

# Caring for Natural Heritage: Revealing Local Ecological Wisdom in Petilasan Saputangis

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**Abstract:** This research spotlights the existence of indigenous ecological knowledge in Sidamulya Village, Karangpucung District, Cilacap Regency, with a particular interest in the natural environment surrounding the Petilasan Saputangis area. The research explores local customs that reflect environmental respect through rituals and prohibitions that have been observed for centuries. The research is based on an interview with a primary keeper of the petilasan and the community around. Having members of the community take part in activities such as keeping the Petilasan area clean and maintaining the trees denotes a common commitment to the preservation of ecosystems in the surrounding region. It also concentrates on the role key keepers, appointed according to indigenous tradition, play in guiding the conservation imperative. The article considers cooperation and consensus between the community and the key keeper for their interaction to have a positive impact on the maintenance of ecological and cultural harmony. Results of this study have shown that indigenous knowledge may provide a good foundation for managing natural resources on a sustainable basis. This is possibly the knowledge that needs to be included in modern-day conservation policies so as to inspire an integrated approach in environmental conservation.

**Keywords:** Indigenous Ecological Knowledge (IEK), Local Wisdom-based Conservation, Traditional Environmental Management.

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## Introduction

Indigenous ecological knowledge can be defined as the concept describing the traditional cognition of indigenous peoples, which is closely related to nature and the surrounding environment (Daniel et al., 2022; Lee et al., 2021; Nugroho et al., 2020). Such knowledge develops in the deep connection between man and nature when the local community preserves and uses natural resources in a peculiar sustainable way (Prasetyo et al., 2020; Sul-toni et al., 2023; Susanto & Numata, 2023). Knowledge of this sort is then passed on from one generation to another through oral traditions, customary practices, and religious rituals—all of which have profound implications for the state of environmental sustainability (Akhmar et al., 2023; Aspan & Irwansyah, 2023; Sihadi et al., 2023). In this regard, IEK becomes increasingly relevant in

the context of global climate change and increasing ecosystem degradation as one of the alternative solutions in efforts towards the conservation of natural resources (Limpo et al., 2022; Skroblin et al., 2020).

Local wisdom has, for a long time, been at the forefront in Indonesia's effort toward environmental management, especially among societies that still adhere closely to tradition (Lubis et al., 2022; Susanto & Numata, 2023; Yasir et al., 2022). This is one of the unique implementations of IEK which needs further research: that applied by the people in Sidamulya Village, Karangpudung District, Cilacap Regency, Central Java. Within the village, there is also the presence of a cultural site by the name of Petilasan Saputangis, considered by the locals to be in some way 'sacred', and at the same time, a core of traditional ecological practices that would contribute to and help in the

maintenance of nature's balance (Akhmar et al., 2023; Aspan & Irwansyah, 2023; Manningtyas & Furuya, 2022). The local wisdom applied around Petilasan Saputang was very diverse, ranging from religious rituals to customary prohibitions and environmental conservation involving the whole community (Limpo et al., 2022; Prasetyo et al., 2021; Sultoni et al., 2023).

The cultural site of Petilasan Saputangis symbolizes close attachment among people, nature, and spiritual forces. Nature as an entity that needs to be preserved is conserved by the people of Sidamulya through cleaning and offering rituals (Aspan & Irwansyah, 2023; Lee et al., 2021). Moreover, the presence of some traditional taboos, such as the prohibition against the felling of trees and the extraction of honey without prior authorization by the locksmith, aimed at preserving the balance of the ecosystem surrounding the site, itself well demonstrates the appreciation of the local community of that resource.. Such traditional wisdom embodies current thoughts on sustainability.

The role of Indigenous Ecological Knowledge in the preservation of the environment is deeply intertwined with their cultural identity and heritage since this section reflects beliefs and values preserved over generations (Hosen et al., 2020a; Sihadi et al., 2023). It identifies a unique perspective often manifested in sustainable practices that extend the mere management of resources by respect for the intrinsic value and spiritual dimensions of the ecosystem (Aspan & Irwansyah, 2023; Limpo et al., 2022; Suminar, 2023). Nature in most indigenous communities is not only a resource but an entity to be respected and honored. A worldview of this kind generally leads to practices that promote biodiversity, prevent overexploitation of resources, and maintain ecosystem health. For instance, the IEK embeds into daily lives and tradition within a community for the implementation of ecosystem services such as water purification, soil preservation, and species diversity. This could be considered one of the major ecological wisdoms that might guide modern environmental strategy in the face of rising global environmental crises.

The IEK around Petilasan Saputangis in Sidamulya Village provides strong support to cultural heritage as a representative in enacting environmental ethics through the relationship between man and nature (Prasetyo et al., 2021; Suminar, 2023; Susanto & Numata, 2023). For example, some of the rituals conducted in the surrounding area, such as respect for traditional boundaries or prohibition against doing something around sacred places, have actually acted as local flora and fauna protections. A very effective traditional management system is developed among the people of Sidamulya because they value collective interests over personal benefit, and ecological health is regarded as a spiritual matter. This commitment to conservation can provide modern environmentalists and policymakers not only with a holistic framework upholding ecological integrity and cultural significance but also one where steps toward environmental sustainability are taken alongside the preservation of cultures. This is according to Finn et al. (2017) and Hill et al. (2012). To this end, integrations of this kind have played and may yet continue to play an important role in devising comprehensive, culturally sensitive environmental policies in line with Indonesia's rich heritage.

On the contrary, with times and modernization, IEK in Sidamulya Village faces many challenges. The new generation tends to diverge from the ancestral culture they perceive as irrelevant to modernity. This is a threat to the sustainability of IEK since they are highly dependent on intergenerational inheritance. Moreover, technology and urbanization entering rural areas threatens traditional practices that have been formed as the basic foundation of environmental sustainability within the village. Hence, this study is very important, since it documents and further develops the role of IEK in maintaining the natural balance in Sidamulya Village.

The given study is supposed to provide the prevailing IEK practices that still exist in Sidamulya Village, aiming at environmental conservation around Petilasan Saputangis. The objective of the present research was to learn how local communities in this area perceive their relationship with nature and also how they

maintain ecosystem balances through traditional practices. This will allow the deeper understanding of IEK in this village so that, with deeper understanding, a more effective strategy might be found for integrating local wisdom into broader policies of natural resource management at the local and national levels.

It also falls under environmental conservation policy in Indonesia, especially at a time when the government has begun to quite rightly realize or give due recognition to the role of local wisdom in managing natural resources. In fact, Gómez-Baggethun et al., Robinson et al., and Sato et al., have detailed that various policy efforts, such as the Community-Based Forest Management Program, or PHBM, have attempted to merge such local knowledge with modern conservation approaches. This is, however, still a number of challenges to integrating IEK into national policies, especially with regard to the lack of appreciation of local wisdom values among policy-makers and the wider community. Therefore, the result of this study can be expected to increase the argument that IEK deserves a place within the formal policies of conservation.

Therefore, the present study looks into a deep analysis of the IEK practices in Petilasan Saputangis with the hope of showing a wide insight into the probable potentiality of local wisdom in environmental management. This study also seeks to reveal the challenges of sustaining IEK amidst modernization and put forward practical recommendations that ought to be taken so that local wisdom can keep abreast with the relevance and sustainability of modern environmental conservation. The result is expected to give a significant contribution to conservation efforts based on local wisdom and inform the creation of more holistic conservation policy in Indonesia.

## Methods

This qualitative research will study and explore Indigenous Ecological Knowledge (IEK) that the people of Sidamulya Village, Karangpucung District, Cilacap Regency are undertaking

(Acharibasam & McVittie, 2022; Nesterova, 2020). In determining the location, research should be conducted in Petilasan Saputangis, which is a strategic location for the implementation of activities based on IEK, where the essence of local wisdom for environmental conservation lies (Gadgil et al., 2021). Qualitative research is appropriate for this study because the approaches allow giving meaning and practices that reflect the touchy relationship between the particular community and its environment. Such methods interface with work by Hill et al., Robinson et al., and Kimmerer.

Three major methods were utilized in data collection: in-depth interviews, participant observation, and documentation. In-depth interviews with the key person of Petilasan Saputangis and members of the local community who are actively participating in environmental preservation around the site were performed (Buell et al., 2020; Lam et al., 2020). Semi-structured interviews were employed to allow for an in-depth exploration of new and important issues that might come up during the discussion. Participatory observation involves observing ritual activities such as cleaning and offering, daily activities of the community in maintaining cleanliness, and preserving nature around Petilasan. This method was employed to gain firsthand insight into the practical application of IEK in daily life (Sandoval-Rivera, 2020; Skroblin et al., 2020; Wilcox et al., 2023). Photography and field notes were also forms of documentation for supporting and enriching information obtained from interviews and observations.

Thematic analysis was carried out on the methods used for collection. Precisely, data in this study were categorized into key themes including but not limited to ritual practices, customary prohibitions, and community participation in environmental protection (Smith et al., 2021). According to Davis & Ruddle and Finn et al., each identified theme was further elaborated to understand the role of IEK in maintaining ecological balance and cultural preservation. Triangulation allowed means of verification to confirm findings through different data collection methods, namely interviews, observation, and

documentation, because it guarantees the results obtained are valid and coherent from interpretations (Matuk et al., 2020).

The limitation of this study considered the short duration of observation and possible participants' bias. To overcome these problems, however, a strict data triangulation and thematic analysis were involved to weed out any inaccuracies or credibility issues from the results of the findings (Menges, 2022; Salim et al., 2023). In spite of these limitations, this study is bound to contribute valued knowledge to the role of local wisdom in environmental conservation and make useful recommendations toward integrating IEK into broader national and local levels of natural resource management policy (Acharibasam & McVittie, 2022).



Figure 1. Overview of Petilasan Saputangis Site



Figure 2. Vegetation and Environment Around Petilasan Saputangis

## Results and Discussion

The presence of this study indicates that IEK, as practiced by the people in Sidamulya Village, especially around the area of Petilasan Saputangis,

is very instrumental to the effort of preserving the environment and cultural heritage (Lee et al., 2021; Suminar, 2023; Susanto & Numata, 2023). Among the main practices that have been identified stands out the communal ritual of *resik-resik*, which takes place every Kamis Wage. This ritual involves cleaning the area of Petilasan, both to keep it physically clean and also as some spiritual homage to ancestors and nature around. It shows full knowledge of the interdependence among people, nature, and supernatural forces in maintaining ecological balance (Akhmar et al., 2023; Nesterova, 2020; Sinthumule & Mashau, 2020).

Apart from the *resik-resik* ritual, another important practice is to prepare offerings or *sesaji* on certain nights known as Jumat Kliwon. These offerings are prepared for ancestors and spiritual beings believed to guard the Petilasan. This is one practice that again indicates the respect given to nature and care by the inhabitants of Sidamulya rather than exploitation of nature (Mavhura & Mushure, 2019; Prasetyo et al., 2020; Sultoni et al., 2023). Spiritual and ecological factors are put into all these rituals, which underlines the fact that IEK encompasses not only environmental practices but also strengthens the values of natural conservation through spiritual reverence.

Other prohibitions, such as on tree felling, honey gathering without permission, and reptile catching, reinforce care for the environment in Petilasan Saputangis. These are some other prohibitions imposed on the society and duly adhered to by its people under the stewardship of a custodian, thereby ladling down tradition from generation to generation (Gadgil et al., 2021; Habiaryemye & Korina, 2021; Skroblin et al., 2020). By adhering to these rules and regulations, the community helps uphold ecosystem integrity around Petilasan and minimizes most risks of environmental degradation at the hands of human activities. In this regard, Robinson et al. and Kimmerer note that through IEKs, it has been possible to ensure realistic guidelines in the management of resources toward sustainability even without interference from modern technology.

Ultimately, the *jurukunci* of Petilasan Saputangis plays an important role in the protection of IEK

and continued village tradition. The jurukunci serves as a spiritual leader but also a keeper of ecological tradition passed down through generations (Akhmar et al., 2023; Suminar, 2023; Susanto & Numata, 2023). Interviews with the jurukunci explained that selection is non-hereditary but comes as some form of special appointment, entrusted by the ancestors or mbah. It emphasizes spiritual trust to maintain local wisdom. This spiritual leadership largely helps in sustaining both cultural and ecological values that are inherent in the practice of IEK (Aspan & Irwansyah, 2023; Lee et al., 2021; Najib, 2020).

The participative active community in keeping cleanliness and environmental sustainability around Petilasan Saputangis also shows the collective nature of IEK. It does follow rituals and prohibitions, yet works practically to preserve the physical environment through tree care, clean-ups, and preservation of the sustainability of the surrounding environment (Nesterova, 2020; Utami et al., 2022). This suggests that IEK is a social tool in action, cementing solidarity within communities when it concerns keeping humans in balance with nature.

On the other hand, the study again points out that IEK faces challenges in terms of relevance to continuity at the trend of modernization and changing social conditions (Acharibasam & McVittie, 2022; Limpo et al., 2022). Thus, the Sidamulya Village youth have started detaching themselves from tradition in their perception that it does not bear relevance to contemporary life. In as much as innovative technology and urbanization threaten to wipe out some of the very values that are enshrined in IEK, hence the need for ensuring continuity for such wisdom; it is important that formal and informal education on the importance of IEK should be perpetuated to ensure that future generations put into practice this knowledge (Habiyaremye & Korina, 2021; Suminar, 2023).

These findings would tend to mean that IEK is still very relevant and, as such, may consider solving contemporary environmental problems. While the roots of IEK are found in traditional knowledge, the principles embedded in it—including ecosystem protection, wise resource management, and respect for nature—are in tune

with the more contemporary notions of conservation (Hosen et al., 2020; Mavhura & Mushure, 2019; Sinthumule & Mashau, 2020). This opens up opportunities for the integration of IEK into natural resource management policies, especially at the local level. Policies that take local wisdom into consideration tend to be more acceptable to the community and most likely to work for the community also.

One of the striking reversals from this study is how ritualized respect at Sidamulya Village shapes environmental ethics among its residents. Ceremonies like *resik-resik* and offerings provide a cultural model for the care of the environment as something more than a duty but also a spiritual imperative (Su et al., 2020). It instills ecological responsibility beyond what utilitarian conservation efforts could emanate through embedding respect for nature into the very identity of the community. By venerating natural resources, the people of Sidamulya hold a philosophy that realizes ecosystem resilience (Robinson et al., 2021). This indigenous conservation approach can act as a supplement to modern conservation practices by underpinning the cultural values at the root of sustainable behavior that is commonly overlooked by contemporary environmental management.

Moreover, this research highlights that these practices of the IEK—as can be seen in the case described here of the ceremonial stone, the Petilasan Saputangis—offer a possible framework for adaptive management of the environment (Saxena, 2020; Singh et al., 2020). As opposed to static policy, the IEK practices evolve organically alongside the changing environment and social changes in the community, clearly stated in the shifts in ritual practice reflecting seasonality and local resource availability. These allow for IEK to be highly resilient against ecological changes when compared with many other traditional models of conservation, which have not been able to allow localized adjustments (Kusumastuti et al., 2021; Wu & Cheng, 2023). The adaptive nature of IEK as drawn in conservation policies enhances resilience and flexibility of environmental strategies, especially in regions where rigid policies face obstacles in implementation due to differing local conditions.

While IEK indeed brings a wealth of knowledge to environmental conservation, the generational shift poses one big problem: the perception among the growing younger generation that these are traditions unrelated to the modern way of life (Akhmar et al., 2023; Suminar, 2023). This may be realized through involvement from educational initiatives in the younger generation and the inclusion of IEK in contemporary conservation. Schools and community programs can apply IEK concepts to nourish a new appreciation and pride in cultural heritage among Indigenous peoples while at the same time addressing relevant environmental issues of concern to younger generations, including climate change and loss of biodiversity. There is a possible linkage of IEK through integrations within the latest educational frameworks that will reduce the gap between traditional and contemporary environmental science, and at the same time preserve the cultural and ecological wisdom for the benefit of future generations (Nesterova, 2020; Saxena, 2020).

There is also the need for collaboration between indigenous communities, government, and other stakeholders in any case to ensure that IEK can be applied within broader conservation strategies. As such, the local governments may support this initiative through programs that encourage the conservation of IEK through either education and training or giving incentives to communities for those who practice conservation in line with local wisdom. The initiatives will create the desired awareness of the need to preserve the local wisdom to join the rest of the world in responding to global environmental crises (Gadgil et al., 2021; Hosen et al., 2020).

### Conclusions

Indigenous Ecological Knowledge (IEK) in Sidamulya Village, especially surrounding Petilasan Saputangis, highlights the importance of local wisdom in safeguarding both environmental and cultural heritage. The community's traditional practices such as rituals, customary restrictions, and collective efforts in ecosystem upkeep demonstrate that IEK offers a sustainable approach

to managing natural resources. Nonetheless, the impact of modernization calls for deliberate efforts to ensure IEK remains relevant and is preserved for future generations. Incorporating IEK into contemporary conservation policies could foster a more comprehensive approach to ecological and cultural sustainability.

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