

## Lessons Learned from Traditional Settlement Patterns for Housing Planning in Indonesia

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### ABSTRACT

Recent research on traditional settlement pattern shows that traditional settlements in Indonesia are losing their values and degeneration of built form has changed the beauty of their original typologies. New settlements and housing projects are often oriented to western type of built form that may or may not fit to local situation. The quest of this paper was what kind of traditional settlement values that should be preserved to enrich current new housing development as an effort of digging out local wisdom that can contribute to new ideas of housing development/settlement in Indonesia. This study was based on descriptive analysis of several traditional settlements in Bali, Lombok and Kalimantan by evaluating their changes of settlement pattern and built form. This research found that traditional settlements uphold the harmony between built form and the spirit (wisdom) of nature or incorporating spirit of macrocosmos into microcosmos. This paper proposes to revitalise the wise of traditional settlement pattern to enrich our future housing development with the aim at establishing Indonesian settlement values into modern living.

**KEY WORDS:** traditional settlement, pattern, typology.

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### INTRODUCTION

The pattern of traditional settlement is formed by cultural beliefs based on cosmologic interpretation of relationship between human being and nature. This pattern will be kept by the traditional community when they moved elsewhere. This can be seen from the efforts of traditional community in modifying their new settlements [1], however, the pattern may not exactly duplicate the 'original' one due to different roles of physical elements of the settlement to their current culture which begins to adopt 'external' cultures into their built environment.

Kutai tribe community has basic concepts in planning the lay-out of their house and environment for more than 300 years [2]. This phenomena also occurs in: Bayan community- Lombok island [3]; Bontang Kuala community – City of Bontang [4]; and Baliaga community – Bali Island [5]. These four communities exemplify the values of Indonesian cultures which consist tens of unique architecture and built environment. These settlements contribute and enrich the character of Indonesian settlements and in many cases provide economic advantages for the local community by providing attractiveness for tourism.

These four settlements are uniquely different although Kutai Guntung and Bontang Kuala are located in the same island (Borneo) while Bayan dan Baliaga are in Lombok Island and Bali Island which are very close. Kutai Guntung and Bontang Kuala settlement present Kalimantan (Borneo Island) culture in different form. Kutai Guntung shows indigenous Kalimantan culture which is influenced by Hindu, Islam and animism, while Bontang Kuala is strongly influenced by Bugis Moslem culture (Sulawesi Island). Bayan community represent the indigenous culture of Sasak – Lombok. Hindu and Islamic influence in Bayan community is very little, while Baliaga community is a typical Hindu – Bali culture. Each settlement has local wisdom in regenerating their built form and environment.

Current 'modern' housing form and site is mostly enriched by external (western) values ranging from mediterranean, spanish styles to 'minimalist' architectural style. Housing site is mainly determined by economic and aesthetical approach which are detached from the Indonesian traditional concept, i.e., the balance of macrocosmos and microcosmos. Few new developments incorporate Asian (oriental) concept of the balance of nature (Yin-Yang) using Feng Shui concept, but none of them using Indonesian local concept. Based on these issues, the research explored the patterns of local settlements (case study on four settlements) and their regeneration which exist in Indonesia. The study, then, proposed effort to conserve and revitalize the traditional/local values for Indonesian modern living.

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## RESEARCH METHODS

The research descriptively explored the four settlements, found their distinctive characters and the similarities among their characters. Behaviour mapping and samples, using Slovin method, were taken from population in each settlement. The samples consisted of samples of building to be observed and samples of household for interview in generating social-economic background, local believes in their community associated with the pattern of their settlement. Samples of building were required to be 50 years old or older. The samples must also significant values for history, science and culture, and the spatial pattern should be distinctive.

## RESULTS AND FINDINGS

Observation on the four cases found several important findings as follows:

### Zoning concept:

Kutai Guntung community believe that their settlement is divided into two zones, i.e., *dayung* and *roh adat* (tribal spirit). *Dayung* is a zone for utilization, that is a zone for building houses, social activities, and farming/agriculture. Kutai tribe believes that forest and its content is tribal property that should be maintained respectfully. *Roh adat* covers forest that should be preserved and *dayung* for cultivation, both should be developed in a balanced state. Spatial zone in Kutai Guntung community is called *simpung*. Traditional settlement in Kutai Guntung is divided into four *simpung*: *simpung huma* (agriculture dan forest), *simpung lou* (main building, mosque and water source), *simpung balai* (housing and yard) and *simpung lalaq* (graveyard and its pathway) [6].

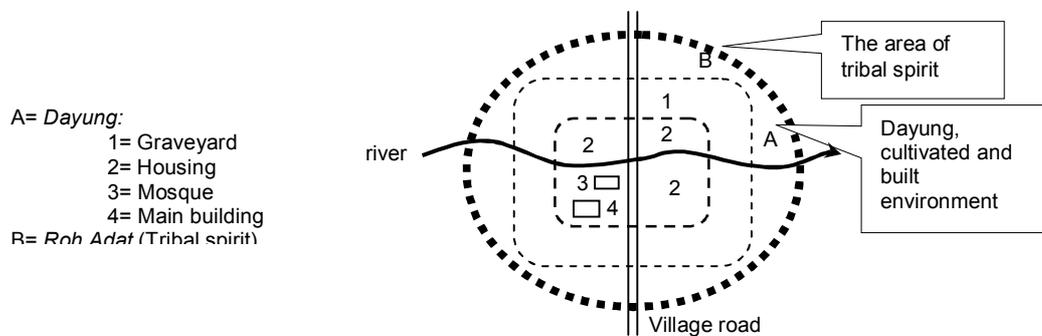


Fig. 1. Spatial pattern in Kutai Guntung Settlement

Figure 1 shows that the whole area was 'protected' by the tribal spirit. They respect the forest as they respect their tribal spirit. The community considers water resources as their sacred zone where they built building for worship and main building in the its proximity. This shows that they respect the gift of the nature and have established local wisdom in protecting natural resources / environment.

At the micro context, zoning for their houses is also divided into four zones, i.e.: a) *serambi* (verandah) is a zone for males for making social activities and for welcoming guest, etc.; b) *rumah ibu* (mother home) is females zone. This is the larger area in the house to give honour to mother; c) *selang* (alley / corridor) is circulation zone and is also considered as females zone; d) *dapur* (kitchen) is also a female-dominated space. The prototype of the house is showed in figure 2. Wood and leaves are used for building material. Social status of the people can be seen from type of roof. *Plembang* roof is used by people who are at higher social status than those who use *bumbungan* roof.

The pattern of settlement in Bontang Kuala is usually linear, following the shape of a river or road. At a smaller scale, cluster settlements were found where houses were developed surrounding *karamba* (fish pond).

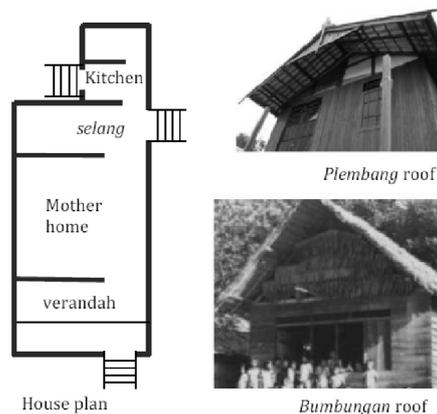


Fig.2: Typology of Houses in Bontang Kuala

Settlement in Bontang Kuala is divided into three main zones: a) north: cultural activity centre; b) centre: trade, housing and worship; c) south: public facilities, education and cemetery (figure 3). The layout of the house is similar to Kutai Guntung house. The house is divided into *beranda* or verandah (front verandah and main verandah); *balai* (main/family room), and *dapo'* (kitchen is at the centre, right side is for food storage and left side is for bathroom).

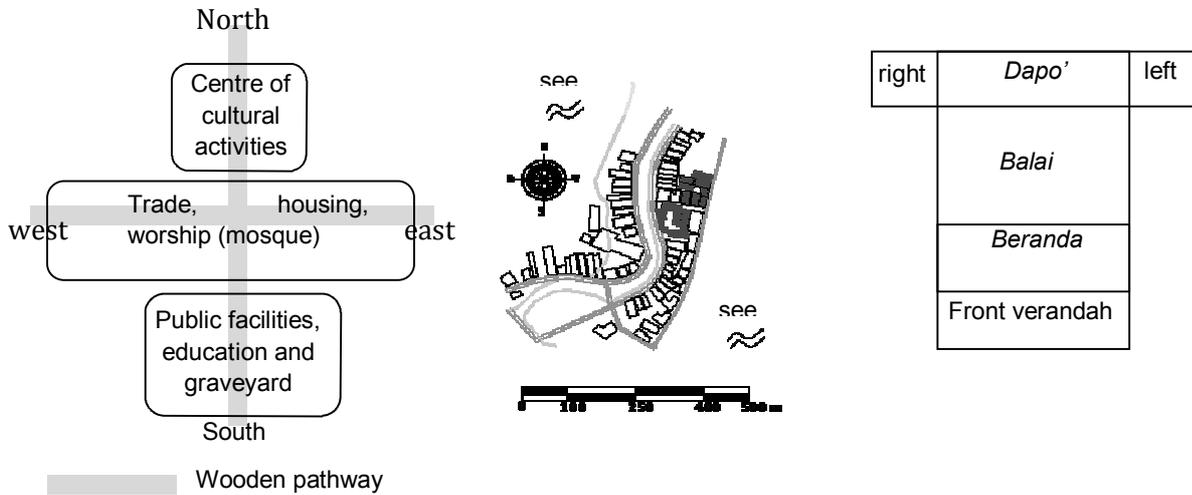


Figure 3. Typology of settlement in Bontang Kuala

Bayan community in Lombok Island upholds the so-called *awig-awig*, a traditional guidance adopted by Sasak-Bayan community for the design of housing elements and settlement pattern. *Awig-awig* is a local knowledge, inherited from hundred years ago and has attracted many tourists to see this unique tradition. Unfortunately, interrelation with external communities has changed traditional built form that should be conserved. The settlement consists of several buildings: *bale* (main house); *berugaq*; rice barn; stable; and kitchen. *Bale*, the main building is closely related to the roles of mother (*inaq*), thus the spatial concept of Sasak is to respect mother, therefore, majority of private rooms are dedicated to mother/females. *Berugaq* is gazebo-like building, and its function is for a reception room, family's activities, etc. Not all *bales* have *berugaq* and its location is not always at front of *bale*. Kitchen can be attached to *bale* or *berugaq*.

Rice barn is a unique building detached from *bale* or *berugaq*. Its location is either at the back or side of *bale*. Next to rice barn is stable. It is usually at the side or back of *bale*. Opening (door entrance) of *bale* is placed at east – west orientation (figure 4). Another important concept is the formation of building. The order / hierarchy of building is based on seniority. New couple usually builds their house on the same land of father (*patrilinealism*). The formation of houses created a composition of buildings as shown in figure 5.

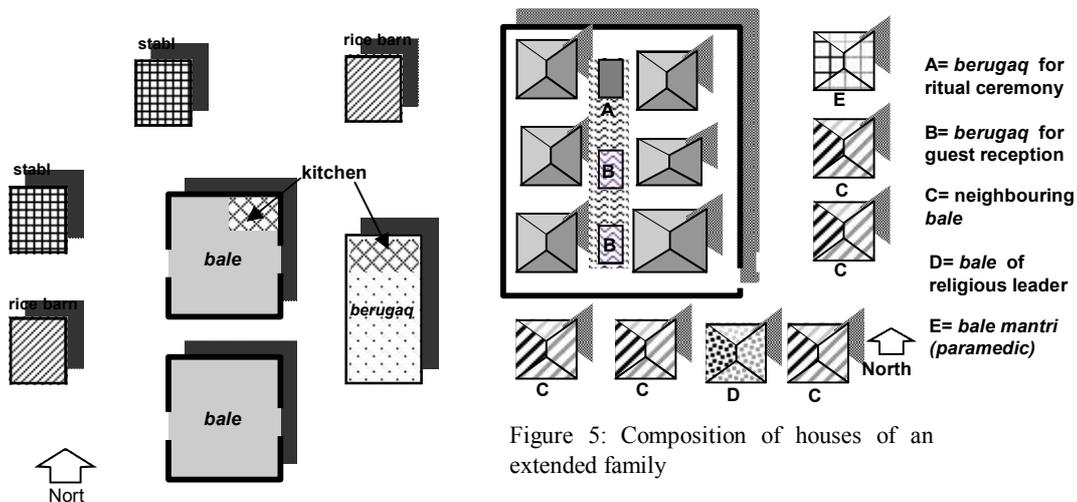


Figure 4: Pattern of housing in Sasak – Bayan community

Figure 5: Composition of houses of an extended family

Baliaga Village, Bali Island is a typical Balinese settlement. Hinduism strongly influenced the spatial form of the settlement. Spatial concept of the village is named *Tri Hita Karana* (three levels/states of zone) that consisted of *parhyangan* zone (heaven zone); *pawongan* zone (human zone) and *palemahan* zone (earth zone) (Udiyana, 2008). The functions of each zone are as follows: *Parhyangan* zone is used for religious activities and worship (*pura*). Main buildings in this zone are *pura bale agung* and *pura dalem*. These are compulsory *pura buildings* in Hindu-Bali tradition.

*Pawongan* zone is used for social and economic activities. Main buildings in this zone are housing, *bale banjar* (traditional main hall) and offices. *Puras* exist in this zone, but their function are supplementary, i.e. daily worship to support daily activities.

*Palemahan* zone is used for housing and agriculture-based economic activities. The zone is dominated by farm, rice field, *pondok* (houses near farm) and *setra* (graveyard).

The *Tri Hita Karana* rule is also applied for housing configuration. Balinese house consists of several buildings which follow *Tri Hita Karana*. *Parahyangan* zone for Balinese home is called *Hulu* zone, *Pawongan* zone is called *Tengah* zone, while *Palemahan* zone is called *Teben* zone (figure 6). The function of each zone is exactly the same with their concept in larger area (settlement) context. *Hulu* zone is sacred area, therefore this area is located for *sangah* (building for worship). *Tengah* zone usually consists of *Bale Meten* and *Bale Adat*. *Teben* zone is a *tegalan umah* (courtyard) and/or a zone for new building.

Similarities among those four settlements proved that Indonesian traditional settlements are based on the interconnection between physical and spiritual elements. Zones of the settlements are divided into particular function and order as they represent the spirit of forest, sea, and God and other zones related to social- economic activities. Each settlements place sacred zone to keep the interconnection between their settlement with the spirit or god(s). Traditional activity was proven to be the factor in maintaining the value of their settlements is their traditional ceremonies in relation to religion/faith and activities in relation to human being. This common believe has led traditional community to respect and protect the nature/ mother earth. This can be considered as wisdom of their tradition on settlement and environment.

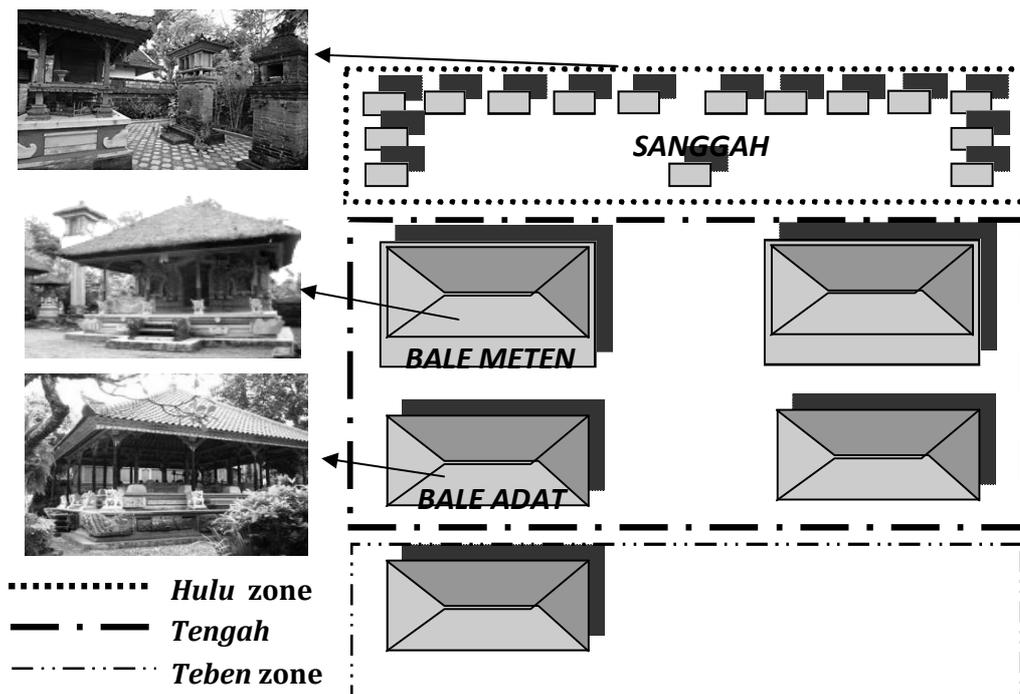


Figure 6 : *Tri Hita Karana* concept for housing structure and pattern in Baliaga

The study areas also have specific characteristics that can be distinguished among four settlements. Kutai Guntung and Bontang Kuala's households are living in a single building (home) and the composition of the building is linear following the shape of a river or a pathway. Households in Sasak- Bayan dan Baliaga are living in a cluster of building where each building has particular functions, therefore their homes are internally oriented and divided into particular order from the sacred area to public area.

#### The process of change:

The dominant factors that have changed the form of the settlements, among others, are: a) demography factors due to rapid growth of the population who often neglect traditional believe and knowledge; b) the change of people's occupation from agriculture/fishery to industrial labor or other job where many people migrated

from other places into this area to find job; c) the change of building material of renovated buildings; and d) the change of occupation/income.

#### **Policy for preservation and conservation:**

Observation on the existing condition of settlements in the four communities classified three level of conservation: preservation, rehabilitation and reconstruction. Preservation policies should be applied on settlements which have only little changes and the condition of the original building were fairly good. Some part of settlements in Kutai Guntung, Bontang Kuala, Bayan and Baliaga were worth to be preserved. Rehabilitation shall be applied on the area that has change their settlement's elements due to the introduction of new land uses (industry), in-migration, the changes on job structure and income. Rehabilitation would be suitable for area that has changed their original pattern caused by new activities, people, occupation and technology. It is indicated by disappearance of some significant element of traditional settlement such as: green buffer area as the boundary of a family (kinship)- based cluster of houses (Kutai Guntung); a unique paddy barn building (Kutai Guntung and Bayan) and degeneration of Tri hita karana concept in Baliaga settlement.

At the building scale, policy for conservation should be applied for:

Roof (upper structure) component and materials (wood, *galvallum* sheet), wall and columns, and flooring system. The policy should be based on the originality of construction, materials, and finishing (including colours).

#### **Lessons learned from traditional settlements:**

The values of traditional settlements are very worthy not only to be preserved and conserved but also to be reinvented for new settlements. Implementation of traditional notions on housing development will automatically lead to the principles of conservation of nature which in modern terms are called 'green development' and 'green building'.

Traditional settlements have taught and led residents to be always close to spiritual need of human being. The beauty of settlements is not only on the physical aspects but also on the social and spiritual aspects. Some new housing development which set its image as [specific religion] residents is not actually new concept but the concept that already exists in almost all traditional settlements in Indonesia. The 'vertical' connection between human and God/the spirit does not always mean the existence of worship buildings but more importantly is the action and attitude to protect and respect the nature (mountain and water source/spring was treated as sacred zone).

Traditional settlements, which are unique, are important to be reinvented to enrich new types of modern housing development. Elements of traditional settlements, which can be implemented, to replace western models, in housing development are: The pattern of land uses /zoning system; the orientation of building and housing mass; architectural articulation; and the use of materials.

#### **CONCLUSION**

The four settlements exemplified common values and concepts of Indonesian traditional settlements although each of them was unique. Main similarities that occurred in those settlements were the appreciation of cosmic value into micro context (their settlements). The appreciation was clearly manifested in the zoning system and space pattern of the settlement and housing lay-out design. The wisdom of traditional settlement led to an attitude of loving and protecting the environment. Significant natural resources were considered sacred places. Therefore, sacred buildings for worship were placed near to or oriented to natural resources (water, mountain, etc).

New housing developments may adopt several values which exist in traditional settlements. On other words, the concept of traditional settlements may coexist with modern concept in new housing development. Digging and actuating traditional concepts would create more eligible Indonesian built environment and preserve Indonesian culture.

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