

Changes In The Hierarchy of Sentani Tribal Traditional Settlement Spaces In Sentani Lake, Papua Indonesia

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ABSTRACT

The research into changes in the Sentani indigenous people's settlement spaces can be assumed in cultural and environmental relations. The most priorities highly depend on cultural and environmental backgrounds since they are the main factor determining the course of the evaluation of changes in the form of the traditional settlement hierarchy built. The significant aspect of the innate form of the traditional settlement hierarchy is the changes in the traditional community-built environment into opportunities affecting the changes in traditional settlement patterns. The interdependence between forms of housing and settlement patterns, including houses and settlements, is inseparable from one another. Community occupancy is an essential component of the establishment of settlements they have. In addition, none of the dwellings can be seen as independent buildings standing alone in the natural landscape. Configuration of indoors (dwelling community) and outdoors (settlements) makes an interaction formed entirely by the mutual dependence between the two. In this paper, this method used compares a series of traditional settlements ranging from the most original to the most changed in 1903 and 2022 in the remote areas closer to the original condition. Field studies were conducted in traditional settlements of Sentani indigenous people. Observation, sketching, photography, fieldwork notes, and in-depth interviews were used as research techniques to explore rich data and phenomena within the socio-cultural and environmental contexts. The relationship between the forms and patterns of traditional settlements is determined by the layout correlation between the mass of the building and the patterns of settlement arrangement. This is the focus of this research based on the relationship of cultural changes in the hierarchy of traditional residential spaces.

Keywords: Hierarchy, Space, Spatial Patterns, Value

I. INTRODUCTION

The traditional settlements have been, and continue to be the subject of research carried out by experts of various disciplines including historians, geographers, ethnographers, anthropologists, urban planners, architects, etc. Among these various specialties, most studies can be grouped into two main lines, namely those examining the characteristics of traditional dwellings and those investigating the traditional settlement patterns. The architects tend to describe the morphological characteristics of individual residential units, and few describe the characteristics of the traditional settlement hierarchy. In other words, they tend to see traditional houses as the end products of traditional buildings, rather than seeing traditional settlements as cultural products that must be protected as the traditional values of traditional communities.

Research on changes in settlements has been carried out including studying the changes in settlements on aspects of spatial areas, settlement arrangements, and villages based on studies of physical form transformation. These studies include Danarti K (2001), Saraswati (2008), Sueca (2005), Purnomo (2010), Rosmiaty A (2010), Himasari (2012), Bukit ES et.al. (2012), Moufida S et.al (2013) and Ni Made (2014). Meanwhile, traditional settlement research is dominated by the romanticism of past cultural wealth, examination of visual forms, spatial patterns, traditional construction technologies, and cultural symbolism, as has been executed by Setiada (2003) regarding the traditional village of Legian in terms of traditional Balinese village patterns, Funo (2005) in consideration on the typology of Kampung house and Betawi house of Kampung Luar Batang (Jakarta), Mentayani (2008) examining the footsteps of the traditional architectural relationship between the Banjar and Bakumpai tribes, Chen (2008) investigating the typological rule system of Malay houses in Peninsula Malaysia, and Wasilah (2011) conducting the comparative study of the traditional architecture of

Toraja and Mamasa.

The Traditional settlement of Sentani indigenous people has unique and still survives today. One of the surviving traditional cultures as a work of architecture having a unique characteristic that is a traditional settlement situated in the surroundings of indigenous settlements in Sentani lake. As it is said by Hartzler (1976), the Sentani community traditionally lived as fishermen, farmers, and harvesters of sago. Sentani indigenous people are a homogeneous society adhering to the tradition taught by the ancestors. One of them can be seen physically from the traditional home of Sentani indigenous people. The culture is changing along with the built environment. When the neighborhood was built, the homogeneous groups of people controlled over the environment established as seen in traditional societies (Rapoport and Hardie, 1991).

This study aims to focus on the changes in the hierarchy of the Sentani Tribe traditional settlements on the coast of Sentani lake in Papua with a case study in the traditional settlements of Sentani tribe at Ayapo village based on historical references in 1903 with traditional settlements in the current conditions of 2022, and find the core cultural elements of the Sentani people.

II. METHODS AND MATERIAL

Based on Groat and Wang (2002), this research is qualitative interpretation and meaning towards the current situation or progress. Emphasis of this study is on the researcher's role as the main part or "objective eyes" from a research tool, and the data obtained through observation, a list of open questions, and interviews on the real background (natural setting). According to Rapoport and Hardie (1991), the methodology used to study the environmental and cultural change is building a foundation of traditional culture and environment through environmental

order from time to time and identifying the core elements of the surviving, changing, and disappearing traditions and new elements. Lawrence (1987) in Faqih (2005), proposes a comparative study of the same building types in different communities to describe the relationship between reciprocal variables of architecture, society, and culture in the community. Methods need to be established on a systematic analysis of the spatial buildings and how activities in the space of time travel are. Lawrence's method was combined with model changes of learning according to Rapoport.

The research procedure used three-step investigation to find the changes in the relationship between culture and architecture at different residences (*habitus* fishermen and *habitus* farming) and the transformation of the physical environment of the house. Three steps of the investigation are (1). The review of the document history (historical reference in 1903) of past and previous research studies and criticism to find the basis of the authenticity of Sentani indigenous community existence; (2) The collection of oral history and memory through interviews and observation to find a variety of opinions, as well as the development of traditional historical homes and the heritage of traditional vernacular cultural life; (3) The direct observation methods to increase rehabilitates of the research employing case study method.

III. RESULTS AND DISCUSSION

The settlement of Sentani traditional fishing community is represented as a place that still holds the cultural values and beliefs to the ancestors of Sentani tribe. It relates to the value of belief in ancestors that is special or unique and formed from the arrangement of elements based on a belief system, culture, and cosmology supporting every activity of indigenous people.

The hierarchy of fishermen's settlement spaces of Sentani indigenous people is closely related to the rules or cultural values of Sentani tribe. The hierarchy places the *obe imae* (traditional house) as a sacred space and center of orientation in fishing settlements. Sacred is symbolized by the symbol of the kangaroo animal on the ridge of a traditional house representing natural forces. That is, the phenomenon of the living space of fishing communities is closely related to the sacredness of the traditional values of Sentani that have been set by their ancestors realized by the hierarchy of "yo" or the settlement of the Sentani tribal community. Sacred traditional values as guidelines and references for forming traditional settlements are maintained in every individual and group behavior of indigenous people as the core culture of Sentani tribe.

Fig. 1 and Fig. 2 illustrate the changes in agglomerated rural settlements in the form of grids on the water to change into clustered settlements in the form of clusters on land parallel to the coastline in fishing settlements today.



Figure 1. The defense settlement is in the form of a linear line on the shore of Lake Sentani, and the house of the tribal chief "*obe imae*" is the main orientation of the settlement. (Source: Sande, 1908 and Author's Sketch)



Figure 2. Settlement Patterns are linear parallel to the coastline (Source: Google Earth, 2022 and Author's Sketch)

The forms of traditional fishing settlement patterns in 1903 were agglomerated rural settlements in the form of a grid on the water with the lake as a food source. The form of settlements is grouped with the main orientation towards the *obe imae* traditional house in the leading position and *khombo imae* in the highest position forming the survival space of Sentani tribal settlement. Defensive space aims to prevent the intervention of other groups into settlements, both assault or outside intervention. As Roscoe (2008) said, in New Guinea, the fortress of settlements serves to deter attackers by using several obstacles, to slow down enemy arrivals.

The form of agglomerated rural settlements on the water grid changes into a clustered settlement pattern in the form of partial clusters parallel to the coastline caused by the growth of the fishing population of the traditional community. The data of the Ayapo village fishing community in 2022 were 1019 people with 212 households and 165 non-permanent houses. Meanwhile, the population and the number of traditional houses in 1903 were still small. The increase in population from 1903 to 2022 increased the growth

of new homes and changed the pattern of settlement growth from linear clustering in 1903 fishing communities and then spread on land partly in the form of coastal clusters of Sentani Lake on current fishing communities.

The traditional house of "*Obe imae*" as a center of defense for fishing communities is still maintained in the hierarchy of traditional settlement patterns. The changes occur in the security system model from traditional to non-traditional. The changes are due to the tradition of tribal warfare in the Sentani Tribal community that has been abandoned by traditional fishermen today. In 1903, the tradition of tribal warfare was carried out to seize food resources, but at this time, it had been regulated by traditional institutions in the traditional Sentani tribal system. The changes in the village security system has changed the hierarchy pattern of traditional linear community settlements into a linear cluster.

The changes in the settlement pattern of fishing communities from 1903 to 2022 also changed their natural environment from the shelter (shell) above the lake water to above the land on the shores of Sentani Lake. The inter-occupancy network system (shell) changed from a network system using a boat on the water to a network system on land as a liaison system between networks. These changes affected the formation of territories (territories) based on access rights, management rights, and ownership rights. This influenced the zoning system and the hierarchy of traditional fishing settlement spaces based on the three territorial formations consisting of territories or sacred spaces (private zones), traditional spaces (semi-private zones), and community spaces (public zones).

The traditional values of Sentani tribe play a role in maintaining the survival of cultural values and become the traditional characteristics of the Sentani tribal community. This is in line with Juzan and Sulaiman (2005) stating that culture is an element filtering the suitability of the built environment for users. The cultural element of concern is the cultural values believed by users to determine the process of selecting

the appropriate one in shaping the personalization of space. This is manifested in the personalization of space in fishing settlements formed based on traditional values believed by the Sentani indigenous people. The changes in the pattern of settlements caused by several factors above changed the hierarchy of the Sentani tribal settlement spaces in Kampung Ayapo explained in Fig. 3-4.



Figure 3. The hierarchy of settlements on the water of the indigenous Sentani tribe in 1903



Figure 4. Sentani tribal settlement hierarchy on the coast of Sentani Lake in 2022

The changes in the hierarchy of fishermen settlements occurred in 1903, where the chiefs of the "Ondoafi", customary leaders "Khoselo" and indigenous youths were placed at the front of the "sacred" "obe imae" and "khombo" traditional houses, while the space of indigenous people was located behind them as a

protected area. Although the hierarchy of fishermen settlement space changed, the position of traditional and tribal leaders as influential figures in the front remain the foremost, while the indigenous youth and community changed to spread linear beach reflected by the pattern of cluster settlements in fishermen today.

The sacred space in the fishing settlement is interpreted as a space of communication between humans and God, humans and ancestors, as well as humans and nature. The sacred space is located in the "obe imae" traditional territory as a place for Sentani traditional activities and rituals. The place inside has supernatural powers, and the container/space has ancestral and natural powers symbolized by several symbols and ornaments. Sacred spaces are believed to have supernatural powers interpreting the relationship between the past of the Sentani indigenous people, the strength of their ancestors, and their nature. The fishing communities call Sentani Lake "puyakha" meaning real characteristics, and "puyakhapu" meaning water areas. Therefore, traditional settlements on the shores of Sentani Lake are known as *Negeri Pusaka* or Real Land on water.

The changes in the fisheries settlement hierarchy also change the activity system, activities, or behavior of community groups, where the activity is carried out at a specific place and time. Existing activities in physical settings take place at a fixed or temporary time and there is a structure or series making the activities and actors have meaning. The changes in the existing setting system as a space for the activities of Sentani indigenous people take place in traditional activities and ceremonies, religious/spiritual activities, community economic activities, community social interaction activities, or individual or group activities.

The changes are reflected in the changes in the scope of the "khombo imae" worship house as the center of ancestor worship activities and traditional education in the fishing community in 1903 into the "obe imae" traditional house and the house of the chief in the current Ayapo fishermen community. The setting of

collective gathering space in the "*obe imae*" traditional house has changed to the current open space setting of fishermen. Open space settings as an axis between settings, where "*obe imae*" exists is the most widely used setting for fishing communities. In the scope of relationship between human and God, the worship setting carried out in the "*kombo imae*" (house of worship) formerly, was then conducted in the church (prayer place), open spaces, and residents' houses in the farmer society. Meanwhile, the scope and relationship of individual or group activities in the settings of residential houses changed to the setting of collective houses except for religious buildings and traditional buildings (*obe imae* and *Ondoafi houses*). The scope of social interaction activities including all activities related to the relationship of God, humans, and nature cover all settings existing in the fishing settlements in 1903 and today. This is due to the relationship between activities and problems of the population related to social, economic, individual/group, and custom interactions as well as problems with the outside environment resolved through customary deliberations in the "*obe imae*" traditional house settings.

IV. CONCLUSION

The changes in the traditional settlement hierarchy due to the changes in fishing communities over water in 1903 turned into fishing communities on land as currently found a fixed aspect of economic capital (lakes as a source of food and life), and symbolic capital (natural relations and ancestors (*Mangna Ro*), Sentani custom (*Mang*), indigenous people (*Mang Romia*) as the capital of traditional fishing community life. The most influential factor in the changes in the hierarchy of traditional fishing community settlement space is the aspect of changing cultural capital and social capital due to the change in fishing communities in 1903 into fishing communities. This has changed the form, space, position, and meaning of the traditional settlements of the Sentani Tribe. This finding is in line

with the Rapoport (2005) model revealing that the activity system mainly influences the setting system with the "*khombo imae*" worship house representing custom (sacred) in the traditional collective settlement of fishermen in 1903, turning into *obe imae* and the church as the center of the current traditional fishing community settlement.

The changes from the 1903 to 2022 settlement space hierarchies occurred in the context of forming a personalization of space based on the representation of the traditional values of Sentani Tribe. This reinforces the opinion of Rapoport (1983) rejecting the changes, the traditional values should be maintained until the end since they are a substantial component of the traditional environment and a core element to maintain the character of the culture. In the changes in space personalization in fishermen settlements into farmers, the cultural character is still maintained as a representation of the traditional values of the Sentani Tribe, as the core culture of Sentani indigenous people. The cultural character in Sentani traditional space hierarchy is manifested from five essential concepts of representation of Sentani traditional values, namely (1) belief in God of "*Hubraho Mando*," (2) the existence of ancestral spirits and natural forces, (3) the role and responsibility of *Ondoafi*, *Khoselo* and *abuafa*, (4) the traditional culture in Sentani indigenous community unit, and (5) the ethnic brotherhood.

The five concepts of specific Sentani traditional values are rooted in a critical concept of Sentani traditional life (orthodox) indicating that the ideal life for Sentani indigenous people as symbolic capital is united with God (*hubharo mando*), ancestors, nature (*Mangna Ro*), and fellow indigenous people (*mang romia*).

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NOMENCLATURE

Sentani traditional language

<i>Ondoafi</i>	Highest chieftain (commander of war)
<i>Khombo Imae</i>	House of worship
<i>Romyea Imae</i>	Community House
<i>Obe Imae</i>	Tribal House
<i>Khoselo</i>	Chief of customs
<i>Puyakha</i>	Real traits
<i>puyakhapu</i>	Water region

<i>Halewayo</i>	An everlasting and happy
<i>Kunduwayo</i>	land
<i>Uarofo</i>	Spirits around the village
<i>Seumoi and siburu</i>	The spirits in the lake water
<i>Siakhe</i>	The spirits residing in the forests and mountains
<i>Mahe</i>	Ancestral spirits
<i>Pulo-yo</i>	Religious field
<i>Phuyo-ayo</i>	Security field
<i>Phume - ameyo</i>	Prosperity field
<i>Yomme-yammeyo</i>	Order field
<i>Yonow" or</i>	Customary council
<i>"aranggae</i>	institution
<i>Abu-afa</i>	Chieftain's special auxiliary devices
<i>Iymea-iymea</i>	Community houses
<i>Yoho</i>	Home group
<i>Yo</i>	Village

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