

WATER SYSTEM OF THE KINGDOM OF GALUH (1371 – 1475 AD)

MUMUH MUHSIN ZAKARIA

Associate Professor, Department of History and Philology, Faculty of Humanities, Universitas Padjadjaran Bandung, Indonesia. Email: mumuh.muhsin@unpad.ac.id

MIFTAHUL FALAH

Lecturer, Department of History and Philology, Faculty of Cultural Sciences, Universitas Padjadjaran. Email: miftahul.falah@unpad.ac.id

BUDIMANSYAH

Doctoral Student, Postgraduate Program, Faculty of Cultural Sciences, Universitas Padjadjaran. Email: budimansyah170001@mail.unpad.ac.id

Abstract

This study aims to reveal the function of the moat in Galuh Pakwan City as the center of the Galuh Kingdom, to what extent the moat is related to the interpretation of the Kawali Inscription I which is suspected not only as a purely defensive function. In this study, historical method is used in order to produce a comprehensive study. In addition, the theory of urban planning and hydrology is also used. The lack of sources regarding the ditch in Galuh Pakwan City, it is hoped that in-depth interviews with informants can become material for historical analysis. Based on the facts on the ground, it is suspected that the existence of a ditch in Galuh Pakwan City can still be seen in several places in the Kawali District area. The moat was built on the orders of King Niskalawastu Kancana (1371 - 1475) after he was crowned ruler of the Galuh Kingdom. The most actual study regarding the ditch in Galuh Pakwan City shows another function outside of the city's defense function, namely as agricultural irrigation. This strong suspicion regarding the function of irrigation is in line with the contents of the fragment from the Sanghyang Siksa Kanda ng Karesian manuscript about the existence of early rice fields in Tatar Sunda.

Keywords: Galuh Pakwan, Trenches, Paddy Fields, Irrigation, Hydrology

1. INTRODUCTION

Rice is a basic commodity as a staple food for most people in Southeast Asia. Rice can grow in dry or wet land conditions, as well as swamp land with a floating system. (Wolters, 2007: 209). The area of rice farming land in Southeast Asia is about 16 percent of the total land area of all agricultural commodities, and provides an employment impact of 61 percent of the total economically active population, and around 35 percent of the gross domestic product of the sector. (Capistrano and Gerald G. Marten, 1986: 6-7). According to historical sources, the rice plant was brought to Southeast Asia by Austronesian-speaking people during the late Neolithic period. The variety with the Latin name *Oryza Sativa* was developed for the first time in the Central China region. However, this needs to be re-examined, because the early phases of the development of rice agriculture in the Southeast Asian region were still constrained by sources, especially related to archaeo-botanical data. Based on archaeological evidence, rice farming in Indonesia dates back to 4000 years ago on the northwestern island of Borneo, as well as on the islands of Java and Bali at least 2000 years ago. (Glover and C. F. W. Higham, 1996: 426; Bellwood et al., 1997: 168; Christie, 2007), pp. 235-236). Of course, in subsequent developments, rice farming and irrigation development were influenced

by China and India. (Van der Meer, 1979: 1-4). Rice farming in Java and Bali experienced very rapid development in the period before the 15th century. (Van der Meer, 1979: vii). This information can be strengthened by evidence showing large-scale irrigation development under the instructions of kings who once ruled. This period was the beginning of the birth of hydraulic installation technology (water system) to maximize the rice field sector (wet cultivation). The implementation of irrigation projects for agricultural purposes (sometimes there were also functions for flood control and city defense) carried out by kings in the past, indicated the existence of groups of people who had knowledge, organization and mass mobilization capabilities, as well as the centrality of a leader, to be able to develop a hydraulic society with oriental despotism to strengthen the existence of the kingdom. (Wittfogel, 1957: 17-18).

Development of agricultural irrigation (especially in Java) is not new. It was recorded that irrigation was made during the Tarumanagara era around the 6th century, namely making a canal that empties into the North Coast of Java named Candrabagha, as recorded in the Tugu Inscription. (Poesponegoro dan Nugroho Notosusanto eds., 2008: 53). Then, Sultan Ageng as the ruler of Banten around the middle of the 16th century built the Tirtayasa Irrigation Canal, which was recorded by the VOC in the Daag Register. (Guillot, 2008: 115-119; Wibisono, 2013: 54; Budimansyah et al., 2018: 422). On the other hand, actually, irrigation does not require sophisticated construction. Paddy fields can also be easily planted with only contour irrigation, in which water flows naturally from higher ground, enters small ditches, and continues to irrigate the fields. To develop this almost natural type of irrigation, little capital or labor is required. (Boomgaard, 1990: 143). Regarding the water system which aims for agricultural irrigation and flood control, it is very interesting if we examine the two great kings who once ruled the Tatar Sunda, namely, Prabu Niskalawastu Kancana (1371 - 1475 AD) and Sri Baduga Maharaja (1482 - 1521 AD). As written in the Kawali Inscription I and the Batutulis Inscription, the two figures are not only related genealogically, but also have similarities in their policy of building canals and dams, which have a positive impact on the prosperity of their people. (Budimansyah, 2019:108-110, 169; Budimansyah, 2020: 129-130). This article will focus on what Niskalawastu Kancana did when he was in power in the Galuh Kingdom. The historical reconstruction is based on the interpretation of the contents of the Kawali Inscription I with fragments of the text of the Sanghyang Siksa Kanda ng Karesian Manuscript, as well as physical evidence found in the field.

2. RESEARCH METHOD

The historical method will be used in this study, starting from the heuristic stage, to explore related sources, both primary and secondary sources. Then the next stage is criticism and interpretation of the source. Then, historiography as the final stage will write down past events so that they become a chronological and imaginative historical story, which as a whole constitutes a unified whole. (Gottschalk, 2006: 33-34). The historical approach through historical methods is very appropriate to produce a comprehensive study, because it has a critical analysis that can be applied to all related sources. The process of source criticism in the early stages of a historical reconstruction is a key point in order to produce information

whose validity is unquestionable. (Lorenz, 2001: 6868-6870; Buckley, 2016: 879). In addition to using historical methods and social theories, this research will also use regional spatial planning theories and concepts, hydrological science, and descriptive-qualitative methods. Regional space as a historical product is created from a process of formation of discourses as dynamic and highly subjective entities. Territorial space in the broadest sense is understood as a state (state/kingdom), which has a relationship between subjects (individuals or groups), mediators (abstract areas or concrete areas) and objects... (Dhona, 2016: 2). The science of hydrology is the study of water regulation related to the hydrological, the movement of water in the hydrosphere which includes the processes of evaporation, cooling of air masses (condensation), rain (precipitation), and flow. These parts are a cycle that occurs naturally in freshwater ecosystems and seawater ecosystems. The normal hydrological cycle will have an impact on proper water management for various purposes such as water storage, flood control, and maintenance of water availability, which is strongly influenced by the presence of land cover and the physiography of an area. (Setyawan et al. 2018: 244).

Due to the lack of sources related to the water system during the Galuh Kingdom, it is very important to conduct in-depth interviews with sources in the field, especially regarding toponymy and archaeological (and geological) remains in the North Ciamis area as a study area. Sources who will be asked for information are cultural heirs, cultural actors, and site caretakers. All of these sources have five requirements, namely being fully enculturated with the culture they inherit, being directly involved in the historical/cultural events to be studied, having detailed knowledge regarding historical/cultural conditions that are not known/understood by researchers, having sufficient time involvement in research, and in the information provided using the local language so that it can provide a new perspective beyond the conclusions of experts on the history of Galuh in general.

3. SUNDANESE AGRARIAN CULTURE

The Sundanese people view that the natural environment is not something to be subdued, but must be respected and cared for, as a tribute to nature which has given life and livelihood. This attitude of respect is very visible in the farming activities of the Sundanese people which are full of the implementation of traditions, beliefs and customs. The ancient Sundanese people were known as cultivators (*huma*), which forced them to keep moving for a certain period of time. The *huma* farming pattern practiced by the Sundanese people is basically the concept of maintaining the ecosystem (the universe entrusted by God Almighty) which is based on spirituality and religious values. From this, a dialogue between humans and nature is formed which produces an emotional bond to respect and care for each other, both physically and psychologically, which is symbolized by the rice plant as the embodiment of the essence of Dewi Sri Sanghyang Pohaci. Until now, the attitude of respect of the Sundanese people towards nature is still being carried out by the Sundanese traditional communities. The change in the agricultural pattern of the Sundanese people from *huma* (dry rice cultivation) to wet rice cultivation was influenced by the political situation that occurred after the fall of the Sunda Kingdom in 1579 AD. The strong influence of the Sultanate of Mataram on the Tatar Sunda in the 17th century, which was followed by the early influence of

the VOC (1677) had an impact on the opening of rice fields on a large scale in the villages. This has changed at least two things. First, in the settlement pattern of the population which was originally nomadic to settle in one place. Second, rice which was originally to fulfill its own needs turned into a commercial commodity.

4. PADDY FIELD CULTURE IN TATAR SUNDA

The most important factor in rice farming is a regular source of water during the growing season. Adequate levels of water are needed to create soil conditions in which bacteria produce nitrogen as a growth stimulant for plants, and water needs to flow to remove toxic materials. The condition of the paddy fields that are maximally flooded as agricultural land provides nutrients for the rice, also has the further benefit of suppressing weed growth which is a perennial problem in the tropics. Therefore, the role of good irrigation channels is very vital, and will be greatly influenced by local geographical conditions. (Wolters, 2017: 209). Around the 17th century AD, the area on the north coast of Java in the Sunda Kingdom, namely Karawang, was described as one of the rice granaries on the island of Java. From this area, the surplus of rice for supplies to Malacca is quite significant, apart from two other places, namely Demak and Jepara. The success of the rice farming industry is inseparable from the construction of irrigation canals as the main infrastructure for the agricultural sector by the Sultanate of Mataram, which already has mastery in the fields of hydrological engineering and water management. (Wibisono, 2013: 54). The statement that Karawang around the 17th century AD had become a rice barn, which of course also served as a rice field farming area, was for the first time disclosed by H. J. de Graaf based on sources from Koloniaal Archief 769 (8 February 1642, f. 64). Based on the archives, it is said that the culture of rice fields in Tatar Sunda began in the 1600s which was introduced by Mataram troops who settled in Karawang after the attack on Casteel Batavia.¹

The word "sawah" (rice field) was already known to the Sundanese before the 17th century AD. In part IX of the text of the Sanghyang Siksa Kanda ng Karesian (SSKK) Manuscript, it says "Jaga [lamun] urang nyieun [sa]wah, [éta] sangkan [kadar] teu sangsara" ("Later if we will make [have] rice fields, the purpose is that we do not live miserable"). (Nurwansah, 2017: 32-61). Budimansyah's research (2019) shows that part IX of the SSKK Manuscript text is closely correlated with the contents of the front of the Kawali I Inscription lines 6-8, which was transliterated and translated by Titi Surti Nastiti and Hasan Djafar. (Budimansyah, 2019: 119-120).



Figure 1: Photo of the front of the Kawali I Inscription

Source: Doc. Budimansyah 2017.

“Nihan tapak walar nu siya mulia tapa[k] iña paṛbu raja wastu mañadëg di kuta kawali nu mahayu na kadatuan surawisesa nu marigi sakuliliṅ dayöh nu najur sakala desa aya ma nu pa[n]döri pakena gawe rahhayu pakön höböl jaya dina buana”.

(This is the sign of his former venerable Prabu Raja Wastu who ruled in the city of Kawali. He beautified the palace of Surawisesa. He made a moat around of the capital that prospered the entire region. May there be a successor to the king who exercises virtue in order to be victorious in the world).

Looking at part IX of the text of the SSKK Manuscript written during the time when Sri Baduga Maharaja was in power (1440 Ç/1518 AD), the word "sawah" (paddy field), when associated with the contents of the front of the Kawali I Inscription lines 6-8 very clearly implies about the event of the creation of irrigation canals by order of Prabu Niskalawastu Kancana. (Nurwansah, 2017: 31-61; Budimansyah, 2019: 119-120).

5. WATER SYSTEM OF THE GALUH KINGDOM

Water management has strong historical roots in Southeast Asian communities. The oldest manifestations of water management for agricultural purposes based on archaeological data are found in wetland areas. This tradition still continues today in almost all regions of Southeast Asia. (Christie, 2007: 119-120). In the course of time a wide variety of irrigation structures have been built in Southeast Asia, ranging from small-scale channel systems to interconnected large-scale channel systems. The structure of such irrigation networks is affected by geographical conditions, such as climatic and geomorphological conditions, topography, as well as geology and hydrology. (Wittfogel, 1957: 18, 23; 1970: 209).

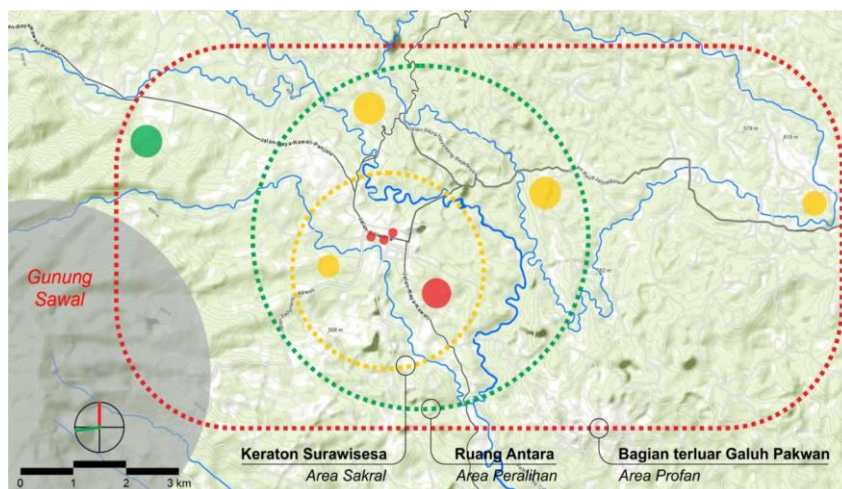


Figure 2: Map of the Zone Division of Galuh Pakwan City Space Function

Source: Budimansyah 2019.

Galuh Pakwan City as the heart of the Galuh Kingdom is a city built on the consideration of the physical condition of the landscape of the area that surrounds it. The city was formed from a design based on cultural concepts and aligned with local cosmology. (Budimansyah et al. 2020: 125). Galuh Pakwan, like the cities of pre-colonial Java Island, continues the tradition of cities in the Hindu-Buddhist period with its form as a mandala city, with the king's palace occupying the position of the city center surrounded by squares and other important buildings around it. (Damayanti dan Handinoto, 2005: 35; Purwani, 2017: 74).

In 1371 AD Niskalawastu Kancana ascended the throne in place of his father, Lord Niskala. In the early days of his reign, Dewa Niskala repaired the Surawisesa Palace complex as well as creating a channel (trench) as a defense system for Galuh Pakwan City, as told by the Kawali I Inscription. The channel (ditch) serves as a line of defense of the territory (city), agricultural irrigation (irrigation of rice fields), and management of natural disasters, especially floods. Budimansyah et al.,:125). The creation of the channel (trench) was born from a group of advanced knowledgeable people supported by the existence of the sole authority of a ruler so that the organization and mobilization of a large mass went well. Events like this almost occurred in contemporary kingdoms in East Asia and Southeast Asia. (Wittfogel, 1957: 18, 23; Wolters, 2007: 209). The making of canals (ditches) by the people in the past is a translation of the concept of nature conservation (which in this case is water conservation). Water and soil conservation are two things that are interrelated as an effort to save the earth to restore natural ecosystems in order to save the lives that come with it. The availability of sustainable water quantity and quality is a parameter of the success of integrated soil conservation actions. (Susilawati, 2006: 33). It is suspected that the remains of the Galuh Pakwan City ditch (or the Ciamis people call it the Surawisesa Trench) are in two places, namely in Kawali District which stretches for \pm 4.5 km from the start of the Winduraja Village area to the border of Kawali Village and Dayeuh Luhur Village and ends at confluence of the Cimuntur River. Then two location points in the Selacai Village area,

Cipaku District, which are flanked by the rice fields. The estimated length of each remaining trench is ± 2 km.² It is suspected that the remaining ditches are currently being used by the local community as rice fields. Its location as an elongated valley flanked by two slopes makes the area very suitable for use as wet land cultivation.

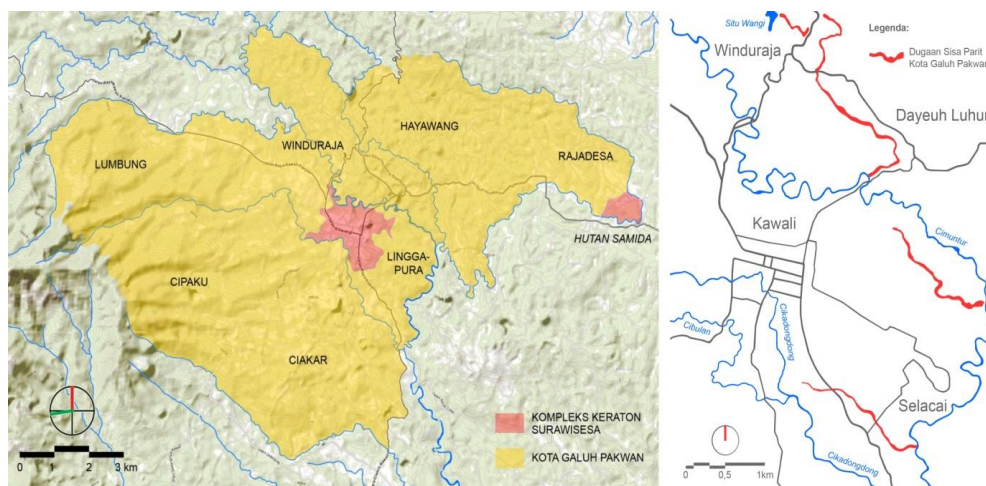


Figure 3: Map of Galuh Pakwan City and Location of the Suspected Remains of the Surawisesa Trench

Source: Budimansyah 2019.

The interpretation of the function of the trenches made during the reign of King Niskalawastu Kancana in the Kawali I Inscription can be traced through two words as the main key, namely "parigi" and "tajur". Parigi literally means "a ditch, a trench, either deep or shallow. In terms of parigi is "A fosse dug round a house, or round any enclosure, with a view to use it as a defense or means of defense". While the word tajur is "to make a plantation of fruit-trees" (aiming to support the plantation sector, or orchards). (Rigg, 1862: 361, 474). From other sources it is explained that a parigi is a wide and deep channel, like a man-made river which has a function as irrigation, disposing of rain runoff into rivers, draining stagnant water in settlements, and so on. Tajur/tanjur means planting; cultivate; plant. (Danadibrata, 2006: 204, 669).

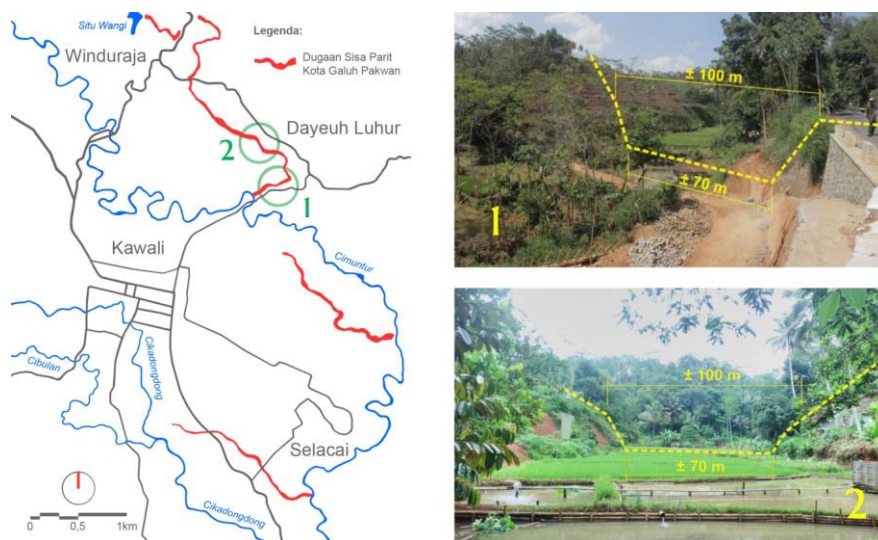


Figure 4: Map and Photo of the Location of the Alleged Remains of the Surawisesa Trench

Source: Budimansyah 2019

6. CONCLUSION

The conclusion that rice field culture in Tatar Sunda began in the 17th century has already become well established. The thesis put forward by H. J. de Graaf (1958) has been continuously cited by experts who make studies of agrarian culture on the island of Java, and it has survived to this day. The development of the study of Sundanese history and culture, which mainly departs from the perspective of archeology and philology, has produced very encouraging findings. Scholars of Sundanese history and culture have slowly begun to uncover the historical veil that has been difficult to uncover so far. The contents of the Kawali I inscription and the contents of the text of the Sanghyang Siksa Kandang Karesian manuscript are able to provide an answer that the rice field culture was carried out by the Sundanese people at least in the 14th century. Prabu Niskalawastu Kancana can be seen as a visionary king with his initiative to make a ditch in Galuh Pakwan City. Based on an analysis using a transdisciplinary approach, the interpretation of the function of the ditch built on the orders of Niskalawastu Kancana is as a city defense and irrigation canal for agricultural land.

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