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URBANISATION AND SUSTAINABILITY: A STUDY OF DENPASAR CITY- BALI INDONESIA

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ABSTRACT

Bali is one of the small islands within the 17.504 island throughout Republic of Indonesia. From the earliest of the 19th Bali is one of the famous tourist destinations in Southeast Asia. Become one of the tourist destination, Bali is facing rapid development because of population growth as the impact of tourism industry. The unique landscape of Bali is the pull factor for tourism industry. Denpasar, the capital city of Bali is among the fastest growing regions in Indonesia with rapid growth and expansion from surrounding island is threatening the natural and cultural landscapes. Natural and cultural landscape is the heritage asset as the most important component of Bali’s image and identity which attracts large number of tourists. The rapid population growth brought significant negative impact to the natural and cultural landscape and heritage. Without proper conservation and management of natural landscape and cultural heritage Bali will lose its attractive tourism industry. This paper attempts to describe the interrelation between urbanisation, tourism and sustainability in Denpasar city, and will provide an approach to sustain the natural and cultural landscape and heritage, at the same time to retain the character and identity of Bali.

Key words: urbanisation, sustainability, population, natural, cultural, landscape, heritage.

URBANISATION AND TOURISM

Urbanisation in the developing and developed countries is now becoming a major trend. Within the next five years, it is estimated that over 500 million people will be living in urbanised areas, and by 2030 about 60% of the world's population will live in urban settlements. Rapid migration especially derived from urbanisations pose significant risks of uncontrolled growth of cities, the cultural and natural resources. This condition needs the serious attention from the government, and then creates priority on the provision of infrastructure to accommodate increasing number of people in urban areas. The attempt to sustain cultural and natural heritage and landscape has been neglected. However, preserving the landscape and heritage requires a big amount of fund where it is hardly achieved by most of developing countries.

Bali has become one of the world’s most favourite tourist destinations. Since 1994 the tourism industry has increased to more than 2 million visitors and by 2002 to over 4 million tourists visited this small island with a population of around 3 million people (Lietaer, 2002). These developments have caused Bali’s inhabitants to seriously consider how they will survive the tourist and population boom and without losing their
island's character and their world renowned natural and cultural heritage, religious and cultural festivals. Since Denpasar became the capital city of Bali, the development of all aspects of Denpasar increased rapidly, and the city has grown into the centre of trading, education, industry and tourism (Denpasar Planning Board, 2011) especially in the west and south districts of Denpasar. As the result of tourism industry, government policy has shifted from an economy based on sustainable agriculture (with traditional irrigation system/ subak) to an economy based on tourism. Undeniably, the emphasis on tourism and industry has replaced the agriculture zones to become tourism facilities, housing areas, industry and other commercial facilities to support tourism and the population.

Since the increase of 4.05% population per year in Denpasar (Denpasar Planning Board, 2011), accompanied with development in many areas, the need for land to accommodate the population has increased. This problem has been accompanied with environmental degradation. Natural and heritage sites in Denpasar are also being affected. The encroachment onto these sites has become one of the biggest issues in Bali today. For example the famous Ulunwatu temple has seen unplanned development encroach on the sacred site boundaries and agriculture, this situation has created a conflict between government and the local people. Together with the temples, the character of other sites such as natural landscape, beaches, main roads and lakes are degraded as the uncontrolled new development increased with the need to address the population boom. Moreover the image of Denpasar in the past with its strong traditional character has been polluted with traffic and rapid population and uncontrolled new developments (Nas, 1995).

BALINESE URBAN PLANNING

Balinese culture is well known as the product of the Balinese Hindu religion. Balinese people are mostly Hindu live within adat villages (adat means customary laws) with their extended family. Every village consists of one or more adat villages. This adat village is one of the strong points of Balinese culture, since the adat community has a philosophical relationship with their territory and land as the community’s ancestral legacy. According to Suartika, the adat has the capacity to manage its own organization, resolve problems, provide solutions, and make decisions within the community. Furthermore, it is divided into several banjar (neighbourhood associations).
with its own balaibanjar (community building facility). Within this banjar system, there is a regular community meeting to discuss the community problems and makes decision based on community consensus. However, within today’s society with the population boom based on urbanisation and tourism, the Balinese population is heterogenic especially in the city. The adat and banjar system is commonly run by the Balinese Hindu society in the past, and it is getting harder to control heterogenic communities. In addition, since 1947, the nationalisation of planning system in Bali by the state government has destroyed the capacity of adat system in manage the land development for community in Bali (Suartika, 2010).

The concept of space, building and landscape and urban design in Bali is the harmonisation between god, humans and the natural environment as the main basis of all these Balinese concepts. The harmonious relationship between nature and the built environment described as manik ring cecupu (Samadhi, 2004), is the psycho-cosmic concept of manik (baby represent the microcosm) and cecupu (mother’s womb represent macrocosm). At the same time, the harmonisation between the human (also called Bhuwana Alit) and the nature (also called BhuwanaAgung) should be maintained in order to achieve the final goal of Hindu belief. Within the Balinese settlements, there are three zones classifications of parahyangan (sacred spaces such as temples), pawongan (middle spaces such as residential) and palemahan (profane spaces such as graveyards). Every adat village is basically divided into three main spaces to accommodate those classifications. However, with population boom and uncertain development in Denpasar, the original plan of Denpasar based on ancient Hindu concept has encroached by new developments and informal housing degrades the quality of image and identity of Denpasar from the past. Indeed, heterogenic community creates new lifestyle and high demand of any resources for new developments then forces the natural resources and landscapes.

SUSTAINABILITY ISSUES IN DENPASAR

Sustainability issues become one of the major problems in Bali. Rapid population increased in Bali especially Denpasar as the capital city, environmental degradation is undeniable. Land, water, and air are polluted with the negative result from human activities. The urbanisation rate as recorded by the Bali Statistic Bureau in
2000 found that 30, 25% of population of Denpasar comes from outside Bali with the highest number from the island of Java. This number has increased by 3.7% during the last ten years of the 4% increase of Denpasar population. Following this, Denpasar hold 7% urbanisation number of the total 10% urbanisation in Bali in 2000 (Bali Statistic Bureau, 2010). Moreover, tourism boom in Bali as described by Marshal (2011) is extremely high with 1.3 million in 2001 and then the quantity is almost doubled within ten years later which were mostly Australian visitors, and there are millions more Indonesian visitors to this small island from other islands around Bali every year.

Bali's wealth compare with other areas in Indonesia has attract many people to migrate in order to have a better life opportunity. The land requirement for housing to accommodate more and more people is getting higher every year and transforms green areas to housing development and its facilities. In term of land uses, housing and commercial activities are the major element, while tourism facilities also took large place within the development with local and foreign investor under a high competition in land commercial market. However, noted in Denpasar Strategic Planning 2005-2025 that jobless is increasing 3.86% during the last 5 years that every year the job competition is getting higher. High jobs competition in Bali especially Denpasar has increased the number of crime such as some crimes against foreigners (Marsh, 2011). Furthermore, low income population had been raising about 2.95%. This group of people is mostly homeless and some of them residing in the slum areas, where there is also lack of environmental and government support. In 2007, there are identified 80 locations of informal settlements, where it spread out in Denpasar with certainly bad quality of settlement and lack of utility support from government (Denpasar Planning Board, 2007).

Solid waste as one of the major issue in Denpasar is derived mostly from household and commercial activities such as traditional market, temporary food stall along the road and illegal dumping. Ground, river and mangrove are contaminated with waste as the dumpsite capacity is no longer sufficient (Bruce & Storey, 2010). The environmental issues seem to be ignored as the focus of this county is to improve economic growth. In 2003, every single person contribute to 3.25 litre/day of solid waste, and the total amount of solid waste in Denpasar in a month is 1,901.738 m3,
while the capacity of the dumpsite to collect the waste is only 630.66 m$^3$ per months. It is remaining of 1,271.076 m$^3$ of the waste unhandled by the dumpsite.

Pollution and traffic is also become a major issue in Denpasar, as the increase of motorcycle using every year. The use of public transport in Denpasar is only 3%, as the city dwellers prefer to use their own private transport. Furthermore, there is a significant increase of private transport due to lack of policy from government to control it. The increase of private transport is 11% per year. In 2008, there are 538,792 private transports which consist of 84,399 private cars; 1,477 private buses; 36,214 commercial vehicles and 416,702 motorbikes. This number is increasing in 2009 with the total of 572,071 private transport made up of 90,534 private cars; 1,610 private bus; 22,155 commercial vehicles and 457,772 motorbikes (Denpasar Transport Board, 2011). Since that, the amount of private cars compare with the total length roads in Denpasar with only 432.22 km is considered overload. Moreover, there is no opportunity to expand the roads as Denpasar is already packed with housing and commercial development.

Bali and Denpasar especially will face water shortage as the water supply for Bali is only 4.7 million m$^3$ per year while with the dense population in Bali the use of the water is 5.4 million m$^3$ annually (Suriyani, 2011). From 788,445 populations in Denpasar, 64,834 populations do not have access for clean water which is supplied by PDAM (The Denpasar Water Company). The poor service of the water company is due reducing water supply of Bali. Moreover, Denpasar has to buy water from other region such as Gianyar and Badung Water Company in Bali to supply its population (Suriyani, 2011). With the poor water and sanitation facilities especially in the slum housing increased contagious diseases in Denpasar spread out quickly.

However, Denpasar is always faced flooding during November-March, with the average rainfall of 97.1 mm and the highest is in February with 406 mm. The worst flood mostly happened at the west and south Denpasar, as both areas had higher population and dense with housing and commercial activities (Denpasar Planning Board, 2011). Poor drainage combined with waste has polluted the city and natural landscape such as the famous tourist’s favourite Kuta beach (Marshall, 2011) with waste every rainy season which brought to the beach by river flooding. Indeed, trash and waste overflowed to roads and households during rainy season as the rivers and sewage
gutters were swelling. This problem occurs not only because of the quality of drainage, but it also because of the waste produce by housing and commercial activities.

Traffic and other activities in Denpasar are contributing to noise. The level of noise above the standard is found in the residential, education and green areas (Suarna, 2007). It is noted that the noise in green areas such as public open space/park is 63.9 dB from 55dB standard, education 65.8 dB from 55dB standard, and residential 63.7 dB from 55 dB standards respectively. The quality of air in Denpasar is already polluted with smoke and dust from transport activities. It found that the amount of smoke and dust is above the standard requirement of 230 i g/m3, while Denpasar reach 337 i g/m3 in 2006 (Sugiarta, 2006).

CONCLUSION

Sustainability issues in Denpasar are becoming a major problem today. Urbanisation undeniably brought significant negative impact for the natural and cultural landscape of Denpasar. Indeed, lack of planning policy to address sustainability issue creates this problem more complex. An integrated approach of socio cultural, economic, ecology and environmental is needed to solved this problem.

The first step could apply is to identify the socio cultural, economic and environmental impacts of natural and cultural landscapes issues in Denpasar that affect the community and the sustainable environment due to the high rate of urbanisation and urban development. Further, it could reveal the gaps in the application of planning policy in Bali. Within this stage, the gaps and link between modern planning policy and the ancient concept of Balinese planning could be identified.

Second, developed a conceptual framework to reform planning policy to address sustainability for the future, Urban Design Principles and social ecological approach could be applied as this method integrates sustainability issues. Within this method a specific technique such as field study with interview, questionnaire and policy analysis should be applied for collecting accuracy of data. Certainly, urban design put it emphasises on aesthetic, economic, social and environmental justice and within its practice becomes an intersection between planner, architect and landscape designer to achieve the goal of a successful cities. Urban design makes urban planning more forward looking and creates an effective form of planning by developing vision for the
future of a city (Madanipour, 2006 in Gunder, 2011). It can be said that urban design
drawn the inspiration of the past, present and future (Gosling & Maitland,
1984). Furthermore, guidelines could be formulated through reformed planning
policy. This guideline would benefit for the future planning in Denpasar which could
address the sustainability issue with accommodates population growth and fostering
tourism industry to keep the economic stability. At the same time, this proposed
 guideline should also maintain the value of the traditional Balinese Hindu concept of
harmonisation between human life with the God and nature (Tri Hita Karana) which
has been established as the main goal of development in Denpasar Strategic Planning.
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