# The Hydrosocial and Dwelling Perspectives of Telaga (Pond) in Gunungsewu Karst of Gunungkidul

# Perspektif Hidrososial dan *Dwelling* Telaga di Gunungsewu Karst, Gunungkidul

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**Abstract**
Gunungsewu Karst is a representation of a harsh drought region. For generations, local people have relied on *telaga* (pond), the only karst surface feature that can harvest rainwater, to fulfill their water needs. This anthropological study adopts hydrosocial and dwelling perspectives to understand how local people perceive and respond to ecological changes surrounding *telaga* over time. Furthermore, it aims to demonstrate that the functions of *telaga* transcend its material benefits. By exploring myths, water rites (*merti telaga*), and people's memory, I argue that the *telaga* serves as a waterscape and cosmological inspiration where humans and nonhumans (in this discussion, trees and water) interact, protect, and provide life to each other. This study also reveals that environmental changes in the *telaga* strongly stimulate the community to reorganize its cosmological realm. In other words, the accumulation of intersubjective relationships between local communities and the *telaga* can also be perceived as a historical process that creates a "biocultural memory" where humans' "genetic, linguistic, and cognitive" experiences intersect.

**Keywords**: Hydrosocial; Dwelling; Telaga

***Abstrak***
*Karst Gunungsewu merupakan representasi dari wilayah kekeringan yang parah. Selama beberapa generasi, masyarakat setempat mengandalkan telaga untuk memenuhi kebutuhan air mereka, satu-satunya fitur permukaan karst yang dapat menampung air hujan. Studi antropologi ini mengadopsi perspektif hidrososial dan dwelling untuk memahami bagaimana masyarakat lokal memandang dan merespons perubahan ekologi di sekitar telaga dari waktu ke waktu. Selain itu, penelitian ini juga bertujuan untuk menggambarkan bahwa fungsi telaga lebih dari sekadar manfaat materialnya. Dengan mengeksplorasi mitos, ritus air (merti telaga), dan ingatan masyarakat, saya berargumen bahwa telaga berfungsi sebagai lanskap dan inspirasi kosmologis di mana manusia dan non-manusia (dalam pembahasan ini pohon dan air) saling berinteraksi, melindungi, dan memberikan kehidupan satu sama lain. Penelitian ini juga mengungkapkan bahwa perubahan lingkungan di telaga memandu masyarakat untuk menata ulang ranah kosmologisnya. Dengan kata lain, akumulasi hubungan intersubjektif antara masyarakat lokal dan telaga juga dapat dilihat sebagai proses sejarah yang menciptakan "memori biokultural" di mana pengalaman "genetik, linguistik, dan kognitif" manusia bersinggungan.*

***Kata kunci**: Hidrososial; Dwelling; Telaga*

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## Introduction

This paper discusses the hydrosocial aspects of water flow in Gunungsewu (Thousand Mountains) Karst in Gunungkidul. This region geographically stretches along the southern coast of Central Java, and administratively, it is part of the Yogyakarta Province. As numerous geographers have pointed out, the interplay between the materiality of Karst and the flow of water creates unique hydrological conditions in which water is extremely scarce at the surface but abundant at the sub-surface (Ford & Williams, 2007; Jennings, 1971; Uhlig, 1980). A doline (pond) or sinkhole is a karst feature that serves to collect rainwater. The local people call it a *telaga*. Scholars studying the interaction between humans and the karst environment of Gunungsewu karst have mainly focused on how humans in Gunungsewu Karst struggle to fulfill their water needs (Nibbering, 1991, 1993; Sunkar, 2008; Uhlig, 1980; Yuwono & Haryono, 2003). Uhlig (1980, p. 40), for instance, as an ecologist, views the karst landscape as an unfriendly environment for humans; "the harshness of the environment is determined even more by the serious lack of water and by the increasing depletion and erosion of the soil." He also reported that the dry season made it difficult for the local community to fulfill their water needs as the *telaga* dried up. In such a situation, local people must walk kilometers to the nearest water source.

In addition, further studies showed that in the 2000s, only 30 out of 443 dolines in the Gunungsewu Karst area in Gunungkidul could store water. Surprisingly, government infrastructure projects, such as lake bank concreting to prevent erosion and government embankment construction from lifting the clay layer of the *telaga*, resulted in rapid water loss (Haryono et al., 2009; Santosa, 2007). For Karst experts, the damage to Karst's land is irreversible. These studies posit that the hydrosocial relationship between the community and the *telaga* is often limited to discussions of adaptation and resilience. This perspective overlooks the cultural dimension of the community. For example, in the context of a hydrosocial perspective, the community categorizes a deteriorated *telaga* as a dead *telaga* (*telaga mati*). The death of the *telaga* was also accompanied by local stories about the disappearance of the surrounding vegetation and its sacred trees (*resan*). This condition not only explains the physical aspects but also delves into the profound aspects of life.

For instance, over generations, the local people have loyally protected the big trees and *resan* around the *telaga*, letting them grow as tall as possible. For the local people, protecting the trees also sustains water availability. Their branches and leaves grow as a canopy, preventing water evaporation. Also, its robust roots that penetrate the ground serve as conduits for water flow into the *telaga*. In the previous fieldwork, I learned how locals sealed the bottom of karst sinkholes with rocks and mud to prevent water from entering the underground environment.

By using a hydrosocial perspective, this paper attempts to question how people perceive the existence of the *telaga* beyond its physical aspects and how they respond to the ecological changes of the *telaga* over time. The hydrosocial perspective emerges to provide an understanding that the flow of water results from dialectical and relational processes involving both nature and society (Bakker, 2012; Ballestero, 2019a; Boelens, 2014; Linton & Budds, 2014; Orlove & Caton, 2010). It emphasizes that the material aspects of water flow are inseparable from its interactions with society, encompassing how water is constructed and produced and how its flow influences human life. In other words, "water and society make and remake each other" (Linton & Budds, 2014, p. 4).

As Mosse (2003) puts it, the "unruliness" of the material aspect of water also reflects its inclusiveness, going beyond its "liquid form" (Ballestero, 2019a, p. 406). As water flows on our terrestrial landscape, it freely moves, follows the shape of the terrain (Bakker 2012), and interacts with any places we claim as territories, regions, and boundaries, including the political, cultural, and social situations of those places (Barnes & Alatout, 2012). Drawing from Tsing (2015), a waterscape, like a landscape, is an unintentional "world-making project" created through the collaboration of overlapping human and nonhuman activities.

The hydrosocial aspect of the place also reflects Ingold's (2020) perspective on the dwelling. Along with the hydrosocial concept, the dwelling perspective advocates that "the production of life involves the unfolding of a field of relations that crosscuts the boundary between human and nonhuman." This implies that every human and nonhuman subject is a producer of life. Under these conditions, the landscape is generated "by the interplay of diverse human and nonhuman agents in their mutual relations" (Ingold, 2002, p. 501). This means that every agency will continuously create "conditions for each other's existence" (Ingold, 2020, p. 503).

In recent decades, many studies have focused on how indigenous people perceive water and explained that myths (Palmer, 2015), rites (Lansing, 2007), knowledge (Hayman et al., 2018), identities (Burnasheva, 2020), and experiences (Aigo et al., 2020) are reflections of the interaction of water with human and nonhuman agencies (the surrounding environment). Nevertheless, studies on the affinity of trees, humans, water, and myth have not received much attention. Research on the social life of trees and their relationship with humans often overlooks the role of water as a vital element in landscape making (Sivaramakrishnan, 2020), life cycle rites (Bonnemere, 2020; Giambelli, 2020; Knight, 2020), and trees as the energy giver (Mauze, 2020).

Therefore, it is necessary to explore the water myths, spirits, trees, and other living beings to illustrate how the interaction of non-material and material agents play their roles in making a waterscape or *telaga*. As Ingold (2002) argues, myth, spirit, and memory are essential elements for landscape making. The storytelling about mythical figures reflects past experiences of "other-than-human entities" as a person in a specific landscape (Ingold, 2002, p. 100). At the same time, memory represents an event from the past that guides humans in dealing with the future. In addition, Ingold says that living entities, such as trees, grow with human dwelling in a spatial context. Meanwhile, from the aspect of temporality, it goes linear with the human life cycle from growth and decay (Ingold, 2002, p. 204). In other words, trees are places where humans can inhabit their myths and memories.

Although today, the local people do not consume *telaga* water as often as in the past due to the availability of the government's piped water network in many places, the local communities still appreciate the *telaga* as it holds a long history of village life and cosmological inspiration. In other words, the *telaga* serves as an inclusive place where humans and nonhumans dwell together, give life, and protect each other in both material and symbolic contexts. In other words, the *telaga* is more than its water and containers. It is a waterscape—the place where humans interact with water and other beings (Orlove & Caton, 2010, p. 408), especially in their relation with sacred trees (*resan*) and ancestor spirits (*danyang*).

Moreover, *telaga* serves as the ritual arena since it is believed to be the home of *danyang* who dwell in *resan*. Therefore, water bodies and trees constitute two essential aspects of cosmology in the Gunungsewu Karst landscape in Gunungkidul. For instance, many toponyms, ranging from the

smallest settlement unit, the hamlet, to the regency, refer to the names of trees and water, for example, Klumpit Village (*Klumpit* or Plum Tree), Ringin Village (*Beringin* or Banyan Tree), Pulejajar Hamlet (*Pule* or Blackboard Tree), and Panggang Sub-district (*Panggang* or Blume Tree). Meanwhile, some village toponyms related to water include *banyu* (water), *kedung* (lake), *telaga* (pond), and *sumber* (water spring). In addition, these toponyms are deeply connected to the myths of the origin of the place (PTKA, 2002).

In the previous fieldwork, I also witnessed the endeavor of local environmental activists to revive the damaged or dead telaga in both material and spiritual contexts, such as saving and planting local trees around the *telaga*, preserving the *merti telaga* (water) rite to summon the vanishing spirit, along with its myths. For the local people, myths, sacred trees (*resan*), and rituals are agencies that animate the *telaga*. Therefore, this paper will explore how the community perceives ecological changes and how the interactions between humans and nonhumans – especially the dynamics of affinity among trees, water, myth, and humans— contribute to the creation of the cosmology of *telaga* over time.

## Methods

This research uses ethnographic methods to get the emic aspect of the hydrological perspective of locals. Data collection primarily involved observation and in-depth interviews with key figures (Fetterman, 2024). As Fetterman (2024, p. 65) puts it, ethnographic method research is designed to guide and explain the ideas or behaviors embedded in a particular community. This writing is based on the fieldwork of my dissertation project in 2021-2022. During the fieldwork, I collected myths about *resan* in four *telaga*, explored the meaning of *merti telaga* rites, and excavated people's memories. My storytellers were gatekeepers (*kuncen*) serving as shamans (*dukun*) of *telaga*, *abangan* adherents, and local environmental activists. *Abangan* is one of the variants of religion in Java where adherents represent aspects of animism and mysticism in ritual practice and daily life (Geertz, 2014, p. xxxii). An important element of abangan is *kejawen* or jawaism. *Kejawen* constitutes Javanese mystical knowledge of rituals, ethics, norms and aesthetics (Picard, 2011, p. 8). I used pseudonyms for most of my informants. The real names that appear in this context refer to the informants' works, and their use has been authorized with their consent.

To illustrate the affinity between the *telaga*, trees, and humans, I use Descola's (2013) concept of animistic ontology to examine how *abangan* adherents view nonhumans, especially spirits and trees, as persons with a similar interiority (lives, feelings, political motives) but different exterior forms where water that acts as a "portal," connecting the aspects of the interiority among different beings living in a particular environment. This interconnecting constitutes "multinatural politics" embodied and contested in rituals and myths (Palmer, 2015, p. 22). Accordingly, I will use Castro's exchanging perspectives (1998) to explore the experience of the *kuncen* of *telaga* or *dukun* in understanding nonhuman perspectives when seeing humans to reveal the political relations between them.

Furthermore, I will employ the slow activism concept echoed by Hayman et al. (2018) to analyze how local environmental activists critically respond to the mis-implementation of state infrastructure projects in the *telaga*. Hayman (2018, p. 85) argues that slow activism refers to the ontology of local communities which views every ecological process as life-giving. This idea is opposed to western ontology which views that nature must be exploited as a resource to accelerate

economic growth. During my fieldwork, I participated in local environmental activists' activities such as tree planting, environmental discussions, and negotiations with the local government. Slow activism, as a political movement, encompasses the advocacy of the local community to resist (without closing the dialogical process) the anthropocentric paradigm imposed by the state, which simplifies biodiversity as natural resources by separating environment and culture (Ballestero, 2019b; Mitchell, 2002; Scott, 1998).

Slow activism also represents an internal observation of the dwelling perspective. This perspective posits that the places where humans live have horizons, not external boundaries (Ingold, 2020, p. 507), such as delineation, borders, and zones produced by the scientific regime through remote observation. I also developed "slow activism" as a crossover of animistic ontology, transforming it into "indigenous knowledge" so the public can hear it. Thus, "indigenous knowledge" is not just a conservation rhetoric created and imposed by the state, as Li (2005) states, but instead, it is a self-emergence of consciousness (Hayman et al., 2018; Tang & Tang, 2001).

## Results and Discussion

### Spirit, Trees, and *Telaga*

The story of a man drowning in *Telaga Serpeng*, Semanu, on February 2, 2022, made *Mbah* (Elder) Eko, the *kuncen* of *Telaga Jambe* in Semanu District, sad. He grieved twice. Firstly, as a person, he could feel how sad the victim's family was. Secondly, as a *dukun*, he worried because the *telaga* had taken a victim. "It's a warning sign that the *danyang* and *pangrekso* (spirits) who protect *telaga* are no longer respected, so they demand sacrifices," *Mbah* Eko said. He noted that the merti telaga had not been performed in many places in recent decades. As Pemberton (1994) said, the New Order government intensively relocated traditional events from sacred places to village halls, including in Gunungkidul. Local water-based rituals were eliminated and replaced with national-based ceremonies led by state representatives. Thus, he felt fortunate and proud that his village's merti telaga rite is still preserved. He emphasized that villagers should always organize merti telaga as the telaga is "the root of life (akar kehidupan)." Without a telaga, the villages have no life (see Figure 1).

**Figure 1.** *Telaga*
Source: Primary data, 2021

*Abangan* spiritualists view the *telaga* as *tetengger* (landmark), signifying the history of the creation of the village or place. When I was in Telaga Jambe with my interlocutor, Hanung, he said that the *telaga* and trees brought fertility and life to the village. As Hanung explains, "Look at the *beringin* (*Ficus benjamina*) tree; its robust roots are like a phallus, *jlebbb*, penetrates the yoni of the mother earth (soil). These roots *srtttt* absorb water from all directions, making a conduit to the *telaga*, the lifeblood for all creatures in this village."

Drawing on the conversation with Hanung that took place between the *telaga* and the *resan*, I would like to elaborate on how Hanung describes "the aboutness" (Kohn, 2013, p. 73) of these two nonhuman objects. Kohn's (2013, pp. 8–9) semiosis (the creation and interpretation) explains that every living thing can essentially represent its existence through signs to humans and other species. I perceive Hanung's onomatopoeic expressions, such as *jlebbb* (roots penetrating the soil) and *srtttt* (roots absorbing the water), as symbols that demonstrate a sameness "to the things they represent" (Kohn, 2013, p. 9). In short, those expressions sonically refer to the motion of an action (Kohn, 2013, p. 31) about how the marriage of the tree and the *telaga* animates the symbol of fertility and the origin of life in the village. As Kohn explains, semiosis, as a "living sign," describes how nonhumans "do things" in the world, and this is an essential part of what makes them alive (Kohn, 2013, p. 34).

Revisiting *Mbah* Eko's *kejawen* knowledge, he recounted that when early humans settled in Gunungkidul, social disruption, such as crop failure, drought, and disease outbreaks, resulted in many deaths. He said that these (*pralaya*) catastrophes were the retaliation of the spirit due to the greedy human behavior that destroyed nature, especially the clearing of forests for farmland and settlements. He further recited a mantra that is commonly spelled in the *merti telaga* rite: *Ngotobogomo-Nyoyojodopo-Lowosatodo-Korocohono*, telling the story of a peace treaty between humans and the spirit to achieve a new harmonious order. He clarified that this mantra is a reversed version of the first line of the modern Javanese script, which reads *ho-no-co-ro-ko* and *po-do-jo-yo-nyo*. Furthermore, he explained that *honocoroko* means human, and *podojoyonyo* means victory. He explicitly stated that this means humans are victorious. In contrast, the mantra *Ngotobogomo-Nyoyojodopo-Lowosatodo-Korocohono* conveys the wise message that there are no winners on this earth. All creatures are God's creations that should respect each other.

Ya Miroda Daromi Ya
Whoever forces becomes the giver of freedom
(*Siapa yang memaksa malah menjadi pemberi kebebasan*)
Ya Midosa Sadomi YA
Who makes sin, turns to merit
(*Siapa membuat dosa, berbalik membuat jasa*)
Ya Dayuda Dayuda YA
Siapa yang memerangi, berbalik menjadi damai
(*Who wages war, turns to peace*)
Ya Sicaya Cayasai Ya
Who does harm, turn to make wealth and health
(*Siapa membuat celaka berbalik menjadi membuat sehat dan sejahtera)*
Ya Sihama Mahasi Ya
Who makes damage turn into building and love
(*Siapa yang membuat rusak berbalik menjadi membangun dan sayang*)

*Mbah* Eko believed that the peace treaty with the *danyang* implicitly commands humans to preserve the trees where they reside, to respect them as ancestors, and to offer *seserahan* (gifts) and sacrifices consisting of *ingkung* (chicken) and *nasi berkah* (blessed rice) in post-harvest rites. I visited more than ten *telagas* in the Karst Gunugsewu region of Gunungkidul. All the *telagas* are surrounded by big trees. In the *Telaga Winong*, I saw a large white cloth (*mori*) wrapped around a tree, dressing and signifying the process of subjecting the tree to a *resan* or a person. I also saw a

bundle of *seserahan* hanging on large trunks, indicating that there may have been a *midang* rite here a few weeks ago (see Figures 2 and 3). The essence of this rite is to send prayers to the ancestors for success in their pursuits, such as finding a spouse, a good harvest, and passing school exams. The locals believe that *resan* is the incarnation of the founder of their village. He was an escaped soldier of the Majapahit Kingdom.

**Figure 2.** White Mori "Dress" Covering *Resan*
Source: Primary data, 2021

Hence, local people exclusively view *resan* as a symbol of the genesis of the village, the body of the *danyang* (ancestral spirit), and the guardian of the *telaga*. Not surprisingly, in the daily life of Javanese people, if one is walking and crosses paths with a tree or when somebody wants to take shelter under a tree, he/she is obliged to say *kulo nuwun mbah* (pardon me, Sir) as an expression of politeness (*unggah-ungguh)* and as a form of a request for permission to enter his area. One does not expect a verbal response from the tree. However, with a spiritual bond (*ikatan batin*) as a manifestation of "knowability" constituted by "intrinsic self-similarity" (Kohn, 2013, p. 86), he or she thinks or feels that the tree has given permission. This description reflects Javanese animistic cosmology's inclusivism, explicitly categorizing nonhuman beings (i.e., spirits, plants, and animals) as persons or selves. Thus, this perspective establishes a possibility of "exchanging information" between beings (Descola, 2013, p. 16). As *Mbah* Eko said, "Although the appearance is different (exterior), the inside or j*eroan* (interior) is the same; both have spirits (*jiwa*) (*bedo rupane podo jeroane, podo-podo nduwe nyowo*).

**Figure 3.** A Gift for *Resan*
Source: Primary data, 2021

Spiritually, *kejawen* practitioners define *resan* or *rekso* as the guardian of the *telaga*. In addition, the concept of *rekso* can also be attributed to humans who faithfully preserve the *resan* trees. Thus, the human-tree relationship represents a mutual guardianship based on a conditional agreement in which water is the medium. As Palmer (2015, p. 13) explains, sacred spring is a vital aspect of both human and nonhuman life that ensures the existence of both as it acts as a "portal," connecting the aspects of the interiority among different beings. Therefore, in multinatural cosmology, the rite is an essential transaction tool.

Sasmito, a *dukun*, told me that *warih* (sacred water) is the primary medium for *nenepi* (meditating in sacred places). Therefore, it enables him to communicate with the *danyang* (spirits). He also explained that *banyu* (profane water) becomes *warih* when it fills in a sacred environment, in this case, *telaga* with *resan*. A *dukun* uses *warih* for *padusan* (cleansing bath) before *nenepi*. The purpose of *nenepi* is to seek *wangsit* (revelation) whispered by the *danyang* appearing in the *impen* (dream). As Palmer says (2015, p. 13), water is "a threshold for exchange and reciprocity between the visible and invisible worlds."

As a translator, this enables him to interpret his spiritual experiences and the whisper of the spirit to a layperson audience (Castro, 2004, p. 468). In line with this, in the *abangan* perspective, cross-boundaries between cultures or the mystical world are known as *kejawen* knowledge (*ilmu kejawen*), emphasizing the concept of *manunggaling roso*, —the unification of human sense (*rasa*) and soul (*jiwa*) with nature, achieved through *nenepi*.

Furthermore, the *wangsit* delivered by *danyang* guides humans in predicting any adverse events in the future and overcoming them. As explained by *Mbah* Eko, the last time he did *nenepi* to seek *wangsit* on how to hold *merti telaga* during the Covid-19 pandemic. At that time, the government issued instructions to prohibit events that could invite crowds, including community ritual activities. He was behind a *resan* in his dream and witnessed a modest *merti telaga* rite. There were no audiences from outside the village and no *Tayuban* dance performances.

From his dream interpretation, he explained that the *merti telaga* rite must be held even during a pandemic. "It doesn't need to be as festive as it used to be. What is important is the *slametan* and the *ingkung* to save the village from danger," *Mbah* Eko explained. As Kohn (2013) explains, dreams are an empirical experience of animistic communities, serving as a portal and the "product

of the ambulation of the soul" (Kohn, 2013, p. 144), which both connect "domestic realms and nonhuman sylvan ones" (Descola, 2013, p. 155). In that sense, the temporary transformation of humans into *resan* represents an exchange perspective for viewing "human and nonhuman sociality" (Castro, 2004).

### The Dead Telaga (Telaga Mati)

Gunungkidul people employ the term *telaga mati* not only to describe a dried-up *telaga* but also to express the disappearance of *merti telaga* rites. I borrow the concept of the *tanah mati* (dead land) of Dayak People from Dove's study (2011) to build an argument that external factors can disrupt the material and spiritual aspects of a landscape. The ethnography of the dead land illustrates that the invasion of rubber plantations, along with the plantation economy system, has led to the disappearance of fruit trees that were once used for offering, thereby killing the cosmological elements that participate in it, especially the rites of exchange between humans and spirits and the wealth redistribution. In this discussion, I will explain how external factors, such as expansive non-native trees and the mis-implementation of infrastructure construction, contributed to the death of the telaga both in material and spiritual contexts.

In August, during the peak of the dry season, I visited Petung Village. Accompanied by Patmo, a local environmental activist, I met Ribut. Ribut is a wood-based graphic artist. He showed me a piece of his unfinished work at his art studio. It illustrates a woman scavenging for water in the half-dry *Telaga Tileng*. Ribut said that the woman in the picture was his mother. In the past, his mother had to collect the leftover water trapped (*mbelik*) in *Telaga Tileng* for water needs at home during the dry season (see Figure 4). The condition has worsened; no water is left at the peak of the dry season. The myth of the dead *Telaga Tileng* is also closely associated with the death of the *resan*. If the *resan* dies, the *telaga* will not live long. Before 2001, *Telaga Tileng* could still hold water until the end of the dry season, but now it has completely dried up (see Figure. 5). Ribut said that it is because the *telaga* has died, and people here must buy water.

**Figure 4.** Ribut's Artwork
Source: Primary data, 2021

**Figure 5.** Telaga Mati
Source: Primary data, 2021

Ribut also said that people of his generation had been disconnected from the *merti telaga* rite. As a result, no one has inherited *ilmu kejawen*, a set of instruments for performing the *merti telaga* ceremony. In general, the gatekeeper of the *telaga* also serves as a shaman, a person who possesses the ability to communicate with the *danyang*. He also has the expertise to detect and seal the *telaga* ponor to delay water discharge. He recalled that in every *merti telaga* event, the *telaga* gatekeeper would place a cow skull in the *telaga* ponor as an offering to the *danyang* before sealing the aquifer cracks with stones and mud. He also said that *Telaga Tileng* has lost its myth-tellers because many elders have died. The only fragment of his grandfather's story that he can recall regarding this *telaga* is the origin of its name.

According to local people's perspectives, the reforestation program was one of the triggers that displaced local trees, leading to the vanish of the *telaga* water. In *Telaga Tileng*, for example, trees such as *beringin* (*Ficus benjamina*), *bulu* (*Ficus virens*), *randu* (*Ceiba pentandra*), and *klumpi*t (*Terminalia sericocarpa*) were replaced with economic trees such as acacia (*Acacia manguium*). Reforestation activities in the Gunungsewu Karst region in Gunungkidul have shaped the vegetation landscape of this region to look like a "monoculture plantation forest" (Peluso, 1994, p. 20). Mass reforestation outside protected forest areas began in the 1970s through the Presidential Instruction program to rehabilitate critical land and preserve water sources by planting fast-growing trees (Presiden Republik Indonesia, 1980). However, the program has had a negative impact.

Patmo argues that, while acacia grows faster than local trees, their shade levels are much lower than local trees. In other words, these trees are not as effective as the local trees in preventing the evaporation of *telaga* water during the dry season. In addition, villagers consider acacia to be a water-intensive tree, killing the grass (which feeds livestock) that lives around them. In short, as Patmo puts it, acacia is like an invader, taking what is not its own and destroying the harmony of the local environment.

Patmo also added that the roots of acacia grow deep into the ground. The nature of its root growth contrasts with the *beringin*, which extends horizontally to provide a path for water to the *telaga*.

This observation of the relationship between water, trees, and the karst environment appears in his painting, "The Underground World of The Tree" (*Dunia Bawah Tanah Pohon*) (see Figure 6). Interestingly, what Patmo explains is the same as what many forestry scholars explain: non-native trees are invasive trees that can threaten plant diversity. As Moyo & Dube (2010, p. 27) explain that their deep-rooting systems, such as those found in acacia trees, absorb and demand (Ellison et al., 2012) more water than other trees, potentially killing local plants, reducing the water table, and stealing water that would supposedly end up in rivers (Moyo & Dube, 2010, p. 33).

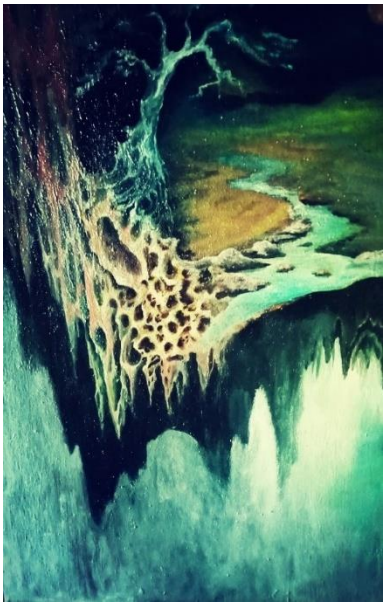

**Figure 6.** Patmo's Painting
Source: Primary data, 2021

Furthermore, the construction of the *telaga* wall and the sediment removal from the *telaga* bed, as a government infrastructure project, have also reduced the durability of the telaga. Patmo stated that the sediment layer is a seal to prevent water infiltration into the ponor. Therefore, the removal of sedimentation actually reduces the water retention time in the telaga. Also, the concrete structure surrounding the telaga blocks the waterway formed by the roots of the trees. One resident of *Tileng* Village mentioned that in the past, villagers would work together to plug the cracks in the sinkhole and cover them with mud at the beginning of the rainy season. Also, farmers let their cows enter the telaga to help solidify and spread the sediment.

The telaga area was previously characterized by a combination of natural features, and some artificial structures, such as foothills, shrubs, trees, and terraces, were destroyed and replaced by concrete structures. These structures shape a horizontal geometric pattern, indicating well-managed water resources. In other words, the spatial arrangement process, utilizing the concept of "geometric perfection," including "the regularity and neatness of its appearance," objectifies nature into natural resources (Scott, 1998, pp. 15–18). In other words, this process of infrastructuralization, as explained by Ballestero (2019b, p. 22), aims at "separating figures from the ground," defining the spatial boundaries of natural resources in the landscape. Furthermore, Scott (1998, p. 46) argues that the process of legibility and simplification, a mapping method, produces "a still photograph" of nature that freezes the dynamic of time and space. Ribut

remembers that in the past, the *telaga* landscape was lively. When rainwater fell, it filled the lowest surfaces. Thus, the *telaga* area was formed tentatively following the contours of the terrain and rainfall. In other words, water chooses its container.

Clearly, local people understand the interaction of water and its container, or to borrow the actants of Latour (1996, p. 86), all objects such as water, rocks, soil, and trees are autonomous figures, constituting the "carrying capacity" of the *telaga*. In other words, experts have failed to capture the collaboration of humans and nonhumans within telaga. Consequently, *Telaga Tileng*, which used to be larger, now looks like a pond or a manufactured infrastructure feature that attempts to delineate the water body from the surrounding ecology or to separate the water and its container.

#### Slow activism: Protecting Telaga, Saving Resan, and Reviving Spirit

On June 5, 2021, I participated in a tree planting and spring revitalization activity in one of the villages in Playen District. This activity was initiated by the Resan Gunungkidul Community (*Komunitas Resan Gunungkidul)*. Patmo, the leader of this initiative, said that during the dry season, they search and revive damaged water sources. Meanwhile, they plant local trees in critical water sources in the rainy season. Patmo took me to a water source that had been buried by sedimentation. Near the water source stands a *beringin*. One of the villagers says that since the PDAM (piped water network) entered the village in the early 2000s, people have gradually abandoned the spring, eventually becoming neglected. Patmo explained, "We will remove the soil and destroy anything that blocks the waterway." A short time later, he and four of his friends were hoeing away at the sedimentation, destroying gutters and small plants, and clearing out the piles of humus that had blocked the spring.

After excavating the ground 2-3 meters deep, the tree roots became exposed. Along with other villagers, I surrounded the spring, hoping the tree roots would provide a conduit for water. "See the water flowing; the water is reborn," one of the villagers said. Patmo smiled and shed tears of joy. Patmo said reviving dead spring water is physical work. It is an easy job as it requires only labor and time. Furthermore, he said that the next responsibility is to maintain and revive the spirit of this spring water through the practice of *kejawen* rituals such as *merti sumber* and providing gifts to *resan*. However, this is made more difficult because many Islamic fundamentalist activists often threaten the practice of this ritual as it is considered an act of polytheism.

In addition, Patmo feels that the government is also neglecting the protection of *telaga* and *resan*. He admitted that he has often sent proposals to the Environment Agency or *Dinas Lingkungan Hidup* (DLH) about protecting these objects. Nevertheless, he said his proposals have always been rejected. According to Patmo, the DLH considered that the idea of protection for *telaga* and *resan* does not represent the area which is too small for a conservation program. Patmo had also tried to seek support from the Regional Office of Cultural Affairs (*Dinas Kebudayaan*), a local-level government agency charged with preserving culture and local history and protecting cultural sites. Unfortunately, their proposal was also rejected because trees and *telaga* could not be categorized as material culture and thus could not represent local history. They are just myths.

He could not comprehend how the DLH failed to recognize and appreciate the *telaga* as a water resource and trees as natural conservation agents, reducing the evaporation of *telaga* water in the dry season. He also criticized the *Dinas Kebudayaan* for failing to understand the concept of trees in *kejawen* as *tetengger*, which contains the historical value of the village. "To explore the village's

origin, why must you refer to written sources? They are hard to find; the tree is *a tetengger*. It tells the village's origin; why can't it be considered history?" Patmo argued.

However, several times, I observed local staff from both institutions participating in *bersih desa* (village cleansing) and tree-planting activities. They could also blend in with the local community. As Javanese speakers, these officials were well versed in the terms embedded in ritual practices and sacred places*: resan, merti telaga, memule, danyang,* and could find the equivalent words when translating them into Indonesian. When delivering speeches as government representatives, these officials often expressed their appreciation for the activities of local communities in preserving local culture and environment. For instance, in a village cleansing speech in the Playen sub-district, a DLH official articulated the *resan* as a living monument. Elsewhere, an official from the *Dinas Kebudayaan*, in his speech, considered that *merti telaga* is a tradition that contains local community-based water conservation and argued that the *memule* rite that honors *danyang* is not idolatry but a Javanese tradition that must be preserved.

This expresses that the different perspectives between authorities and communities in viewing contested land space do not result from a lack of dialogue (Di Giminiani, 2013, p. 528). Instead, it is a scenario that excludes local knowledge and involvement in conservation practices. Although, on the one hand, the state recognizes local environmental knowledge as a way of life —an important aspect for local communities to manage their environment— on the other hand, the state views local knowledge as ineligible to be used as the main scheme in the environmental management agenda because it is difficult to explain with scientific standards (Ellen & Harris, 2005).

On December 11, 2021, members of the *resan* organized a *memule* (honoring) rite for the *resan* tree of *Pasar* (Market) *Kawak* Wonosari, a place believed by locals to be the first market in this region. The rite consists of four stages: praying together in front of the resan, reciting the story of Ki Demang Puspowilogo (the ancestor), transplanting the resan tree, and having a traditional banquet with a ritual speech (*kenduri*). Although the *beringin* is enormous, its trunk looks vulnerable, its leaves have fallen, its hanging aerial roots no longer grow, and its roots are dry. Joko, the gatekeeper, said the tree was poisoned in late 2020. Joko found that the perpetrators were a group of Islamic fundamentalists. They killed the *resan* secretly at night by soaking the roots with lots of waste oil multiple time. Thus, this rite aims to revive the dignity of the *resan* Pasar Kawak, glorify the *danyang*, and restore the *resan* as the cosmological entity of the village.

In this event, all the prerequisites of the rite are presented. Some incense was placed in the four cardinal directions where the *resan* tree stands at the center, summoning the *danyang*. The ritualists, especially those wearing traditional Javanese clothes, presented offerings consisting of rice, flowers, coconut shells, coins, and cigarettes. After that, they planted tree seeds around the old *resan*. Also, four people climbed the dying *resan* to tuck many seeds in its branches, hoping that the roots and branches of this new *beringin* would grow to embrace and strengthen the dying *resan* (see Figure 7).

**Figure 7.** Transplanting the Dying *Resan*
Source: Patmo, 2021

The *memule* rite drew the attention of hundreds of locals, journalists, artist communities, and academics. The most surprising guest, however, was the Vice Regent. The *resan* members took advantage of his presence to convey a message about the issues of *resan* and spring water protection. In other words, the rite is a strategy to persuade elites to use their power to protect the *resan*. Patmo chose the *resan* as the topic of his ritual speech (*medhar sabda*), a verbalization process of ontology that presents the *resan* as a "cultural text" and "cultural representation" (Keane, 1995, pp. 106–107). Because this ritual speech uses canonical words such as *pengrekso, danyang*, and *tetunggon*, this ritual speech also becomes a political negotiation instrument in dealing with other guests, in this context, the politicians. Patmo exemplifies this in his speech to the Vice Regent at the *kenduri* (banquet) session:

> *"Resan* in Javanese means *pangrekso,* which means guardian, the guardian of all things with great advantages. He is the guardian of springs, the producer of oxygen, and the creator of coolness. *Resan* is also a *tetenger*. Almost all hamlets in Gunungkidul have *resan* like this as a sign of their origin. Even the names of the hamlets are named after trees. Mr. Vice Regent, this *beringin* of Pasar Kawak is a story about the origin of life. Demang Puspowilogo (ancestor) struggles to plant *beringin* in this location to establish a market and preserve the spring water. The market and the spring water are the lifeblood of the people here. We should not forget history, and we should not forget the sacrifices of our ancestors to prosper our children and grandchildren. The understanding of the *resan* is beyond the tree. It is the guardian of life. His nature always protects life and provides a good example of daily behavior. We should be able to do good things as our ancestors have taught us. Hopefully, with this incident, we take a thoughtful attitude to what nature has given us. Hopefully, the *beringin* of Pasar Kawak can be preserved and comfort the community."

Although during the *kenduri* session, Vice Bupati did not initiate extensive dialogue with local community representatives, since then, he has frequently invited Patmo and other *resan* members to his official residence to continue discussing the *telaga* and *resan* protection issues. In short, Patmo told me that the Vice Regent had shown goodwill in accommodating their ideas in the Local Government Regulation (*Peraturan Daerah*). In return, Patmo said that if the Vice Regent upholds his commitment, he will mobilize his colleagues to vote for him in the upcoming regent election against his current boss. In this case, conservation issues provide a "room for maneuvers" for local communities and activists to influence state development programs (Li, 2005, p. 157).

Moreover, in the context of local politics, I also see that conservation issues are utilized by politicians as a "room for maneuvers" to gain popularity for their electoral agenda. As described, water and *resan*-related rites represent a political alliance of inclusiveness of multinatural politics, which operate through exchange and reciprocity among participating agents. To some extent, the

presence of politicians at this rite also serves as an arena to accommodate the political interests of both voters and politicians in electoral politics. Furthermore, as noted by Silva (2008) and Palmer (2015), modern politics in Austronesia society is essentially driven by exchange and reciprocity deeply rooted in local culture. As Keane (1994, pp. 612–614) explains, when the rite is present as a public display, it will connect "past promises and future obligation" and a contestation arena used by certain parties to maintain their reputation and dignity.

In December, I was engaged in *telaga* naturalization activities in Kunyit Hamlet. In this place, the *resan* members planted three species of trees: *beringin* (*Ficus benjamina)*, *klumpit* (*Terminalia sericocarpa*), and *randu* (*Ceiba pentandra*). I estimated that 50 saplings were planted. The number of these saplings, which could reach 100 stems and were planted sporadically, was less than in previous activities. After learning from the earlier activities, they discovered that only 10 percent of the trees survived. The rest perished due to natural and human factors, such as erosion and accidental hoeing by farmers. As Patmo said, "We don't want these trees to die for nothing; reducing their number does not compromise the substance of our objectives. Anyway, if there are fewer trees, it is also easier to manage." Therefore, in Kunyit, they focus on planting trees in safer locations, such as alongside old *resan* trees and on land owned by farmers and village governments who are willing to care for the saplings.

However, planting *beringin* seedling trees is most densely concentrated along the concrete edge of the *telaga*. Patmo told me that the roots of the *beringin* are robust and long. He hoped these roots would break through the concrete one day and create waterways to *Telaga Klumpit*. In their view, destroying concrete caused by tree roots is one of the goals of naturalizing the *telaga*. To me, this idea is utopian because a small *beringin* takes decades to mature into a strong adult, and the *telaga* infrastructure program can also happen at any time, depending on the government's intention. I also asked Patmo about it. As he said, "It is better to do something than nothing at all; the most important thing is that we must slowly but surely (*alon-alon asal kelakon*). We must embrace the nature of trees as the most patient living beings that appreciate the process. Growth is not an instant nature but a step-by-step process, and so does this movement." In other words, the idea of slow activists presents a counter-narrative to the anthropocentric logic of government development that prioritizes the speed of time, money, and change that actually separates nature and culture and destroys the environment rapidly (Hayman et al., 2018, p. 85).

## Conclusion

Through the three preceding substantive discussions, this hydrosocial and dwelling perspective study demonstrates that the inclusiveness of the *telaga* shapes the social relationships between humans and nonhumans (spirit and tree). Environmental changes in the *telaga* strongly stimulate the community to reorganize its cosmological realm. In other words, local communities perceive the *telaga* as a waterscape where water bodies serve as places of "community life" (Aigo et al., 2020, p. 8) with profound meanings beyond their material benefits where humans and nonhumans interact, protect, and provide life to each other. The accumulation of intersubjective relationships between local communities and the *telaga* can also be perceived as a historical process that creates a "biocultural memory" where humans' "genetic, linguistic, and cognitive" experiences intersect (Aigo et al., 2020, p. 2). Furthermore, the vision of biocultural memory with knowledge and affection can lead humans to articulate social and environmental changes around them (Aigo et al., 2020, p. 4), which can be experienced through the existence of local knowledge, nostalgic memories, and the reproduction of myth (Ingold, 2002; Jarec, 2019).

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