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# SUSTAINABLE TOURISM CONCEPT IN REDESIGNING ZONE-ARRANGEMENT ON BANYUWEDANG HOT SPRINGS ARCHITECTURE

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**Abstract:** Architecture and tourism are two things that have mutual connection to each other in terms of spatial arrangement and sustainable resources management. Architectural form in tourism accommodation support concerns on many sustainable aspects in community's social-economy, environment, and culture. Banyuwedang Hot Spring as tourism object has many potential, such as hot spring sources, mangrove forest, and a temple with its own architectural form called "Pura Mas Beji Banyuwedang" and "Pura Dang Kahyangan Banyuwedang". The management system of this tourism object is self-management by some group of local people. The issue that emerge on site was zone setting and activities that looks unorganized and not fit-based on function embedded to it, and also didn't concerned about activities impact on mangrove forest. On average, 50% of main and support facilities not properly-used. On Average of tourist visit is 60 person a day and the system of waste management was not well-organized and well-made. The purpose of this research is to rearrange architectural zonation arrangement of Banyuwedang Hot Spring using sustainable tourism concept (economy, social, and environment). Using naturalistic qualitative research method by searching for problems that has sensual empiric, native's viewpoints, researcher's viewpoint base logic, and transcendental characteristic. Zone arrangement that resulting from this research are recreative and conservative zone that have mutually connected to each other in terms hot spring tourism spatial. Those zone arrangements formed based on (1) potentials owned as a tourism object; (2) Economic aspects such as operational cost and local people income; (3) social aspects from the creation of social space between visitors; (4) environmental aspects, by the mangrove forest and hot spring sustainability preservation; and (5) cultural aspect, by the preservation of religious ritual and ritual attraction as one hot spring space.

**Key words:** hot spring architecture, redesign, sustainable tourism, zone arrangement.

## INTRODUCTION

Sustainability perspective in using resources as tourism potentials must be a holistic embeded planning. It means that in terms of tourism object planning, we need some paradigm in terms of social, economy, and environment that need to be concerned and considered in defending the sustainability of tourism support potentials. The involvement of all tourism stakeholders such as government, private sector, and local people must be equally arrange and must support each other in creating a sustainability (between tourism and social-economy and environment) (Pradapa, 2004). In line with that, sustainable tourism concept in Sustainability Tourism Charter (1995) mentioned that development emphasized on alignment concept and integrated between ecological aspect, worth in terms of economy, and social through resources arrangement and resources utilization on sustain terms.

Tourism object and attraction often used by community, and therefore becomes public asset. It encompasses river, water spring, open space and park, roads and other rural capitals. The development of tourism potentially reduces public access to the common public resources. The intensive uses of resources by tourist led to the scarcity of natural resources, such as land and water (Normelani *et al.*, 2016). In the developing countries with rich natural resources, the diversity of flora, fauna, and landscapes is the ultimate natural resources for tourism development. In some part, cultural resources have been promoted as a tourism object. Since every part has its own culture background, the cultural aspect of community

often diverse in developing countries. This is become the advantages among developing countries with its huge cultural resources to be cultural tourism destination (McKercher and Cros, 2012)

Development in phisycal context in tourism facility architecture need to use sustainable architectural concept. Sustainable architecture concept is an architecture that attempt to minimize negative impact on built environment with efficiency and moderation in using material, energy, and development space, and also ecosystem in extensively (Ragheb, El-Shimy and Ragheb, 2016). Sustainable architecture is not just seeing through physical aspect of building to environment but also as a whole (holistic) considering local people involvement in supporting sustainable development. In sustainable architecture concept, besides environmental aspects and cultural aspects which become parameter there are also local people involvement as a very important aspect that needs to be consider. Just like what Sidiq & Resnawaty (2017) said, reSSources and local community uniqueness (tradition and culture) are the main leading elements of tourism main activity and become ecology system that interconnected. According to Dewi, Fandeli, & Baiquni (2013), main potency in local people-based tourism are human, nature, and culture. That 3 elements contained in tourism village concept that according to Nuryanti (1999) was a form of integration between attraction, accommodation, and facilities that served in organizational structure of local people life in form of procedures and traditions that applied. Those things can be met on Banyuwedang Hot Spring tourism object, that is the people of Pejarakan Village as the organization which lead it, hot spring sources and mangrove forest as natural potency and religious rituals in form of Mas Beji Banyuwedang Temple and Dang Kahyangan Banyuwedang Temple.

The characteristic of Banyuwedang Hot Spring is the hot water sources which located on the edge of mangrove forest. This potency used by local people (Pejarakan Village) for healing ritual of any kinds of skin diseases. In line with the development of nature tourism concept, then Banyuwedang Hot Spring was made as one of tourism object by Buleleng District Government on year 1982. As a tourism destination, it needs to accommodate supporting facilities which buildon that area in form of public bathing pool for secular activities, private bathing chambers, accommodation such as food stall/food court, toilet and others supporting facilities. From year 1984 until now, management of it has been taken over by Pejarakan Village because didn't show increasing number of tourist visit.

In management of tourism objects it needs to consider sustainable aspect potencies (nature and cultural) which will become that tourism object attractiveness. Sustainability in this context was a attempt in preserving natural ecosystem and cultural order either physically or metaphysically for the next generation. Nature and culture potencies are vital sources that needs to be conserved, but brings good impact (economy and welfare) to local people. That Concept became the eyeglasses in seeing management phenomenon of Banyuwedang Hot Spring, which contains some things that can give sustainability disadvantageous to local nature and culture.

Banyuwedang Hot Spring as tourism destination has hot springs (kelebutan) as sorces of tourism bathing activities and Mas Beji Banyuwedang Temple and Dang Kahyangan Banyuwedang Temple as Hindu's Religious Architecture. Beside all that, in this region also has mangrove forest which can be considered as plus mark in terms of tourism object attractiveness. Accordings to grand tour, we found that existing zone arrangement consist of 3 zone, that has following conditions : zone 1 : Not-well functioned facilities which should be function as private bathing chambers, public bathing chambers, food stall/food court, toilet, and changing room; zone 2: There weren't any supporting facilities such as managerial office and adequate parking area; zone 3: zone arrangement looks unclear/unfinished in terms of

groupings such as private and public bathing chambers inside the temple zone, food stall zone spreaded and bathing chambers for healing located near the springs (kelebutan); and zone 4: waste disposal management looks not well-organized, it can be meet on soap waste and grey water didn't filtered before streamed to natural environment, there were still garbage scattered, even between mangrove roots. Those images showed that sustainability concept still weak in terms of full-governancy by people of Pejarakan Village.

Besides all that, local people which represented by Banyuwedang Hot Spring tourism object manager delivering the plan for tourism object development through arrangement and adding some support and services facilities. Parking area arrangement which today looks not well organized, visitor parked their vehicles on any space available, adding gazebo facilities, bridge construction or jetty for tour around mangrove forest and adding souvenir shop buildings. Local people desire in thi tourism object arrangement needs a direction and planning that lead to the sustainability of it's potencies.

In arrangement of this Banyuwedang Hot Spring, we need a sustainable way of approach. This approach considering "recreational" aspect and "conservational" aspect integrated in Banyuwedang Hot Spring Tourism Destination. Recreational aspects are the availability bathing tourism facilities and other facilities that support it. Conservation aspects are the preservation natural environment, ritual activities, and local people involvement in managing the object. Environmental conservation related to hot spring and mangrove forest which are the potencies of these tourism object, Ritual activities are the existence of ritual activities and temple architecture (Dang Kahyangan Banyuwedang Temple and Mas Beji Banyuwedang Temple) as tourism attractiveness, and the involvement of local people by the existence of traditional village (Pejarakan Village) in managing the area.

This research purpose is to redesign zone arrangement of Banyuwedang Hot Spring Tourism Object through sustainability tourism approach by combination between "recreational" and "conservational" concept. The redesign of the zoning system is based on the following issues: (1) recreational facilities such as open pool, private pool, public showers, playground, visitors lockers, toilets and locker rooms, and zoning kiosks still spread and unstructured; (2) the irregularity of the zoning arrangement creates an unclear circulation between the circulation of visitors and the community performing prayers; (3) there are many facilities that have been physically damaged and unfit for use as well as lack of other supporting facilities in increasing the number of tourist visits to Banyuwedang Hot Springs.

In this redesign design is divided into two major zonation namely recreation and conservation zones. Recreational zone are bathing facilities and supporting facilities, and conservational zone are hot spring, mangrove forest, and ritual activities. Early zone arrangement redesigned through sustainability approaches, so it can produce an integrated zone arrangement concept between conservation and tourism attraction. Method that used is qualitative naturalistic which focus on empirical studies about tourism activities phenomenon, preserving environment and culture around it. The results will become a consideration in rearrangement of the tourism object through holistic approach.

## **RESEARCH METHODOLOGY**

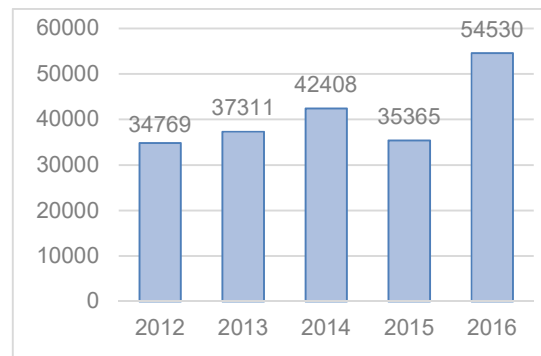
Research method that used is qualitative naturalistic through sustainable tourism approaches by approach on economical aspect (equity in people income through direct involvement in managing the tourism object), social aspect (preserving social space extension between visitors and local people) and environment (mangrove forest and hot spring) and also

culture (Pura Mas Beji's and Pura Dang Kahyangan Banyuwedang's architecture). That aspects need to be put as foundation in redesigning sustainability zone arrangement in Banyuwedang Hot Spring Tourism Object. Step by step of this research are: (1) survey related to early phenomenon which are activity system, available facilities and utility system through direct involvement as visitors; (2) zone arrangement identification related to the object; (3) Doing an unstructured interview with visitors and the tourism object manager; (4) discussing an empiric studies with sustainable tourism concepts and local approaches; and (5) Draw a conclusion in form of redesigning zone arrangement of Banyuwedang Hot Spring.

## RESULT AND DISCUSSION

### 1. General image of Banyuwedang Hot Spring Tourism Object

Banyuwedang Hot Spring Tourism Object was one of natural tourism destination in Buleleng District with its main potency such as hot spring and mangrove forest. Total amounts of tourist visit to the object still on minimum level that is more or less 70 to 100 person a day. It happens because of facilities and promotion management still not fully supported recreational activities in the object. Operational time of this tourism object opened at 08:00 am until 18:00 pm on Monday until Friday, but in Sunday opened at 08:00am to 20:00pm. Total amounts of tourist to the tourism object can be seen on the following Figure 1 below:



**Figure 1. Total Amount Graphic of Tourist visit to Banyuwedang Hot Spring**  
(Banyuwedang Hot Spring Management, 2018)

Activities that did by tourist in the object are recreation and spiritual. Recreation by do bathing in hot spring that available on open pool and pool chambers. Spiritual activity that held here is a healing type, and also in this object there are healing pool especially used by visitors that got skin diseases. This hot spring came from kelebunan (spring) which located on north side of the site and brackish water.

Banyuwedang hot spring got 2 function, recreation and spiritual. Recreational function can be seen from hot spring that can be used for bathing and spiritual function (skin diseases cure). Those potencies already functioned from long ago before the object became tourism destination. With majority of users was the local people. Now, the object has been developed for public hot spring bathing.

Potencies that already on the object are natural potency and spiritual potency. Natural potency (1) Hot Spring (kelebunan) that keep on flowing with large amount of water discharge formed a hot spring bathing pool, this spring is functioned for flowing the water to the open bathing pool or bathing chambers; (2) View of Bali's northern beach and an overlay of mangrove forest increasing the beautifulness of this tourism object, visitors can enjoy the view

while bathing; and (3) Air that still fresh and natural that created by green elements of mangrove forest and also this place located far away from people settlement which crowded.

Besides natural potency that become the attractiveness value of this object, there are also spiritual potential that marked by the existence of 2 great temple (Mas Beji Banyuwedang Temple dan Dang Kahyangan Banyuwedang Temple). Spiritual tourism that did by visitors is healing ritual on healing-pool bathing chambers and Pura Mas Beji Banyuwedang. Before visitors doing the healing ritual, they have to pray for permission to used the hot spring in honour for *niskala* elements around the objects, and then continue to do bathing in the pool that available. Healing pool positioned different from normal pool that only used for recreational purpose which located near hot spring (*kelebutan*).

Cultural potencies also increasing the attractiveness of the object. On ceremonial day, Hindu, Muslim, and Catholic doing their courteous in this object. The value of religion tolerance between people also can be seen as one of cultural attractiveness.

The Image of Banyuwedang Hot Spring existing can be seen on the following Figure 2 below:



**Figure 2. Banyuwedang Hot Spring Existing (survey result, 2018)**



## 2. Redesigning Zone Arrangement of Banyuwedang Hot Spring Tourism Object

### a. Recreation Zone

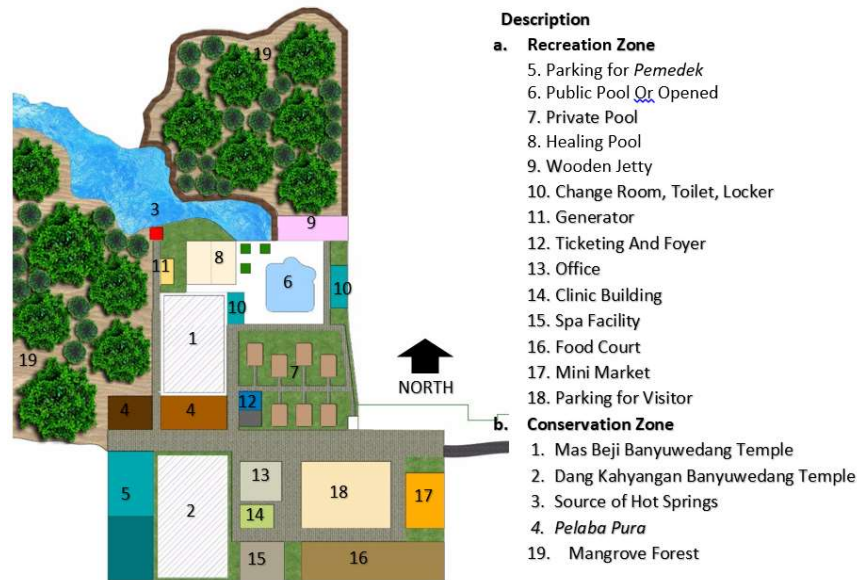
In this zone arrangement there are area for tourism attraction activities in form of opened hot spring bathing facilities, chambers or bathing for healing purposes. Open-Bathing zone in form of hot spring bathing used in public located on middle area of the others attraction facilities and close to hot spring sources. The zone arrangement concept are (1) public pool or opened located on the middle and become the core orientation of bathing chambers; (2) Bathing chambers located in the south side of the bathing pool with orientation to building masses in the north or to the opened bathing pool; (3) While healing pool located not far from hot spring sources. These zone arrangement done based on distance consideration between opened bathing pool, bathing chambers, or healing chambers that closed enough to the hot spring sources. This means that hot spring water distribution doesn't need more power sources to flowing the hot water from it sources. Beside that, the creation public spaces as social space from visitors who do recreation on the object. Bathing chambers zone also located on the area that easy to monitor from all negative things.

Other Recreational zone which is "tour around mangrove" is a trip through mangrove forest via wooden jetty. That jetty has been planned to stop near edge area of mangrove forest, so that not destroying the mangrove trees to much. Visitors can go around mangrove forest which located on the north of the site while enjoying fresh air that comes from the forest and also beautifulness of northern buleleng district open seas. End of the trip is returning to the hot spring bathing area.

Zone arrangement of this recreation supporting facilities also planned with approaches to environmental conservation. That facilities are deposit box area and changing room, shower room, and toilet. The most considered things on that facility are waste disposal management; toilet; and also plastic garbage disposal system. Waste in form of soap and detergent will flow through filtration process before it flowed to open nature. This system filtered the rest of bad molecule from soap or detergent and that liquid waste, so it detached from the molercul and flowed to open nature.

Other zone arrangement that support the recreational activities in the Banyuwedang Hot Spring tourism object are (1) Management Office; (2) restaurant; (3) Souvenir Shop; (4) Parking area, and (5) Medical Clinic. Facilities that located in southern zone of the site and located in eastern side of Pura Dang Kahyangan Banyuwedang zone. In the beginning, this zone is an empty land and functioned as parking area for visitors, but according to more strcuturized zone concept, then some facilities which located on the same zone as bathing pool zone has been moved to supporting zone. Beside that also for adding comforness and safetiness of all visitors then function such as medical clinic and SPA need to be added.

Block Plan of Redesigning Zone Banyuwedang Hot Springs can be seen on the following Figure 3 below:



**Figure 3. Block Plan of Redesigning Zone Banyuwedang Hot Springs** (analysis result, 2018)

According to description above and discussed with sustainability concept (economic, social, environment). Economic sustainability seen from open-bathing pool zone and closed (chambers) which located as closed to hot spring sources. Efficiencies in energy-draw power sources or hot water distribution from it's sources to all pool are minimizing energy needs concept. Besides that also, bathing pool zonation placement near the hot spring sources, keeps water quality so it's temperature will not easily drop. Zone arrangement related to building masses that oriented to the centre (open-bathing pool) produce activities pattern settings that creates social spaces between visitors. People that came from all regions of Bali and outside Bali can know each other well through that. The management of waste disposal system from activities in bathing pool, shower room, and bathroom are using filtration system that flowed away all liquid waste (detergent and soap) from all activities to open nature. That filtration concept can help to preserved nature around the object (mangrove forest) from liquid waste pollution by bathing pool, shower room, and bathroom. Sustainability environmental concept also described from zonation arrangement of supporting facilities such as: (1) management office; (2) restaurant; (3) souvenir shop; (4) parking area; and (5) medical clinic which the zonation located far away from hot spring sources to keep a good nature environmental quality.

#### b. Conservative Zone

There is other potencies in Banyuwedang Hot Spring Bathing which is the existence of Pura Mas Beji Banyuwedang and Pura Dang Kahyangan Banyuwedang architecture. Pura Mas Beji got interconnection with the Banyuwedang hot spring sources, because the temple existence was a form of respect to the spring in Hindu-Balinese religion context in general and especially for banyuwedang people. According to Wijaya (2015) stated that Balinese people perceive that springs are a source of life and need to be managed sustainable it by spacial system. The spacial system are Balinese people do ritual activities at the source of the spring as an effort to respect the water source in an *niskala* (ritual) by establishing a temple (holy place) around the place. The people who do healing activities through hot spring media, must

first do praying at Pura Mas Beji Banyuwedang. The existence of those temples certainly have social activities setting that do prayers (*pamedek*). There are two main activities in Banyuwedang hot spring as tourism object which are recreation and ritual. These things means that 2 activities and rituals spaces (recreation & ritual) have been well preserved in terms of their existence related to preserving sustainability of those two in one tourism object region.

Zone arrangement of those temple arranged with preservation of its existence but blend in spatial on one tourism object. Distance between Pura Mas Beji Banyuwedang arranged with border line of a park with 1 metre width from the temple outer wall border. Kinds of plant which will be used such as mini yellow bamboo or red shoot flower. This borderline concept separating 2 zones not absolutely but separation made through harmonization in those two zones. Because of the existence of Pura Mas Beji was a part of this object. Same concept also applied in Pura Dang Kahyangan Banyuwedang. But, the borderline width is 2 metre because of these temple complex much bigger than Pura Mas Beji Banyuwedang. So, conservation of those two temples still preserved in one tourism region with it's secularity. Transition Zone between Recreative Zone (Secular Zone) and Conservative Zone (Sacral Zone) can be seen on the following Figure 4 below:



**Figure 4. Transition Zone between Recreative Zone (Secular Zone) and Conservative Zone (Sacral Zone) (analysis result, 2018)**

Figure 4, illustrates the boundary between recreation zones and conservative zones is space in the form of a planter box. The transition space maintains the continuity between the two zones (recreational and conservative). In the context of architecture, the transition space becomes the middle boundary that divides the two opposing spaces to create harmony. Besides that, the existence of transition space (planter box) as an acoustic (silencer) of recreational activities conducted by visitors. Therefore, visitors who do secular activities in the recreation zone can enjoy the potential of freshness of mangrove forest and also the potential in the form of a temple architecture that is still maintained its existence. While people who do praying can quietly perform ritual activities without disturbed by recreation activities. So the

sustainability of the temple architecture as a cultural potential in Banyuwedang Hot Springs still maintained its existence as the spirit of place.

Other conservative zone is the mangrove forest. In redesigning the zone arrangement of the object, mangrove forest existence preserved. Zonation of bathing chambers, food stall, and bathing shower for healing resetting by consideration that activities on that zone have negative impact on mangrove forest sustainability. There are plastic garbages from food from food wrapping and detergent in western zone of Pura Mas as activities result on those spaces. Bathing chambers and healing shower rearranged to be one area with open bathing pool, and the existence of food stalls relocated to southern of the tourism object with quite far distance from conservative zone (mangrove forest and spring).

Arrangement concepts on top were sustainability concept in environmental and cultural context. The sustainability of mangrove forest ecosystem preserved through space and activities governance that doesn't cause environmental pollution. Those pollution came from plastic garbages from activities in food stall, bathroom, and bathing pool. Because of it, spaces and activity setting on those spaces moved to zone that not directly or indirectly touch vital conservation zone (mangrove forest and hot spring sources). Sustainability in cultural context which is the existence of religious ritual on both temple in this Banyuwedang Hot Spring tourism object keep on going through zones that accommodate ritual activities at a time also become local cultural attraction in supporting tourism potencies. The intended result is a summary of the results of the analysis of the data, not the research results in the form of raw data. The results of the analysis of the data from the statistical data processing software, presented by re-typing in the table which is adapted to needs, not by means of cut output results analysis.

## **CONCLUSION**

Redesigning zone arrangement of Banyuwedang Hot Spring based on sustainability concept through "recreative and conservative" spaces zone arrangement. It consist of: recreative zone arrangement based on activities character as spaces for bathing and it's supporting spaces. Conservative zone as potency that gives value on bathing place there are hot spring sources, mangrove forest, and Pura Mas Beji and Pura Dang Kahyangan Banyuwedang Temple. Those two zones existence preserved in one unity of sustainable tourism region. The separation of those two zone through consideration on economic sustainability concept, social sustainability, environmental sustainability, and cultural sustainability. Minimizing power use with the placement setting of bathing pool near hot spring sources, social interaction spaces through centered mass pattern on public activities in one spaces, preserving mangrove forest and hot spring sources from pollution of plastic garbages and liquid waste with space zonation not located on those vital area. Do not reducing ritual activities existence and supportive ritual with those spaces arrangement in one unity of tourism spaces.

## **SUGGESTION**

1. The results of this study are expected to be a consideration or guide lines in the construction and structuring of facilities at the Banyuwedang Hot Spring tourist attraction by focusing on sustainable development.
2. Consider the potential of the natural environment and local cultural wisdom (ritual aspects and temple architecture) as a very important potential in sustainable development in Banyuwedang Hot Spring attractions

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## SUSTAINABLE TOURISM CONCEPT IN REDESIGNING ZONE-ARRANGEMENT ON BANYUWEDANG HOT SPRINGS ARCHITECTURE

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**Abstract:** Architecture and tourism are two things that have mutual connection to each other in terms of spatial arrangement and sustainable resources management. Architectural form in tourism accommodation support concerns on many sustainable aspects in community's social-economy, environment, and culture. Banyuwedang Hot Spring as tourism object has many potential, such as hot spring sources, mangrove forest, and a temple with its own architectural form called "Pura Mas Beji Banyuwedang" and "Pura Dang Kahyangan Banyuwedang". The management system of this tourism object is self-management by some group of local people. The issue that emerge on site was zone setting and activities that looks unorganized and not fit-based on function embedded to it, and also didn't concerned about activities impact on mangrove forest. On average, 50% of main and support facilities not properly-used. On Average of tourist visit is 60 person a day and the system of waste management was not well-organized and well-made. The purpose of this research is to rearrange architectural zonation arrangement of Banyuwedang Hot Spring using sustainable tourism concept (economy, social, and environment). Using naturalistic qualitative research method by searching for problems that has sensual empiric, native's viewpoints, researcher's viewpoint base logic, and transcendental characteristic. Zone arrangement that resulting from this research are recreative and conservative zone that have mutually connected to each other in terms hot spring tourism spatial. Those zone arrangements formed based on (1) potentials owned as a tourism object; (2) Economic aspects such as operational cost and local people income; (3) social aspects from the creation of social space between visitors; (4) environmental aspects, by the mangrove forest and hot spring sustainability preservation; and (5) cultural aspect, by the preservation of religious ritual and ritual attraction as one hot spring space.

**Key words:** hot spring architecture, redesign, sustainable tourism, zone arrangement.

### INTRODUCTION

Sustainability perspective in using resources as tourism potentials must be a holistic embeded planning. It means that in terms of tourism object planning, we need some paradigm in terms of social, economy, and environment that need to be concerned and considered in defending the sustainability of tourism support potentials. The involvement of all tourism stakeholders such as government, private sector, and local people must be equally arrange and must support each other in creating a sustainability. The concept of sustainable tourism development involves balanced economic, social and cultural development without endangering the environment (Angelevska-Najdeska and Rakicevik, 2012). If that is not balanced will effect bad against the local potential in maintaining this aspect of sustainability. Just like statements by Pramanik and Ingkadijaya (2018), the impact of tourism against economic, socio-cultural and the environment that is able to improve the economy of the local community and the consumerist mindset for the benefit of tourism, however, is a potential disruptive nature experiencing natural quality. In line with that, sustainable tourism concept in Sustainability Tourism Charter (1995) mentioned that development emphasized on alignment concept and integrated between ecological aspect, worth in terms of economy, and social through resources arrangement and resources utilization on sustain terms.

Tourism object and attraction often used by community, and therefore becomes public asset. It is encompasses river, water spring, open space and park, roads and other rural

capitals. The development of tourism potentially reduces public access to the common public resources. The intensive uses of resources by tourist led to the scarcity of natural resources, such as land and water (Normelani *et al.*, 2016). In the developing countries with rich natural resources, the diversity of flora, fauna, and landscapes is the ultimate natural resources for tourism development. In some part, cultural resources have been promoted as a tourism object. Since every part has its own culture background, the cultural aspect of community often diverse in developing countries. This is become the advantages among developing countries with its huge cultural resources to be cultural tourism destination (McKercher and Cros, 2012)

Development in phisycal context in tourism facility architecture need to use sustainable architectural concept. Sustainable architecture concept is an architecture that attempt to minimize negative impact on built environment with efficiency and moderation in using material, energy, and development space, and also ecosystem in extensively (Ragheb, El-Shimy and Ragheb, 2016). Sustainable architecture is not just seeing through physical aspect of building to environment but also as a whole (holistic) considering local people involvement in supporting sustainable development. In sustainable architecture concept, besides environmental aspects and cultural aspects which become parameter there are also local people involvement as a very important aspectthat needs to be consider. Just like what Sidiq & Resnawaty (2017) said, rersources and local community uniqueness (tradition and culture) are the main leading elements of tourism main activity and become ecology system that interconnected. According to Dewi, Fandeli, & Baiquni (2013), main potency in local people-based tourism are human, nature, and culture. empowerment and community involvement in tourism is very important in keeping the potential nature and culture in an effort to create a sustainable tourism (Sutawa, 2013). Those things can be met on Banyuwedang Hot Spring tourism object, that is the people of Pejarakan Village as the organization which lead it, hot spring sources and mangrove forest as natural potency and religious rituals in form of Mas Beji Banyuwedang Temple and Dang Kahyangan Banyuwedang Temple.

The characteristic of Banyuwedang Hot Spring is the hot water sources which located on the edge of mangrove forest. This potency used by local people (Pejarakan Village) for healing ritual of any kinds of skin diseases. In line with the development of nature tourism concept, then Banyuwedang Hot Spring was made as one of tourism object by Buleleng District Government on year 1982. As a tourism destination, it needs to accommodate supporting facilities which buildon that area in form of public bathing pool for secular activities, private bathing chambers, accommodation such as food stall/food court, toilet and others supporting facilities. From year 1984 until now, management of it has been taken over by Pejarakan Village because didn't show increasing number of tourist visit.

In management of tourism objects it needs to consider sustainable aspect potencies (nature and cultural) which will become that tourism object attractiveness. Sustainability in this context was a attempt in preserving natural ecosystem and cultural order either physically or metaphysically for the next generation. Nature and culture potencies are vital sources that needs to be conserved, but brings good impact (economy and welfare) to local people. That Concept became the eyeglasses in seeing management phenomenon of Banyuwedang Hot Spring, which contains some things that can give sustainability disadvantageous to local nature and culture.

Banyuwedang Hot Spring as tourism destination has hot springs (*kelebutan*) as sorces of tourism bathing activities and Mas Beji Banyuwedang Temple and Dang Kahyangan Banyuwedang Temple as Hindu's Religious Architecture. Beside all that, in this region also has mangrove forest which can be considered as plus mark in terms of tourism object

attractiveness. Accordings to grand tour, we found that existing zone arrangement consist of 3 zone, that has following conditions : zone 1 : Not-well functioned facilities which should be function as private bathing chambers, public bathing chambers, food stall/food court, toilet, and changing room; zone 2: There weren't any supporting facilities such as managerial office and adequate parking area; zone 3: zone arrangement looks unclear/unfinished in terms of groupings such as private and public bathing chambers inside the temple zone, food stall zone spreaded and bathing chambers for healing located near the springs (*kelebutan*); and zone 4: waste disposal management looks not well-organized, it can be meet on soap waste and grey water didn't filtered before streamed to natural environment, there were still garbage scaterred, even between mangrove roots. Those images showed that sustainability concept still weak in terms of full-governancy by people of Pejarakan Village.

Besides all that, local people which represented by Banyuwedang Hot Spring tourism object manager delivering the plan for tourism object development through arrangement and adding some support and services facilities. Parking area arrangement which today looks not well organized, visitor parked their vehicles on any space available, adding gazebo facilities, bridge construction or jetty for tour around mangrove forest and adding souvenir shop buildings. Local people desire in thi tourism object arrangement needs a direction and planning that lead to the sustainability of it's potencies.

In arrangement of this Banyuwedang Hot Spring, we need a sustainable way of approach. This approach considering "recreational" aspect and "conservational" aspect integrated in Banyuwedang Hot Spring Tourism Destination. Recreational aspects are the availability bathing tourism facilities and other facilities that support it. Conservation aspects are the preservation natural environment, ritual activities, and local people involvement in managing the object. Environmental conservation related to hot spring and mangrove forest which are the potencies of these tourism object, Ritual activities are the existence of ritual activities and temple architecture (Dang Kahyangan Banyuwedang Temple and Mas Beji Banyuwedang Temple) as tourism attractiveness, and the involvement of local people by the existence of traditional village (Pejarakan Village) in managing the area.

The source of hot springs (*kelebutan*) is part of objects of cultural heritage because of its existence from the past until now by the local community as a source of water for ritual medical activities. The existence of springs in Balinese culture as a source of life gets special attention through ritual activities to protect springs from pollution and damage by humans. As like statement by Wijaya (2015), Balinese people perceive that springs are a source of life and need to be managed sustainable it by spasial system. The Elements of architecture as part of the Banyuwedang Hot Spring area is temple architecture (Mas Beji Banyuwedang Temple and Dang Khahyangan Banyuwedang Temple). The temples are the cultural potential tangible by these tourist objects and become the potential for natural tourist attraction in these places. Cultural heritage objects that are needed as the main potential elements and as a characteristic identity of a tourist attraction for hot air bathing in Banyuwedang. As said by Zain (2014), that it is necessary to agree and preserve not integrity, authenticity and value of benefits of traditional architecture and cultural heritage objects to be passed on to future generations.

This research purpose is to redesign zone arrangement of Banyuwedang Hot Spring Tourism Object through sustainability tourism approach by combination between "recreational" and "conservational" concept. The redesign of the zoning system is based on the following issues: (1) recreational facilities such as open pool, private pool, public showers, playground, visitors lockers, toilets and locker rooms, and zoning kiosks still spread and unstructured; (2) the irregularity of the zoning arrangement creates an unclear circulation between the circulation of visitors and the community performing prayers; (3) there are many facilities that

have been physically damaged and unfit for use as well as lack of other supporting facilities in increasing the number of tourist visits to Banyuwedang Hot Springs.

In this redesign design is divided into two major zonation namely recreation and conservation zones. Recreational zone are bathing facilities and supporting facilities, and conservational zone are hot spring, mangrove forest, and ritual activities. Early zone arrangement redesigned through sustainability approaches, so it can produce an integrated zone arrangement concept between conservation and tourism attraction. Method that used is qualitative naturalistic which focus on empirical studies about tourism activities phenomenon, preserving environment and culture around it. The results will become a consideration in rearrangement of the tourism object through holistic approach.

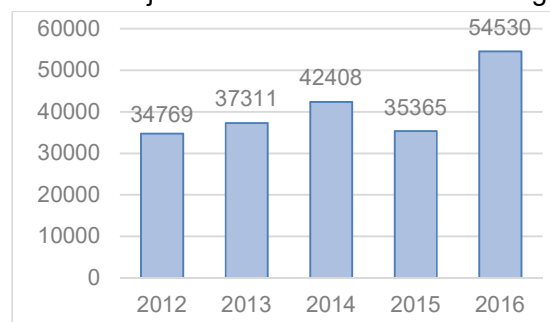
## RESEARCH METHODOLOGY

Research method that used is qualitative naturalistic through sustainable tourism approaches by approach on economical aspect (equity in people income through direct involvement in managing the tourism object), social aspect (preserving social space extension between visitors and local people) and environment (mangrove forest and hot spring) and also culture (Mas Beji Temple and Dang Kahyangan Banyuwedang Temple architecture). That aspects need to be put as foundation in redesigning sustainability zone arrangement in Banyuwedang Hot Spring Tourism Object. Step by step of this research are: (1) survey related to early phenomenon which are activity system, available facilities and utility system through direct involvement as visitors; (2) zone arrangement identification related to the object; (3) Doing an unstructured interview with visitors and the tourism object manager; (4) discussing an empiric studies with sustainable tourism concepts and local approaches; and (5) Draw a conclusion in form of redesigning zone arrangement of Banyuwedang Hot Spring.

## RESULT AND DISCUSSION

### 1. General image of Banyuwedang Hot Spring Tourism Object

Banyuwedang Hot Spring Tourism Object was one of natural tourism destination in Buleleng District with its main potency such as hot spring and mangrove forest. Total amounts of tourist visit to the object still on minimum level that is more or less 70 to 100 person a day. It happens because of facilities and promotion management still not fully supported recreational activities in the object. Operational time of this tourism object opened at 08:00 am until 18:00 pm on Monday until Friday, but in Sunday opened at 08:00am to 20:00pm. Total amounts of tourist to the tourism object can be seen on the following Figure 1 below:



**Figure 1. Total Amount Graphic of Tourist visit to Banyuwedang Hot Spring**  
(Banyuwedang Hot Spring Management, 2018)

Activities that did by tourist in the object are recreation and spiritual. Recreation by do bathing in hot spring that available on open pool and pool chambers. Spiritual activity that held here is a healing type, and also in this object there are healing pool especially used by visitors that got skin diseases. This hot spring came from hot spring (*kelebutan*) which located on north side of the site and brackish water.

Banyuwedang hot spring got 2 function, recreation and spiritual. Recreational function can be seen from hot spring that can be used for bathing and spiritual function (skin diseases cure). Those potencies already functioned from long ago before the object became tourism destination. With majority of users was the local people. Now, the object has been developed for public hot spring bathing.

Potencies that already on the object are natural potency and spiritual potency. Natural potency (1) Hot Spring (*kelebutan*) that keep on flowing with large amount of water discharge formed a hot spring bathing pool, this spring is functioned for flowing the water to the open bathing pool or bathing chambers; (2) View of Bali's northern beach and an overlay of mangrove forest increasing the beautifulness of this tourism object, visitors can enjoy the view while bathing; and (3) Air that still fresh and natural that created by green elements of mangrove forest and also this place located far away from people settlement which crowded.

Besides natural potency that become the attractiveness value of this object, there are also spiritual potential that marked by the existence of 2 great temple (Mas Beji Banyuwedang Temple dan Dang Kahyangan Banyuwedang Temple). Spiritual tourism that did by visitors is healing ritual on healing-pool bathing chambers and Mas Beji Banyuwedang Temple. Before visitors doing the healing ritual, they have to pray for permission to used the hot spring in honour for *niskala* elements around the objects, and then continue to do bathing in the pool that available. Healing pool positioned different from normal pool that only used for recreational purpose which located near hot spring (*kelebutan*).

Cultural potencies also increasing the attractiveness of the object. On ceremonial day, Hindu, Muslim, and Catholic doing their courteous in this object. The value of religion tolerance between people also can be seen as one of cultural attractiveness.

The Image of Banyuwedang Hot Spring existing can be seen on the following Figure 2 below:





**Figure 2. Banyuwedang Hot Spring Existing (survey result, 2018)**

Figure 2 explain that the Banyuwedang's hot spring has natural potential as a hot spring (*kelebutan*) as the forerunner of this tourist attraction, the mangrove forest directly facing the northern sea of Bali which has the potential to provide harmony and panorama of the mangrove ecosystem, Mas Beji Banyuwedang Temple and Dang Kahyangan Banyuwedang Tempel are a cultural potential consisting of temple architecture which physically and ritual still exists today. These potentials are a very important part as a tourist attraction, namely the natural and cultural attraction (architecture and ritual activities). In spatial planning of Banyuwedang's hot spring, this potential aspect becomes the main consideration factor as an aspect that must be maintained. The recommended sustainability is hot springs from tourism activities, managing the sustainability of mangrove forests in an effort to use them as tourism preservation, managing a combination of ritual space (temple architecture) and recreation space. To make it happen, involving stakeholders is needed, not only planners but also involving the local community as the subject of managing the tourist attraction and the government's attention that is very much needed in this matter. So, for the sustainability of this tourist attraction, a balance between natural and cultural potential and its users is needed.

## **2. Redesigning Zone Arrangement of Banyuwedang Hot Spring Tourism Object**

### **a. Recreation Zone**

In this zone arrangement there are area for tourism attraction activities in form of opened hot spring bathing facilities, chambers or bathing for healing purposes. Open-Bathing zone in form of hot spring bathing used in public located on middle area of the others attraction facilities and close to hot spring sources. The zone arrangement concept are (1) public pool or opened located on the middle and become the core orientation of bathing chambers; (2) Bathing chambers located in the south side of the bathing pool with orientation to building masses in the north or to the opened bathing pool; (3) While healing pool located not far from hot spring sources. These zone arrangement done based on distance consideration between opened bathing pool, bathing chambers, or healing chambers that closed enough to the hot



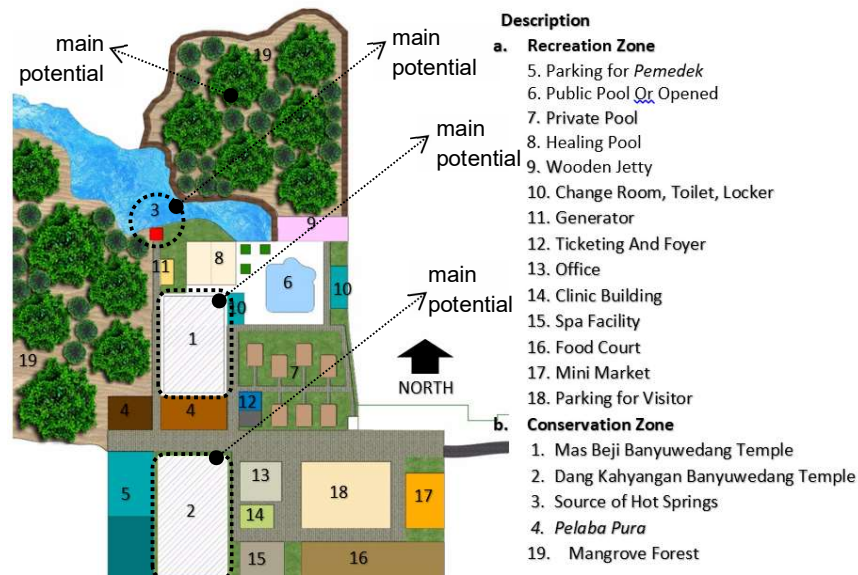
spring sources. This means that hot spring water distribution doesn't need more power sources to flowing the hot water from it sources. Beside that, the creation public spaces as social space from visitors who do recreation on the object. Bathing chambers zone also located on the area that easy to monitor from all negative things.

Other Recreational zone which is "tour around mangrove" is a trip through mangrove forest via wooden jetty. That jetty has been planned to stop near edge area of mangrove forest, so that not destroying the mangrove trees to much. Visitors can go around mangrove forest which located on the north of the site while enjoying fresh air that comes from the forest and also beautifulness of northern buleleng district open seas. End of the trip is returning to the hot spring bathing area.

Zone arrangement of this recreation supporting facilities also planned with approaches to environmental conservation. That facilities are deposit box area and changing room, shower room, and toilet. The most considered things on that facility are waste disposal management; toilet; and also plastic garbage disposal system. Waste in form of soap and detergent will flow through filtration process before it flowed to open nature. This system filtered the rest of bad molecule from soap or detergent and that liquid waste, so it detached from the molcul and flowed to open nature.

Other zone arrangement that support the recreational activities in the Banyuwedang Hot Spring tourism object are (1) Management Office; (2) restaurant; (3) Souvenir Shop; (4) Parking area, and (5) Medical Clinic. Facilities that located in southern zone of the site and located in eastern side of Dang Kahyangan Banyuwedang Temple zone. In the beginning, this zone is an empty land and functioned as parking area for visitors, but according to more strcuturized zone concept, then some facilities which located on the same zone as bathing pool zone has been moved to supporting zone. Beside that also for adding comfortness and safetiness of all visitors then function such as medical clinic and SPA need to be added.

Block Plan of Redesigning Zone Banyuwedang Hot Springs can be seen on the following Figure 3 below:



**Figure 3. Block Plan of Redesigning Zone Banyuwedang Hot Springs (analysis result, 2018)**

According to description above and discussed with sustainability concept (economic, social, environment). Economic sustainability seen from open-bathing pool zone and closed (chambers) which located as closed to hot spring sources. Efficiencies in energy-draw power sources or hot water distribution from it's sources to all pool are minimizing energy needs concept. Besides that also, bathing pool zonation placement near the hot spring sources, keeps water quality so it's temperature will not easily drop. Zone arrangement related to building masses that oriented to the centre (open-bathing pool) produce activities pattern settings that creates social spaces between visitors. People that came from all regions of Bali and outside Bali can know each other well through that. The management of waste disposal system from activities in bathing pool, shower room, and bathroom are using filtration system that flowed away all liquid waste (detergent and soap) from all activities to open nature. That filtration concept can help to preserved nature around the object (mangrove forest) from liquid waste pollution by bathing pool, shower room, and bathroom. Sustainability environmental concept also described from zonation arrangement of supporting facilities such as: (1) management office; (2) restaurant; (3) souvenir shop; (4) parking area; and (5) medical clinic which the zonation located far away from hot spring sources to keep a good nature environmental quality.

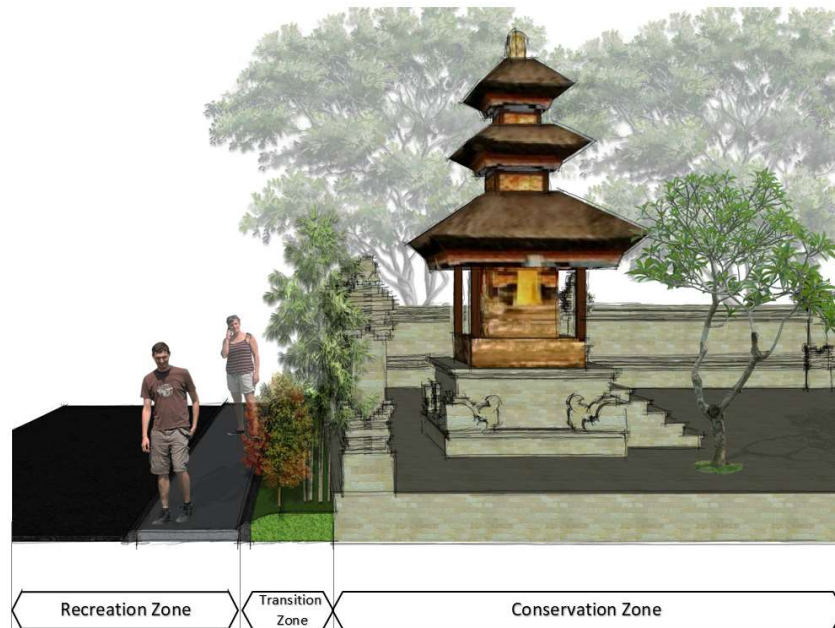
The existence of this tourist attraction shows the zoning system of bathing and supporting facilities spread without planning and considering aspects of environmental pollution. The results of bathing activities without going through the filtration process to the mangrove forest and plastic waste are disposed under the mangrove tree. In this arrangement, bathing facilities are planned to stay away from hot springs (*kelebutan*), bathroom waste must go through a filtration process before being discharged into the wild and landfills are far from sources of spring and mangrove forests. This zoning system is an architectural plan in maintaining the sustainability of the natural potential found in the tourist attractions of Banyuwedang hot spring.

#### b. Conservative Zone

There is other potencies in Banyuwedang Hot Spring Bathing which is the existence of Mas Beji Banyuwedang Temple and Dang Kahyangan Banyuwedang Temple architecture. Mas Beji Temple got interconnection with the Banyuwedang hot spring sources, because the temple existence was a form of respect to the spring in Hindu-Balinese religion context in general and especially for banyuwedang people. According to Wijaya (2015) stated that Balinese people perceive that springs are a source of life and need to be managed sustainable it by spasioal system. The spasioal system are Balinese people do ritual activities at the source of the spring as an effort to respect the water source in an *niskala* (ritual) by establishing a temple (holy place) around the place. The people who do healing activities through hot spring media, must first do praying at Mas Beji Banyuwedang Temple. The existence of those temples certainly have social activities setting that do prayers (*pamedek*). There are two main activities in Banyuwedang hot spring as tourism object which are recreation and ritual. These things means that 2 activities and rituals spaces (recreation & ritual) have been well preserved in terms of their existence related to preserving sustainability of those two in one tourism object region.

Zone arrangement of those temple arranged with preservation of its existence but blend in spatial on one tourism object. Distance between Mas Beji Banyuwedang temple arranged with border line of a park with 1 metre width from the temple outer wall border. Kinds of plant which will be used such as mini yellow bamboo or red shoot flower. This borderline concept separating 2 zones not absolutely but separation made through harmonization in those two

zones. Because of the existence of Mas Beji Banyuwedang Temple was a part of this object. Same concept also applied in Dang Kahyangan Banyuwedang Temple. But, the borderline width is 2 metre because of these temple complex much bigger than Mas Beji Banyuwedang Temple. So, conservation of those two temples still preserved in one tourism region with it's secularity. Transition Zone between Recreative Zone (Secular Zone) and Conservative Zone (Sacral Zone) can be seen on the following Figure 4 below:



**Figure 4. Transition Zone between Recreative Zone (Secular Zone) and Conservative Zone (Sacral Zone) (analysis result, 2018)**

Figure 4, illustrates the boundary between recreation zones and conservative zones is space in the form of a planter box. The transition space maintains the continuity between the two zones (recreational and conservative). In the context of architecture, the transition space becomes the middle boundary that divides the two opposing spaces to create harmony. Besides that, the existence of transition space (planter box) as an acoustic (silencer) of recreational activities conducted by visitors. Therefore, visitors who do secular activities in the recreation zone can enjoy the potential of freshness of mangrove forest and also the potential in the form of a temple architecture that is still maintained its existence. While people who do praying can quietly perform ritual activities without disturbed by recreation activities. So the sustainability of the temple architecture as a cultural potential in Banyuwedang Hot Springs still maintained its existence as the spirit of place.

Other conservative zone is the mangrove forest. In redesigning the zone arrangement of the object, mangrove forest existence preserved. Zonation of bathing chambers, food stall, and bathing shower for healing resetting by consideration that activities on that zone have negative impact on mangrove forest sustainability. There are plastic garbages from food from food wrappig and detergent in western zone of Mas Beji Banyuwedang Temple as activities result on those spaces. Bathing chambers and healing shower rearranged to be one area with open bathing pool, and the existence of food stalls relocated to southern of the toursim object with quite far distance from conservative sone (mangrove forest and spring).

Arrangement concepts on top were sustainability concept in environmental and cultural context. The sustainability of mangrove forest ecosystem preserved through space and activities governance that doesn't cause environmental pollution. Those pollution came from plastic garbages from activities in food stall, bathroom, and bathing pool. Because of it, spaces and activity setting on those spaces moved to zone that not directly or indirectly touch vital conservation zone (mangrove forest and hot spring sources). Sustainability in cultural context which is the existence of religious ritual on both temple in this Bayuwedang Hot Spring tourism object keep on going through zones that accommodate ritual activities at a time also become local cultural attraction in supporting tourism potencies. The intended result is a summary of the results of the analysis of the data, not the research results in the form of raw data. The results of the analysis of the data from the statistical data processing software, presented by re-typing in the table which is adapted to needs, not by means of cut output results analysis.

## **CONCLUSION**

Redesigning zone arrangement of Banyuwedang Hot Spring based on sustainability concept through "recreative and conservative" spaces zone arrangement. It consist of: recreative zone arrangement based on activities character as spaces for bathing and it's supporting spaces. Conservative zone as potency that gives value on bathing place there are hot spring sources, mangrove forest, and Mas Beji Banyuwedang Temple and Dang Kahyangan Banyuwedang Temple. Those two zones existence preserved in one unity of sustainable tourism region. The separation of those two zone through consideration on economic sustainability concept, social sustainability, environmental sustainability, and cultural sustainability. Minimizing power use with the placement setting of bathing pool near hot spring sources, social interaction spaces through centered mass pattern on public activities in one spaces, preserving mangrove forest and hot spring sources from pollution of plastic garbages and liquid waste with space zonation not located on those vital area. Do not reducing ritual activities existence and supportive ritual with those spaces arrangement in one unity of tourism spaces.

In implementing sustainable concepts not only planning by considering aspects of environmental impact but also non-physical aspects such as (1) local ritual values of the importance of maintaining springs and mangrove forests, (2) local regulations (awig-awig) which is generally applicable in the tourist attraction, (3) full involvement of local communities in the management of the space and (4) support of the central government. These concepts are in accordance with the research that has been carried out by Siswadi, Taruna and Purnaweni (2017) namely to safeguard local wisdom for future generations through strengthening the spirit of the community, increasing understanding, awareness and exceptions and community participation towards a society that is wise about the environment and provide a legal umbrella.

## **SUGGESTION**

1. The results of this study are expected to be a consideration or guide lines in the construction and structuring of facilities at the Banyuwedang Hot Spring tourist attraction by focusing on sustainable development.
2. Consider the potential of the natural environment and local cultural wisdom (ritual aspects and temple architecture) as a very important potential in sustainable development in Banyuwedang Hot Spring attractions

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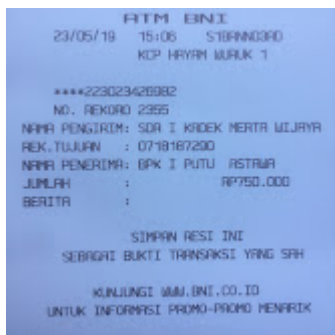
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