Local Wisdom as a Planning Strategy and Sustainable Settlement Development in to Kaili Traditional Central Sulawesi

Running Title: Local Wisdom for Sustainable Settlement Development

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Abstract: *The Kaili tribe is one of the tribes that live on the island of Sulawesi, Central Sulawesi province and has unique local wisdom and needs to be further studied by researchers. Plan and design settlements that have local wisdom since ancient times, and are currently experiencing degradation. The process of planning and designing refers to their customary law. This study aims to uncover the stages of planning and designing a sustainable settlement development that is harmonious and local wisdom The phenomenological approach method is used to analyze the behavior of To Kaili to find a harmonious planning and design strategy. The findings are variations or patterns of housing development from micro to macro scale which show the metamorphosis of settlements that depend on customary rules.*

Keywords: Harmonious settlement, Local wisdom, Planning Strategy, Settlement scale, metamorphose, phenomenon performed by To Kaili

1. Introduction

Indonesia is the biggest archipelago country in the world with thousands of small islands in it which there one or more tribes on every island. Every tribe has its local wisdom that seems similar to each other but still has distinct uniqueness that differs to each other tribes.

One of the tribes which has its unique local wisdom and not yet fully studied is Kaili tribe (to Kaili. This tribe has relic in the form of a stone statue called Menhir which becomes heritage from previous tribes. Stone culture denotes the legacy of their ancestors who came from outside Celebes island which presumes come to Celebes on centuries before which also denotes their advancing civilization. The arrival of the foreign tribes that migrate from Outside Island predicted came through the Asian peninsula through two phases: First phases are through Bone bay, down to Saddang river and end up to Lore Valley. These migrants then recognized as stone culture bringers. In the second phase, those migrants come through Minahasa down to Igor Hill until they reach Lore hill and pass through to West Celebes, the migrant in this phases recognize as earthenware/pottery culture bringer. When these immigrants arrive at Celebes is not known as there is not found any detail information on the date when they migrate. (Kudernt.W, 1940,1944).

Before the arrival of the migrant from outside of Celebes Island, there already an ingenious group of people that already settle in the Centre of Celebes. The appearance of these migrant affect culture acculturation and form many other local pearls of wisdom in the local vicinity. These migrant appearances classified societies into two. The immigrant peoples, and the ingenious peoples. The inequality of their culture birth a culture of war that causes a form of two groups within societies that is the ruler group and worker group. The ruler group (Madika) and worker

society group or slave. Pengayuan (War culture) gives the form of strata or social class which determined through who win the war and become ruler and reigned title as Madika while the loser turned become worker/slave (Watau) for Madika (Mattulada,1988).

Both of those group have their territory, Madika occupies the valley which named as Balingkae Watau settle the hilly territory which called Oma. their cultural settlement in Balingkae and Oma is a form of show social class within To Kaili society at that age. Cultural acculturation not only occurs in time where the migrant from the outside island comes into, but it continued when another migrant comes from another vicinity of Celebes as the arrival of Bugis and Mandar tribe from the west of Celebes. Before the appearance of Bugis tribe, Makassar and the negative effect of ToKaili culture of war between tribes (Pengayuan culture) in their environment shape To Kaili to developing their culture to give birth an enlightened and wise group of people called Tadulako.

Tadulako initiated discontinuation of war culture between tribes and divert it toward Living together with a culture that forms society groups that able to working together and no waging war between each other. The previous habit of having in-between family marriage now changed into outward family marriage (From Endogamy to Exogamy).

The exogamy marriage culture leads the society group became more developed and need suitable and ever developed settlement. These development lead toward the shape of the settlement from the micro-scale toward the great scale settlement accompanied by local wisdom that keeps developed and became the settlement foundation from settlement development. Based on this description the purpose of this study is to research the Local Wisdom as A Planning Strategy and Sustainable Settlement Development

2. Background Knowledge

A. The concept of sustainable Pragmatism planning

Knowledge of every tribe that exist in Indonesia, actually have various conditions that are identical, so that cannot be equated knowledge from each community group to each other. to start this research, researcher is expected to know background knowledge which can help researcher look at various point of view from every tribe, especially the tribe who became the object of this research. The literature used in this research is intended as the background of the researcher's knowledge which includes: vernacular architecture, settlement, cultural canalization in society, with the intention as the initial knowledge of the researcher used to capture various phenomena in the field according to the need of this research.

B. The concept of sustainable Pragmatism planning

The development of the concept of pragmatism planning has developed very rapidly in the planning dimension, several opinions that reveal the concept of pragmatism, including expressing the influence of US pragmatic philosophy on the development of theory about the nature, purpose, and method of planning. describes the key contributions of pragmatic and "neo-pragmatic" philosophers and identifies the influence of pragmatism on the initial concept of planning as a rational process; on the perspectives of Friedman, Lindblom, and Schon; on the development of the "critical pragmatism" of Forester; and on the contribution of other planning theories in the 1980s and 1990s. Identify the importance of pragmatic ideas in emphasizing the planning dimension as a practical social learning activity, which must utilize human capacities and promote the ability to transform critical transformative systemic work in the public sphere. (Healey, Patsy, 2009)

The philosophical position of pragmatism as a conceptual scaffold for design thinking. Contributing several existing contributions to the design has been drawn from the concepts of pragmatism. The line of thought with a broader examination of how the central concept of design thinking resonates with John Dewey's pragmatic philosophy. The argument presented suggests that there is a great degree of convergence between pragmatic perspectives and design thinking. Pragmatism offers a well-developed and coherent articulation of the crucial concerns for designing pragmatic thoughts and perspectives that can be of value at the theoretical and practical levels. At the theoretical level, he can inform and inspire the development of the discourse on design. At a practical level, pragmatic concepts can be operationalized to inform and guide concrete designs and help us understand and manage the design process. (Dalsgaard, Peter, 2014)

Decoding thoughts can obscure the construction of a holistic and actionable paradigm of holistic planning paradigm in an attempt to develop sustainability planning that makes many approaches to sustainable development planning and policy. The dichotomy is a classic thing that was recognized more than a century ago by the hard-thinking and soft-minded William James pragmatic philosopher, or for that matter, those who believe in more and better information to overcome the challenge of sustainability and those who rely on power. of some votes. He then argues that the approach to sustainable development is based on a philosophy of pragmatism as a means to connect a hard and gentle perspective to planning, policy and sustainability action. After detailing how the hard-minded and gentle temperament among sustainability supporters translate into different types of understanding and initiative, a pragmatic framework for holistic sustainability planning and a proposed policy suite. This framework is arguably based on an understanding of pragmatic theories of truth and rationality, integration and the basis of processes for action, and human experience as a test of public values and priorities of action. This opinion contributes to the evolving that refers to pragmatic philosophy, attributing this to the more work in environmental philosophy that highlights the usefulness of pragmatism in building a philosophy of sustainable development. If planners and members of a democratic society can work towards a common understanding that it is a continuous process of communication and interaction between citizens and experts who need to be sustained in the push toward sustainable development, that knowledge must be generated and tested in public. context, and that the story has stood side by side with scientific models and statistics, an important step towards sustainability can be done in the overall planning profession. (Holden, Meg, 2008)

C. Vernacular Architecture

The vernacular term in architecture, often interpreted as architecture without an architect. And vernacular is also interpreted as a local language, which is used to mention local forms loaded with local content, including cultural elements, environment including local climate embodied in the physical form of architecture such as layout, structure, and detail from ornaments. The other term of vernacular relates to the local potential of building materials, local labor, and local wisdom. These vernacular terms relate to primitive architecture such as in the form of shelter, space utilization, orientation, construction, natural influences and human behavior (Olive, 1997).

Characteristics of vernacular buildings (Olive, 1997) consist of:
- Buildings are not supported by principles and theories,
- Adapting to the environment,
- Following the ability of society (technology and economy),
- Describe the culture of the community,

Be open to the natural resources that exist in the environment and always be able to accept the changes that can last for a long time.

Vernacular architecture when viewed as a collection of houses and other supporting buildings that bound by the availability of resources from the environment. The shape of the house and its supporting elements are formed due to the fulfillment of specific needs and accommodate the culture that influences it. Vernacular architecture is born to a collection of people who live together and form groups (communities). Communities formed by kinship and homogeneity, Tradition becomes people guide to live which is passed down from generation to generation into a tradition

so that the community is called a collection of traditional societies. The community that formed the house together, like the architect who doubles as a worker. The community gives birth to a village and is located in the inland, and more traditional, adaptiveness characterized to local customs and its nature. The formed community group tends to settle down from generation to generation, thus regarding it as the birthplace.

The embodiment of the dwelling and all its facilities is more determined on the process than the product. people in one community are always based on their carpentry technology and must apply the initiation process at every stage and be made aware of the community tradition, for example before the start of the activity festivity which shows the strength of the customs ties in their life. Architecture is not only tangible form, but can form of social space, symbolic space, which reflects a space of creation and inhabitants. (Olive, 1997)

Implementation of the construction process, generally determined by hereditary or based on the agreement related to local orientation, the construction will be similar though not entirely the same. The local orientation of the vernacular architecture (vernacular settlement) describes three things, they are place, people, and periods as a form of architecture, so that local orientation becomes the keyword and vernacular venues are called local villages because they can grow, assimilate naturally, and continue to grow to the present.

Vernacular villages grow and are born from ethnic societies and certain ethnic traditions so that they are always in line with the cosmology, life view, lifestyle, which has a distinctive appearance as a reflection of the identity developed innovatively, creatively, with syncretic and eclectic approach, Seen as anonymous, indigenous, native, naive, primitive, rude, popular spontaneous, local or folk base. The use of norms, customs, culture, climate, and potential of local materials that have gained recognition is based on the long experience (trial and error) of a community group.

D. Settlement
Settlement or human settlement, defined as a place of life and living, also the place of the relationship (interaction) between man and man, the man with nature and man with the ruler of nature. Human-filled settlements and physical containers of human habitation. Settlements are places or areas where people gather and live together, build houses and facilities needed in human life.

Settlements can also be said as a collection of houses inhabited by the population, forming a community as a place to live, a place to work, as well as a place to communicate. Also, the settlement should not be described only in three dimensions but must be viewed from four dimensions, because the living human element always changes its character and culture in time units (Doxiadis, 1976).

There are 5 elements of settler formation (human Settlement) according to Doxiadis (1976), the elements are as follows:

1) Nature as an element, i.e. a place or container of a village formed or shaped by elements of the environment such as geography, topography, soil, water resources, plants, animals and climate or weather. All these elements interact so that it functions as a village or village.
2) Humans as elements, i.e. people who live in nature and perform activities, such as biological activities, sensations, perceptions, emotions, and morals associated with the values and norms held by humans or groups of people.
3) Community as an element, a group of people living together form a residential environment, such as forming social strata, forming culture (culture), forming the administrative area.
4) Protection (shell) as an element, i.e. the structure of a container in which there are living and living human beings, such as housing, community services, business centers, recreational containers, commercial containers, offices.
5) Networks or social capital as elements, i.e. systems that are naturally artificial and functioning as a settlement, such as Water supply systems for settlers' needs, roads for transportation, drainage channels, communications networks, power grids and all needs Other physical.

The five elements of the settlement are aspects that must be studied holistically to find an ideal settlement (Doxiadis, 1976). Elements of the village are in charge of maintaining a dynamic balance and expressed differently on each part, every scale and during the process of settlement evolution. The basis of a settlement is an ecological unit that is hierarchically linked to each other of each element. Thus the law of a settlement is not a simple causal law, but a statistical law concerning the effects of change.

Settlement in the residential unit scale to become a city, experiencing synchronic and diachronic changes that develop from one phase to the next. To analyze a settlement, it must connect between the past and the present. Thus the village is dynamic and changing all the time and requires innovations to stay alive. The village will die if it no longer provides services to human needs. The ideal settlement must provide comfort, security, tranquility, and safety for people.

Settlements are essentially created by humans to move in space with the boundaries of the territory of the population, therefore settlements create the physical environment and institutional environment. The process of change (evolution) is happening is one of the factors that prolong the life of settlements. The process of evolution can be analyzed by clarifying the size of observational objects (settlements, residential units, shelter, residential space) both population and area. The quality of the relationships of the units or sections of the village, variations in morphogenesis, depends on the availability of physical data and non-physical factors, including social, economic, political, administrative, technological and aesthetic factors. (Doxiadis.1976), A settlement is a residence in an environment that has a boundary or a clear area, a place consisting of 'inside' and 'outside' has limits to the scope of the settlement (Schulz, 1985). While the village is the result of human relations with the environment, and the village serves as a center for human gathering. The village is not just a place, but it is part

of a larger neighborhood, so the village must have an element of "inside" and "outside".

The settlement is unique and is a point of interest with an outline that is likely to be a dominant element, attracting or becoming a magnet, so that people will have an attachment that becomes a glue between them. The village has the characteristics achieved through the physical condition of the environment and non-physical conditions such as culture, the social life of society is a system that has been stable and patterned in a place and related to the history of society.

Another view of settlements is part of a large region within a region, functioning as the center of a group and is an interpretation of a site, a land or a plot and transformed into a place where people live. Some environments, which have a specific natural character and spatial structure are referred to as plains, valleys, and ponds (basins), and these spaces are equipped with natural elements, e.g. topography with rocks owned, vegetation and water and equipped with a very important orientation such as the relationship between sites with light, weather and natural conditions that are part of the microclimate.

Settlements that emerged in the late 60s, defined as a guide housing and human life. Settlements present since the community recognize the culture and coincide with the presence of civilization or human culture. The structure and form of the house are considered to be the embodiment of the cultural values of its community. Houses are a shelter or human shelter in the face of climate and weather changes (heat, cold, rain, and wind). The house is called a residence because of its function as a place of rest, place of family building, place of work, as well as a symbol of social status (Rapoport, 1969, 1977).

Human behavior varies and changes depending on the place where it is located. For the traditional community, the house is associated with various aspects, such as socio-cultural aspects, religion, and physical environment. Thus the house and settlement is a part of the territory in which residents are residing, taking part in work activities, endeavoring, connecting with fellow settlers as a society and fulfilling various life activities (Rapoport, 1977)

E. Vernacular Settlement
The term vernacular settlement in architecture is often defined as a settlement formed without an architect. The vernacular term is defined as the local language, the local language as expressed in the previous discussion which is used to express a work of architecture of society. Thus, in the settlement, the term vernacular settlement is used for the mention of local forms loaded with local content, such as: Loaded with elements of culture, environment including local climate embodied in the physical form of architecture such as layout, structure, detail of ornaments, ornaments as described in the previous discussion
Vernacular settlements can be understood as building a house together, in the eyes of the public as an architect who doubles as a worker. So that the community group that built the place settled gave birth to a village, which is located in the interior and more traditional, adaptive to the local customs and nature. The established community groups tend

to settle in a hereditary area, thus presuming the settlement as the place of birth.

The realization of settlements as a residence with all the facilities it has more determined on the process of formation than the residential products produced. Improving the quality of society in one community is always based on the quality of its carpentry technology and must apply the initiation process at every stage that is made aware to the tradition of the community, for example before the activity begins "Kenduri" or festivity done as part of the tradition. Architecture is not only a form of shape but also in the form of social space, symbolic space, which reflects a space of creation and inhabitants in an architectural form (Oliver, 1997)

The implementation of the settlement building process is generally determined from generation to generation or based on agreements relating to a trusted local orientation so that the awakened will be similar although not entirely the same. The local orientation of the vernacular settlement explains three things: place, people and period (time) as their architectural form, therefore the local orientation of the settlement becomes the keyword. Thus vernacular settlements are also called local villages or local settlements because they can grow, develop, assimilate naturally and continue to grow to the present day.

3. Method

The selection of qualitative methods to approach reality phenomenology refers to the condition of the ToKaili who have an oral tradition and have custom rules that tend to close themselves to the information itself, thus requiring methods/ways that are specific to dig.

In collecting information, some of the instruments that are used as observation and interviews. An observation instrument intended to get an idea of the reality of the object so that the observation data the researcher is expected to describe as it is the object under study. While the use of instruments used on interviews to uncover what is behind the reality of the object.

Qualitative research with phenomenology in the analysis process is based on three known reduction by reduction of ethics and EMIC, reduction and reduction in transcendental phenomenology. The reduction process of ethical and EMIC is intended to gather information that spawned a variety of themes, then the phenomenological reduction is so that through these themes can be explored concepts in it, as well as the transcendental reduction, intended to discover the nature/essence of the concepts that lead to the formation of a theory local is local (cannot generalize).

The transcendental reduction process requires intention list (consciousness) into the demands of researchers in the analysis process consists of:

1) Intentional/objective awareness
Intends to direct the data to the intentional object, because of the object intentionally only visible when there is no data (Data phyletic), so that the function of intentional here

linking the data to the object. Such objectification is especially apparent, for example, in the perception and awareness activities such as in thinking and doubting.

2) Intentional / conscious identification

Intends to direct a variety of data coming from various events and then later to the objectified result object. Identification heavily influenced by various aspects such as motivation, interest, involvement. This identification is necessary because if no, then no objects are identical. This raises the "sensations".

3) Intentional awareness

Intends that every aspect of an identical object relationship, for example, this part of the side of the front pointing. The connectedness - connectedness of objects provides opportunities for the subject to experience back another time. This means that aspects will always be overshadowed by identical objects that have appeared since the beginning.

4) Intentional / institutional awareness

Intends that the activities that function constitutes intentional objects so that the intentional object is not seen as something that is just there for intentional activities, but was created by intentional activities. In other words, intentional objects derived from "deposits" intentional activities

4. Result and Discussion

4.1 Findings

a) Local Wisdom

To Kaili way of life undergoes many changes in developing a harmonious life. Many of the influences that came from many groups of the migrant to the ToKaili land affect the changes toward their live behavior. Since less than 4000 years ago until 8000 years ago, the arrival of this migrant on the Kaili land brought the stone culture, it is seen from many relics such as statue megalithic that founded in several places. The presence of these megalithic statues (Menhir) shows the advanced of To Kaili at those times. The Migration toward Kaili Land by groups of peoples given effect toward culture acculturation between the ingenious people and the migrant people, it gives birth a strong and persistent able culture while the other culture cannot and extinct. The result of culture acculturation births various To Kaili local wisdom which became their legacies. This culture acculturation cannot occur by itself but by chain course of the event that gives birth toward the culture. After undergoes within time, the local wisdom became accepted by society and recognized as part of their culture. The culture of War between tribe (Pengayuan)

In To Kaili cause few groups within the tribe got annihilated because they can't defend themselves and also cause a few of them to form a small group of To Kaili that live in scatter exclusively and closed. One of those tribes that still able to found is Wana tribe that settles few places on Igor Hill in Central Celebes forming a group of Kaili tribes that settle on

the valley in the vicinity of the mountainous area until valley near the beach.

The awareness negativity of war on tribes' culture drove groups of to Kaili to abandon that culture. This effort also initiated by Tadulako (The wise and Enlightened people) who is a figure leader and introduces the culture of living together and protect each other in between groups. The culture of protecting each other gave birth to local wisdom of always try to find on how to live harmoniously with each other group of tribes.

Live harmoniously post Pengayuan culture can be achieved by putting forward relationships between each people (Hintuvu), the relationship between people and environment (Katuva), and the relationship between people and the ruler of nature (Pehakovia), That relationship between that three aspect can be described in this picture below.
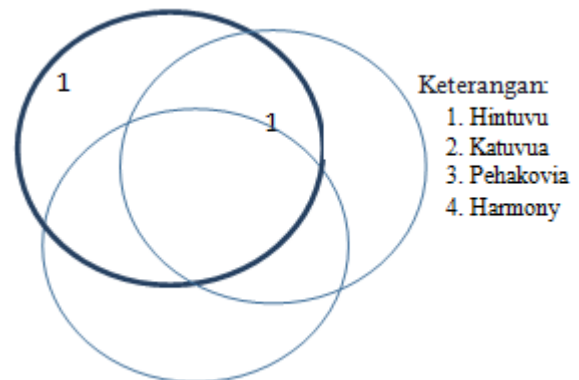

Picture 1: Principles of To Kaili harmonious life

The picture above shows To Kaili to achieve harmonious life in the world has to hold these 3 principles and materialize it in custom rules and became a way of life. These three principles linked with harmony on the relationship between human (hintuvu), This principle describe that harmony can't be optimally achieved if no relationship linked toward environment and ruler of nature. This is also applied in vice versa. So that harmonious life in ToKaili heavily depends on integration on those three founding principles.

b) The strategy of planning and sustainable settlement development

When making planning and designing toward their life, The main strategy is to actualize those three principles that have been described at point A within discussion toward custom rules and become To Kaili Guide toward achieving harmonious life on the world. These three principles interpreted as a whole live system of To Kaili. Every system that is a foundation principle translated into part of the system. Every (Hintuvu) system has part consisted of a Human, network, and residential structure. While Katuvua consisted of 3 parts: Upper Realm, Middle Realm, and lower Real, and Pehakovia consisted of the ruler of nature, Custom rule, and leadership. The image of it is shown in the below picture.
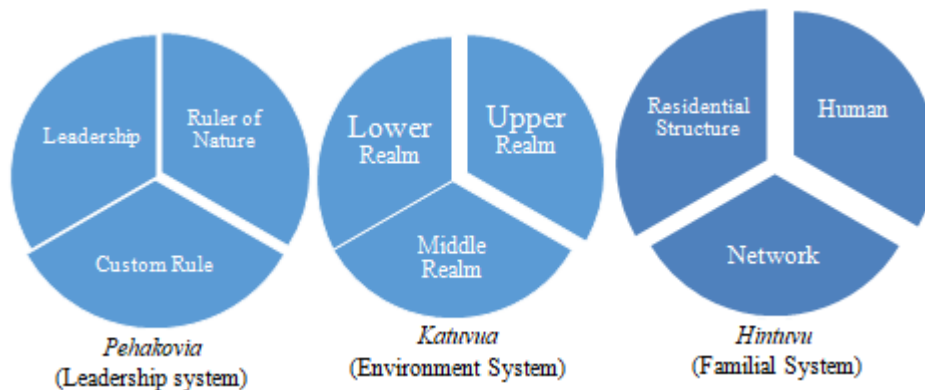
Picture 2: The sub-system of the harmonious live system

Picture 2 explains To Kaili a strategy to find the harmony that builder through a balance between system and subsystem along with the supportive part that drives the birth of a great system called harmonious system. Settlement structure as To Kaili vessel in develops internal and external network, making humans as subject of planning thus form familial system (kinship). This system cant achieves harmony if not supported by another sub system like environment subsystem that related to nature management and leadership subsystem that related to residential structure management.

The strategy of harmonious planning in To Kaili society needs synergy between the whole system and every part of it, every element into Kaili life system is pillars that support each other to build sustainable life in ToKaili to achieve harmony. These three foundation principles have to be synergized and if any inequality occurs within a system will result in a de-harmonize relationship. Therefore, one of the subsystem roles in the relation of the other subsystem become so important to protect each other to maintain the stabilization into Kaili life which if neglected that lead toward omen of disaster.

To maintain the harmonious relationship in ToKaili life, the Custom rule holds an important role in managing the system mechanism that turned worked in Kaili society. The custom rule becomes a regulator within To Kaili. This custom to also have a role in planning and designing life necessity. There few custom rules that have a role in life order into Kaili, few of them are rule regarding leadership, kinship environment, and cosmology. Which its implementation is poured in the decision making procedure. Which described in this picture below.
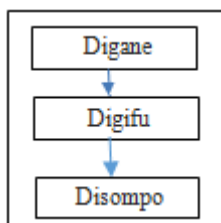
Picture 3: Application of custom rule process

Picture 3 shows the decision making implementation phase in every effort to maintain the order of life balance into Kaili. Mogane is a decision-making system by Totua. The stages of Mogane consisted of Digane which is a council meeting (Molibu) that has the intent to discuss planning problems or tribesman behavioral problems that break the custom rule. Digifu is collective decision making by Totua within the council, and Disompo is the execution of the council outcome or form of obedience for the rule breaker to undergo the punishment as to redeem itself.

To Kaili Leadership has a staged structure that starts from the family leadership stage, up to great settlement leadership stage. In Family stage, it's known as ToTua (parent), parent responsible to educate and teach their child so they can perform their duty in following the custom rule in their tribe, so when the child grow and own a family but unable to live independently then the child family still become their responsibility, so it's uncommon there exist family within family because the chilled family is not able to live independently enough. This culture still steadfastly held by generation to generation until now there still exist multiple To Kaili child-parent families within the house. For the family that their child's family able to stand independently, the parent family had a duty to provide a suitable house near their vicinity.

In Kaili customary provision, after marriage, the boys have to follow his wife or his wife's family, while the wives can't leave the house unaccompanied by her parent so the married man will become the female family responsibility.

When all their children can live independently, they will form a village (Boya) that consists of several close families. The leader of this village will elect the most elder within those several families. This happens when the parent of these families that always leads them is seen unable to lead them anymore because their age or simply pass away. With this they have a duty do Mogane with the purpose to elect the new ToTua for these new group of families in their new Village, but still, every family still headed by family head independently which respect the ToTua.

The settlement chiefs, the chiefs of the bigger village (Ngata), if formed by a federation of few families that form an even bigger village that led by several To Tua as representative of their villages. The leadership structure in Ngata is consist of several To Tua (Village representative), Maradika and Pabicara. Maradika is equal as a government officer in settlement and Pabicara equal as spokesman and interpreter that convey formulation of customary rule outcome in council which would be executed by Maradika.

Ngata Bete is the highest form of the settlement known as great settlement, the governmental system within it has a show in its governmental system that consists of Jagugu, Tina Ngata, Matadika and Pabicara. Jagugu is people that have the spiritual skill and also have the judicial right, as explained, Jaggu has right to give sanction toward individual or group that has broken the customary rule through conference within the council with To tua.

Every leader to uphold customary rule (Vaya) or plan to develop the environment has to follow the customary rule that regulated in appropriated Vaya. There are few stages in how to carry out the customary rule which stated from Mogane, Digane, Digiyu, and Disompo. Mogane is law effort submitted by To Kaili toward its leaders because there are society or group of people that desire better life improvement in their place or when someone or some group found out broke the applied customary rule, The regulation of the rule can be executed when people report it or one of the Totua submitted report of violation toward the council.

The report will be followed by investigation toward the problem and it confirmed there is evidence violation toward the customary rule or maintainer plan that executed by peoples, then To Tua process a Digane, in Digane, all To tua initiate life improvement or discuss about the rule breaker in council, the council outcome (Mollibu) determined by collective decision making through Digifu phase, then set the rule of conduct which would be given to Maradika as governmental officer to be executed (disompo)

c) Settlement metamorphose

Settling culture started from the culture of settling that gives birth toward the concept of house and village. House into Kaili Society have different name depending on where they settled, house that located on the valley from high hill like in Lore is known as Tambi, and house that located on valley that surrounded by hill like in Kulawi is known as Sou, while house that placed on valley near beach is known as Banua.

The origin house and its development are started from the need to protect one shelf from weather or climate like rain and sunburn which lead To Kaili to make shelter known as Torowau. It's a pile of leaves that placed on top of two supported beam wooden pole that makes space below of it which became shelter space. Then it improves as the necessity for life improves, not only just became shelter but advance to become the place to rest along with a container known as bamaru Ncamali.

On the next improvement, nomadic culture improved to became settling culture after getting influenced by the arrival of the outside migrant in Kaili Soil, they introduce a shape of house as place to live known as Bolawo and Bolanoa, Bolawo are shape of house that consist of stack of log that become base or floor that given roof that only given toward their leader (Madika), Bolana are made by use of smaller log a tied up together into shape of house and given toward worker class (Watau). The shapes of that house keep developed until it becomes a house named toward where it built. House on the mountain known as Tambi, House built on lower mountain region known as Sou and house built on the coastal region known as Banua.

The arrival of Bugis and Mandar tribe gives influence toward the shape of the house, so they introduce a stilt house (Rumah Panggung) known as pabuhuhampua and pabuhudola. Pabuhuhampua is a stilt house that use beam of raw whole wood, the below end of the wood planted firmly into the earth, This house uses the durable wood that water and dirt proofed like ironwood or ebony. While pabuhudola is a house that same as pabuhuhampua, but influenced by technology so the wood already processed became a rectangular block. These change processes are metamorphosed phases of all To Kaili House. Unfortunately, there is no information on timely detail of that development as writing culture is not exist within To Kaili Culture.

The metamorphose shape of To Kaili settlement can be observed through special order started from house to great village (Ngata Bete). Every spatial order planning for To Kaili necessity activity always based on cosmology regulation that manages space. In Custom rule, To Kaili have sacred space, semi-sacred space, an unclean space. This is based on its value, for example, sacred space is purified space because into Kaili point of view, that space is believed to be placed where their ancestor reside like on top of the mountain and the semi-sacred space are called Oma which given toward human to do their life duty while unclean spae are river and muddled water. To Kaili view that this place is where the evil spirit reside or their rejected ancestor to join the upper real because of their behavior when they live as they always broke the rules
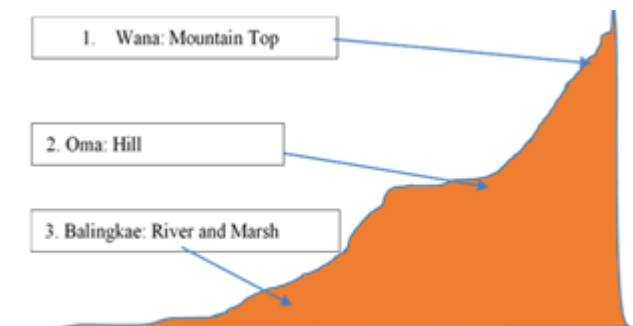

Picture 4: Nature Cosmology according to To Kaili Custom

Picture 4 Show cosmology perspective that implemented into the settlement, start from the house (micro-scale settlement) up to Ngata Bete (macro-scale settlement). Application of cosmology element in house and settlement manifested in space arrangement on small scale settlement up to great scale settlement, in sacred space form, human space, an unclean space. Sacred Space in a house is identified as the kitchen, human space identified as room surrounding the kitchen and unclean space identified as outdoor vicinity of house livestock bin. See picture 5a
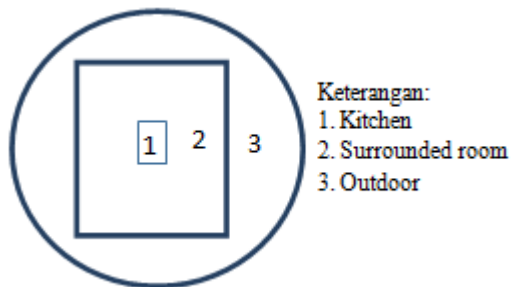
Picture 5 (a) House
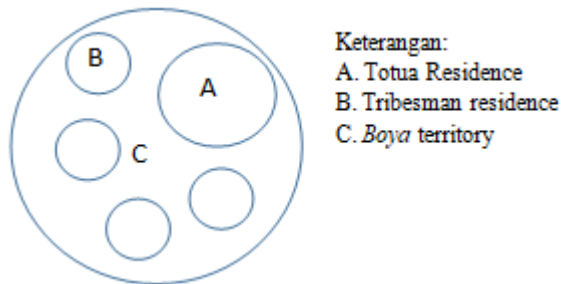
Picture 5 (b) Village (Boya)

So in settlement space arrangement there always three aspect in that the application differ depending on the scale of the planned settlement, on boya scale, sacred space identified as Totua Residence and human space identified as tribesmen residence within Boya territory and unclean space identified as unoccupied area of Boya territory confined by ditch that acts as the border as explained in picture 5.b.

In Ngata and Ngata Bete, Sacred room identified as a landmark that its name varies depending on its location. For the highland area, for example, Lore has a sacred landmark named Duhunga that n longer exists. Middle land named Lobo still able to be found its replica in Kulawi and Toro, while in low land or valley like Palu identified as Baruga. Next is human space is a group of boya that form Ngata. And unclean space is the vast edge of border territory and in few areas functioned as a graveyard as it near to water source (River and lake). Please see picture 7.
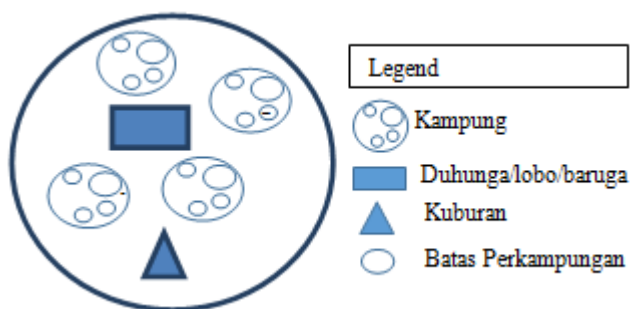
Picture 7: Middle scale settlement pattern (Ngata)

In the most complex and signifies that Tokaili already forms a city with its complexity arrangement in great settlement (Ngata Bete). Ngata bete is a group of settlements that represent the human environment that owns sacred space in form of the central government also surrounded by farm and field as territory border that also has a water source that identifies as unclean space.

4.2 Discussion

Planning and designing settlement space toward To Kaili society strategy manifested through the application of three principle foundation of embraced custom rule To kaili. The embraced custom rule in To Kaili always gives the effort to maintain balance and life harmony within To Kaili society and another group that becomes part of their society.

To Kaili custom rule became their embodiment toward holistic system application where the balance between each other system that always demanded by custom rule, so to achieve harmonious balance it needs united interaction from all system or achieved a balance that refers to the synergy between each system that made the whole system. Thisexplanation identical to Jhonson PA (2000) opinion.

Nature cosmology understanding that Tokaili Believed, made nature consists of the upper realm as where their ancestor resides to reach heaven, Upper realm identified as top of the mountain or hilltop that became their high vantage point in their vicinity. The middle realm identified as a valley that they believe as a place to settle and live (pengataa) Zaenal (2015). And Lower real is river, lake or muddle marsh region. This cosmology understanding above applied into the house where upper realm identified as the kitchen, Middle realm identified with asira or elevated floor and have to edge that bedstead, also lower real that identified as outdoor which also identified as unclean space so everything that came from there must be cleaned before properly utilized.

This pattern applied to planned and designed staged settlement started from small scale like boya, up to middle scale (Ngata), and great scale like Ngata bete. Implementation in that various scale show the balance on that stage, so the development of settlement occurs when it has achieved optimal balance. That pattern is suitable to Pareto theory that said every stage has a point of balance that if unbalance occur will lead to advanced balance.

Balance form and harmony in every level of planning and physical designing in To Kaili Society is heavily affected by the society leadership, custom rule and its application along with belief toward ruler of nature. Local Wisdom application principle To Kaili heavily relies on how the leader executes the custom rule through the council (Molibu). This view coincides with Rapopt A (1963.1979.1977) view about Architectural understanding, culture, and design that he embrace.
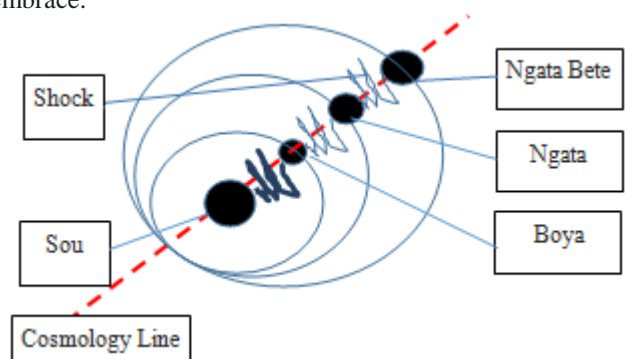
Picture 7: House structure and traditional To Kaili settlement

Picture 7 show implementation of sustainable planning and designing strategy gave birth to structure form of cultural staged settlement of To Kaili which started from house to Sou and become grown become Boya, Ngata is a form of a new balance of Boya development and Ngata Bete is the highest form of balance and harmony into Kaili Settlement. If seen from Ngata bête development then-new cultural interference from the migrant gave a form of development of more complex ngata bête that have form consist of patanggota and pitungngota.

Ngata bete with the custom rule that regulates patanggota is a form of Ngata Bete that division of territory based on a must-have skill within its people, same with Pitungngota but have more must-have skill than patanggota. More explanation is Patanggota is territory division to develop certain territory to focus on a certain skill like rulership territory, Mystic territory (in the charge toward defense) medication territory, and agriculture territory. While pitungngota has much wider territory division like merchant territory, craftsmen territory, and divination territory.

5. Conclusion

Local wisdom became To Kaili guide in planning and designing necessity fulfillment like clothes, food, and place to live. Local wisdom application in Tokaili refers to Custom rule with Mogane.

Custom rule translated into a rule that linked toward nature, so To Kaili viewed as a community that appreciates nature with its rule and regulation on how to manage to protect nature and to preserve it. The rule that refers to the social model and belief toward the ruler of nature strengthens the application of the custom rule.

Mogane with all of its devices to the application by To Tua or its cultural leader always considering balance and harmony, its always being maintained by mete out punishment toward violator of the custom rule that damaging the nature or made deviation society. Mogane also utilized to asses cultural leader skill on how they control its people to not violate the rule and also encourage To Kaili people to develop people's life through giving appreciation and ascend them to became public figures because of their service toward to kaili community.

The golden age of custom rule application in regulating and managing people's life within To Kaili vicinity end when Indonesia declared its independence, this is caused by government policy for uniformity of people life management like changing government management started from village scale. The change of custom rule to be positive law affects the effort to protect central authority. Custom rule applications and people's obedience toward it become faded to the point of extinction. With this, the customs rule only applied as part of a culture that showed during To Kaili Event likes marriage event, birth event, death event and no longer applicable toward planning and designing into kaili way of life.

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