

Traditional Knowledge Sacred Area: Holly Sites (Pedanyangan) in Tengger Tribe of East Java, Indonesia

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Abstract This study aims to reveal the diversity of plant species, the existence of traditional conservation areas, perceptions, meanings and action (praxis) in tengger's society, East Java. Holly's site (*Danyang* or *petren*) is a spiritual belief by the community, related to the point of view of trust, religion, and also the success raised by the groups. People believe the diversity of flora in traditional conservation areas is spiritually sacred whose existence is protected by customary rules. The relationship between local's believe, religion, biodiversity, and environment is the local wisdom of the tengger tribe. The research method was conducted through free interviews, direct observations by surveys, and attending ceremonies of traditional rituals in traditional conservation holly sites, and worship sites or *sanggar pamujan*). It leads by traditional leaders called *pandhita* (shaman) and he is supporter called *legen* or *wong sepuh*, and also Tengger's society. As a results of the study show that traditional rituals are still well and consistently carried out, especially in the Tengger tribe. While the diversity of plant species in the sacred area is very well maintained and respected. Traditional conservation is a combination of religious views and local beliefs, it turns out that it gets more respect than formal conservation. The diversity of plant species in the sacred area as traditional conservation includes 38 species from 33 genus and 24 families. Tengger's indigenous tribe need to have a developing status in customary law and village policy about traditional conservation sites (*pedanyangan* and *sanggar pamujan*). Conservation of protected areas and traditional knowledge can be used as a model that must be considered as the key to traditional biodiversity conservation. The community has been able to determine and utilize long-lived tree species, as well as the diversity of other plant species in traditional rituals.

Keywords Secred area, Holly sites, Tengger tribe, East Java

1. Introduction

Holly site (*pedanyangan*, *danyang*, *punden* or *petren*), worship sites (*sanggar pamujan*), *perapen* or *tumang* in Mt. Bromo and Mt. Mahameru) are sacred areas that are used by the tengger tribes in performing every traditional event. The relationship between local belief and religion forms, a local knowledge system that is applied in the form of traditional conservation areas. Adaptation is an accumulation of ideas, perception and conception (corpus), the results of their culture by utilizing biological natural resources and the environment. The recent research and policy for biodiversity conservation needs taxonomic knowledge, ecology, conservation biology, anthropology etc. Batoro et al., [3, 4, 6] reported the land use system was adapted from indigenous knowledge which consisted of holly sites, worship sites and cemetery area.

Tengger tribe is a native of East Java, which is estimated to occupy the area around Mount Bromo Tengger and Semeru in East Java around the 13th century BC and likes at an altitude of 500-2100 m ASL. They occupied at the same time the development of the Majapahit Kingdom in 1350 BC, isolating themselves and preferring to live in a cold environment, caused near the shrine of Mt. Bromo and Mt. Mahameru [4, 6].

The tengger tribes areas are namely bordered by conservation areas and production forests, covering the four districts of Malang, Pasuruan, Probolinggo and Lumajang. The tengger tribes is spread in eight sub-districts with 47 villages in East Java. Bromo Tengger and Semeru has temperatures between 10°C-20°C degree and sometimes 0°C., e.g. Ranupani village, Senduro district and has latitudes between 2000-2100 m ASL [5]. People's adaptation is an evolving ethnobiology part because of the fact of community groups or ethnic groups in an effort to overcome danger. The use of these biological sources by them contains deep and symbolic meaning.

[17] reported each ethnic group has its own customs depending on their knowledge and available natural resources and environment. Paleo-botany evidence shows that human dependence on the natural environment along

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with biodiversity has been known since prehistory. The role of ethnic groups with all the ways of life are closely related to biodiversity and the environment [8, 20, 22].

The adaptation of the tengger tribes has been through a long time process carried out from generation to generation through the socio-cultural of the economy in its environment. The relationship unites various components through the process of cultural evolution from various aspects of life and lasts until now. A harmonious and continuous relationship between the socio-cultural system and the biophysical environment (ecosystem) has been interpreted by Rambo [16, 17].

These interactions lead to adaptation to knowledge system, management, utilization and impact on natural resources and the environment. Community knowledge about the use of plants as ritual materials for adaptation is not only influenced by history, customs, however the conditions of biological resources and the environment available.

Human dependence on biodiversity and the way of life is closely related to cultural diversity determining the fate of the environment [8, 19, 20]. Based on the background above, the need for research focused on knowledge traditional, conservation, locations which are a manifestation of the adaptation of tengger tribe's cultural life.

2. Materials and Methods

Research observations use qualitative research by direct interviews with the composition of informants or resource persons selected based on consideration of demographic factors. The informants were conducted through purposive sampling: traditional leaders, shaman (*dukun pandhita*). Shamans supporter (*wong sepuh* and *legen*) and local communities who were experts about sacred places (traditional conservation). Exploratory surveys include inventorying and identifying plant species in holly site and sacred sites. Following the traditional rituals performed by local communities tengger [8, 11, 21, 22]. The plant organs used were recorded, local names, made by herbariums, collected, identified then determined by the scientific name and classification with the flora in Java book [1].

3. Results and Discussion

The tengger people in Bromo Tengger and Semeru areas have been going on for a long time and they have been able to adapt their lives for generations. The adaptation of life is realized through socio-cultural, economic, utilization of biodiversity and the environment in the steep and cold hilly mountains. The Tengger community has traditional knowledge, living in the Bromo Tengger Semeru and Arjuno Biosphere Reserve environments, having a unique perspective of sacred places. [14] reported, traditional knowledge is vital for sustainability of natural resources including forests, water, and agroecosystems across landscape continuum spanning from households through

farms, village, commons and wilderness.

In maintaining the living system due to extreme natural conditions such as cold environments, volcanic events, they have been able to maintain, manage, utilizing available natural resources. These harmonious interactions and relationships last a long time until now and are retained by them. They hold fast to ancestral cultural customs as a legacy of their ancestors who are recognized as having intrinsic value as future life capital assets for example development in generation and tourism.

Preserving cultural customs can also mean preserving the knowledge of the community, the environment and the traditional sources of biodiversity in Tengger. However, currently experiencing a change in life due to the influence of external pressures such as information, education and the impact of globalization and the development of the tourism area.

Tengger people's adaptation indicated by the symbol of life including the tengger's language, the daily wear of both men and women, such as scabbard, headgear (*ketu*), the color of traditional clothing with fabric that called *slempang*. Black clothes is for the general public, while the shaman uses white. The symbol of the sacred place, holly sites, worship sites, *perapen*. Mt. Bromo, Mt. Mahameru is a sacred area utilized in every traditional event.

They have divided the rules of cultural customs namely covering general customs, customs relating to life and agriculture or natural disasters. [4] reported general customs (*Kasada*, *Karo* and *Unan-unan*) have been determined based on the tengger calendar. Whereas traditional events relating to human life include death (*entas-entas*), marriage event (*walagara*); agriculture and the consequences of danger.

Places of interest in traditional cultural activities are holy sites (*pedanyangan*), and worship sites (*sanggar pamujan*). While the *pedanyangan* area has a certain area depending on the needs of the village, usually not broad, 0.01-1 ha or more, while the type of plant depends on the height of the location. The traditional rituals performed by the Tengger tribe are a manifestation of the adaptation of it is life and have taken place and were passed down from his ancestors. For instance of the *karo* customary program in the Gubuklakah village that starts from water sources, holly sites, followed by tayup dances (Figure 1A) and the same traditional *karo* events at Ngadas village (Figure 1B).

The architecture of the tengger village is neatly arranged, adjusting the location, equipped with a village hall, a grand hall, a tomb, a pedestrian, a school and a place of worship. Most of the tengger soil environment is hills at an altitude of 500-2100 meters above sea level (ASL). The average air temperature is 10 to 20°C. They have unique, interesting and distinctive customs, as well as the problems of religion and belief that developed are inherited from Majapahit Kingdom, so that it is known as people Majapahit [4, 5]. In conducting customary events they feel happy in a tengger tribe, bonding together, polite and feeling happy and very proud. Within a period of one year the tengger people conduct customary events on a regular basis based on the calendar and

deliberations of the Tengger officials. Embodiment, adaptation in order to get the blessings of prosperity, health, happiness, safety from God called *Sang Hyang Widhi Wasa*

in navigating the ark of his life this is the message of *Raden Kusumo* the ancestor of the tengger tribe.



Figure 1. Location of sacred area. A. The *karo* ritual tayup dance and gamelan music in Gubuklakah village. B. *Sanggar pamujan* where traditional unan-unan events in Ngadas village

Sacred places and biodiversity

Biodiversity of plant and animal species used in performing rituals in sacred places (traditional conservation areas) varies depending on the purpose and type of celebration [2, 3]. Sacred locations are located within the village, Perhutani forest or in Bromo Tengger Semeru National Park (BTS-NP), for example *marit* in Mt. Bromo (Fig. 2). Traditional conservation based on the religious knowledge system of the local community will be more sustainable than formal conservation, for example holly sites: *danyang* in Mororejo village and *danyang* in Sapikerep village (Fig. 3).



Figure 2. *Pujan kasada* event, *marit* in Mt. Bromo, BTS-NP

The Tengger community facilitates the use of biodiversity by giving local names of plants and animals. [9, 12] reported the majority of the local population of Papua New Guinea is partly or wholly dependent on the abundance of fauna and

flora in the region. While the demand for landowners is the most encouraging movement that has the potential to maintain the conservation of traditional practices.

The Tengger community in facilitating, utilizing biodiversity is by giving local names of plant and animal species. For examples of *adas* (*Foeniculum vulgare*), *putihan* (*Buddleja indica*), *kayu-kebek* (*Ficus grassulasioides*), *danglu* (*Engelhardia spicata*), *piji* (*Pinanga coronata*), *edelweiss* or *tanalayu* (*Anaphalis longifolia*), *kipres* (*Casuarina junghuhniana*), *ringin* (*Ficus benyamina*), *deluk* (*Steptopelia chinensis*), the name used to facilitate practice and make it easier to remember. Species diversity for ritual material includes: rice (*Oryza sativa*), *kenongo* (*Cananga odorata*), *sundel* (*Polianthes tuberosa*), *soka* (*Ixora paludosa*), *rose*, *mawar* (*Rosa hybrida*), *senikir* (*Tagetes erecta*), *coconut* (*Cocos nucifera*), *jambe* (*Areca catechu*), *banana* (*Musa paradisiaca*), *chicken* (*Gallus gallus*) etc. [3]. Specil type of animal for unan-unan event offerings is buffalo, kerbau (*Bubalus bubalis*). (Holly sites (*danyangan*), worship sites (*Sanggar Pamujan*) there is a place offering (*Padmasari*) around there are large trees, especially *cemara gunung* (*Casuarina junghuhniana*), *danglu* (*Engelhardia spicata*), *ringin* (*Ficus benyamina*), *sirih* (*Piper betle*), *pandan wangi* (*Pandanus aryllifolius*), *pampung* (*Macropanax dipersus*) (Fig. 3). Communities have developed rules to protect sacred sites, including the traditional institution of sacred site guardians, people who voluntarily take responsibility to look after a site [18]. The area conserved by the Tengger tribe, sacred sites have the potential to contribute to the biocultural conservation network.



Figure 3. *Danyang* (holly sites). A. Holly site in Mororejo village covering *Casuarina junghuhniana* and *Engelhardia spicata*. B. *Danyang* is *Ficus benyamina* in Sapikerep village

Table 1. The diversity of the main plant species in traditional conservation

Local name	Scientific name	Family	Name sacred cites	Utilized ritual	Habitus
Danglu	<i>Engelhardia spicata</i> L.	Juglandaceae	<i>Danyang</i>	Customary activities	Tree
Ringin	<i>Ficus benyamina</i> L.	Moraceae	<i>Danyang, sanggar pamujan</i>	Customary activities	Tree
Preh	<i>Ficus callosa</i> Wild.	Moraceae	<i>Danyang</i>	Customary activities	Tree
Cemara gunung	<i>Casuarina junghuhniana</i> Miq.	Casuarinaceae	<i>Danyang, sanggar pamujan</i>	Customary activities	Tree
Pasang	<i>Quercus lineata</i>	Fagaceae	<i>Danyang</i>	Customary activities	Tree
Pampung	<i>Macropanax dipersus</i> (Bl.) O.K.	Araliaceae	<i>Danyang</i>	Customary activities, and <i>petra</i>	Tree
Bendo	<i>Artocarpus elasticus</i> Reinw. ex Bl.	Moraceae	<i>Danyang</i>	Customary activities	Tree
Locari	<i>Michelia champaca</i> L.	Annonaceae	<i>Danyang, Sanggar</i>	Customary activities	Tree
Putihah	<i>Buddleja indica</i> Lour.	Asteraceae	<i>Danyang, sanggar pamujan</i>	Customary activities,	Shrub
Tanalayu	<i>Anaphalis longifolia</i> (Bl.) DC., <i>A. javanica</i> (Reinw.) Schulzh.)	Asteraceae	<i>Danyang, Sanggar pamujan</i>	Customary activities, <i>petra</i>	Shrub
Piji	<i>Pinanga coronata</i> (Bl. ex Mart) Bl.	Arecaceae	<i>Danyang, Sanggar pamujan</i>	Customary activities,	Small tree
Tlotok/kokrok	<i>Curculigo capitulata</i> (Lour.) O.K.	Amaryllidaceae	<i>Danyang, sanggar pamujan</i>	Customary activities, <i>petra</i>	Shrub

Variations types of plants in sacred area (*pedanyangan* and *sanggar pamujan*) depend on the height and of the location or village. The diversity of plant species in the sacred area is traditional conservation including: 38 species from 33 genera and 24 families (Table 1). Types of plant namely cemara gunung (*Casuarina junghuhniana*), danglu (*Engelhadia spicata*), pampung (*Macropanax dipersus*). The plant grows well at an altitude of 1600-2100 m ASL, while preh (*Ficus callosa*), ringin (*Ficus benyamina*) grows well at 500-1200 m ASL.

Pedanyangan is a sacred place, where ancestral spirits, village pusher, natural stakeholders, are used burning *petra*,

usually growing large trees planted early in inhabited villages. *Petra* or *bespa* is a puppet made of bamboo (*Dendrocalamus asper*, *Gigantochloa apus*), alang-alang (*Imperata cylindrica*), tanalayu, edelweis (*Anaphalis longifolia*, *Anaphalis javanica*), senikir (*Tagetes erecta*), and pampung leaf (*Macropanax dipersus*). The existence of a place protected by adat is a form of traditional conservation that is not realized that the purpose of its formation has the meaning of conservation of natural resources. Traditional conservation is based on the relationship of the local belief system, religion, the sacred area may also mean tribal control.

Customary rituals relate to traditional conservation areas

The Tengger community in performing ritual activities in accordance with the Tengger calendar includes the *kasa* (first), *karo* (second), *katiga* (third), *kapat* (fourth), *kalima* (fifth), *kanem* (sixth), *kapitu* (seventh), *kawolu* (eighth), *kasanga* (ninth), *kasepuluh* (tenth), *dhesta* (eleventh) and *YadNya kasada* (twelfth) while *unan-unan* or *pancawarso* where every month has meaning (*candra*). The implementation of traditional rituals by the Tengger people is basically intended to serve *Sang Hyang Widhi Wasa*, respect the ancestral spirits and respect the universe and its environment. The meaning of each use of plant species that sprout a lot, for example sugar cane (*Sacharum officinarum*), corn (*Zea mays*), rice (*Oryza sativa*), *piji* (*Pinanga coronata*), banana (*Musa paradisiaca*) as abundant sustenance, strengthen brotherhood and symbol of unity. [7, 9] reported the cultural relations of classification flora and spealized fauna is adapted on the life in environment.

The Tengger tribes hold fast to ancestral cultural customs as the inheritance of their ancestors has a noble intrinsic value that needs to be preserved as a cultural heritage of the archipelago and basic capital assets of tourism. Indigenous people has an envolving status in international law and policy, and many of the rights contained in draft declaration are not secured [13]. Preserving cultural customs can also be interpreted to preserve the knowledge of the community, the environment of water sources and traditional biodiversity in tengger. The knowledge of local on the cultural, spiritual, social and economic values of plants can be immense use to the entire humankind. [18] reported sacred sites means of expression and transmission of culture, necessitating recognition and support for the rights of their traditional caretakers and local communities.

4. Conclusions

Bonds in the Tengger tribe can unite and operate the system of traditions, cultural customs, intrinsic values that are noble from their ancestors and are an accumulation of their adaptation of life. Customary ancestral culture, local belief, traditional conservation has given value in life, peace and harmony. Preserving cultural customs has an impact on preserving ancestral knowledge, natural environment, genetic resources, conservation of biodiversity (traditional conservation), and conservation of water resources in Tengger. The traditional Tengger tribe conservation area needs to be supported by conservation efforts to prevent the loss of local knowledge and culture. Tengger's indigenous people need to have a developing status in customary law and village policy about traditional conservation sites. Religious views and local beliefs about conservation are more sustainable. The diversity of plant species in the sacred area is traditional conservation consist of 38 species from 33 genus and 24 families. The existence of a protected, sacred

place by custom is a form of traditional conservation that is not accidental.

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