Aesthetic and cultural value of Nglanggeran ancient volcano geoheritage: A cultural geomorphology perspective

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Abstract. Nglanggeran Ancient Volcano is a residual hill over from an ancient volcano. The Government of the Republic of Indonesia and the Government of the Special Region of Yogyakarta have designated the area as a Geoheritage, but the aesthetic and cultural aspects of the landscape have not been studied further and are still considered separately. In fact, a landscape is composed of abiotic, biotic, and cultural aspects, all of which interact with each other in the earth system. This study focuses on the aesthetic and cultural aspects of Nglanggeran Ancient Volcano in the perspective of cultural geomorphology. The method used is descriptive qualitative exploratory method. Cultural and aesthetic values are explored through literature studies and field surveys. The results of this study are the immaterial cultural values and aesthetic values of the Nglanggeran Ancient Volcano Geoheritage, such as Nglanggeran Legend, Kampung Pitu’s Folklore, the beauty of nglanggeran landscape, nglanggeran ecotourism, and nglanggeran as artistic inspiration. This study will strengthen the legal basis of Nglanggeran Ancient Volcano as a geoheritage and provide scientific awareness of the relationship between aesthetic and cultural aspects and landforms in a landscape framework.

Keywords: Geoheritage; Cultural Geomorphology; Aesthetic Value; Cultural Value; Nglanggeran Ancient Volcano

1 Introduction

Geomorphology is a complex study closely related to an area’s abiotic, biotic, and cultural aspects [1,2,3,4]. The branch of geomorphology that studies geomorphological components in an area that embodies cultural features in a landscape and their interactions with cultural heritage, both material and immaterial, is Cultural Geomorphology [4,5,6]. This study examines the relationship between geomorphology and cultural elements, which is schematically considered from two points of view, namely in the broad sense of geomorphology as a component of cultural heritage and in the narrow sense of the relationship between the cultural component and the geomorphological context in which the cultural component is located.

The landscape is a cultural component of an area, along with all the natural and anthropogenic factors that exist in it [4,6]. In addition, cultural elements are also found in specific artistic expressions such as music, painting, poetry, etc. [4,6]. The concept of landscape is currently related to various fields and aspects of cultural assets. It is a fundamental idea that gives new value and character to the relationship between nature and history and humans and their territories [4]. With this definition, the landscape can be considered the most complex and morphologically the most extensive and continuous cultural asset because it contains and communicates messages and values everyone can identify with [4].

Observation is the first step in understanding the landscape [4]. The concept of the landscape takes a social dimension and can be proposed as an object of study with strong educational implications, especially in building new relationships between humans and nature [4]. Therefore, if landscapes in terms of physical, biological, historical, architectural, etc., components are to be considered major cultural assets, then landscapes should be better understood, protected, and valued [4]. Only an in-depth understanding of all the environmental components of an area and its history can ensure that the correct selection of safeguards and management initiatives can be made [4]. Of course, the first source of knowledge of an area is the area itself with its geological structure, landforms, and human intervention on natural elements, including archaeological, historical, socioeconomic components, etc. [4].

There are five stages in the study of cultural geomorphology (Figure 2) [4,5,7,8,9]. The first stage is the physical setting of an area where cultural assets are sheltered and a description of its geological and geomorphological evolution (geomorphological surveys and mapping). The second stage is the consideration of the geomorphological causes that condition certain
cultural assets. The geomorphological causes that condition certain cultural assets are influenced by the socioeconomic needs of the people in a particular area. In the third stage, geomorphic disaster assessment of cultural sites subject to risk must be carried out to identify and determine mitigation measures. The fourth stage is to consider the results of cultural assets, especially social and tourism activities, that can have a negative impact on the natural environment, especially geomorphological features. Finally, the stage that must be carried out is proper management of cultural assets, namely management that cannot be separated from its integration with the surrounding environment.

As an object of geomorphological study, the landscape is a cultural component of an area along with all its natural and anthropogenic factors. One area with a complex landscape and cultural relationship is the Nglanggeran Ancient Volcano. Nglanggeran Ancient Volcano is a remnant hill of a volcano that was once active in the Oligocene to Miocene, located in Patuk District, Gunungkidul Regency, Special Region of Yogyakarta [10,11]. The dome-shaped remnant hill is evidence of a period of tertiary volcanism in Java with a maximum elevation of +686 masl [11,12,13,14,15]. Therefore, this area is conserved and empowered for ecotourism [15,16].

This area is an ecotourism area that presents natural beauty and attractions for tourists [15,16]. Considering that the Special Region of Yogyakarta has a variety of natural assets and the need for geoheritage determination, the government of the Republic of Indonesia, through the Ministry of Energy and Mineral Resources, has decided to determine geoheritage in the Special Region of Yogyakarta, one of which is the Nglanggeran Ancient Volcano. However, the criteria for aesthetic and cultural values have not been included in the Minister of Energy and Mineral Resources decree. The aim of this research is detailing the aesthetic and cultural values in the Nglanggeran Ancient Volcano to strengthen the status of the Nglanggeran Ancient Volcano as a Geoheritage with a cultural geomorphological approach especially in the second stage.

2 Method

The method used in this study is the descriptive qualitative exploratory method by means of literature studies and field surveys and quantitative method to calculate surface roughness. The study area covers the Geoheritage of the Nglanggeran Ancient Volcano (Figure 1). The cultural and aesthetic values of the Nglanggeran Ancient Volcano Geoheritage were further explored through mapping the surface roughness, literature studies and field surveys to find material and immaterial cultural heritage and its relationship between cultural and geomorphological heritage. The mapping of surface roughness uses DEM data from DEMNAS with a resolution of 0.8 arcsecond. The approach used is cultural geomorphology. This study will cover up to the second stage of the study of cultural geomorphology, on geomorphological causes (Figure 2).
3 Result & Discussion

3.1 Cultural value

3.1.1 Nglanggeran Legend

Nglanggeran comes from the word "ngelanggar" which means breaking the rules [17]. Legend has it that long ago, residents of Nglanggeran Village invited a dalang to hold a harvest celebration party. However, some villagers do carelessness so that the wayang puppet of the Dalang is damaged. This made the Dalang angry. The puppeteer cursed the guilty people to become puppets and threw them into Nglanggeran Hill. That is why the Ancient Volcano was called "Nglanggeran" by residents. Regardless of whether the legend is true, Nglanggeran Ancient Volcano looks like some stones resembling a wayang puppet's shape.

3.1.2 Kampung Pitu (Pitu Nglanggeran Village) Folklore

Pitu Nglanggeran village is a village that is only inhabited by seven families [17]. Pitu Nglanggeran Village was formerly known as Telaga Planggeran Village. In that place, there is a lake that never dries up, even in the dry season. The lake was often used for guyang (bathing) sembrani horses. Because of this, the lake is often called Guyangan Lake. In ancient times, people from the palace came to the Nglanggeran Village area. The palace people knew that Pitu Village had a Kinah Gadung Wulung tree containing an heirloom. The palace people then contested: "Whoever can take care of these heirlooms will be given sufficient land for their livelihood and their descendants." At that time, the descendants of Mbah Kiai Irokromo were the winners. Until now, the residents of Pitu Village are descendants of Mbah Kiai Irokromo.

No written rule states that the residents of Kampung Pitu must number 7 families. However, when there were eight families in Pitu Village, there were often disasters and fights, making Pitu Village again number 7 families. In addition to the number of families that must occupy, other beliefs continue to be believed to this day. The people of Pitu Village do not hold shadow puppet shows. Because the mountain around the village is called the puppet mountain. Thus, the people of Pitu village believe not in holding shadow puppet shows. The people in Pitu Village also still stick with some traditions, for example, building houses and ceremonies. The myth of Telaga Guyangan and Rasulan also enriches a landscape's cultural aspects [17].

3.2 Aesthetic value

3.2.1 Nglanggeran landscape

The roughness of a landscape provides a positive experience and impression of beauty for human society (figure 3, right image) [1]. This is because the landscape's roughness is one of the constituents of geodiversity [18]. Beautiful landforms can have more economic value and social status [1]. The remaining Nglanggeran Ancient Volcano is a denuded dome formation, thus exposing the rock. Landscape diversity can be enriched by rock outcrops [1]. For example, in Nglanggeran, tertiary volcanism rock gives beauty to the landscape (Figure 3, upper image).
Apart from being based on photos of landscape appearances, the surface roughness of a landscape can be calculated and presented on a map. Based on DEM data from DEMNAS and calculation of surface roughness, Nglanggeran Ancient Volcano, has a maximum relative roughness which is marked in purple in black circle (Figure 4). However, the surrounding area has a moderate to minimum surface roughness, resulting in very contrasting features. This is one indication that the landscape that looks beautiful but is easily accessible to visitors or tourists.

3.2.2 Nglanggeran ecotourism

Ecotourism is a form of tourism that utilizes the potential of natural and cultural resources sustainably as a sustainable source of income. Nglanggeran ecotourism initially emerged and was developed by the local community, especially the youth, with support from the village government and local government. Tourism elements identified in the Nglanggeran Ecotourism Area include attractions, accommodation, promotions, and transportation. The main attractions in the Nglanggeran Ecotourism Area are the natural tourist attractions of the Nglanggeran Ancient Volcano and the rice fields in Nglanggeran Village [19]. In addition, there are also attractions in the form of artificial tourist attractions, namely outbound rides, such as flying fox, rafting, and climbing. Educational and cultural tourism attractions are also available at Nglanggeran Ecotourism in tour packages.

Accommodation to meet the needs of tourists staying in the Nglanggeran Ecotourism Area is a homestay. The homestay is privately owned and managed by the community. Other tourist needs are met by accommodations such as toilets, bathrooms, gazebos,
pavilions, parking lots, secretariats, and places of worship [19].

Promotion of Nglanggeran Ecotourism is carried out both offline and online. Offline promotion is carried out through cultural carnival activities, exhibitions, leaflets, word-of-mouth promotion, and communication networks in tourism forums. Meanwhile, online promotion uses websites and social media, especially Instagram and Facebook.

Access to the Nglanggeran Ecotourism Area can only use private vehicle transportation because no public transportation routes pass through the area. Nevertheless, Nglanggeran Ecotourism is relatively easy to access because of the smoothly paved road conditions. In addition, there are motorcycle taxis that support transportation around the Nglanggeran Ecotourism area.

Visitors to Nglanggeran Ecotourism consist of domestic and foreign visitors. Characteristics of visitors who come generally are visitors who like adventure and activities in nature. In addition, some visitors are students who carry out live-in activities. The management of Nglanggeran Ecotourism is targeting visitors from students and nature lovers.

3.2.3 Artistic inspiration of Nglanggeran

The landscape is an important source of inspiration for art workers (artists, musicians, poets, writers, etc.) [20]. There is one song that is closely related to the Nglanggeran Ancient Volcano, namely the song Banyu Langit, sung by Didi Kempot. In the song's stanzas, there is a depiction of the charm of the Nglanggeran Ancient Volcano. This indicates that the Ancient Volcano of Nglanggeran provides a source of inspiration for musicians, one of which is Didi Kempot.

3.2.4 Cultural Geomorphology of Nglanggeran Ancient Volcano

Nglanggeran Ancient Volcano is a unique landscape. Landscape may be considered as a cultural component of a territory along with the natural and anthropogenic in its landscape [9]. In addition, the landscape is also an inspiration for artists, musicians and so on. Thanks to the Nglanggeran ancient volcano landscape, various works of art were born. Nglanggeran Ancient Volcano landscape is also empowered as ecotourism. Aesthetic and cultural values can be used as ecotourism branding in Nglanggeran Ancient Volcano. Thus, the attractions owned by ecotourism in Nglanggeran can be more diverse and able to convey cultural values to visitors.

3.3 Discussion

The geoheritage criteria are based on the Decree of the Minister of Energy and Mineral Resources of the Republic of Indonesia no. 13.K/HK.01/MEM.G/2021 concerning the Determination of the Geological Heritage (Geoheritage) of the Special Region of Yogyakarta does not involve cultural aspects. Cultural aspects and biophysical aspects are still being reviewed separately. Cultural and biophysical aspects can be attributed to a landform that makes up a heritage. Therefore, a more in-depth study of cultural geomorphology in a landscape is needed, especially those designated as geoheritage, up to the fifth stage, namely the management of cultural assets.

Cultural assets found in Nglanggeran Ancient Volcano are generally in immaterial form. Therefore, to empower this geoheritage area, it is necessary to involve the community. Nglanggeran Tourism Village has become one of the best tourist villages in the world. This has good potential to integrate all aspects of the landscape within the broad framework of cultural geomorphology.

4 Conclusion

Nglanggeran Ancient Volcano is one of the geoheritage established in the Special Region of Yogyakarta, Indonesia. Cultural values that exist in a landscape can be attributed to re-examining the immaterial and material aspects of culture that exist in a landscape. In Nglanggeran Ancient Volcano, cultural aspects are only found in immaterial forms, so consistent community empowerment is needed in preserving culture as a form of preserving landscape within the framework of cultural geomorphology.

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