Resilience of cultural landscape heritage study in spatial tourism context

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Abstract. Resilience is regarded as a capacity to adapt to the dynamic condition as a management to avoid disturbance and disaster. All this time, resilience is always embedded in local people’s values. Actually in the tourism case, there is a resilience approach to avoid the disaster because of tourism activities or over tourism case. Tourist visits have created problems when local people or spatial spaces are unable to accommodate tourist needs. Based on this phenomenon today, it is important to focus on resilience thinking on tourist area, especially in this case cultural landscape heritage area. Resilience must be understood as the main aspect to explore the potential and the capability to adapt to the dynamic condition that is always changing. In architecture and planning approach, spatial is a human space that can show an interaction between human and nature with culture as media and all of them must be regarded as a holistic system with equilibrium and balance. In this study, the definition of resilience was explored by content analysis based on exploration of many texts in journals and books. It was then discussed by dialog theory between tourist, cultural landscape and resilience. Understanding resilience of cultural landscape with content analysis will create several conclusions that can become reference to tourism cases. To support the theory, this paper described one case of a tourist area chosen as national tourism destination that is Toba Lake area in North Sumatera.

Keywords: heritage, resilience, cultural landscape, tourism, spatial

1. Introduction
Resilience was initially discussed in 1970s when Holling wrote resilience and stability of ecological systems that focused on equilibrium in built environmental. Engineering and ecology as base fields used to understand the disturbance, ability and capacity as main elements of resilience [1–6]. It happened because there was no balance and equilibrium in growth and adaptability. The fast growth without capacity and ability to adapt will create a disturbance in its system [1,2,6,7]. In architectural spatial context, space and spatial capacity in built environment for human activities needs become a holistic system, which can contribute to human safety and comfort. When there is no safety and comfort, there will be social physical disasters, such as shock and stress. Furthermore, when there is no balance and equilibrium of nature management, there will be nature disasters, such as land sliding, abrasion, flood, etc. Global disasters without nature perspective to set up the built environment, will lead to massive disturbance for human and space, such as eruption, earthquake or tsunami that affected disaster victims.
2. Methods
Dialog theory, which analyzes cultural landscape and resilience theories in tourism heritage context, becomes tool to reconstruct the resilience of cultural landscape theories in heritage area. To support this, content analysis is carried out to understand and define the terms. In this case, there are some points to define resilience and its relation. The preposition, which is produced from dialog theory, is used to see the phenomenon in Lake Toba Area based on spatial space perspective in architecture and planning. All of the data were explored based on empiric data and textbook, including historic data. The facts of tourism program from government with all policy were also analyzed to obtain the real data.

3. Resilience of cultural landscape in heritage tourism area

3.1. Tourism activities as a spatial change
Tourism as a driver of social change with its manifestation [8,9] and rapid growth [8–12] have activities and need supporting facilities that cause many changes in spatial planning. Supporting facilities, such as hotels, mall, good streets and others, are created to serve tourists and make them feel comfortable. Good indicators of tourism service are about comfort and length of stay.

Tourism activities will improve the economy of the local community [10,12–14]. Tourism is a form of economic move [9] that should take a consideration of capacity, adaptability and ability [8–10,15] of both built environmental in nature and humans in their livelihood. Changes will occur in the physical spatial order and the socio-cultural order, especially for local communities. Nature will change because of tourism demand and human activities that caused the formation of new spaces. Environment is as carrying capacity of tourism activities [8–10] so it is important to discuss sustainability tourism in the future [8–10,12,16–19], sustainability in nature environmental and a set of belief of the people that based on nature. These conditions cannot be achieved when tourism is still understood as the amount of trips and people. Furthermore, when tourism area is a heritage area too, the tourism and heritage sites must be preserved to prevent damage [12,13]. Tourism is related with spatial change, so it must be developed with a balance between nature, built environmental and value [15,16]. There must be threshold of spatial and local values for the cultural landscape heritage area.

3.2. Cultural landscape heritage in tourism area
Balancing between nature and tourist activities is a significant factor to understanding cultural landscape heritage in tourism area. Tourist as a driver of change [8,9] and to conduct one form of economic activity [9,13] must be limited with cultural landscape heritage’s understanding. Cultural landscape is described as the active interaction of human activities [20–22] to set up the built environmental based on nature perspective. Nature is a main inspiration to be the guideline in spatial development [11,15,23–26]. Cultural landscape focuses on the balance between nature and human activities with dynamic changes [16,22–24,27,28]. Set of beliefs from local people based on nature will be taken into consideration in spatial space [23].

3.3. Resilience of cultural landscape in tourism heritage area
Nature with built environment and local people in tourism heritage area have specific aspects. Each of them has a threshold to support for changes. On the one hand, tourism activities bring up many changes [9]. Different lifestyles from tourists create new lifestyles in tourist areas. Therefore, resilience is needed for spatial space and local people in order to avoid the disturbance.
Resilience is the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity and feedbacks [2] that referred to Holling’s paper in 1973. Resilience is described as equilibrium that focuses on engineering and ecological [1–7,29] and on spatial space or built environment [15,30,31]. Other than that, resilience is also about capacity and ability to adaptation [1–6] which can support the equilibrium. The equilibrium is the limit where a process can still survive without disturbance. In tourism area, the
disturbance can occur because of fast growing tourist activities [8–10] and environmental changes [1–4,7,30–32]. So, resilience indicates an adaptive capacity in changing cycles [2,3,33].

4. Resilience of cultural landscape heritage study
Resilience approach in cultural landscape heritage area with its tourists is an important aspect to understand the nature and avoid from the disturbance or disaster. There are several points that can be drawn as conclusions, specifically:

- a. Tourist activities, which need support in facilities, can create changes in environment and local value so their capacity must be understood to keep the equilibrium and balance between nature and local people with their beliefs.
- b. Nature and local people have a capacity to adapt to changes, so there must be a management of change to avoid the disaster or disturbance.
- c. Changing of nature paradigm and belief system in local people can have an impact in spatial change where if there is no good understanding, there will be a disturbance on the built environment.
- d. To avoid the disturbance or disaster, an area with built environment needs resilience understanding in spatial and human values.
- e. Resilience is a dynamic process which has capacity to adapt to the preliminary disturbance.

In spatial context, resilience can be defined as (1) human adaptability; (2) balance between spatial built environment and (3) infrastructure capacity. Three of them become a holistic system that can support the area to avoid the disturbance because of environmental changes created by human activities. In this context, resilience is composed by spatial space and human adaptation. Resilience is a system management that organises capability and adaptability in environmental changes with an equilibrium stage.

![Spatial Resilience Schema](image)

**Figure 1. Spatial Resilience Schema**

5. Toba tourism area with its resilience as cultural landscape heritage

5.1. The potential of toba lake area as cultural landscape heritage
Toba Lake area was formed by eruption in the past time with its calderas. The caldera system, which surrounds the Samosir Island, has unique and beautiful scenery. In the long run, caldera has attracted local people to set up settlement and livelihood. All of them with their significance can be describe as cultural landscape heritage. For tourism destination, it can be known as cultural landscape heritage tourism. The potentials of the nature and many cultural activities, including traditional house in Toba Lake, are a system that forms cultural landscape heritage.
The government creates many programs for the national tourism to support not only local tourists but also foreign tourists. As description in many papers, tourist activities can enhance economic aspect to upgrade the local people welfare [13] with concerns to heritage value in its development [11,12,21,22]. In the recent years, many areas have been set as new patterns, known as homestays, resorts and the other terms. Furthermore, today there are many hotels, minimarkets, cafes etc. for tourist facilities. To attract many tourists, now there are many cultural activities with their meanings that can be enjoyed by tourists. For instance, Si Gale Gale Show, Gondang Naposo, and Toba Lake Festival included many craftswomen who created Ulos in many places. Those cultural activities have become beautiful and interesting attractions for local and foreign tourists.
The development of Toba Lake Area as one of ten national tourism destinations has made an impact on spatial changes in many areas. Almost all of them are made for the tourist demand or to supply facilities for tourist needs. Promotion for popular and unique areas is made for increasing the number of tourists. Many areas have been changed for tourism sites, such as Bakkara, Pangururan, Pusuk Buhit and especially in Tomok, Parapat and Ambarita which for a long time always have become a concentration for Toba Lake Tourist Destination. The problem in future spatial planning is about the balance between environmental changes and tourist facilities. The tourism sites can become crowded and slum, and the local people can be foreigner people in their hometown. That condition is very dangerous because it can create imbalance or there is no equilibrium between capacity, and adaptability to respect the environmental changes which can create disturbance. That issue can create natural disasters, such as storm, and manmade disasters, such as land sliding, dryness, flooding, or human psyche disasters, such as stress or culture shock. All of them can happen because there is no equilibrium or because the ability threshold has been exceeded.

5.2. Creating balance in Toba lake area as cultural landscape heritage tourism area
Toba Lake area has many attractive spots and cultural activities that have meanings related to the local values. All of programs that will support tourist activities must refer to the local values in order to preserve cultural landscape values. The development of tourism area must not destroy the balance between nature and human activities that concerns with tourist needs [2,3,8–10,16]. Creating balance can be done by supporting tourism with local values and uniqueness in each place. The local people must be given local knowledge to care for their belief and to be proud of it. Furthermore, local people who support local and central governments must realize that the Toba Lake Nature system is a holistic area, which should always be kept original. Based on local people knowledge and good policy from government, a guideline should be created to keep the balance between nature and people needs. That effort shows resilience to keep the cultural landscape heritage tourism area in order to create comfort for all people, not only for tourists but also for local people.

6. Conclusion
Understanding resilience in cultural landscape heritage tourism area is an important aspect along with tourist activities and movements. Spatial development has to refer to the nature and local values. Nature must be an inspiration to set up the built environment. The capacity of nature, space and people must become a guideline in order to avoid the disturbance and disaster. Toba Lake area as cultural landscape heritage of national tourism destination must be supported with the local knowledge from nature and local belief. Based on government program, Toba Lake area can be developed with resilience criteria from the space and local people. Its main goal is to preserve the cultural values that have long existed. The second goal is to avoid the disturbance because of tourist activities.

7. References
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