LOCAL WISDOM, 18 (1): 63-76, 2026
Local Wisdom Scientific Online
Journal ISSN: 2086-3764

Modelling of Traditional Ceremonial Plants in Tenggerese Residential Front Yards

Irawan Setyabudi[1*], Syarif Hidayatulloh[1], Dian Kartika Santoso[2]
[1]*Landscape Architecture Department, Universitas Tribhuwana Tunggadewi, Malang, Indonesia*
[2]*Architecture Departement, Universitas Pembangunan Nasional "Veteran" Jawa Timur, Surabaya, Indonesia*
*Corresponding Author: isetyabudi.st@gmail.com

Keywords:
Tenggerese, ethnobotany; ceremonial plants; residential front yard; cultural landscape conservation

Abstract

The Tenggerese community in Ngadas Village, Malang Regency, is renowned for its traditional ceremonies that utilize various plant species as ritual media. Over time, continuous use without conservation threatens the sustainability of these plants. This study aims to identify the types, functions, meanings, and emerging needs of ceremonial plants and to propose a front-yard landscape model integrating these plants as a form of cultural landscape-based conservation. A descriptive qualitative method was employed through literature review, in-depth interviews with local elders and government representatives, and field observations. The results identified 26 ceremonial plant species, such as Cordyline fruticosa, Imperata cylindrica, and Gigantochloa apus, each with unique symbolic functions. Three typologies of front yard spaces were identified: large (6x8 m), medium (3x6 m), and small (1x5 m), which served as the basis for adaptive landscape modeling. The modeling was developed using SketchUp, Lumion, and Adobe Photoshop. The study concludes that integrating ethnobotanical ceremonial plants into residential front yards can promote their conservation while visually reinforcing the cultural identity of the Tenggerese people.

Article History
Received : Apr 30, 2025
Accepted : Jan 6, 2026
Published : Jan 15, 2026

1. Introduction

The Tengger tribe is one of thousands of tribes in Indonesia. The Tengger people live on the slopes of Mount Bromo and Semeru. There are four districts where the Tengger people live: Pasuruan, Probolinggo, Malang, and Lumajang Regencies, East Java Province. The Tenggerese people are distributed across several villages, including Ngadas Village in Poncokusumo District, Malang Regency (Listiyana & Mutiah, 2017; Wijaya et al., 2023). Ngadas Village is located within the Bromo Tengger Semeru National Park (TNBTS). Its administrative location is in Poncokusumo District, Malang Regency, East Java. Uniquely, the population in Ngadas Village is dominated by the Tengger Tribe (Agustapraja, 2017; Batoro, 2017; BBTNBTS, 2013; Santoso et al., 2019). The Tengger people have a powerful

character, evident in their language, art, and other cultural elements. Many traditional ceremonies are held every year (Budiyanti, 2015; Haryanto, 2016; Santoso et al., 2019).

Traditional ceremonies are practices passed down from generation to generation that are still maintained today to sustain and harmonize the social or community environment and nature, which local communities use in their activities (Ainur, 2014). The use of plants in traditional ceremonies is still largely carried out by people living in rural areas. The use of plants as offerings in traditional ceremonies is rooted in beliefs and traditions inseparable from plants. They consider the plant to be an important part of the implementation of traditional ceremonial rituals. The use of plants as offerings in traditional ceremonies is based on beliefs and traditions that cannot be separated from plants (Febrianto et al., 2017). In general, the people of Tengger live in the agricultural sector, especially growing potatoes, leeks, cabbage, corn, and carrots, and a small number engage in tourism, trade, and animal husbandry. Plants in Indonesia are abundant and can be utilized by the community to meet their daily needs, a practice called ethnobotany.

Ethnobotany is a science that explains the use and management of traditional plants by communities within their surrounding environments. Ethnobotany also studies the relationship between humans and their environment, where the natural environment provides abundant resources (Yakub et al., 2019). Ethnobotany explains that people depend on plants in their surroundings, either directly or indirectly. This relationship will describe the level of human knowledge in utilizing and managing plants, in the form of yards, gardens, fields, or forests that are generally not cultivated (growing wild). Plants, besides providing benefits to humans, also require human action to preserve them. Indirectly, humans also conserve plants; the community will continue to preserve plants used for traditional ceremonies (Jamaludin, 2013; Sujarwo & Caneva, 2016; Zagaria et al., 2017).

The decline in plant populations is due to their continuous use without proper conservation efforts that rely solely on local knowledge. Conservation efforts are carried out by planting these plants in the fields, yards, and roads around the village, as well as raising livestock around people's homes (Wijayanti, 2017). One way to preserve traditional ceremonial plants is to plant them in the yard or front yard of a Tengger tribe member's residence. The front yard of the house is the first thing someone sees when visiting a building.

Existing studies have documented ethnobotanical knowledge and ceremonial use but have not sufficiently addressed integrated, applied conservation models tailored to contemporary settlement patterns. Current conservation paradigms often separate biological conservation from cultural preservation. This research argues for an integrated, in-situ ethnobotanical approach that addresses both. The urgency lies in the fact that conservation cannot be deferred to protected areas alone; it must be actively integrated into the living spaces of the knowledge holders. By modelling the reintroduction of ceremonial plants into residential front yards, this study operationalises the theoretical principle of "conservation through use," ensuring that cultural relevance drives preservation efforts. Therefore, this study positions itself as an urgent, applied response to theoretical concerns about biocultural erosion. It moves beyond documenting plant-use knowledge to actively designing a strategy for its spatial reinforcement, thereby contributing to the vital discourse on sustaining living cultural landscapes in the face of globalizing pressures.

This conservation or preservation effort is expected to strengthen and preserve the cultural identity and customs of the Tengger tribe, especially the plants used in traditional

ceremonies. Therefore, this study aims: 1) to identify the various types of plants used in traditional ceremonies for the Tengger tribe, and 2) to provide recommendations for modelling the use of traditional ceremonial plants in the front yard of the Tengger tribe's residence.

2. Methods

This research was conducted on the Tengger tribe in East Java. Researchers selected one of the villages within the Tengger tribe, namely Ngadas Village, Poncokusumo District, Malang Regency. The time required for this research is estimated at 5 months, covering preparation, data and information collection, data processing, and report preparation. The method used in this study is a qualitative descriptive method with the following steps:

Data Collecting

The data collected in this study include both primary and secondary data. Primary data is the source of research data obtained through in-depth interviews and field observations. Secondary data are research data obtained through literature reviews and related documents. Data collection from respondents in in-depth interviews uses a purposive sampling technique with predetermined criteria.

Data Analyzing

Data processing in this study uses content analysis methods. Content analysis is a research method aimed at understanding the characteristics of content by analyzing it (Eriyanto, 2011). The data obtained has been tabulated for qualitative analysis through comparison and data linkage. The data processing stage involves classifying data, assigning levels of information importance, and examining interrelationships among information, so that a descriptive and in-depth discussion can be conducted (Pratiwi & Wikantiyoso, 2022).

Table 1 serves as the analytical framework for coding, categorizing, and synthesizing data from various sources, guiding the research process from data collection to conclusion.

Table 1. Analytical framework

Variable	Sub-Variable / Analysis Indicators	Data Sources & Verification Technique
1. Plant Identity	a. Local name b. Scientific name & family c. Plant part used (organ)	In-depth interviews, field observation, literature review, and verification with photo specimens and identification keys.
2. Cultural Function	a. Name of the traditional ceremony involving the plant b. Specific ritual role (offering medium, ritual tool, clothing accessory, etc.) c. Frequency of use (mandatory, optional, seasonal)	Interviews with community elders and village officials, participant observation, and review of customary documents.
3. Symbolic Meaning	a. Philosophical value (safety, fertility, purification) b. Association with myths or beliefs c. Representation in Tengger cosmology (relationship with nature, ancestors, or deities)	In-depth interviews with key informants, analysis of narratives in mantras or prayers, and review of ethnographic literature.

Variable	Sub-Variable / Analysis Indicators	Data Sources & Verification Technique
4. Growth Requirements	a. Environmental conditions (altitude, light, temperature, humidity) b. Soil type and water needs c. Maintenance and propagation patterns	Field observation, interviews with practitioners (farmers, gardeners), review of botanical/agronomic literature.
5. Spatial Context	a. Front yard typology (size, shape, orientation, topography) b. Existing elements (buildings, other vegetation, pathways) c. Current function of the yard space (social, economic, aesthetic)	Field observation (measurement, sketch mapping), interviews with homeowners, and photo analysis.

The results of the analysis of the types, functions, meanings, and conditions for growing plants used in traditional ceremonial activities in Ngadas village are presented in tabular and descriptive form.

Residential Front Yard Modeling

This stage of modeling the residence's front yard follows collecting data on the plants used in traditional ceremonies. The modeling stages include:

1) Collection of house sample inventory data is then analyzed and developed into a home garden design concept with a predetermined sample house size.
2) Making site modeling using SketchUp software. Modeling is limited to creating a site and a land-contour model.
3) The rendering process uses Lumion 8 software. This rendering process is used to make the modeling images presented appear more realistic.
4) Adding previously known plant elements using Adobe Photoshop software and plant images in PNG format. Then the editing process is used to make the modeling look more realistic.

The preparation of each landscape model integrated multiple critical aspects to ensure the proposals were culturally authentic, ecologically viable, and spatially coherent. These considerations guided every stage of the design process, from initial concept to final visualization (Table 2).

***Table* 2.** Aspects Integrated into Landscape Modeling

Aspect Category	Specific Considerations	Influence on Model Design
Spatial	Yard Size & Typology, Orientation, Topography	Determined the scale, layout, planting zones, and realistic sunlight/shadow simulation.
Botanical	Plant Type, Mature Dimension (HxW), Growth Form, Requirements	Dictated species selection, spacing, layering, and grouping for ecological compatibility.
Cultural	Symbolic Function, Ritual Hierarchy, Traditional Layout Principles	Guided the meaningful placement of plants to reinforce ritual significance and identity.
Practical	Maintenance Needs, Seasonal Change, Household Use Patterns	Ensured the design is livable, sustainable, and in line with residents' daily lives.

3. Results and Discussions

Traditional Ceremony of The Tengger Tribe

The public ceremony is performed by all the people of Ngadas village, without exception. Several traditional ceremonies are carried out together, including (Pramita et al., 2013):

1. Pujan
2. Kasada
3. Hajat Nyapu
4. Hajat Karo
5. Unan-unan

The individual ceremony is a ceremony performed by each individual in the Ngadas village community. Several traditional ceremonies are carried out individually, including (Pramita et al., 2013):

1. Entas entas
2. Burial or Death Ceremony
3. Walagara
4. Adeg griyo

Use of Plants in Traditional Ceremonies

Several kinds of traditional ceremonies are held in Ngadas village. There are only a few traditional ceremonies that use plants as media or means, as well as offerings, in the process of traditional ceremonies, including the pujan ceremony, the kasada ceremony, the karo ceremony, hajat nyapu, Unan unan ceremony, entas entas ceremony, burial or death ceremonies, adeg griyo ceremonies, and walagara ceremonies. Several types of plants used in traditional ceremonies in Ngadas village are shown in Table 3 below.

Table 3. Traditional ceremonial plants.

Plant	Traditional Ceremony	Meaning	Organs used
Alang-alang (*Imperata cylindrica*)	Burial/Death	Provides protection and sanctity	Leaf
Andong (*Cordyline fruticosa*)	Entas entas	The place where the spirits live.	Leaf
Anting-anting (*Acalypha australis*)	Pujan, Hajat Nyapu, Karo, Entas entas, unan unan	No specific symbolic meaning identified.	Flower
Bawang Prey (*Allium porrum Linn.*)	Kasada	As a plant offering to the earth or expressing gratitude for the agricultural products obtained.	Stems, Leaves
Gedang Rojo (*Musa acuminata*)	Karo, Kasada, Walagara, Entas entas, Adeg griyo, Pujan	Banana tree or wit gedang means Saget Padang (Relieved and happy).	All Parts of Plants
Jagung (*Zea Mays*)	Kasada	As a plant offering of the earth or gratitude for the agricultural products obtained.	Seed
Jambe (*Areca catechu*)	Kasada	As a symbol to honor their ancestors.	Seed

Plant	Traditional Ceremony	Meaning	Organs used
Kelapa (*Cocos nucifera*)	Karo, Kasada, Walagara, Entas entas	As a symbol to honor their ancestors.	Leaf, fruit
Kencur (*Kaempferia galanga*)	Kasada	As a plant offering of the earth or gratitude for the agricultural products obtained.	All Parts of Plants
Kentang (*Solanum tuberosum*)	Kasada	As a plant offering of the earth or gratitude for the agricultural products obtained.	All Parts of Plants
Kubis (*Brassica oleracea*)	Kasada	As a plant offering of the earth, or gratitude for the agricultural products obtained	Leaf
Kunir (*Curcuma domestica*)	Kasada	As a plant offering of the earth, or gratitude for the agricultural products obtained	All Parts of Plants
Lombok Rawit (*Capsicum annuum*)	Kasada	As a plant offering of the earth, or gratitude for the agricultural products obtained	All Parts of Plants
Lombok Terong (*Solanum melongena*)	Kasada	As a plant offering of the earth, or gratitude for the agricultural products obtained	All Parts of Plants
Menjari / Tempuh Wiyang (*Emilia sonchifolia*)	Pujan, Hajat Nyapu, Karo, Entas entas	No specific symbolic meaning identified	Flower
Pampung (Pampung)	Entas entas	It means pumpung (still). In the sense that they are still alive, they must still remember their ancestors.	Leaf
Piji (*Veitchia merrillii*)	Kasada	Piji has the meaning of *Miji* / Planning (Desiring)	Flower
Pring jajang (*Bambusa vulgaris*)	Kasada	No specific symbolic meaning identified	Rod
Pring tali (Bambu Apus)	Entas entas, kasada	No specific symbolic meaning identified	Rod
Putihan (*Chromolaena odorata*)	Pujan, Hajat Nyapu, Karo, Entas entas	Has a sacred meaning.	Leaf
Senikir (*Tagetes erecta L*)	Pujan, Hajat Nyapu, Karo, Entas entas, Unan-unan	Has a sacred meaning.	Flower
Tales (*Colocasia esculenta*)	Entas entas	No specific symbolic meaning identified	Tubers
Tanalayu (*Anaphalis javanica*)	Pujan, Hajat Nyapu, Karo, Entas entas	This plant symbolizes immortality because, even though it has withered, its shape and color remain unchanged. As with the existence of God, he is eternal, the source of all sources of life.	Floweer
Tebu (*Saccharum officinarum*)	Kasada	Tebu has the meaning' anteping kalbu' (sincere).	All Parts of Plants

Plant	Traditional Ceremony	Meaning	Organs used
Tlotok *(Molineria capitulata*)	Entas entas, Kasada	Tlotok means *telu tok* (only three). What this *telu tok* means is that there are only 3 ropes for a deceased person.	Leaf
Wringin (*Ficus benjamina)*	Walagara, Kasada	Symbolizes the most ancient tree.	Leaves and Twigs

The use of some plant organs is only representative of each plant. There is no special meaning for the use of plant organs in every traditional ceremony.

Modeling the front yard of a residential house

Residential courtyard modeling is divided into three typologies, and 1 sample is taken from each typology, which is used as a representative of each typology (Iswanto et al., 2020)that have sizes of 6x8 meters (wide), 3x6 meters (medium), and 1x5 meters (small), and can be used by the community as a garden model design catalog on the front page of the Tenggerese house.

The sample for modeling the front yard of a residential house is taken from 3 typologies: 6x8 meters (wide), 3x6 meters (medium), and 1x5 meters (small).

(a) (b)

(c)

Figure 1. (a) Large, (b) Medium, (c) Small.

The stages of modeling the front yard of the house, in general, consist of:

A. Site Inventory

Site inventory is the process of collecting data on field conditions (Hakim, 2012; Setyabudi, 2016). Inventory data were obtained from three samples: sandy clay soils, large and medium-sized samples exposed to full sun, and small samples exposed to sunlight only during the day.

B. Site Analysis

Based on the results of the site inventory with these conditions, an analysis is produced in the form of:

1) Selection of vegetation that can grow in these conditions, namely Piji (*Veitchia merrillii*), Andong (*Cordyline fruticosa*), Senikir (*Tagetes erecta L.*), Tlotok (*Molineria capitulata*), Anting-anting (*Fuchsia hybrid*), Lombok Rawit (*Capsicum frutescens* L.), Bawang Prey (*Allium fistulosum*)
2) Public and residential gardens.
3) Residential gardens are active for large sizes, semi-active for medium sizes, and passive for small sizes.

Creating a Simple Residential Garden Concept

Creating a simple space concept divided into several areas: a relaxing room, a garden room, a vegetable garden room, and a garden access. The concept of separating the garden into functional rooms, such as a relaxing area, a ceremonial garden, a vegetable plot, and connecting pathways based on the landscape architecture principle of outdoor spaces, which creates structured, multi-use spaces that enhance both practicality and cultural meaning (Qin, 2021). For the Tenggerese, this zoning reflects a traditional understanding of spatial order, where plants are grouped according to their purpose: sacred ceremonial species in the garden room for ritual and identity, edible plants in the vegetable room for daily use, and a relaxing room for social and private activities, all connected by clear access paths. This approach efficiently organizes available space, whether large, medium, or small, into a coherent, culturally resonant, and sustainable home landscape that supports both conservation and everyday life.

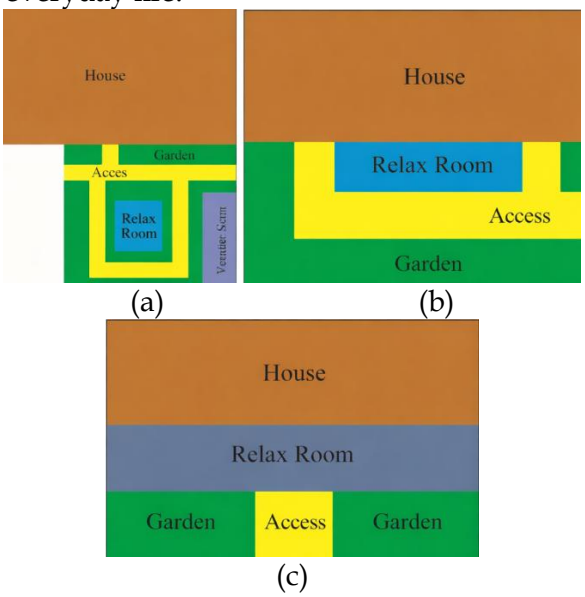
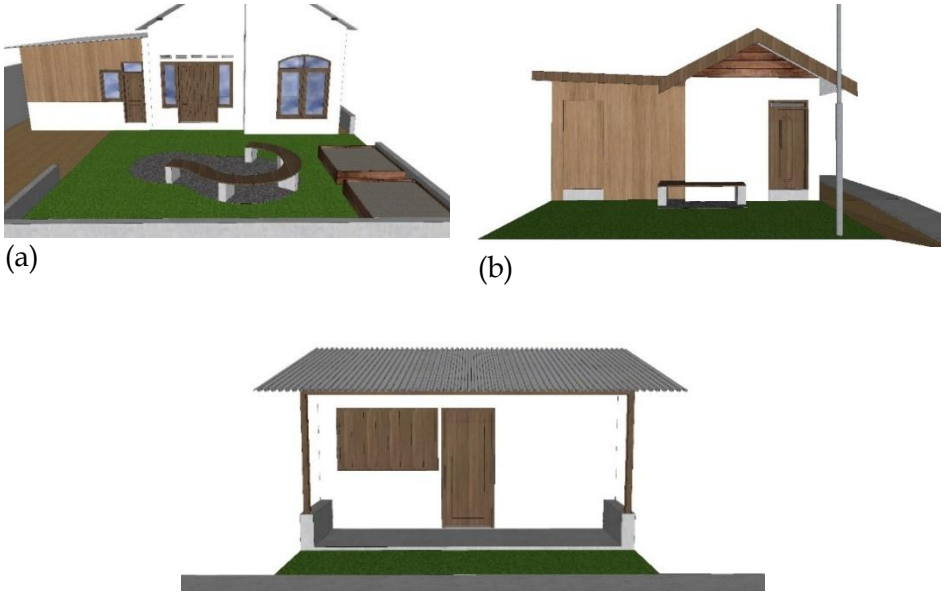


Figure 2. (a) The concept of a large modeling garden space, (b) The concept of a medium-sized modeling garden space, (c) The concept of a small-sized modeling garden space.

Making Site Modelling

The site modeling results illustrate the three-dimensional (3D) representation of the house and residential front yard developed using SketchUp software. The model visualizes the existing spatial configuration of the residential plot, including building mass, open spaces, circulation patterns, and the initial arrangement of landscape areas. Through this site model, spatial relationships between built structures and the front yard become more clearly defined, providing a basis for subsequent visualization and design development.

The modeling outcome serves as a foundational representation for interpreting spatial constraints and opportunities within the residential front yard. The resulting site model is presented in the following figures.



(a) (b) (c)

Figure 3. (a) Modeling the site and facade of a large house, (b) modeling the site and facade of a medium-sized house, (c) modeling the site and facade of a small house.

Rendering

The rendered visualizations provide an enhanced representation of the previously developed site model, enabling the proposed residential front-yard landscape to be viewed more realistically. The rendering process highlights visual aspects such as spatial depth, vegetation form, material appearance, and overall landscape atmosphere, which support a more straightforward interpretation of the design proposal. By applying rendering techniques using Lumion 8, the visual output helps convey the spatial hierarchy and visual composition of landscape elements within the front yard. These rendered images help illustrate how ceremonial plants and supporting elements are visually integrated into the overall site layout. The rendering results are presented in the following visual figures.

(a) (b)

(c)

Figure 4. (a) Rendering of the site and facade of a large-sized house, (b) Rendering of the site and facade of a medium-sized house, (c) Rendering of the site and facade of a small-sized house.

Add the element

The integration of landscape elements represents the outcome of the modeling process before the results are presented as a complete layout image. At this stage, plant species used in traditional ceremonies, along with supporting landscape components, are incorporated into the residential front yard based on the analysis and simplified design concept. The arrangement of these elements demonstrates how ceremonial plants can be spatially accommodated within limited residential spaces while maintaining their cultural functions. In addition, the added elements contribute to the landscape's overall spatial composition, visual balance, and functional zoning. This stage reflects the transformation of ethnobotanical knowledge into a tangible and interpretable landscape layout.

(a)

(b)

(c)

Figure 5. (a) Adding area size elements. (b) Addition of medium-sized Elements, (c) Addition of small-sized Elements.

Presentation of Modeling Results

The presentation of modeling results represents the final visual outcome of the proposed landscape modeling recommendations. This stage includes layout images, three-dimensional visualizations, and descriptive explanations of the types of elements applied

in the residential front yard design. The presented models illustrate how ceremonial plants and supporting landscape elements are organized spatially to reflect cultural functions, spatial hierarchy, and visual coherence. The visualization serves as a medium for clearly and comprehensively communicating modeling outcomes, enabling the interpretation of design intentions and spatial arrangements. This presentation stage consolidates the results of the analysis, modeling, rendering, and element integration into a coherent landscape proposal that can be understood both visually and conceptually (Oduyemi & Okoroh, 2016).

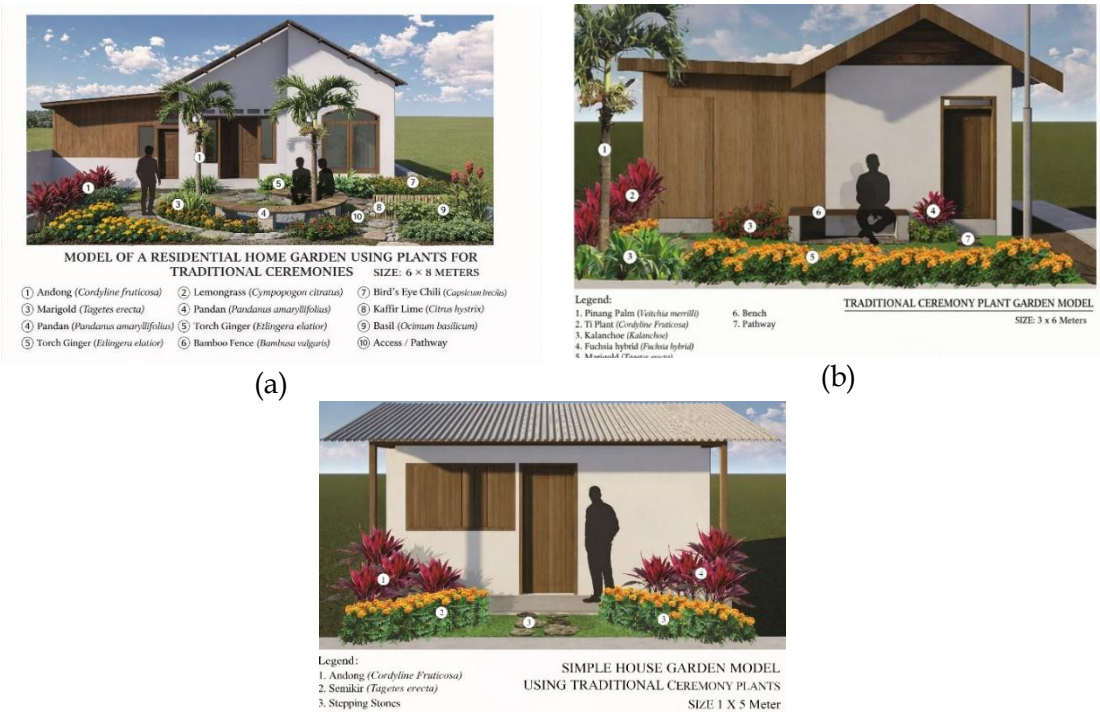


Figure 6. (a) Layout for presentation of extensive size modeling, (b) Layout for presentation of medium size modeling, (c) Layout for presentation of small size modeling.

In the modeling above, the plant types used differ across models. The differences among these plants are due to the limited size of the house's front yard, the conditions for growing them, and their suitability for use in traditional ceremonies conducted by the people of Ngadas village.

Table 2. List of Plants in Each Model

No	Size	Plant	Contribution of plants to traditional ceremonies
1	Size 1x5 Meter (Small)	Andong (*Cordyline Fruticosa*)	Upacara *Entas entas*
		Senikir (Tagetes erecta L.)	Upacara *Pujan*, Hajat *Nyapu*, Hajat *Karo*, Upacara *Entas-entas*, Upacara Unan-unan
2	Size 3x6 Meter (Medium)	Piji (*Veitchia merrillii*)	Upacara *Kasada*
		Andong (*Cordyline Fruticosa*)	Upacara *Entas entas*
		Senikir (*Tagetes erecta L.*)	Upacara *Pujan*, Hajat *Nyapu*, Hajat *Karo*, Upacara *Entas-entas*, Upacara Unan-unan

No	Size	Plant	Contribution of plants to traditional ceremonies
		Tlotok (*Molineria capitulate*)	Upacara *Entas entas* dan Upacara *Kasada*
		Anting-anting (*Fuchsia hybrid*)	Upacara *Pujan*, Hajat *Nyapu*, Hajat *Karo*, Upacara *Entas entas* dan Upacara *unan unan*
3	Size 6x8 Meter (Large)	Piji (*Veitchia merrillii*)	Upacara *Kasada*
		Andong (*Cordyline Fruticosa*)	Upacara *Entas entas*
		Senikir (*Tagetes erecta L.*)	Upacara *Pujan*, Hajat *Nyapu*, Hajat *Karo*, Upacara *Entas-Entas* dan Upacara Unan-Unan
		Tlotok (*Molineria capitulate*)	Upacara *Entas entas* dan Upacara *Kasada*
		Anting-anting (*Fuchsia hybrid*)	Upacara *Pujan*, Hajat *Nyapu*, Hajat *Karo*, Upacara *Entas entas* dan Upacara *unan unan*
		Lombok Rawit (*Capsicum frutescens L.*)	Upacara *Kasada*
		Bawang Prey (*Allium fistulosum*)	Upacara *Kasada*

The modeling of the residential front yard is intended to support and facilitate the community in fulfilling the plant requirements for traditional ceremonial activities.

4. Conclusion

Ngadas Village hosts a variety of traditional ceremonies each year, encompassing both individual and communal events. Individual ceremonies include sayut, entas-entasan, walagara, death or burial rites, and adeg griyo. In contrast, communal ceremonies comprise pujan, hajat karo, kasada, unan, hajat barik'an, gegenep, galungan, and hajat nyapu. These ceremonies are intrinsically linked to the use of plants, which function as mediums for prayers, offerings, and tributes. A total of 26 plant species are utilized in these ceremonial practices. These plants are obtained through various means, including purchase from outside the village, local cultivation, and foraging in surrounding forests or within the Bromo Tengger Semeru National Park. The modeling of front yards among the Tengger community is classified into three typologies based on size. The first typology consists of a large front yard measuring 6 × 8 meters, featuring plant species such as Piji (Veitchia merrillii), Andong (Cordyline fruticosa), Senikir (Tagetes erecta L.), Tlotok (Molineria capitulata), Anting-anting (Fuchsia hybrid), Lombok Rawit (Capsicum frutescens L.), and Bawang Prey (Allium fistulosum). The second typology represents a medium-sized front yard measuring 3 × 6 meters, incorporating Piji, Andong, Senikir, Tlotok, and Anting-anting plants. The final typology consists of a smaller residential front yard measuring 1 × 5 meters, which includes Andong and Senikir plants.

References

Agustapraja, H. R. (2017). Penerapan Genius Loci Pada Pemukiman Masyarakat Ngadas Tengger Malang. *Civilla : Jurnal Teknik Sipil Universitas Islam Lamongan*, *Vol 2*, *No 1 (2017):* *March*. http://jurnalteknik.unisla.ac.id/index.php/CVL/article/view/42/pdf

Ainur, S. (2014). Etnobotani Bahan Upacara Adat Oleh Masyarakat Using di Kabupaten Banyuwangi. In *Artikel Ilmiah.* Program Studi Pendidikan Biologi. FKIP. Unej.

Batoro, J. (2017). *Keajaiban Bromo Tengger Semeru : analisis kehidupan suku Tengger-antropologi-*

biologi di lingkungan Bromo Tengger Semeru Jawa Timur. UB Press. https://opac.perpusnas.go.id/DetailOpac.aspx?id=1140798

BBTNBTS. (2013). *Hikayat Wong Tengger: Kisah Peminggiran dan Dominasi*. Balai Besar Taman Nasional Tengger Semeru.

Budiyanti, S. (2015). Analisis Deskriptif Aktivitas Dan Potensi Komunitas Desa 'Enclave'Ranu Pane Pada Zona Pemanfaatan Tradisional, Kecamatan Senduro, Kab. Lumajang, Wilayah Taman Nasional Bromo Tengger Semeru (TNBTS). *DIMENSI-Journal of Sociology*, *8*(2). https://doi.org/https://doi.org/10.21107/djs.v8i2.3732

Eriyanto. (2011). *Analisis Isi: Pengantar Metodologi Penelitian Ilmu Komunikasi dan Ilmu-Ilmu Sosial Lainnya.* Repository.Uinjkt.Ac.Id.

Febrianto, R. S., Wulandari, L. D., & Santosa, H. (2017). Pola Spasial Teritori Pada Lanskap-Hunian Masyarakat Peladang Desa Juruan Laok Madura Timur. *Arteks*, *2*(1), 59–76. https://doi.org/https://doi.org/10.30822/arteks.v2i1.41

Hakim, R. (2012). Komponen Perancangan Arsitektur Lansekap (Edisi Kedua). *Bumi Aksara. Jakarta*.

Haryanto, J. T. (2016). Pesan Kerukunan Cerita Lisan Masyarakat Tengger Desa Ngadas Kabupaten Malang. *Jurnal SMaRT*, *2*(2), 131. http://dx.doi.org/10.18784/smart.v2i2.389.g250.

Iswanto, H. H., Sunu, N., Giriwati, S., & Wikantiyoso, R. (2020). Typology and Morphology of the Traditional House of Sumbersari Village, Udanawu, Blitar District. *Local Wisdom : Jurnal Ilmiah Kajian Kearifan Lokal*, *12*(2), 124–134. https://doi.org/https://doi.org/10.26905/lw.v12i2.3839

Jamaludin. (2013). The Aesthetics of Sundanese Traditional Design: Case Study : Rice Containers Design. *Journal of Visual Art and Design*, *4*(1), 35–41. https://doi.org/10.5614/itbj.vad.2013.4.1.5

Listiyana, A., & Mutiah, R. (2017). Pemberdayaan Masyarakat Suku Tengger Ngadas Poncokusumo Kabupaten Malang Dalam Mengembangkan Potensi Tumbuhan Obat dan Hasil Pertanian Berbasis "Etnofarmasi" Menuju Terciptanya Desa Mandiri. *Journal of Islamic Medicine*, *1*(1), 1–8. https://doi.org/https://doi.org/10.18860/jim.v1i1.4117

Oduyemi, O., & Okoroh, M. (2016). Building performance modelling for sustainable building design. *International Journal of Sustainable Built Environment*, *5*(2), 461–469. https://doi.org/https://doi.org/10.1016/j.ijsbe.2016.05.004

Pramita, N. H., Indriyani, S., & Hakim, L. (2013). Etnobotani upacara kasada masyarakat tengger, di desa ngadas, kecamatan poncokusumo, kabupaten malang. *Journal of Indonesian Tourism and Development Studies*, *1*(2), 52–61. http://jitode.ub.ac.id

Pratiwi, M. A., & Wikantiyoso, R. (2022). Local Wisdom as Cultural Resilience on Tourism Activities (Case Study: Penglipuran Bali Traditional Village). *Local Wisdom: Jurnal Ilmiah Kajian Kearifan Lokal*, *14*(1), 95–105.

Qin, Z. (2021). Research on Planning and Design of Plant Landscape for Outdoor Exhibition of Modern Architecture. *IOP Conference Series: Earth and Environmental Science*, *760*(1), 12028. 10.1088/1755-1315/760/1/012028

Santoso, D. K., Antariksa, & Utami, S. (2019). Tipologi Rumah-Ladang di Desa Enclave

Taman Nasional Bromo Tengger Semeru , Ngadas , Kabupaten Malang Typology of Farmhouse in Enclave Village , Bromo Tengger Semeru. *Arsitektura*, *17*(2), 271–282. https://doi.org/https://doi.org/10.20961/arst.v17i2.33140

Setyabudi, I. (2016). Elemen dan Proses Desain Arsitektur Lanskap Taman Rumah Tinggal. In *Malang: Dream Litera*.

Sujarwo, W., & Caneva, G. (2016). Using quantitative indices to evaluate the cultural importance of food and nutraceutical plants: Comparative data from the Island of Bali (Indonesia). *Journal of Cultural Heritage*, *18*, 342–348. https://doi.org/https://doi.org/10.1016/j.culher.2015.06.006

Wijaya, I. B. A., Santoso, D. K., & Setyabudi, I. (2023). Thermal Condition Evaluation of Farmhouse Using Ecotect Analysis as an Effort to Optimize Cultural Activity of Enclave Villagers (Case Study: Ngadas, Bromo Tengger Semeru National Park) BT - Innovative Technologies in Intelligent Systems and Industrial Ap. In S. C. Mukhopadhyay, S. M. N. A. Senanayake, & P. W. C. Withana (Eds.), *Innovative Technologies in Intelligent Systems and Industrial Applications* (pp. 505–513). Springer Nature Switzerland. https://doi.org/https://doi.org/10.1007/978-3-031-29078-7_44

Wijayanti, R. E. (2017). *Etnobotani Upacara Adat di Sekitar Taman Nasional Bromo Tengger Semeru dan Pemanfaatannya sebagai Buku Ilmiah Populer* [Universitas Jember]. https://www.academia.edu/102595067/Etnobotani_Upacara_Adat_DI_Sekitar_Taman_Nasional_Bromo_Tengger_Semeru_Dan_Pemanfaatannya_Sebagai_Buku_Ilmiah_Populer

Yakub, A., Leksono, A. S., & Batoro, J. (2019). Ethnobotany of medicinal and edible plants of Tobelo Dalam tribe in Aketajawe Lolobata National Park Area. *Jurnal Pembangunan Dan Alam Lestari*, *10*(1), 45–50. https://doi.org/https://doi.org/10.21776/ub.jpal.2019.010.01.08

Zagaria, C., Schulp, C. J. E., Kizos, T., Gounaridis, D., & Verburg, P. H. (2017). Cultural landscapes and behavioral transformations: An agent-based model for the simulation and discussion of alternative landscape futures in East Lesvos, Greece. *Land Use Policy*, *65*, 26–44. https://doi.org/https://doi.org/10.1016/j.landusepol.2017.03.022