

The Mixed Heritage Values of Mount Mayon Natural Park: A Case Study on Harnessing a People-Centered Approach to Nature-Culture Linkages Conservation in a Multi-Hazard Context

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Abstract

This essay will explore how the mixed heritage values of Mount Mayon Natural Park (MMNP) can be utilized to craft people-centered disaster mitigation mechanisms in a multi-hazard context. Apart from frequent volcanic activity, the greater area of Mayon is also frequented by other disasters. This was exemplified in the November 2006 disaster involving Typhoon Reming/Durian, where it inundated the slopes of the recently erupted Mayon, causing destructive mudflows that reached towns outside the designated danger zones. While there were disaster risk mitigation plans in place, the sheer scale of the disaster shows that there are still gaps in the overall management regime around the site, which can be improved. These gaps can be possibly addressed through the ongoing efforts of nominating Mayon Volcano as a World Mixed Cultural and Natural Heritage Site; specifically, in adopting a people-centered approach that looks at nature-culture linkages for heritage conservation as a tool in crafting innovative disaster risk reduction mechanisms.

KEY WORDS: Mayon, Volcano, Multi-hazard, World Heritage, Mixed Site

1. Introduction

1.1 Overview of the heritage site

Rising up to 2,462 meters above sea level, Mayon Volcano, the centerpiece of the Mount Mayon Natural Park, is a classic, conical, Basaltic-Andesitic Stratovolcano, whose natural heritage values have been essential to the cultural fabric of the communities around it. A product of the convergent boundary where the Philippine Mobile Belt subsumes the thinner, but heavier, Philippine Sea Plate, the volcano was formed

approximately 20,000 years ago and is part of a cluster of volcanoes lining the subduction zone between the two plates. Because of its placement on a highly restive portion of the Earth's crust, Mayon follows a cyclical and relatively regular Vulcanian-Strombolian eruption sequence, making it the most active volcano in the Philippine archipelago, with 50 eruptions since recordings began in 1616. This ensures that new layers of volcanic material constantly replace any natural deformation, common in volcanic landscapes, forming an unusually concave profile indicative of the interplay between creation and destruction

throughout its geologic history. This creates a unique, natural regulatory, system that maintains the volcano's near-perfect symmetrical shape. This cycle of creation and destruction is reflected, as well, in the cultural values that have been enriched through the lived experiences of the communities, with the aesthetic and physical qualities of the landscape. This is demonstrated in the manner communities have utilized the surrounding lands for agricultural use and mining, providing them with much-needed raw materials for sustenance and development. Conversely, communities have also had to deal with the destructive effects of living in an abundant landscape, with infamous historical eruptions, leaving traces, not only on the physical landscape but also in the intangible heritage of the community. This has resulted in a rich cultural tapestry of visual art, traditions, and performances, and most importantly, the formation of resilience values through community stories and local myths that also act as indigenous disaster risk reduction schemes. These values have also led to the ease of adapting modern disaster risk mitigation plans and regimes, representing continuity in the community's relationship of resiliency with the landscape.

1.2 Brief description of the landscape

Mayon Volcano is the highest mountain in Southern Luzon. On its summit is a small crater that serves as an outlet of its single vent. The volcano's circular base has a circumference of 62.8 kilometers, based

on a 10-kilometer radius set by the Philippine Institute for Volcanology and Seismology (PHIVOLCS) [Fig. 1 (a)]. Set in a landscape predominated by plains and low-lying hills west of Albay Gulf, its imposing profile is visible from the base to the summit, has been noted for its symmetry, and has often been described as a “near-perfect cone” (Fernandez 2001).

The politico-administrative boundaries of the cities and municipalities of Albay are symmetrically notched from the crater rim of Mayon Volcano, with the City of Tabaco and the Municipality of Malilipot in the northeast; the Municipality of Sto. Domingo in the east quadrant; the City of Legazpi and the Municipalities of Daraga in the southeast quadrant; the Municipality of Camalig in the south; and the City of Ligao and the municipality of Guinobatan in the southwest [Fig. 1 (b)].



Figure 1 (b) : Political Map of Albay (Source : Wikipedia 2016)

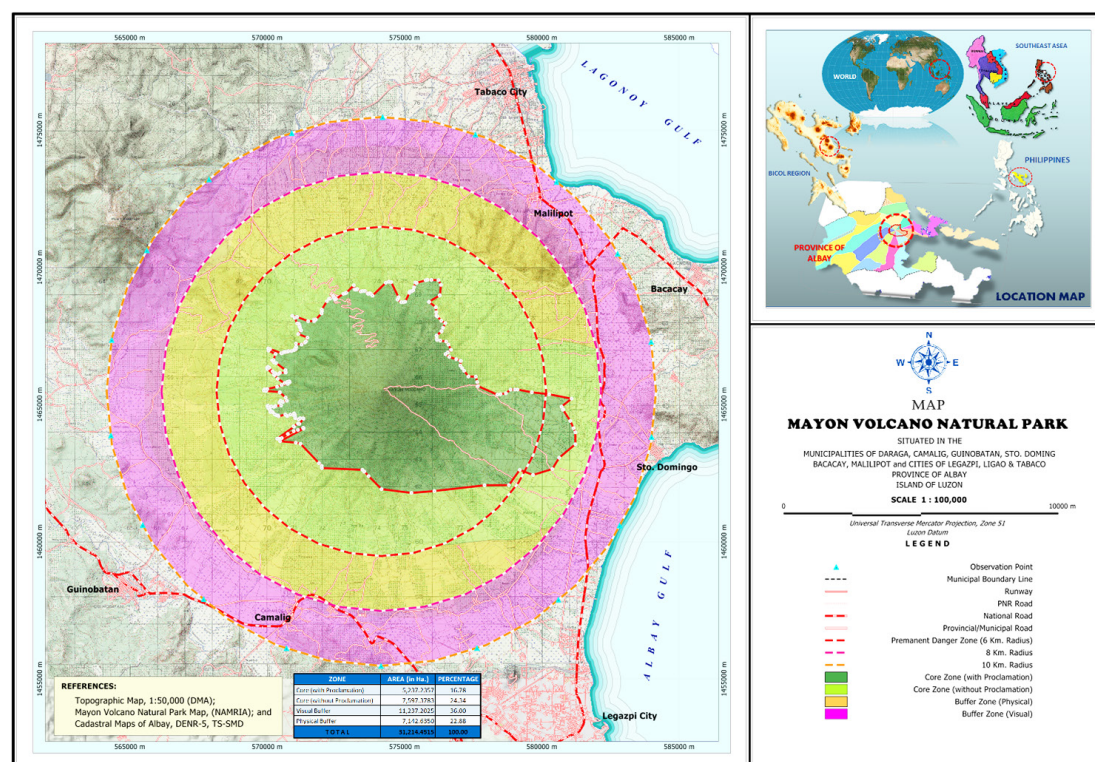


Figure 1 (a) : Mayon's proposed visual easement map (Source: Albay PLGU 2017)

■ 2. Mount Mayon Natural Park's (MMNP) Mixed Cultural and Natural Heritage Values

Mayon Volcano's intertwined cultural and natural heritage values are manifested in the associative relationship communities have with the active volcanic landscape. In this regard, the cultural fabric of the communities living around the site is inextricably linked to their interaction with the landscape, which can be characterized in two major ways: (1) the community's rich tangible and intangible heritage resources borne out of their lived experience of the volcanic landscape's aesthetic qualities and (2) the landscape symbiosis and community resilience in response to the geologic activity of the volcanic landscape. Thus, it can be said that communities around the landscape live in a cycle of creation and destruction, of flourishing and adaptation, in response to the regular but unpredictable changes brought about by the landscape's geological activity.

First, the cultural resources of the communities around Mayon have flourished extensively, owing to their interaction with the various natural aesthetic phenomena associated with the landscape, specifically the volcano's symmetrical shape and the concurrent geological activity associated with its geomorphology. The volcano's symmetrical shape is attributed to its ongoing geological activity, where its relatively mild Vulcanian-Strombolian eruptions act as natural maintenance mechanisms, as well as the corresponding Basaltic-Andesitic qualities of its ejecta. During Mayon's eruptions, lava piles up at the summit crater from the volcano's singular vent, covering older deposits and maintaining the upward movement of the volcano. These cappings eventually give way due to the collapse of the crater rim during major eruptions, distributing the buildup to its lower slopes (Punongbayan and Ruelo 1985). The lava's moderately high viscosity, the high degree of crystallinity, and high yield strength are compensated by the effect of the gravitational pull. Due to its steep slopes, volcanic material is evenly distributed around it, resulting in its uniquely symmetrical shape without any unusual cone elongation relative to anywhere around it. The combination of these geologic processes produces its iconic shape whose aesthetic quality is further enhanced by its notoriety and its proximity to human communities.

Mayon's eruptive history and its aesthetic quality has directly contributed to the enrichment of the cultural heritage around the landscape

and has also become an important symbol and source of heritage values. Local origin myths of the volcano, such as the legend of Daragang Magayon – Magayon meaning beautiful in Bikolano –, are directly associated with the aesthetic appreciation of the volcano's geomorphology. The local pantheon of gods also identifies Mayon as their sacred earthly abode, with the supreme god, Gugurang, said to have left the heavens to reside in the volcano. Mayon's eruptions, in this case, were seen as a manifestation of Gugurang's sacred fire and the resulting fertility of the land was a blessing from the gods. This resulting fertility has also been a source not only of economic development but also further enriching the cultural heritage of the area. Examples include agricultural festivals, such as the Pagsuwak Festival in Guinobatan, festivals syncretized with Christian beliefs, such as the Himoluan Festival in Oas in honor of St. Michael the Archangel, and festivals specific to the celebration of Mayon as a cultural symbol, such as the Cagsawa Festival in Daraga and the Sarung Banggi Festival of Sto. Domingo. Moreover, its symbolic significance, because of its aesthetic qualities, have made it a reference point for the region in numerous historical accounts and travel logs from the Spanish colonial era, easily recognizable and admired for both its beauty and destructive activity. Mayon has likewise contributed to the evolving science of volcanoes worldwide, especially during the 18th century, during which the direct scientific observations by Spanish scientists have contributed to the modernization of the understanding of volcanic phenomena (Jimenez 2007). Numerous visual artworks and literary pieces bear testament to the enduring and universal appreciation of the volcano's aesthetic qualities, especially during its most destructive phases. Its geometry and notorious history have made it a global icon for volcanoes, known for its shape, identifiability, and the dangers it poses to those living around it, thus becoming an essential pedagogical aid in science education on volcanism and geology (Wood 2009).

In addition to the cultural heritage associated with the landscape's aesthetic qualities, its interaction with the people has also provided the ground for the community's adaptive practices, especially in the context of the drastic and irreversible changes brought about by the dynamic geological and meteorological processes in and around the site. This symbiosis between the landscape and the communities around it is thus a representative example of the dynamic interplay between volcanoes and the human communities living around them.

The fertile slopes of Mayon and the immediate plains of the landscape have become a primary source of livelihood in the area since pre-colonial times, with agriculture becoming the dominant industry due to the soil's fertility [Fig. 2 (a)]. Crops, such as taro, abaca, coconut, rice, and sugar, comprise the majority of agricultural produce, some of which, such as taro and abaca, are prized for their

quality. Likewise, the volcanic deposits have also been identified and extracted for mining operations, with the volcano's frequent activity regularly supplying these sites with minable material. This has resulted in the use of these raw materials for the construction of structures imbued with cultural significance, for instance, the Churrigueresque Baroque-style church of Daraga and the Rococo-



Figure 2 (a) : Mayon and the agricultural landscape around it. (Source: Trina Halili, "MOUNT MAYON," retrieved from <https://app.emaze.com/@AWLWQOIF#1>)



Figure 2 (b) : The ruins of Cagsawa Church, which was destroyed in 1814 by Mayon's most destructive eruption to date. (Source : Photo by the author)

style Tabaco Church, both of which are considered National Cultural Treasures. Conversely, Mayon has likewise brought destruction and the loss of life, most famously in 1814 when the town of Cagsawa was buried by pyroclastic surges and lahar, killing 1,200 people [Fig. 2 (b)]. Traces of the volcano's destructive past can also be seen in the gullies and pyroclastic deposits near some municipalities, such as Sto. Domingo and Malipot, with some deposits being in remarkable condition, showing very distinct layering (Newhall 2018).

Despite these constant risks, communities have in fact thrived for centuries and have learned to adapt to the drastic changes brought about by the volcano and its effects. These resiliency values are represented in the informal and institutional efforts through which these communities respond to the volcano's activity. Indigenous methods of disaster response have been documented, as well as early warning measures, in the form of folktales and *kwentong bayan* (community stories) which have helped save lives during Mayon's previous eruptions (Cerdena 2008). One such *kwentong bayan* is the ominous appearance of an old lady asking for water before an eruption, which can be explained as the community's experience of nearby water sources drying up prior to an eruption sequence. This, along with other narratives, has provided communities with the requisite cultural resources to have been able to adopt a culture of resilience, but also to adapt easily to modern and comprehensive disaster risk mitigation plans as well as extensive and state of the art volcanic monitoring systems.

■ 3. Current management arrangements

The site is protected by National Legislation as a Natural Park by virtue of the National Integrated Protected Areas Systems (NIPAS) Act of 1992. A Natural Park, according to the NIPAS Law, is a protected area having no material alteration from human activity and where extensive extractive practices are not allowed so as to maintain the scenic, scientific, and educational significance of the site. In this regard, "Natural Park" corresponds to Category III under IUCN's classification for Protected Areas. Selected tangible cultural heritage sites around the volcano are also protected through the National Heritage Act of 2009 as National Cultural Treasures, which includes Tabaco Church, the ruins of Cagsawa Church, and Daraga Church, which was built with volcanic material from Mayon. Additionally, the Natural Park is itself a component of the Albay Biosphere Reserve, which has been part of the UNESCO Man and Biosphere Network

since 2016. Finally, as the most active volcano in the Philippines, Mayon is monitored by a vast network of sensors and field offices managed by PHIVOLCS; the agency works hand-in-hand with the Albay Public Safety and Emergency Management Office (APSEMO) whenever the volcano erupts.

Part of the ongoing efforts to protect the site is the current World Heritage nomination process, which began when the Province of Albay and the Park Management of MMNP initially voiced their interest, leading to the site being placed on the Tentative List last 2015, under provisional criteria (vii), (viii), and (x). When the province formally signified their desire to work on a World Heritage nomination last 2017, after the designation of the province as a Biosphere Reserve, the National Government, through the Philippine National Commission for UNESCO, has committed to supporting the site through technical and expert-level support and assistance.

Since then, the nomination process has evolved, expanding into the cultural values that animate the landscape. Currently, the National Commission for Culture and the Arts (NCCA) is in the process of conducting a comprehensive heritage mapping activity surrounding the circumferential base of the volcano, in order to identify and validate the different natural and cultural elements related to the volcanic landscape. The results of this mapping activity will be used not only in the nomination dossier but also to identify the appropriate actions needed to protect these linked values between culture and nature, such as more comprehensive geotourism facilities and training for guides and operators on narrativizing the volcano's geological heritage and its resulting cultural values. Further, in order to protect the visual integrity of the volcano across its 360-degree visual easement, there are ongoing negotiations to establish clear infrastructure guidelines and building height regulations. As these are being completed under the general framework of the World Heritage, it is then essential to adopt an overall people-centered approach in the values protection scheme for the site. This will hopefully include institutional arrangements to empower local communities, in the form of local heritage councils, and coordination with the DENR regarding the expanded citizen deputation of *Bantay Gubat* (Forest Rangers) in order to enforce current Protected Area rules and regulations as well as monitor the local biodiversity around the volcano.

In terms of disaster preparedness, the whole

province successfully completed its Albay Disaster Risk Reduction Management Plan in 2009 and has implemented it quite a number of times since then, not only because of Mayon's volcanic activity but more frequently because of the passage of typhoons. For this reason, the province has been cited as having one of the most comprehensive and forward-looking disaster management plans in the country.

4. Current State of Conservation and Challenges for Continuity

The hazards that communities face within the site are multi-dimensional in nature. The combination of the volcano's constant activity, the resulting topography from its geologic history, its location in the Pacific typhoon belt, and the proximity of human communities and settlements around the volcano increase their risk factors (Albay DRRM 2009). These converged back in November 2006, when Typhoon Reming/Durian inundated the region with almost 466mm worth of rain, falling in a 9-hour window (Orense and Ikeda 2007). The slopes of Mayon had just been resupplied by fresh volcanic material following its most recent activity, 4 months prior. This resulted in unusually large lahar flows which descended down Mayon's lower gullies, into river channels, basins, and finally into communities, resulting in 8 barangays being buried and causing 665 deaths, more than half of the total

1,266 fatalities caused by the typhoon (Paguican et al. 2009) [Fig. 3 (a) (b)]. While multi-hazard events have historically occurred with relative frequency, the sheer scale and volume of the 2006 event was enough to overwhelm the existing systems of dikes and sabo dams, which were designed to mitigate mud and lahar flows on a smaller scale, resulting in a complete failure of the conventional means of disaster mitigation (Pierson et al. 2014).

Since then, Albay has learned from their lessons and was able to incorporate a multi-hazard approach to their disaster preparedness schemes, culminating in the 2009 Disaster Risk Reduction Management Plan. The plan has proved invaluable in enabling local authorities to act in an orderly fashion in times of calamity, as well as strengthening inter-agency communication and cooperation. This was seen, for example, during Mayon's 2009 and 2018 eruptions, where evacuations and relief operations were instrumental in ensuring a zero-casualty outcome for the province, which has become the gold standard not only for Albay but for the whole country (Salceda 2013).

There were still gaps in the overall management regime of the site in terms of overall disaster preparation and risk mitigation in the years following the disaster (Scott 2010), though these have been addressed over time, specifically regarding the construction of hard infrastructure

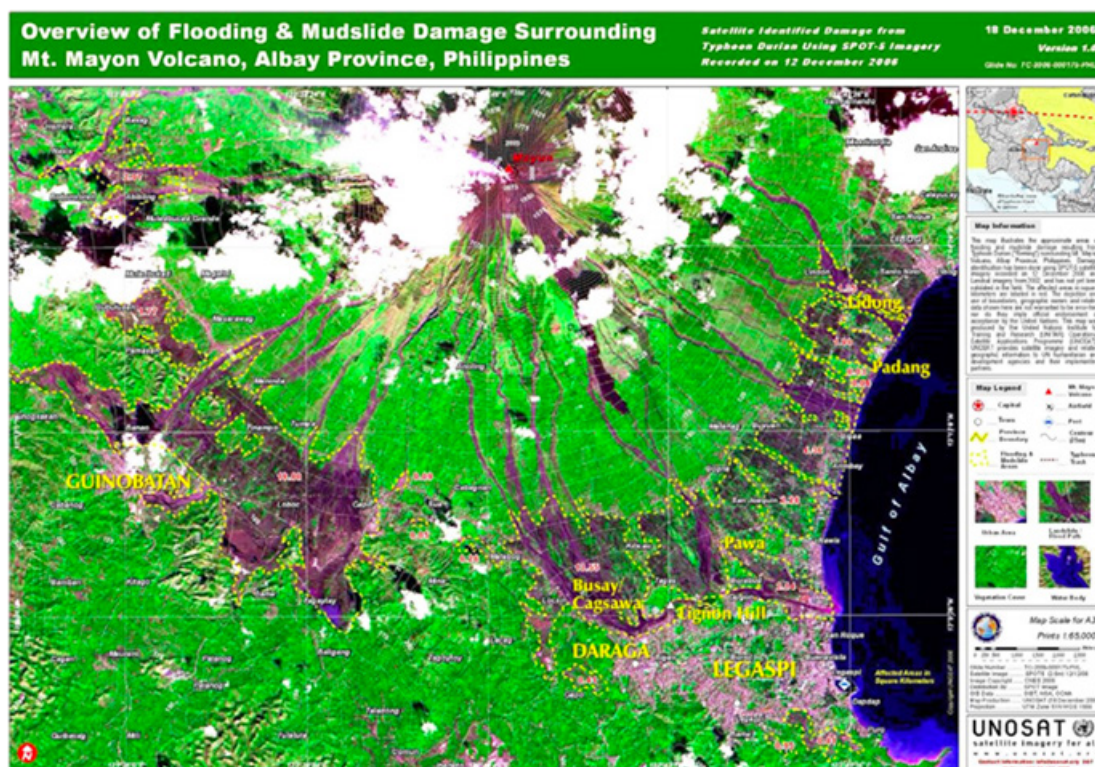


Figure 3 (a) : Flood and lahar damage from the 2006 disaster showing the hardest-hit areas of Lidong, Padang, Guinobatan, Daraga, and Pawa. (Source : UNOSAT 2006)



Figure 3 (b) : Houses covered in lahar in Budiao, Daraga, Albay. (Source: www.geoview.info)

to re-channel future lahar flows. Despite this, the previous disaster also exposed the need to mobilize communities further in utilizing the linked heritage values between nature and culture to mitigate the effects of disasters. The 2006 event can thus point us to a number of key issues that affect the site, not only from a disaster mitigation perspective but also from a heritage conservation standpoint.

First, it has been noted that one of the decisive factors which magnified the effects of the 2006 disaster was the complete failure of communication between the communities and local authorities (Orense and Ikeda 2007). Once the typhoon cut communication lines, communities were left isolated and were not able to cope with the speed of the lahars. Since the disaster, local authorities have held community-based risk mapping workshops to capacitate locals with the ability to act on their own whenever large-scale disasters occur again. Apart from this, however, little has been done to capacitate community resilience values from a multi-hazard perspective incorporating heritage values.

Second is the basic lack of identification and appreciation of the linkages between natural and cultural heritage values, which results from the lack of any holistic institutional arrangement for the community to connect with these values. This is a fundamental issue that needs to be addressed because community values around volcanoes, in general, form the bedrock, not only for community cohesiveness and resilience (Kitagawa 2018) but

also provides the requisite value system for people to appreciate their connection to the natural environment. That these values, at present, exist only as oral traditions and implicit in community life but are not fully documented and mapped poses a serious challenge to the protection of these values, as well as the lack of institutions that can transmit these values to the greater public.

5. Recommendations

The site is currently in the process of completing its nomination dossier to be submitted for consideration by the World Heritage Committee. Concurrently, efforts are being made to expedite the comprehensive identification of natural and cultural heritage values so that protective measures are put up once the mapping activities around the volcano are accomplished. Through the ongoing nomination efforts, continued engagement in the World Heritage nomination process will capacitate local authorities with the ability to adopt a people-centered framework that incorporates both natural and cultural values protection and their interlinkages. This can be achieved by identifying spaces and institutions where these values are being nurtured and transmitted, including more community-based approaches on disaster risk management or affording protection and promotion of local intangible heritage elements associated with the experience of the community with the volcano.

On a smaller scale, ways of connecting with the site's heritage values through conventional

and non-conventional means should be studied for eventual implementation. For instance, interpretation facilities for Mayon's geological heritage can be set up akin to those in Mt. St. Helens, which was able to take advantage of the 1980 eruption and build a comprehensive museum showcasing the important values related to the volcano (Newhall 2018). Other measures include the identification of significant deposits which can be utilized for geological tourism activities, with comprehensive training for guides and operators to narrate Mayon's heritage from the point of view of geological science, and from the community's perspective through stories about those historical eruptions.

Finally, sites of memory such as the Cagsawa ruins from the 1814 eruption [Fig. 2 above] and the Padang memorial cross from the 2006 disaster [Fig. 4], could be rehabilitated and improved with interpretation facilities, promoting the protection and maintenance of practices and intangible elements centered on commemorating the community's experiences of the volcano's eruptions. Memorialization practices and sites serve as identity markers and help foster a sense of community belongingness and provides opportunities to showcase the communities' experiences of living in a multi-hazard context (Preston et al. 2015). It is hoped that the findings of the ongoing mapping exercise, done by the NCCA, will also lead to the improvement of heritage protection schemes,

especially with regard to sites of memory around the volcano.

These recommendations, while provisional, are fundamental in terms of providing avenues and media for community values to be fostered and integrated into a DRM approach as well as in the World Heritage nomination process. By adopting a people-centered approach and focusing on the heritage links between nature and culture, the site could embody the values of adaptation and resilience, which would become an example in the World Heritage context and contribute to the development of comprehensive and inclusive measures for disaster preparedness and risk reduction in multi-hazard sites similar to Mayon.



Figure 4: Padang memorial cross. (Source: Brahmin Reyes, "Beauty and madness" 2012, retrieved from <https://brahmineyes.wordpress.com/?s=padang>)

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