The spatial and settlement pattern in Mabi Hamlet, Belantih Village, Kintamani: conservation of tangible and intangible of Balinese traditional architecture in Bali Aga villages

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Abstract. The Indigenous of Bali Aga villages has uniqueness in architecture, traditional norms and values. Most of Bali Aga villages are located in highland and mountainous areas. The development of economic and technology become a threat to the integrity of traditional Balinese architecture especially in Bali Aga villages. The preliminary research finding was that traditional buildings in Bali Aga villages had changed into modern style, both in spatial and settlement patterns. This happened in Mabi Hamlet, Belantih Village, Kintamani District. There is a decrease in number of traditional Bali Aga houses that threat the extinction of Balinese traditional architecture and local identity. The research aims to explore the development and changes in spatial and settlement patterns in Mabi Hamlet by focusing on Balinese traditional architecture. The importance of inventory and documentation is an effort to preserve the heritage of Balinese traditional architecture. This case study method was selected for Mabi Hamlet in Kintamani Sub-district. The interviews were conducted to village leaders, hamlet heads and traditional elders who played important roles in the implementation of customs in both tangible and intangible aspects. The literature study was conducted to find out the history of Bali Aga villages and to understand Balinese traditional architecture, its culture and customs. Studies on previous research and institutional study aim to understand the timeline, village’s potency and village development. The study results recommendation for the conservation of local values, especially the legacy of traditional Balinese architecture as a local identity and a source of Nusantara identity.

Keywords: the spatial and settlement pattern, Mabi Hamlet, conservation, Bali Aga villages

1. Introduction
Bali Aga is the name of Indigenous villages in Bali that still adopt and implement their original tradition, norms and values. It is different from other villages in south part of Bali that have been influenced by the Majapahit culture while Bali Aga does not. Most of Bali Aga villages are located in the highlands of Bali Island, mountains and some are located along the Lake of Beratan in Kintamani area. Bali Aga is one of popular topics to study because its indigenous original culture and tradition including traditional governance system, architecture, and religious ceremonies implementation. They also have different dialects from general Balinese language and some village still use astronomy to decide the good day (dewase) for the implementation of religious ceremonies. The form of spatial and settlement pattern in the Bali Aga villages is strongly influenced by the villages topography known hulu-teben (upstream-downstream). It has mountain or hills/highlands as upstream (hulu), oriented for the sacred place (kaja) and locate village temples. There are springs for the impure zone (kelod) as
downstream (*teben*) that lay the village cemetery and its Dalem Temple, and also public facilities, such as public bathing, parking area, community hall etc [1,2]. Budiharjo [3] distinguished three types of village’s pattern that also influence the housing pattern. The first pattern is *pempatan agung* or crossroad pattern mostly found in mainland area. This pattern constructs four neighbourhoods that face to the centre of the village. The second pattern is *aling-aling* pattern (*swastika* form) that do not have” straight continuous roads” as the *pempatan agung* pattern. The third is linear pattern that is mostly found in mountains and highland areas of Bali Aga villages [3].

Many scholars who studied the Bali Aga villages, such as Covarrubias in 1974, studied the Indigenous as “original or ancient Balinese” [4], meanwhile Reuter (2002) named the Indigenous Balinese as “the Mountain Balinese” [5]. Further, Hauser-Schaublin (2004) defined that the Balinese people called Bali Aga or Bali Mula or Bali Kuna, and as an “ethnic group” [6]. Other scholar such as Muller [7] documented the Bali Aga during her fieldwork in 1980s in four regions mostly in the north, east, middle and central mountains of Bali [7]. Yudantini [8] concluded and mapped the location of 62 of the Indigenous villages spread across Bali Island from the east, middle to the west (Figure 1) [8]. One of them is Belantih Village with Mabi Hamlet as it is mentioned in Muller’s fieldwork.

The rapid development and improvement of technology and communication bring impact to the communities in the Indigenous villages to have better living. There only remain five traditional houses in Mabi Hamlet that still maintain the original of architecture and norms. Other households have changed their housing pattern into modern style. This phenomenon becomes a threat to the existence of Balinese traditional architecture and the local identity. The research investigates the spatial and settlement pattern and its changes in Mabi Hamlet as a documentation concerning the Bali Aga heritage especially in the architecture field. The research sought tangible and intangible aspects related to the Bali Aga culture and tradition in Belantih Village as uniqueness of the village. The research recommended the conservation of spatial and settlement pattern of the village and served as source of basic information of the existence of Bali Aga villages in Bali.

**Figure 1.** Mapping of the Indigenous villages across Bali Island and Belantih Village is located near the Batur Mountain [8]
2. Methods
The research was conducted mostly a descriptive qualitative research through case study. The case study method is very useful to obtain a comprehensive study, to focus on the object under study and to gain better information regarding non-physical object and also about the behavior of the communities [9]. Direct observation on the object of case study and interviews help to obtain real data, which is used continuously in the analysis of problems related to the spatial and settlement pattern in Mabi Hamlet, Belantih Village, Kintamani Sub-district. The observation was used to investigate the spatial and settlement pattern that had been changed recently. The preliminary research found that there were five traditional houses extant in Mabi Hamlet. The interview was conducted to hamlet’s leader, the householders and questions to the villagers. Most of them cannot avoid the settlement changes especially the housing pattern. The intensive literature review aims to gain understanding of Bali Aga history and its characteristic in both tangible and intangible aspects. The previous research was studied to discover the past condition of the village and to understand the socio culture life of the community. The collected data were then analyzed both through qualitative and quantitative analysis.

3. Discussion

3.1. Glance of Mabi Hamlet in Belantih Village
Belantih Village as one of Bali Aga is located in Kintamani Sub-district that has cold weather (22° C-26° C) surrounded by valley and hills. Belantih is located by coordinate between 115.2877 east longitude and -8.24246 south latitude [10]. Belantih Village is bordered to the north by Selulung Village, to the south by Belanga and Batukaang villages, to the east by Daup Village, and to the west by Catur Village (Figure 2). Belantih Village has an area of 9.06 km² (960 ha) that the land use is allocated for plantation (22.63%), dry land cultivation (62.03%), housing (2.32%), grave yard (0.11%) and other function (12.91%) [11]. Most people work in the farm especially as farmer of orange/citrus and coffee. The population of Belantih Village is approximately 2.527 people in 2017 with the density of 263 people per km² [10].

Belantih Village includes in traditional village (desa adat or desa pekraman) of Desa Pekraman Selulung, and administrative village of Belantih. Administratively Belantih Village has eight hamlets as follows Mabi, Sabang, Luahan, Pangkung, Kayu Padi, Tangguan, Pandan and Selulung Timur. Selulung Timur Hamlet is located in the territory of Selulung Village but administratively Selulung Timur is under Belantih Village. Likewise Sabang Kelod Hamlet is located in the territory of Belantih Village but under Selulung Village administration. This case occurs in some villages in Bali and it is called saling seluk. Mabi Hamlet has been observed by Carole Muller in 1980s. Mabi Hamlet has population of 95 householders with 400 people, and all embrace Hindu Religion.

3.2. Socio Culture of Mabi Hamlet, Belantih as Bali Aga village
The people embrace Hindu religion and they have 3 types of temples. They are Tri Kahyangan Tiga temples, 1 subak (irrigation) temple and 1 other temple. 3 priests lead these religious activities. In the culture, Belantih has art organization including 6 groups of traditional musical called gong kebyar and 2 types of other arts. Meanwhile the people also involve in household handicraft and only 3 household handicrafts are available in Belantih Village. The death ceremony is commemorated through biye tanam as a characteristic of Bali Aga tradition. Biye tanam means the corpse is buried for the cremation ceremony, but only the death’s symbol is burned. The village also celebrates mass cremation in certain period of time that is usually 4-5 years. Belantih Village has 3 cemeteries, namely Setra Bunut, Setra Selulung and Setra Nyawah. The cemeteries are distinguished for infant’s corpse in the upstream of cemetery, for noble’s corpse in the northeast direction, and the rest for the corpse of common people. Most of people in Belantih village are nyineb wangsas (hide their caste), but only one clan is using their caste; they are Arya Kuta Waringin in Kayu Padi Hamlet.

In the governance system, Belantih Village implements a customary government system called Apad or Ulu Apad, known as an upright structure, with a total of 40 members consisting of 20 people in right side and 20 people in left side when they assemble the traditional ceremonies. Belantih Village
applies the pure *ulu apad* system which means the members are selected by natural process, while the impure *ulu apad* system is bequeathed to the posterity or to the descent.

3.3. The Spatial and Settlement Pattern of Mabi Hamlet

The topographic condition of Mabi Hamlet in Belantih Village influences the spatial and village patterns with having a linear pattern in the village as well as the unit of housing. Muller [7] has documented Mabi Hamlet in her book of Bali Aga Villages: Field Works in the 1980s. She presented photographs of Mabi’s settlement condition with having linear pattern that followed the village’s topography. The family temple was placed in the main zone as a sacred area. The settlement was having natural condition and mostly used local material such as wood for the housing structure and bamboo for the roof called *sirap* although zinc in several houses had been used (Figure 3).

![Figure 2. Mabi Hamlet in Belantih Village](image)

![Figure 3. Linear pattern of one yard of unit housing in Mabi Hamlet in the 1980s [7](image)]

(Source: Muller, 2011).

![Figure 4. The linear pattern of the settlement still extant in Mabi Hamlet, 2018](image)
The characteristic of traditional village is divided based on the values of Tri Mandala concept. They are the main zone or utama mandala for holy place, the middle zone or madya mandala for settlement and public facilities, and the profane/impure zone or nista mandala for cemetery and services. This concept is also adopted into spatial and settlement pattern. The upstream of unit housing is placed family temple, in the middle is functioned for houses, and in the impure zone is for service function (Figure 4 and 5). One unit of the housing yard comprises of several linearly dotted houses. There are 5 to 10 of householders and the inhabitants mostly do not in one lineage. The houses are in open circumstances and no border or fencing within the neighbour. This traditional value means that the communities have good relationship to trust each other. It is also for security in the village where everybody involves in watching neighbourhood.

The house pattern traditionally consists of 4 functions as follows: kitchen, bedroom, holy place and terrace or ampik or terampe (Figure 6, 7 and 8). The house has simple functions where the people do their activities in one place in their house except for livelihood. Mostly Belantih people work as orange farmers in the surrounding area.
Figure 6. Sketch of floor plan and elevations of traditional housing in Mabi Hamlet, Belantih Village

Figure 7. Traditional house of Mabi Hamlet changed the roof shape and material.

Figure 8. The original traditional house in Mabi changed the roof material.

3.4. The Changes and Conservation Approaches

The changes of housing are unavoidable due to the increasing development. This also affects Mabi Hamlet and the people change their house pattern into modern style. They built new house to fulfil the demand of living to have better quality of life. The new material, such as concrete was mostly used (Figure 8). The appearance, house’s shape, material, style were changed (Figure 9). Based on observation and interview, there were only 5 existing traditional houses with modification of roof shape and material. Although people changed their houses from traditional into modern style, the people still apply the settlement pattern with linear pattern. This change is also realized by Budiharjo [3] that it caused by the growing of faster tourism development. He states that Bali faces a danger. The increasing number of tourists in Bali affects the societies’ economic and of course they want to change their life to modern which look simple and efficient.
Figure 9. The change of house into modern look. Figure 10. Linear pattern is still adopted in the Mabi Hamlet.

Budiharjo [3] stated there were two points of conservation to be applied in the community to avoid more danger and huge changes of traditional values and the heritages. One approach is comprised of conserving the ecology problems including flora, fauna, pollution and population explosion. The other approach is conservation of architecture and the built environment. Thus he emphasized that the alternate conservation of Bali’s problem is by conserving the Balinese architecture including its environment.

“The best way to avoid this danger happening on Bali is by the conservation of Balinese architectural heritages which will involve the study of the whole environment” (p. 3)

The other aspect in Mabi Hamlet, the intangible of traditional value of spatial space remain implemented in the village. Belantih people celebrate the annual festival called ngusaba. As it is emphasized by Reuter [12] that the people of Bali Aga in the mountains perform rituals or rituals every year to commemorate fertility for the respect of the ancestors as a mark of the turn of the season for agricultural production [12]. The people still celebrate this ritual of their tradition and believe to honour to the forefather. This ritual to honour their ancestors can be applied in their house. Although they changed the house into modern style, they still keep one holy room as a place of ancestor worship (Figure 11 and 12).

Figure 11. The place for ancestor worship Figure 12. The offering in the front of main entrance of house, conservation traditional values

4. Conclusion
The conservation of tangible in tangible aspects in Balinese traditional architecture faces threats because of increasing development and globalisation. It cannot be denied that the people in Mabi Hamlet have changed their housing into new style and with new material. As a Bali Aga, the people still adopt original culture and tradition in their life. Comparison to other research showed that the
spatial and settlement pattern in Mabi Hamlet still implements linear pattern as it is inherited from the past. Nevertheless, the houses pattern have changed into modern form. Now Mabi Hamlet only has 5 traditional houses and that situation threatens the Balinese traditional architecture. Guidance to the people is urgently needed in order to cultivate their awareness of their traditional architecture to be conserved as it serves as reflection of Balinese identity of traditional architecture. The research recommends future research to identify, inventory and document the traditional architecture of Bali Aga for conservation.

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6. References
[1] Gelebet I N, Puja I G N A and dan Dokumentasi Kebudayaan Daerah. P I 1981 Arsitektur tradisional daerah Bali / penyusun, I Nyoman Gelebet ... [et al.] ; penyunting, I Arinton Puja (Departemen Pendidikan dan Kebudayaan, Proyek Inventarisasi dan Dokumentasi Kebudayaan Daerah [Denpasar])

[2] Adiputra I T, Sudaryono S, Wiyono D and Sarwadi A 2016 Konsep Hulu-Teben pada Permukiman Tradisional Bali Pegunungan/Bali Aga di Desa Adat Bayung Gede Kecamatan Kintamani Kabupaten Bangli, Bali Forum Tek. 37

[3] Budihardjo E 1995 Architectural conservation in Bali (Yogyakarta Indonesia: Gadjah Mada University Press)

[4] Covarrubias M 1976 Island of Bali (Oxford University Press, Oxford)

[5] Reuter T A 2002 Custodians of the sacred mountains : culture and society in the highlands of Bali (University of Hawaiʻi Press)

[6] Hauser-Schäublin B 2004 "Bali Aga" and Islam: Ethnicity, Ritual Practice, and "Old-Balinese" as an Anthropological Construct JSTOR 77 27–55

[7] Muller C 2011 Bali aga villages : field work in the 1980s (Walsh Bay Press)

[8] Yudantini N M 2015 Bali Aga Cultural Landscape Challenges: Conserving the Balinese Traditional Landscape for Future Balinese Indigenous Villages (Bali Aga) and Communities (Deakin University-Australia)

[9] STAKE R E 1978 The Case Study Method in Social Inquiry Educ. Res. 7 5–8

[10] Anon DATA POKOK DESA/KELURAHAN

[11] BPS Kabupaten Bangli 2017 Kabupaten Bangli Dalam Angka 2016 (Bali: Pemerintah Kabupaten Bangli)

[12] Reuter T A 2002 The house of our ancestors : precedence and dualism in highland Balinese society (KITLV Press)