

River and Civilization in Sumatera's Historical Perspective in The 7th to 14th Centuries

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Abstract. The study of the relationship of civilization and the river as a natural path resulting from the interaction process between hydrological behaviors with the surface of the earth, vary over time and strongly influenced by the nature of the river, river function, and human behavior in the effort to utilize the river and its resources. The dynamics of water flow and river sediments are not only influenced by natural behavior, but also human behavior or activity. All living things that exist on earth also need a river, including humans. Rivers are often controlled to be more useful or reduce their negative impact on human activities. The benefits of the river for human life are very important and vital, for an example to retain water, to flow the water downstream, the source of sustenance, and the river is often considered as a place for contemplation, relaxation, and even to get enlightenment. It has long been acknowledged that the river became the beginning for the emerge and the development of a civilization, both in the perspective of "A Hydraulic Empire Civilization" and "The Cradle of Civilization". According to the spirit of the time (zeitgeist), humans began to develop technology in the growth areas around the river, the dam was built to control the water flow, to store water or produce energy; the embankment is designed to prevent the river from flowing over flood border; canals are built to connect rivers for transfer the water or navigation. The development of settlements and cultural centers between the 7th and 14th centuries in Sumatera Island cannot be separated from the existence of the Musi River, Batang Hari, Siak, and Kampar River. In that period left a very clear historical trail, namely the kingdom of Sriwijaya as a maritime kingdom, Bahal, Muara Takus Temple, and Muaro Jambi temple.

1. Introduction

Geografisch milieu is a geographical circumstances which include a nation that has an influence over civilization though is limited or complementary such as climate and geographical position. In Indonesia, research on historical geography is limited, especially regarding to historical geography of Sumatera. Archaeological and historical facts show several historical sites in that area, located around the confluence of two rivers. With these considerations the main issue of this study is why the location of the temples in Sumatra located on the banks of the river? The problem formulation consists of two research questions (1) what is the background of the growth of riverside cities in Sumatra in the 7th to 14th centuries? (2) How is the linkage between the development of the riverside area with the construction of Muara Takus temple, Muara Jambi temple, and Bahal temple?



Scholars have defined civilization using various criteria such as the use of writing, cities, a class-based society, agriculture, animal husbandry, public buildings, metallurgy, monumental architecture, and technology (most technology was used to aid in agriculture, other trade technologies such as boats and carts were employed to facilitate trade). One hand civilizations whose agriculture was dependent upon large-scale waterworks for irrigation and flood control were called "hydraulic civilizations".

It is general theory advanced to explain the development of ancient civilizations with systematic organization of work on a large scale, the emergence of social classes, and widespread specialization is the development of irrigation works led to the use of mass labour, to an organizational hierarchy for coordinating and directing its activities, and to government control for ensuring proper distribution of the water. On the other hand the civilizations arose independently at several locations in both hemispheres. Sociocultural developments occurred along different timeframes. "Sedentary" and "nomadic" communities continued to interact considerably; they were not strictly divided among widely different cultural groups. The concept of a cradle of civilization has a focus where the inhabitants came to build cities, to create writing systems, to experiment in techniques for making pottery and using metals, to domesticate animals, and to develop complex social structures involving class systems. The term cradle of civilization has frequently been applied to a variety of cultures and areas. The figurative use of cradle to mean "the place or region in which anything is nurtured or sheltered in its earlier stage".

Based on the problems characteristic, the historical research plan with historical method is made. The aim of this research is to (1) Identify the background of the development of Sumatera's riverside cities in the 7th to 14th centuries. (2) Analyze the pattern of urban development in the river basin area as a center of Buddhist education in Muara Jambi temple, Muara Takus, and Bahal temple. The theory of civilization formation will be used as an approach to solving research problems.

2. Methods

This research focused on the imaginative reconstruction of historical images and events in Sumatra critically and analytically based on the evidence or historical sources and heritage data, using the historical method. The design developed in six stages namely (1) Select a topic, (2) Investigate all relevant evidence; (3) Make a note; (4) Evaluate critically all evidences (source criticism); (5) Construct the results of research into a correct and meaningful pattern; (6) Presents in a way that can attract attention and communicate it to the readers [1]. Data collection techniques, in the form of document study, while the instruments being used is the researcher itself. Data analysis techniques using internal and external criticism as the basis of historiography.

3. Results and discussion

The life character of Southeast Asia society, dominated by water and sea [2], including Indonesia. Indonesia is also known as Nusantara where 2/3 its territory is ocean, so Indonesia can be called as maritime country. The historical and sociological process has strengthened Indonesia as a maritime country with a proven maritime tradition. Understanding geographical, historical and sociological facts and referring [3], the early development of cities in Indonesia, including the island of Sumatera begins with coastal areas on the shipping lanes that connecting China and India.

Sumatera Island is a strategic area that lies at the crossroads of the Silk Road Sea between the two great civilizations of the world namely India and China. Archaeological and historical evidence indicates that Sumatera's relationship with India and China and Java has been established since 7th century [4]. Contact with India and China is likely to have developed since the 1st century AD [5]. Further explained that in the 1st century AD there are several phenomena that allow the growing popularity of marine trade, among others (1) Increasing the spread of Buddhism out of India; (2) the discovery of large shipbuilding technology (jung) that can carry up to 700 people; (3) increased security breaches of commercial silk road business, putting India in place of Siberia as a new gold source for the Roman Empire. And of course the situation has a greater impact on the business world's attention to the island of Sumatra or Swarnadwipa (Gold Island) with a variety of potential owned either from the geographical aspect as well as the wealth of high value trading

Increasing activity in commercial line in the 1st century AD encouraging the emerge of cities in Sumatera island. The requirement for the development of city has been fulfilled [6]. Sumatera with its natural wealth, climate and geographical environment supported by rivers and estuaries to reach the inland areas where the main trading commodities are produced, attracts the advocates for a transit (A favorable "ecological" base); With the support of large and small shipbuilding technology capable of supporting the transportation of trade traffic in food commodities, exotic animals, forest products, and plantations in inland cities and coastal seaports (An advanced technology in both agricultural and non-agricultural spheres; A regular social structure so as to build a monument of magnificent temples that require coordination on every structure of society (A complex social organization). Historically, Sumatera has relied on the long-distance trade of its agricultural products to secure these materials. The irrigation systems and labor required for extensive farming and building monument was managed by a centralized authority. The early development of this authority, over large numbers of people in an urban center, is really what distinguishes Sumatera and gives it a special position in the history of Indonesia.

River is the place to transport water and sediment resulting from the interaction between hydrological behaviors with the earth's surface, from a higher place to a lower, and ends at sea. Flow behavior and an environmental conditions along the river is strongly influenced by the phenomena that occurred in the catchment area of the river, whether natural or phenomenon due to human intervention. Land use development activities assessed to influence the flow behavior include the development of settlement networks, land management, transportation networks, including the development of water resources infrastructure for both irrigation and non-irrigation water needs. Naturally the upstream activities (upper catchment), either in the groove system or in the land system, will affect the downstream river condition, and generally not the other way around. Along with the human desire to obtain a better level of worldly and spiritual life, the development of utilization activities in the area has also developed [7].

With an understanding of the river character, as well as the fact that since the first century, riverside cities already have contributed to international trade, most likely in the 7th century, the riverside cities in the hinterland Sumatera region were connected directly to the International trade with the support of cities or transit ports in the Strait of Malacca. Riverside cities in the hinterland continues to be built to facilitate communication and transportation with the port city on the East coast of Sumatera.

Thus, the structure of municipal networks of Sumatera can be categorized as: riverside cities in the hinterland as collecting centres as well as feeder points (commodity collectors from small villages and forests in the hinterland and as feeder for the seaport city on the beach), as well as larger and broader enter port cities in serving the busier marine trade [3]. Until 14th century that the role of riverside cities on Sumatera's hinterland was increasingly important in the international trading system. Trade was conducted within the civilization as well as with Sumatera. Advancement in technology led to carts and early boats that were used as the main method of trade and travel. Thus the pattern of urban development is a combination between riverine and overland models [8]. The symbiotic mutualistic relationship between the riverside cities in the hinterland and the coastal seaports in the international trade is clearly [9].

Based on historical-archaeological studies, the existence of riverside cities in the hinterland of Sumatera also plays an important role in the spread of Buddhist religion in Sumatra. The spreading of Buddhism since the 7th century has continued to increase along with the spread of influence in the region of Southeast Asia and East Asia. The propagation of Buddhism in the 7th century in Sumatra is depicted in Tsing's trip note as [8]:

"the early networks that initiative the expansion of an 'Esoteric Buddhist package' from the 7th century were across maritime Asia constituted by monk (in Sumatera alluded to by Yijing- I Tsing) who travelled along the path opened by long-distance traders that favoured the quick exchange of goods, people, and idea...Sumatera to the 14th century hosted renowned centres of Buddhist activity especially along the Musi river, the Batang Hari river, the Kampar Kanan River, the Barumun and Pannai Rivers"

Musi River associated with the existence of the capital of Sriwijaya kingdom. The importance of Musi river for Sriwijaya can be seen [4, 9-10]:

“Much of the evidence for life in Sriwijaya probably lies beneath the Musi River. It has been a major artery of commerce for over 2,000 years, and connects the sources of gold, ivory, and other tropical luxuries with the long distance maritime trade route through the strait of Melaka. The majority of Sriwijaya’s population lived over the river...and Sriwijaya’s contribution to Buddhist theology”

The role of Batang Hari river is related to the history of Muara Jambi temple, the temple of Muara Jambi is covers over 2,000 hectares located in the natural levee on the left (north) bank of Batanghari River [8]. Added further that a flood prone area has been realigned to become a viable area for worship rituals and for settlement at that time. The findings of man-made canals that pass around the temple complex and the water reservoirs are evidence that the people of the past to conserve water, use the canals for transportation, obtain source of protein from the various fish cultivated in these canals connected to the Batanghari River. The findings of man-made canals that passes through the temple complex and the water reservoirs are evidence that the people of the fish can survive. The cultivated in these canals To the Batanghari River. In terms of technology and architecture, the structures illustrate the skills and the knowledge in various fields starting from selecting the location, method of constructing the temple and land use adjusted to the geographical condition and environment of the temple compound.

While the Kampar river relationship with the history of the existence of Muara Takus temple is described in research results from the two famous paleography N.J Krom and J.G de Caspar is who successfully identified the text and gold plate that was found in the Muara Takus site. The Muara Takus temple complex is built by the Kampar Kanan River. Muara Takus has the largest brick buildings and sandstone. Within the walls are found the Candi Tua, Candi Bungsu, the Mahligai stupa and the Palangka. In the complex is also found a mound to be the place for cremations (Schnitger in Acri, 1936: 40). It is said that the Muara Takus bricks were made in the village of Ponkai above the temple complex, where inhabitants carried the bricks, handing these over to one another in a long line all the way to the complex. This means that the temples were built jointly with the inhabitants.

Candi Bahal are one of a group of temples discovered in Padang Lawas is area between the Barisan Mountains and the highlands of northern Sumatra with a grassy flat plain (lowland) with dry winds from the west coast blow through the pass and sweep. The three temples of Bahal are separated by a distance of about 500 meter. The complex of the temple is known locally as biaro (from vihara or monastery), possibly indicating a clue to its original use. The plain is kept free of tall vegetation by the prevailing dry winds sweeping through the gap between the two highlands. Padang lawas is quite a different type of site compare to Muara Takus and Muara Jambi. It lies far up two medium-sized rivers, the Barumun and Pannai. There were no major settlements in Padang Lawas, but the area provided a strategic route for people moving between the east and west coast of Sumatera. Its location has one strategic benefit: it lies at the eastern entrance to the easier pass between east and west in the entire chain [11].

The role of Buddhist temples in general cannot be separated from the aspect of education. The temple serves as a monastery of the educational center as well as the spread of Buddhism. Buddhism that developed in Sumatera in 7th to 13th centuries, based on relevant inscriptions as well as the journeys of Chinese travelers, is syncretism with the Syiwaistis school of thought [4, 8-10]. The temples in Sumatera, which are made of red brick except there is a monument on the Muara Takus site, closely related to the growth of riverside cities in the hinterland of Sumatera as a center of Buddhist education in Southeast Asia. The Chinese travelers first studied in these cities before continuing their education to India, as well as they finished their study they will also stop in the cities. Buddhist teachers were often to drop by, as their functioned as diplomats and even as merchants, as [8], that the flow of people in the area might provide the reason for the establishment of the 7th to 13th century shrines found in the area. The area easily accessible from the major maritime thoroughfare through the straits of Melaka, along

with many Buddhist pilgrim passed on their way to and from the important sites in China, India, and Java.

By understanding the function of these cities, it can be illustrated that the role of riverside cities where Muara Jambi temple, Muara Takus temple and Bahal Temple were built, played an important role in the spread of Buddhism until the 14th century. Which of course functioned by the Musi riverside city, where Palembang as the center of power Sriwijaya kingdom. From the findings and studies on the relationship of riverside cities in the hinterland of Sumatera with Muara Jambi temple, Muara Takus and Candi Bahal, there is probably no clear separation between the temple as the sacred building and the Buddhist education center with the residential area. Thus it can be said that the river in this case is used to support the city either as a center of economic, social and religious activities.

Written records gave historians a great deal of insight into the civilizations of ancient Sumatera, but very few written materials have been discovered in the Muara Takus, Muara Jambi and Bahal. As a result, they have had considerable difficulty understanding the nature of the society and religious institutions of that sites. We know relatively little about their legal codes, structure of society, economics activity, and systems of governance. However, this does not conclusively prove that society lacked any social hierarchy. But location within cities as indicators of wealth and peaceful, because there were no natural enemies due to the geographic location of the cities and no weapons have been found at sites.

The limited source of written history as well as the scarce study of the history of the community in the location of the three temples became its own difficulties in analyzing the implementation of hydraulic civilization theory and cradle of civilization theory. However, from the results of existing studies on archaeological and historical heritage, the life of the people of Sumatra at that time tend to be more appropriate when using the approach of cradle civilization theory rather than hydraulic civilization theory. The basic consideration is that the existence of culture in Sumatera with the findings of the three Buddhist temples is part of the development of India religion and culture, even though the local genius also influences the India influence. The weakness of the hydraulic civilization theory in understanding the Sumatera's culture is the absence of information on the existence of monopoly or control over the population and the utilization of rivers or canals that have been built. Thus the theory of cradle civilization is more appropriate to understand the phenomenon of Sumatera history in 7th century to 14th centuries.

Decline of the lifeline of the Cities by the end of 13th, climate change or a tectonic event may have diverted or disrupted river systems and they migrated toward the north Sumatera where they could have established villages and isolated farms. These small communities would not have been able to produce the same agricultural surpluses and others commodity to support large cities in the line of the international trade. With the reduced production of goods, there would have been a decline in international trade route. By around the 14th, most of the cities had been abandoned.

4. Conclusions

The background of the Sumatera's cities development in 7th century to 14th centuries was influenced by internal and external factors. Internal factors that the strategic geographical position of Sumatera lies in the Malacca Straits trade route, supported by vast and deep rivers, as well as the richness of the high-value commodities rural areas. While the external factors, that the growing trade relations between India and China, as well as the spread of Buddhism to Southeast Asia. The river is water and sediment source which in its development has been a place of city formation since the ancient times, as well as cities in Sumatera in the 7th to 14th centuries.

The linkage between the development of the riverside area with the construction of the Muara Takus temple, the Muara Jambi temple and the Bahal Sumatera temple in the 7th to 14th centuries is very clear because the development of the cities ultimately has a function not only as a place of economic and political activity but also a center of renowned Buddhist education in Southeast Asia. Retracing where the place of Buddhist education held in the monastery/ temple, so the construction of these temples become an integral part from the development of the riverside cities.

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