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The Role of Traditional Home Gardens in Cultural Rituals and Heritage Preservation: An Ethnobotanical Study in Pujon Sub-district, Malang Regency, Indonesia

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Tika Putri Agustina[1*], Musma Rukmana[2], Hasmiati Hasmiati[3], Femmy Rose Kawuwung[4]

[1,2,3,4]Biology Education Study Program, Faculty of Mathematics and Natural Sciences, Universitas Negeri Manado, Minahasa, Indonesia

Corresponding Email: *tika_agustina@unima.ac.id

Abstract

This study explores the critical role of home gardens in traditional rituals in Pujon District, Malang Regency. Sustained by long standing customs, home gardens are significant social, cultural, and economic importance, especially concerning local customs. The research aims to identify the plant species cultivated in these gardens, their functions in ritual ceremonies. Adopting a qualittaive researched framework this study utilized a descriptive approach involving field observations and in-depth interviews. Key informants, incorporating garden owners, customary elders, and community leaders, were purposively selected. The results show that home gardens in Pujon Sub-district function as crucial green spaces and sources of food while also serving as focal points for social and cultural activities. Plants such as banana (*Musa* x *paradisiaca*), coconut (*Cocos nucifera*), jasmine (*Jasminum sambac*), and rose (*Rosa* sp.) are necessary to numerous ceremonies and traditional rituals. The preservation of knowledge regarding these plants is maintained through storytelling and daily activities, highlighting their role in sustaining local culture and biodiversity. As a result, home gardens play a crucial role in encouraging cultural identity and ecological balance in the region.

Keywords: Cultural Preservation, Home gardens, Traditional Rituals

INTRODUCTION

One of the unic and lush spatial arrangements in rural areas is the home garden (Putri *et al.,* 2016). Home gardens are a plot of land located near the house, typically enclosed by a fence, and planted with numerous types of vegetation, often including the house and livestock pens (Agustina *et al.,* 2024). These gardens are usually nurtured with plants required by the owner, resulting in a diversity of plant species that can vary from one garden to another, as personal preferences differ. The plants and animals in there contribute to their high biodiversity. This variety plays a significant role in supporting biodiversity conservation and traditional management systems (Mekonnen *et al.,* 2014; Krishnal & Weerahewa, 2014).

Home gardens play important role as multifunctional landscapes, fulfilling various social, cultural, and economic needs such as food, medicine, aesthetics, spirituality, livestock feed, firewood, and income-generating products (Bajpai *et al*., 2013; Shukla *et al*., 2017). Home gardens not only serve as sources of food crops but also offer space for cultivating flowers and medicinal plants. Moreover, these plants also crucial role in preserving indigenous knowledge regarding the use of plants for various purposes, including traditional rituals and cultural practices. The study conducted by Krisnandika *et al*. (2023) showed that *Azadirachta indica* is the most frequently found in home gardens in Bali, largely do to its uses in various rituals, such as daily saplings. Despite the chalengea pose by modernization,

traditional ritual activities are still commonly practiced in Pujon Sub-district. As an example, Muzaqqi (2017) observed that the residents of Wiyurejo Village in Pujon Sub-district continue to perform rituals before starting agricultural activities. Additionally, in Pujon Sub-district, the tradition of bangun nikah (a pre-marriage ceremony) is often accompanied by a slametan tumpengan feast. This ritual features offerings organized in a round container, with rice shaped into a cone, symbolizing specific intentions and aspirations associated with the bangun nikah ceremony (Maulana *et al*., 2023). Furthermore, a variety of offerings (sesaji) made from different plants are also included in the ritual.

Traditional ceremonies often rely on variety of plants, which are typically grown near residential areas, such as home gardens, to simplify their management and accessibility. Pujon Sub-district, located in East Java, has experineced significant growth in its tourism sector. Its varied topography, which includes hilly and mountainous terrain, not only enhance its appeals as a tourist destination but also boosts its agricultural productivity (Winanto, 2018). According to Agustina *et al*. (2024) the rise of ecotourism in Pujon Sub-district has led to a shift in the types of plants grown in home gardens, with ornamental plants becoming prominent to attract visitors. This shift threatens local knowledge, as the existence of plants is linked to the preservation of traditional wisdom.

In the context of cultural preservation and environmental sustainability, it is crucial to recognize the role of home gardens in preserve biodiversity and cultural heritage. This study highlights the deep relationship between rural communities, their home gardens, and the cultural practices embedded in local traditions. Furthermore, research on studying the plants used in traditional ceremonies in home gardens across Pujon Sub-district remain scarce. Therefore, this research is vital for safeguarding both local biodiversity and traditional knowledge.

METHOD

The research was conducted in Pujon Sub-district, Malang Regency, East Java Province. Geographically, the research location lies between 112°26'113" - 122°28'923" East longitude and 7°52'203" - 7°49'373" South latitude (Muttaqin 2014), at an elevation of 1,100 m to 2,500 m above sea level, with slopes ranging from 0-40%. Administratively, it borders Mojokerto Regency to the north, Ngantang Sub-district to the west, Dau Sub-district and Blitar Regency to the south, and Batu City to the east. The total area of Pujon Sub-district is 13,075.144 hectares, with 454.20 hectares designated as residential areas, including home garden (Winanto, 2018).

The study surveyed a total of 90 home gardens across 10 villages in Kecamatan Pujon. Utilizing a qualitative research methodology, it employed a descriptive approach that included

field observations, in-depth interviews, and documentation. Key informants, such as garden owners, customary elders, and community leaders, were selected through purposive sampling. Data on plant utilization were quantified according to use categories using the Pebble Distribution Method (PDM). The PDM data collection included 15 participants from three different environments: home gardens located near rivers, roads, and forests. Participant selection was based on criteria such as gender (male and female) and age groups (elderly >60 years, adults 30–60 years, and youth <30 years). The collected data were quantified and analyzed to assess the importance values of plants for each use category, represented by the Local User's Value Index (LUVI). After the scoring process, LUVI was calculated using the following formula:

$$LUVI = Gij = \sum \text{category } j \; Gij = RWj \times RWij$$

Explanation:

i = Plant species identified through scoring activities

j = Use category

Gij = Individual score

RWj = Weight assigned for a particular use (j)

RWij = Relative weight for plant species usage in category j (Sheil *et al*., 2004).

The herbarium process and plant species identification were conducted in the Biology Laboratory of the Faculty of Teacher Training and Education at Muhammadiyah University of Malang.

RESULTS AND DISCUSSION

The community in Kecamatan Pujon continues to preserve local traditions and cultural practices. A total of 20 plant species from 19 families are used in traditional ceremonies, with the most frequently used families being Araceae and Rubiaceae.

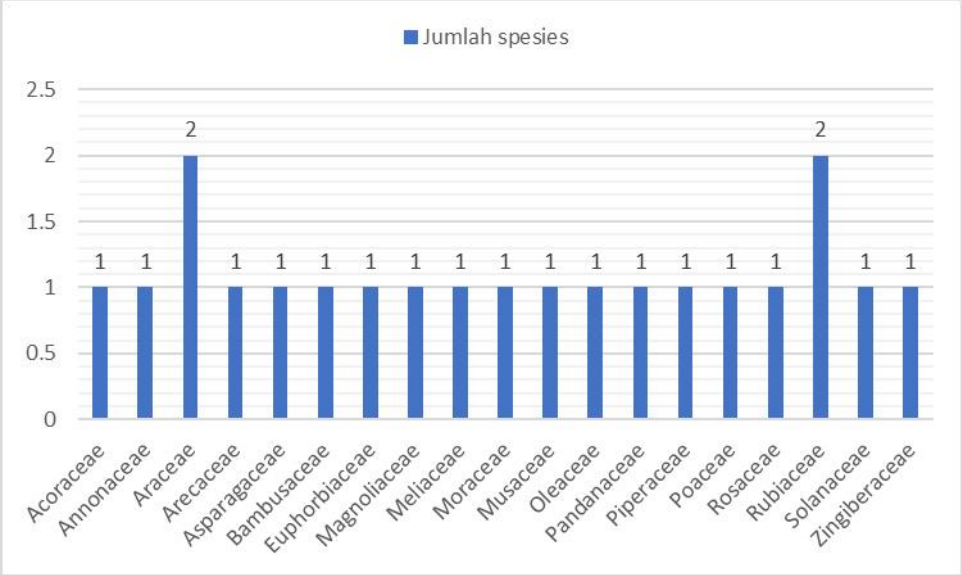

Figure 1. Plant families used in traditional ceremonies.

According to the Pujon community living near the river, the plants most commonly used for traditional ceremonies and spiritual rituals are banana (*Musa* x *paradisiaca*) (LUVI=0.455) and coconut (*Cocos nucifera*) (LUVI=0.450) (Table 1). The communities in Denpasar and Badung also use coconuts in traditional ceremonies (Pratiwi & Sutara, 2013). The group of elderly and adult women did not consider jeringau (*Acorus calamus*) to be an important ritual plant, but the young women gave it a high score (LUVI=0.325). The elderly and young men both regarded *jeringau* as an important plant for rituals, with the younger men assigning it a notably high score (LUVI = 0.488). This is likely because individuals under 30 years old often have infants, making *jeringau* particularly significant to them. Besides its use as a fever remedy for babies, *jeringau* and garlic are also traditionally used to treat *sawan*, a condition believed to result from malevolent spirits. Babies afflicted by *sawan* typically cry incessantly and exhibit elevated body temperatures. To protect against this condition, *jeringau* and garlic are attached to the baby's clothing until they reach one year of age, serving as a safeguard against spirits.

An ethnobotanical study conducted in Aceh Province highlighted the extensive use of *jeringau* in 29 medicinal formulations, including treatments for fever and spiritual ailments (Widyastuti *et al*., 2019). Similarly, the Batak Toba community shares this belief with the Pujon community, considering *jeringau* effective in repelling evil spirits (Panggabean & Tampubolon, 2022).

Table 1. LUVI Values for the Community Living Near the River.

No	Plant	Woman			Man			$\bar{x}$ W	$\bar{x}$ M	$\bar{x}$ Total
		Elderly	Adult	Young	Elderly	Adult	Young			
		>60 Yo	30-60 Yo	<30 Yo	>60 Yo	30-60 Yo	<30 Yo			
1	*Musa* × *paradisiaca*	0.423	0.520	0.358	0.358	0.618	0.455	0.434	0.477	0.455
2	*Cocos nucifera*	0.358	0.618	0.325	0.455	0.553	0.390	0.434	0.466	0.450
3	*Cananga odorata var. Fruticosa*	0.390	0.325	0.390	0.293	0.293	0.423	0.368	0.336	0.352
4	*Pandanus amaryllifolius*	0.390	0.293	0.358	0.325	0.260	0.195	0.347	0.260	0.304
5	*Piper betle*	0.000	0.358	0.358	0.000	0.650	0.455	0.239	0.368	0.304
6	*Jasminum sambac*	0.293	0.293	0.325	0.293	0.228	0.293	0.304	0.271	0.288
7	*Rosa* sp.	0.293	0.293	0.260	0.390	0.130	0.228	0.282	0.249	0.266
8	*Magnolia champaca*	0.325	0.228	0.260	0.228	0.163	0.000	0.271	0.130	0.201
9	*Acorus calamus*	0.000	0.000	0.325	0.325	0.000	0.488	0.108	0.271	0.190
10	*Alocasia macrorrhizos*	0.293	0.163	0.000	0.325	0.000	0.098	0.152	0.141	0.147
11	*Dracaena fruticosa*	0.000	0.000	0.293	0.000	0.195	0.000	0.098	0.065	0.081
12	*Saccharum officinarum*	0.293	0.163	0.000	0.000	0.000	0.000	0.152	0.000	0.076
13	*Ficus benjamina*	0.195	0.000	0.000	0.000	0.163	0.000	0.065	0.054	0.060
14	*Cestrum nocturnum*	0.000	0.000	0.000	0.260	0.000	0.000	0.000	0.087	0.043
15	*Aglaia odorata*	0.000	0.000	0.000	0.000	0.000	0.228	0.000	0.076	0.038
16	*Gardenia jasminoides*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17	*Bambusa* sp.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18	*Colocasia esculenta*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19	*Curcuma longa*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	*Codiaeum variegatum*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

The need for ritual materials has led the community to cultivate various plant species essential for ceremonies. For people living near road access, banana (*Musa* x *paradisiaca*) is the most important plant for rituals. Banana is also used in traditional ceremonies by the Ngadha ethnic group, where it symbolizes prosperity and fertility (Sada & Jumari, 2018). Other plants with high LUVI scores are rose (*Rosa* sp.) (LUVI=0.412) and jasmine (*Jasminum sambac*) (LUVI=0.390). These flowers are frequently used as offerings during traditional ceremonies such as weddings. A similar pattern was found in research by Al Bilad (2021), where the community used red roses in wedding ceremonies. A common ritual is *nyekar* (visiting graves), which takes place on *Jumat Legi* in the Javanese calendar. During nyekar, *kembang borah* (a mix of flowers including roses, jasmine, kenanga, gading, and pandan wangi leaves) is needed. These flowers are also scattered at crossroads on the same day. This practice likely explains why 5 of the top 10 plants with the highest LUVI scores are used in *kembang borah*. Men tend to give higher importance to these plants than women,

likely because men typically carry out the *nyekar* ritual (Table 2). Similar findings were observed in the Hindu community of Sedahan Village, where flowers are the second most important component of traditional ceremonies, serving as offerings in rituals (Kartikawati *et al.,* 2023).

Table 2. LUVI Values for the Community Living Near the Roas Access

No	Plant	Woman			Man			$\bar{x}$ W	$\bar{x}$ M	$\bar{x}$ Total
		Elderly	Adult	Young	Elderly	Adult	Young			
		>60 Yo	30-60 Yo	<30 Yo	>60 Yo	30-60 Yo	<30 Yo			
1	*Musa* × *paradisiaca*	0.390	0.455	0.455	0.325	0.390	0.455	0.433	0.390	0.412
2	*Rosa* sp.	0.325	0.423	0.358	0.423	0.358	0.585	0.369	0.455	0.412
3	*Jasminum sambac*	0.390	0.325	0.423	0.488	0.260	0.455	0.379	0.401	0.390
4	*Cocos nucifera*	0.358	0.455	0.325	0.325	0.358	0.130	0.379	0.271	0.325
5	*Acorus calamus*	0.260	0.293	0.195	0.390	0.000	0.455	0.249	0.282	0.266
6	*Cananga odorata* var. Fruticosa	0.390	0.000	0.293	0.000	0.325	0.390	0.228	0.238	0.233
7	*Magnolia champaca*	0.325	0.000	0.358	0.325	0.260	0.098	0.228	0.228	0.228
8	*Piper betle*	0.000	0.358	0.390	0.260	0.000	0.000	0.249	0.087	0.168
9	*Pandanus amaryllifolius*	0.260	0.000	0.000	0.000	0.423	0.293	0.087	0.239	0.163
10	*Ficus benjamina*	0.195	0.195	0.000	0.228	0.325	0.000	0.130	0.184	0.157
11	*Dracaena fruticosa*	0.000	0.228	0.000	0.260	0.293	0.000	0.076	0.184	0.130
12	*Codiaeum variegatum*	0.000	0.195	0.000	0.228	0.000	0.000	0.065	0.076	0.071
13	*Saccharum officinarum*	0.000	0.000	0.000	0.000	0.260	0.130	0.000	0.130	0.065
14	*Curcuma longa*	0.358	0.000	0.163	0.000	0.000	0.000	0.174	0.000	0.087
15	*Gardenia jasminoides*	0.000	0.325	0.000	0.000	0.000	0.000	0.108	0.000	0.054
16	*Cestrum nocturnum*	0.000	0.000	0.293	0.000	0.000	0.000	0.098	0.000	0.049
17	*Alocasia macrorrhizos*	0.000	0.000	0.000	0.000	0.000	0.260	0.000	0.087	0.043
19	*Bambusa* sp.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	*Colocasia esculenta*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
21	*Aglaia odorata*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

In Pujon Sub-district, traditional customs and rituals continue to be practiced, particularly in special ceremonies like weddings, seven-month pregnancy celebrations, or circumcisions. The plants with the highest significance in ritual and traditional ceremonies for the community living near the forest are banana (*Musa* x *paradisiaca*) (LUVI=0.455) and

coconut (*Cocos nucifera*) (LUVI=0.412). These plants are commonly used, with the fruits serving as offerings and the leaves as containers. This finding aligns with research conducted in Sungai Kupang Village, Kandangan Subdistrict, South Hulu Sungai Regency, where coconut is used in ritual ceremonies such as weddings and the seven-month pregnancy bathing ceremony (Fauzana *et al.,* 2021).

For elderly women, jasmine (*Jasminum sambac*) holds the highest importance in ritual activities (LUVI=0.488). This is because one of the routine traditional activities is *nyekar* (grave visiting). The original concept of *nyekar* is a reminder that humans will return to God and will be held accountable for their deeds in this world. This concept is drawn from Islamic teachings, emphasizing the importance of faith and piety during life as factors determining one's meeting with God (Saputra, 2021). For younger women, the most significant ritual plant is *gading* (*Magnolia champaca*) (LUVI=0.390). Among older and adult men, in addition to coconut and banana, important ritual plants include *pandan wangi* (*Pandanus amaryllifolius*) and *gading* (*Magnolia champaca*). In conclusion, while banana and coconut are considered the most significant plants by the community living near the forest, the types of plants frequently used in rituals are often those used as part of the *kembang borah* flower offerings (Table 3).

Table 3. LUVI Values for the Community Living Near the Forest

No	Plant	Woman			Man			$\bar{x}$ W	$\bar{x}$ M	$\bar{x}$ Total
		Elderly	Adult	Young	Elderly	Adult	Young			
		>60 Yo	30-60 Yo	<30 Yo	>60 Yo	30-60 Yo	<30 Yo			
1	*Musa* × *paradisiaca*	0.390	0.488	0.325	0.488	0.520	0.520	0.401	0.509	0.455
2	*Cocos nucifera*	0.358	0.455	0.325	0.488	0.455	0.390	0.379	0.444	0.412
3	*Jasminum sambac*	0.488	0.293	0.325	0.325	0.325	0.260	0.369	0.303	0.336
4	*Pandanus amaryllifolius*	0.293	0.358	0.293	0.423	0.260	0.293	0.315	0.325	0.320
5	*Magnolia champaca*	0.195	0.358	0.390	0.325	0.358	0.260	0.314	0.314	0.314
6	*Rosa* sp.	0.293	0.260	0.325	0.325	0.260	0.293	0.293	0.293	0.293
7	*Acorus calamus*	0.293	0.260	0.293	0.163	0.293	0.358	0.282	0.271	0.277
8	*Cananga odorata* var. Fruticosa	0.390	0.260	0.358	0.325	0.000	0.228	0.336	0.184	0.260
9	*Piper betle*	0.000	0.325	0.325	0.000	0.293	0.390	0.217	0.228	0.222
10	*Ficus benjamina*	0.358	0.000	0.000	0.000	0.260	0.260	0.119	0.173	0.146
11	*Gardenia jasminoides*	0.000	0.195	0.000	0.228	0.000	0.000	0.065	0.076	0.071
12	*Saccharum officinarum*	0.195	0.000	0.000	0.000	0.228	0.000	0.065	0.076	0.071
13	*Colocasia esculenta*	0.000	0.000	0.293	0.000	0.000	0.000	0.098	0.000	0.049

14	*Bambusa* sp.	0.000	0.000	0.000	0.163	0.000	0.000	0.000	0.054	0.027
15	*Cestrum nocturnum*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
16	*Alocasia macrorrhizos*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17	*Aglaia odorata*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18	*Dracaena fruticosa*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19	*Curcuma longa*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	*Codiaeum variegatum*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

The differences in LUVI values arise from varying perceptions of the importance of different categories of use among different groups. In Pujon Sub-district, plants frequently used in traditional ceremonies include *Musa* × *paradisiaca* (banana) and *Cocos nucifera* (coconut). However, the Using people in Banyuwangi use different species, such as *Capsicum annum* (chili pepper) and *Vigna sinense* (mung bean), for their rituals (Nurchayati, 2020). These variations are attributed to the different ethnic backgrounds of the communities, with the majority in Pujon being Javanese.

Some ritual plants are known only to specific individuals, such as shamans or traditional birth attendants, leading to lower LUVI values. For instance, *Curcuma longa* (turmeric) is known among some respondents living near roads as being used in traditional ceremonies for cutting the umbilical cord. Turmeric is used as a cutting board for the placenta in newborn ceremonies. Similarly, in Desa Banmati, Kecamatan Tawangsari, Kabupaten Sukoharjo, turmeric is used in a ritual known as *ngelarung ari-ari* (floating the placenta), where the placenta is given rice and turmeric before being floated away, symbolizing provisions for the placenta considered a sibling to the baby (Fauziah *et al.,* 2017). In contrast, the Saluan community uses turmeric in wedding ceremonies (Purwanti *et al.,* 2017).

Various types of food plants are utilized in ceremonies and rituals. In Pujon Sub-district, for instance, bananas, coconuts, rice, and various staple crops are part of the offerings in wedding ceremonies. Similarly, the Rejang people incorporate food plants into their ritual offerings, such as *Cocos nucifera* (nioa), *Curcuma longa* (bei kunik), *Cylea barbata* (bungei meloaw), *Piper nigrum* (ladei), *Alpinia galangal* (lajo), *Citrus aurantifolia* (lemeu nipis), *Zingiber officinale* (pedas), *Arenga pinnata* (aren), and *Setaria italica* (dawei) (Zikri *et al.,* 2017). In Pujon, food plants like coconut, banana, staple crops, rice, and spices such as turmeric, coriander, and pepper are used in ceremonial and ritual contexts.

Figure 2. The Community in Pujon Sub-district Plants the Crops They Need for Ritual Activities In Their Home Garden as Show in the Picture A. *Pandanus amaryllifolius* and B. *Curcuma longa*

Typically, the plants used in traditional ceremonies are local varieties. As long as the local knowledge regarding the use of these plants in ceremonies is preserved, it will help ensure the survival of the plants themselves. In the Pujon subdistrict, many useful plants are grown in home gardens, including those used for ritual activities. This practice not only makes it easier to access and care for these plants but also strengthens the connection between people and their cultural heritage (Suwardi *et al*., 2024). Additionally, most of the plants used in rituals are flowering species, so they not only serve a purpose in ceremonies but also beautify the home garden.

The roles of the plants are influential, as it promotes both cultural legacy and environmental harmony. People help to the conservation of biodiversity whilst keeping traditional practices alive, by growing these plants at home garden. Additionally, home gardens provide a practical space for preserving local plant species that might otherwise face extinction due to urban development or neglect. All these plant species continue to thrive, the traditional knowledge regarding their uses, including their spiritual importance, will be hand down and preserve to future generations. This reciprocal connection between nature and culture highlight the importance of maintaining such practices in modern times, as they foster a lasting bond between communities and the environment.

CONCLUSION

Home gardens in Pujon Sub-district play a essensial role in the community, especially in traditional rituals and ceremony. Plants commonly found in these home gardens, as an example bananas (*Musa* x *parasidiaca*), coconuts (*Cococs nucifera*), jasmine (*Jasminum*

sambac), and roses (*Rosa* sp.), are broadly used in ceremonies and rituals, reflecting local social, cultural, and economic needs. Local knowledge of these plants and their uses has been passed down through generations, offering both ceremonial purposes and supporting to the preservation of biodiversity and cultural heritage. Therefore, home gardens in Pujon sub-district are not only simply green spaces but also play as central points for cultural preservation and the maintenance of local knowledge.

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