainable development as the development that meets “the needs of the present without compromising the ability of future generations to meet their own needs” (1987, section 27). In his thesis on the TEK of the indigenous people in Papua New Guinea, Tiu (2016) concludes that the people lead sustainable ways of living by paying respect to, shouldering responsibility to take care, and maintaining reciprocal relationship with nature.

Saying a prayer and conversing with nature are integral parts of WHL ritual. The ritual speaker, for instance, talks to the wood and rope tips, hoping them to return safely to *mondu ma lambi, wai ma lanyir; ka dha woru, ka dha mbabaku* (the fertile riverbanks and the abundant source of water to regenerate to multiply) to meet the needs of the future generations. The future generations are metaphorically described by informant 2 as *dha kahanga ma pahilung; dha kalunga ma pahiapang* (the shoots replacing the old ones; the young twigs substituting the aged ones). Therefore, sustainability of human beings and nature are significant in the life of Sumbanese.

To ensure the sustainability of natural resources, the Sumbanese traditional communities also possess the concept of *tana paita* (bitter soil) and *tana kabba* (plain soil). Bitter soil refers to forestland considered to be sacred, and as a result the natural resources in this area are forbidden to be utilized. Plain soil refers to the areas designated for human use. However, the bitter soil can be turned into the plain one by performing a cooling down ritual. The ritual performance is aimed to neutralize the bitterness to make resources on the soil harvestable (informant 1). The cosmology of bitter soils seems to be an ecological strategy, that is, a strategy to give nature a chance to restore itself.

CONCLUSION

Traditional communities have a sense of unity with nature, and as a result they maintain particular values and behavior enabling them to maintain their interconnectedness. Traditional Ecological Knowledge (TEK) is a term to designate the kinds of practices, beliefs, values evolving through adaptive processes handed down through generations. It mainly concerns with human beings’s relationship with nature. TEK has drawn more attention along with increasing ecological crises, and the urgency to manage natural resources in sustainable ways.

This article presents an ecological ritual, named *Warung Hupu Liku* (WHL) performed by the traditional communities in eastern Sumba, to conclude the completion of house construction. This high-context ritual shares the given people’s ecological ethics, namely, 1) the reciprocal relationship of human beings and nature which result in moral obligation to take care of each other for each other’s survival; 2) the deep feeling of reverence for nature, the provider

for living; 3) the principle of exercising self-restraint to prevent someone from excessive extraction of natural resources; and 4) the principle of leading sustainable ways of living to ensure that the present and future generations are able to meet their needs.

The ecological ethics implies that human beings can sustain their life only if they cohabitate with other creatures and other creations as a whole (Kortner, 2016). Indigenous epistemologies, such as TEK, bear important values with regard to resilience and adaptation strategies, and the capacities required to respond to environmental issues. The inclusion of this culturally specific knowledge is a form of recognition of traditional communities' roles in addressing the ecological disruptions threatening the sustainability of planet earth.

REFERENCES

- Agrawal, A. (1995). Dismantling the Divide Between Indigenous and Scientific Knowledge. *Development and Change*, 26(3), 413-439. <https://doi.org/10.1111/j.1467-7660.1995.tb00560.x>
- Akhmar, A. M., Rahman, F., Supratman, S., Hasyim, H., & Nawir, M. (2022). Poured from the Sky: The Story of Traditional Ecological Knowledge in Cérékang Forest Conservation. *Forest and Society*, 6(2), 527-546. <https://doi.org/10.24259/fs.v6i2.15176>
- Ariando, M. W., & Limjirakan, S. (2019, June). Traditional Ecological Knowledge of Indigenous Peoples on Climate Change Adaptation: A Case Study of Sea Nomads "Orang Suku Laut", Lingga Regency. *The 5th Environmental Asia International Conference, June, 25-35*. https://www.researchgate.net/profile/Wengki-Ariando/publication/337032781_Traditional_Ecological_Knowledge_of_Indigenous_Peoples_on_Climate_Change_Adaptation_A_Case_Study_of_Sea_Nomads_Orang_Suku_Laut_Lingga_Regency_Riau_Islands_Province_Indonesia/links/5
- Bell, C. (1992). *Ritual Theory, Ritual Practice*. Oxford University Press. <http://web.vu.lt/rstc/a.pazeraite/files/2014/09/Catherine-Bell-Ritual-Theory-Ritual-Practice-Oxford-University-Press-USA-2009.pdf>
- Blasi, A. J. (1985). Rituals as a Form of the Religious Mentality. *Sociological Analysis*, 46(1), 59-71.
- Byrne, J. A. (2010). *Biophilia* (Issue January). <https://doi.org/10.1145/1179849.1179879>
- Cajete, G. (2018). Native Science and Sustaining Indigenous Communities. In M. K. N. D. Shilling (Ed.), *Traditional Ecological Knowledge: Learning From Indigenous Practices for Sustainability*.
- Casi, C., Guttorm, H. E., & Virtanen, P. K. (2022). Traditional Ecological Knowledge. In C. P. Krieg & R. Toivanen (Eds.), *Situating Sustainability: A Handbook of Contexts and Concepts* (pp. 222-233). Helsinki University Press. <https://doi.org/10.4324/9781003297444-13>
- Cresswell, J. W. (2003). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (2nd ed.). Sage Publication.

- Erickson, Z. J., Boston, K., Dockry, M. J., & Berrill, J. P. (2022). Listening to Indigenous Voices, Interests, and Priorities That Would Inform Tribal Co-Management of Natural Resources on a California State University Forest. *Forests*, 13(12). <https://doi.org/10.3390/f13122165>
- Fernandez-Gimenez, M. E. (2000). The Role of Mongolia Nomadic Pastoralists' Ecological Knowledge in Rangeland Management. *Ecological Applications*, 10(5), 1318–1326.
- Fox, J. J. (1988). *To Speak in Pairs: Essays on the Ritual Languages of Eastern Indonesia* (J. J. Fox (ed.)). Cambridge University Press.
- Francis, P. (2016). Laudato Si': On care for our common home. In *Ideals and Ideologies: A Reader*. <https://doi.org/10.4324/9781315625546>
- Gadgil, M., Berkes, F., & Folke, C. (1993). Indigenous Knowledge for Knowledge Indigenous Conservation. *Royal Swedish Academy of Sciences*, 22(2/3), 151–156.
- Holmes, R. I. (2003). Environmental Ethics. In *The Blackwell Companion to Philosophy* (pp. 723–743). https://doi.org/10.1007/978-94-007-6537-5_31
- Jain, U. (2012). Cultural Construction of Environmental Problems. *Procedia - Social and Behavioral Sciences*, 68, 6–15. <https://doi.org/10.1016/j.sbspro.2012.12.202>
- Kimmerer, R. W. (2018). Mishkos Kenomagwen, the Lesson of Grass: Restoring Reciprocity with the Good Green Earth. In *Traditional Ecological Knowledge: Learning from Indigenous Practices for Environmental Sustainability*. Cambridge University Press.
- Körtner, U. (2016). Ecological ethics and creation faith. *HTS Teologiese Studies / Theological Studies*, 72(4), 1–9. <https://doi.org/10.4102/hts.v72i4.3296>
- Mazzocchi, F. (2020). A Deeper Meaning of Sustainability: Insights from Indigenous Knowledge. *Anthropocene Review*, 7(1), 77–93. <https://doi.org/10.1177/2053019619898888>
- McDowell, J. H. (1983). The Semiotic Constitution of Kamsa Ritual Language. *Society*, 12(1), 23–46.
- McGraw, J. J., & Krátký, J. (2017). Ritual ecology. *Journal of Material Culture*, 22(2), 237–257.
- McGregor, D. (2004). Coming Full Circle: Indigenous Knowledge, Environment, and Our Future. *American Indian Quarterly*, 28(3/4), 385–410.
- Metcalfe, A., & Game, A. (2014). Ecological being. *Space and Culture*, 17(3), 297–307. <https://doi.org/10.1177/1206331213495779>
- Moller, H., Berkes, F., Lyver, P. O., & Kislalioglu, M. (2004). Combining Science and Traditional Ecological Knowledge: Monitoring Populations for Co-Management. *Ecology and Society*, 9(3). <https://doi.org/10.5751/es-00675-090302>
- Molm, L. D., Schaefer, D. R., & Collett, J. L. (2007). The Value of Reciprocity. *Social Psychology Quarterly*, 70(2), 199–217.
- Ojeda, J., Salomon, A. K., Rowe, J. K., & Ban, N. C. (2022). Reciprocal Contributions between People and Nature: A Conceptual Intervention. *BioScience*, 72(10), 952–962. <https://doi.org/10.1093/biosci/biac053>

- Pamukkale. (2021). Land Ethic ad Anthropocentrism in J.G. Ballard's *The Crystal World*. *International Journal of Social Sciences*, 10, 39–58.
- Rajesh, K., & Rajasekaran, V. (2019). Environmental ethics: Anthropocentric chauvinism as seen in western ethical theories. *International Journal of Innovative Technology and Exploring Engineering*, 8(6 Special Issue 4), 1385–1389.
- Ruiz-Mallén, I., & Corbera, E. (2013). Community-based Conservation and Traditional Ecological Knowledge: Implications for Social-ecological Resilience. *Ecology and Society*, 18(4). <https://doi.org/10.5751/ES-05867-180412>
- Shilling, D. (2018). Introduction: The Soul of Sustainability. In M. K. Nelson & D. Shilling (Eds.), *Traditional Ecological Knowledge: Learning from Indigenous Practices for Environmental Sustainability*. Cambridge University Press.
- Simms, M. C., & Stephens, M. (2005). *Living Folklore: An Introduction to the Study of People and their Traditions*. Utah University Press.
- Sinthumule, N. I. (2023, June). Traditional Ecological Knowledge and Its Role in Biodiversity Conservation: a Systematic Review. *Environmental Science*, 11, 1–15.
- Stacey, N., Karam, J., Dwyer, D., Speed, C., & Meekan, M. (2008). Assessing Traditional Ecological Knowledge of Whale Sharks (*Rhincodon typus*) in eastern Indonesia: A pilot study with fishing communities in Nusa Tenggara Timur. In *East* (Issue April).
- Sternberg, R. J., & Gluck, J. (2019). Wisdom, Morality, amd Ethics. In R. J. Sternberg & J. Gluck (Eds.), *The Cambridge Handbook of Wisdom* (pp. 551–574). Cambridge University Press.
- Sumarwati, S. (2022). Traditional ecological knowledge on the slope of Mount Lawu, Indonesia: all about non-rice food security. *Journal of Ethnic Foods*, 9(1).
- Tiu, S. A. (2016). *Traditional Ecological Knowledge in Sustainable Resource Management in Papua New Guinea : The Role of Education and Implications for Policy*, 1994
- Varanasi, U. (2020). Focusing Attention on Reciprocity between Nature and Humans Can Be the Key to Reinvigorating Planetary Health. *Ecopsychology*, 12(3), 188–194. <https://doi.org/10.1089/eco.2020.0011>
- WCED. (1987). Brundtland. In *Report of the World Commission on Environment and Development: Our Common Future*.
- Zhao, Y. (2016). An Analysis of Aldo Leopold's Land Ethics. *International Journal of Humanities, Social Sciences and Education*, 3(12), 21–25. <https://doi.org/10.20431/2349-0381.0312003>