Vegetation of Keraton Cirebon as symbolize a cultural Cirebon

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Abstract. Vegetation is not only an element of place in the landscape but also can improve a sacred value to a place. There are three Keraton in Cirebon City are known as a sacred place. One of the markers of the sacredness of the palace is the existence of sacred plants. Keraton is a residence of the sultan, who is considered as a messenger of God to this world, and vegetation in it functioned to increase the sacredness of it. The purpose of this study is to find the plant kind be a symbol of the Keraton which contains meaning that increases the sacred value of the Keraton, and also to find the physical function of the vegetation to the Keraton environment. The method used is qualitative analysis. The results study showed there are nine kinds of sacred plants, four of which had the highest level of sacredness can be a symbol of sacredness of Keraton. Besides, this research finding can be a guideline for the conservation activities of the Archipelagos plant.

1. Introduction
Plants in Indonesia are a part of the archipelago's natural wealth. Some of these are specific endemic which can become a part of world cultural heritage. As a legacy, the specific plants, and the landscape where that growth should be maintained, protected, conserved, and managed so that their existence is sustained until the future generations.

Plants in nature have various functions, a sufficient amount of vegetation can play a major role in climate control, water retention, soil building, balancing elements of the ecosystem in the food chain, transpiration, productivity place for organism [1–3]. As an important part of nature, the existence of vegetation can function to modify the microclimate by providing thermal comfort for the creatures living around it. The combination and configuration of various types of vegetation in the form of trees and shrubs with layered canopy and dense leaves and deep and wide roots planted in an area can effectively provide thermal comfort for humans who live around it [1,4].

A combination of various types of plants in the form of large trees, shrubs, and shrubs are planting in the area can have an influence to the microclimate in the area and around it [1,3,5]. The physical characters of trees that can play a role in controlling the microclimate are shade plants with wide canopy in the form of shade [4,5], dense leaves, mature stems> 10 cm, height> 15 meters, and deep and wide roots [6,7].

As the main element of the landscape that supports the life of the creatures in it, plants become symbols of the elements of place that give certain meaning. The meaning given to these plants is generally due to the influence of the community's culture or certain religions [8–10]. In certain places that are considered sacred, plants with certain meanings are placed as markers and strengthen the sacred
character of that place. This plant is a symbol and description of desire or hope, or as an investment in the existence of the universe [8,11].

One of the locations in Indonesia that has a type of plant that gives and strengthens the character of the place is located in three palaces in the city of Cirebon, namely: Keraton Kasepuhan, Kanoman, and Kacirebon. In each palace there are unique plants that strengthen the character of the palace landscape. Every vegetation planted in the Keraton complex is carefully selected based on its sacred meaning and physical function as the main consideration in determining the planting position [12]. Even though the selection of plants is carried out carefully, the indicators of plant selection still refer to the sources of oral stories, both for reasons of choosing the species, position, meaning and function of the plants. Therefore, this paper aims to explore the types of plants that are symbols of the palace and to find out the meaning of plants or trees that increase the sacred value of the palace as a sacred place. After that, assess the relevance of whether these sacred plants function as temperature control, given the position of the palace in the coastal area. On the other hand, the results of this study are also documentation that provides knowledge to future generations that the selection of plants that become symbols of the Palace is chosen not only because of its sacred meaning, but also its physical function as a microclimate controller, particularly temperature.

2. Research methods
This study was conducted from 2014 until 2019 at three Keraton complexes in Cirebon City, West Java, Indonesia, using a qualitative method that divides into 4 phases. The first stage was a literature study for collecting archipelago plants base on 1) the characteristic plant as a temperature controller [4–7] and 2) the characteristics plant as a symbol of sacredness of the place [8,9,11]. The second stages were observation and interview. Observation is conducted at Keraton Kasepuhan, Keraton Kanoman, and Keraton Kacirebonan to collect dan record all the plants inside of complex Keraton. Besides that, interviews conducted to four informants who as Keraton key persons, i.e., Lurah Keraton Kasepuhan, Pangeran Komisi Keraton Kanoman, Patih Keraton Kacirebonan, and Bapak Mustaqim Asteja as a founder of the Cultural Community of Cirebon, Kendi Pertula. the purposes of this interview are to find the meaning (sacred meaning) of plant, the reason for choosing and placing in the Keratons.

The next stage is analysis and discussion to assess the function of plants as symbols of sacredness that enhance the character of the Palace. This assessment is based on indicators that 1) the position of the plant is planted in a sacred place of the palace; 2) giving a strong and shady impression, and 3) almost every part of it can be used for human life [8,9,11]; and 4) can be hundreds of years old. In addition, these plants are physically assessed as 5) a producer of oxygen and shade. The indicators in this assessment are large, tall, broad-crowned, dense leaf tree species [4–7].

3. Results and discussion

3.1. Plants at three Keratons in Cirebon
The observation and interview to informants about vegetation in the Keraton complex shows that the vegetations planted in the Keraton are very diverse and are spread throughout the Keraton yard. there are hundreds of plants that planting from the Keraton square (alun-alun) to the inner gardens of the Keraton. This plant chosen based on its physical characteristics because have a wide canopy, large stems, can live hundreds of years, or because of its beautiful flowers. Refer to the condition Cirebon area located in coastal areas where temperatures are relatively hot, the plants that has been planting around Keraton divide into 3 (three) categories, i.e., shrub with flower, large shrub, and tree.

The ten plants have physical characteristics, sacred meaning, and planting positions in the palace as follows:

- The Banyan tree (*Ficus benjamina*), in Indonesia called *beringin*, has wide canopy, big trunk, the shape of the leaves is small and many (lush), in local meaning, this tree as a symbol of protecting the people. This tree usually planting in alun-alun (yard) or front of the main building of Keraton.
The Mango tree (*Mangifera indica*), in Cirebon language called *pelem*. Mango trees are deep-rooted, symmetrical evergreens that attain heights of 30 meters. Mango trees have lanceolate leaves form and produce fruit 2-3 times a year. This tree has meaning a shared will or determination of the leader, and his people.

The Cape tree (*Mimusops elengi*), in local called *tanjung* or *nanjung* or throne. Cape trees bloom fragrant and have a big trunk and a shady canopy. The meaning of tree is a sultan who lives in the palace understands and understands the suffering of his people and will try to practice wisely to reduce this suffering.

The Sapodilla tree (*Manikara kauki*) or *Sawo kecik* in local name, is a fruit plant. A large and shady tree can grow up to 30-40 meters tall. Low branched, sapodilla trunk with rough skin, blackish gray to dark brown. All parts contain latex, a thick milky white sap. In local language is *sawo kecik* or *becik*, that means good, as a human we must behave properly and correctly. This tree placed in the front area Keraton to greet the people who come meet Sultan.

The Soka plants (*Saraca asoca*) are a type of shrub with a beautiful small red flower that is usually considered sacred by religion Hindu. In local meaning, *soka* refer to *"suka"* in Indonesian or joy, namely that the sultan receives his guests with joy, another meaning is that we humans must live happily. This vegetation usually planting in the sacred garden of Keraton.

Teak tree (*Tectona grandis*). A tropical hardwood tree species. The large, papery leaves of teak trees are often hairy on the lower surface. Teak wood has a specific smell and is valuable because of its durability. These plants are widely scattered throughout the palace, from the front yard to the backyard of the palace. This meaning tree is “sejatinya manusia”, the true human nature, a picture of a real human being, a complete and perfect human being.

Dewandaru plants (*Equina uniflora*) are included as large shrubs with beautiful color fruit. Planting of this vegetation refers to a myth and usually are planted in a sacred garden. This plant, in Cirebon means “pangeling” or reminder, enlightener, and illuminator which another meaning to be human light, who illuminates the darkness.

Kepel (*Stelechocarpus burahol*) a fruit producing tree, up to 25 m tall, trunk diameter of up to 40 cm, and has dark green leaves. Planted as many as 5 trees in front of the pengada, security building. Kepel means handheld. The meaning of this tree planting is five officers whose responsibility (duty) is united to maintain the security of the palace.

Loa/Loh (*Ficus rumpii blume*) is one of the ficus species known as a sacred tree. People believe that every part of the tree used as a repellent calamity.

Angsana tree (*Pterocarpus indica*) is the kind of tree with a big trunk and can grow until 40 meters tall. This tree trunk is quite strong, commonly used for building construction.

3.2. The Analysis and discussion of the function of vegetation as a symbol of Keraton

Based on an interview with key persons, the sacred meaning of Keraton Cirebon plant arise because the plant 1) has many functions for human life, 3) give a strong impression (tall and big trunk), 4) shady (wide canopy and leafy) impression, and 5) have beautiful/attractive physical form. According to Beratha, Dafi and Na’an usually, the existence of the sacred plant is very important for human life so it is placed in the sacred place and be a symbol of this places [8,9,11].

From 10 (ten) plants type where planting inside Keraton, that is one has not philosophy, that is Angsana tree (*Pterocarpus indica*). Nine of them, divides into three categories based on sacred meaning level, i.e.: plants that have a high, a moderate, less philosophy meaning. This level difference is based on the sacred value contained and the planting position of the plant (Figure 1).
Table 1. Analysis the influential of the plants to the sacredness and as a temperature controller.

| No. | Name of plant | As a symbol of a sacred places | Keraton Kasepuhan | Keraton Kanoman | Keraton Kacirebonan | As Temperature Controller |
|-----|---------------|-------------------------------|-------------------|----------------|-------------------|--------------------------|
| 1   | Bayan tree (*Ficus benjamina*), | √√√ | Alun-alun (front yard) | Alun-alun (front yard) | Alun-alun (front yard) | √√√ |
| 2   | Mango tree (*Mangifera indica*), | √√√ | - | Mangga boom garden (Sacred garden) | Front garden | √√√ |
| 3   | Sapodilla tree/Sawo kecik (*Manikara kauki*), | √√√ | Siti Hinggil (Sacred area) & at all Gardens inside of Keraton | at all Gardens inside of Keraton | Front garden of Keraton & at all Gardens inside of Keraton | √√√ |
| 4   | Soka (*Ixora javanica*), | √√ | x | x | Dalem Agung Pakungwati (Sacred area) | √√ |
| 5   | Teak tree (*Tectona grandis*), | √ | at all Gardens inside of Keraton | at all Gardens inside of Keraton | at all Gardens inside of Keraton | √√√ |
| 6   | Dewandaru (*Equina uniflora*), | √√√ | Taman Dewandaru (Sacred garden) | x | x | √√√ |
| 7   | Kepel (*Stelchocarpus burahol*), | √√ | x | Kedaton garden (Living place of Sultan) | x | √√√ |
| 8   | Cape tree (*Minusops elengi*), | √ | at some Keraton garden | at some Keraton garden | at some Keraton garden | √√√ |
| 9   | Loa/Loh (*Ficus rampii blame*), | √√ | x | Pulantara garden (sacred area) | x | √√√ |

Note: √√√: very influential; √√: quite influential; √: little effect; x: none

The plant with high philosophy meaning are 1) the Banyan tree (*Ficus benjamina*) that placed in the front yard (alun-alun) of Keraton, 2) the Mango tree (*Mangifera indica*) that planted in the garden, front of Prabayaksa (main building of Keraton Kanoman), and 3) the Sapodilla tree or Sawo kecik (*Manikara kauki*) that planted in Siti Hinggil (sacred area, the front area of Keraton), and on the front garden of Keraton Kacirebonan, 4) Dewandaru (*Equina uniflora*), was planted in front of Jinem Pangrawit, the main building of the Keraton Kasepuhan, and the garden where it is planted is also called Taman Dewandaru. The next plant belonging to moderate philosophy level, i.e: 1) Soka (*Saraca asoca*), can be found in Dalem Agung Pakungwati, which is the sacred area of the Keraton Kasepuhan, 2) Kepel
Tectona grandis and Mimusops elengi. The meaning of the sacredness of the mango tree is closely related to the history of the palace of sacred tree species was not placed in a holy place. Because this plant has a special meaning and is planted in a holy place, the meaning of this holy plant does not contain any sacred value that is believed by the court wargi Keraton so that the location for planting is not in sacred places. Thus, this plant includes the lowest level for the level of sacredness.

As stated in the previous paragraph, one of the indicators of sacred plants as symbols of sacred places is those that have many benefits for human life. In Table 1 of the nine sacred plants in the palace, almost all of them are types of trees, with large stems, wide crowns, shade, and dense leaves. This type of plant is included in the type of temperature control [4,5,7]. That plants are Banyan tree (Ficus benjamina), Mango tree (Mangifera indica), Teak tree (Tectona grandis), Kepel (Stelechocarpus burahol), Cape tree (Mimusops elengi), and Loa/Loh (Ficus rumpii blume).

3.3. Sacred plants as a symbol of Keraton

In Cirebon culture, this meaning of the Banyan tree or Beringin (Ficus benjamina) is has been influenced by the Hindu-Buddhas philosophy, before Cirebon Kingdom (15th C). Refer to the meaning in the Hindu religion, the Bayan tree is believed as a sacred tree because comes from heaven so as a symbol of purification. All of the body of the bayan tree can be using for medicine [8]. It is a large canopy, big trunk with hanging roots, and can grow more than 30 meters of height, the Banyan tree can have a meaning as a protective tree for mankind. Sultan as a God manifestation will protect and care about his people. Keraton as universe manifestation as a living place of Sultan [13,14]. In Cirebon where the culture influenced by Javanese Culture (Hindhu-Budha), the people of Keraton believe that the Bayan tree has meaning protecting the people. For that, The Bayan tree that a sacred tree will strengthen the Keraton as a sacred place. A place where the sultan lives and does his job to protect and care for his people. For this reason, in the three Keratons, the Bayan tree is placed in the main area which is the most symbolic of the palace as a sacred place.

The second type of sacred plant is Sapodilla tree or Sawo kecil (Manikara kauki), which has the meaning always in goodness [13]. The meaning of this plant also comes from Javanese culture (Hindhu-Budha). Its planting position is in the Siti Hinggil area (Keraton Kasepuhan) and the front yard of the Keraton Kacirebonan. Placing this plant at the front of the Keraton (sacred area) is believed that the entire palace community will always be in goodness, and for the people who will meet the Sultan will receive virtue. Unlike the two other sacred plants, in the Keraton Kanoman, the Mango tree is a plant that is considered sacred and is specially placed in the front garden of Jinem / Prabayaksa, and the garden where it grows is sound Mangga boom. This Mango tree is hundreds of years old, so the size of the trunk is large, the canopy is quite wide, and is very instrumental in controlling the temperature in the area below. This meaning of the sacredness of the mango tree is closely related to the history of the struggle of the Cirebon people during the Colonial Era in Cirebon (18th century to 1945 AD). The meaning of this plant is given by the people of the Keraton to describe the strong determination of the struggle of the palace leader (Sultan) with his people.

From the results of the discussion above, each Keraton has different types of sacred plants. This plant was chosen to strengthen the character of the sacred place. The choice of sacred tree species was not always influenced by Javanese culture in the Hindu-Buddhist era. However, the existence of this plant is to strengthen character and become a symbol of the spirit of leadership in a historical period. In addition, determining the type of plant is also based on the character of its physical form, i.e: large, leafy, long-lived, which gives a strong impression, nurtures, sheds light, and so on, which provides an additional function as an oxygen factory, and automatically reduces the temperature in the environment around the plant.

4. Conclusion

The conclusion from this research is that each palace has a special plant which is placed in front of the main palace building. This plant has a meaning that strengthens the character of the palace as a sacred place. Because this plant has a special meaning and is planted in a holy place, the meaning of this holy
place becomes strong, and the name of the place refers to this sacred plant. Most of the sacred trees are characterized by a wide, lush crown, which can grow up to tens or hundreds of years. With such a physical form, this sacred plant has a function as a producer of oxygen. The function of this plant is to automatically control the temperature for the area around it, especially for the environment in the palace complex. If this plant falls, the palace managers will replace it with a new one. This is intended to maintain the sacred value of the place.

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