

Research Article

Plant Conservation Based on *Tri Mandala* Concept on Homegarden at Pakraman Penge Village, Baru Village, Marga District, Tabanan Regency, Bali

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ABSTRACT

Penge Pakraman village is a traditional village that has the potency to become ecotourism. The emergence of new tourist attractions affects land changes to support tourism activities. This causes the number of plant species in nature to decrease. Plant conservation by utilizing local wisdom is one effort to reduce the decrease of plant species number. The application of *Tri Hita Karana* and *Tri Mandala* in Balinese daily life able to support plant conservation activity. The objective of this research was to determine the role of *Tri Mandala* concept in plant conservation at Pakraman Penge home garden. Data collection methods are carried out through observation plant location with inventory number and name of plants in house sample. Plant use continues with study literature. The results of an inventory of plant diversity in home gardens of Pakraman Penge village recorded 70 species of plants from 16 houses sample. The plant habitus varied from herbs, shrubs until trees. Plant species in the home gardens have functions for ceremonies (51%), medicinal (24%), ornamental (17%), food (6%), and spices (2%). However, based on the location, most plant species were found in *madya mandala* and the lowest were found in *utama mandala*. We also found plants with conservation status consist of least concerned (15 species), vulnerable (*Dracaena draco*), near threatened (*Cycas rumphii*), endangered (*Coffea arabica*). Therefore, the application of *Tri Mandala* concept on Balinese home gardens supports plant conservation and gives economic benefit in individual level.

Keywords: home garden, Pakraman village, plant conservation, *Tri mandala* concept

INTRODUCTION

Penge Pakraman village is a traditional village that still relies on Balinese custom conceptions especially in the design of gardens and houses. This village has the potency to become ecotourism (Prantawan & Sunarta, 2015). However, the emergence of new tourist attractions affects land changes to support tourism activities (Evita *et al.*, 2012). This causes the number of plant species to decrease. Plant conservation by utilizing local wisdom is one effort to reduce the decrease of plant species number (Leksono *et al.*, 2015). However, Balinese people need many kinds of plants to support their ceremonial activity. The applications of *Tri Hita Karana* and *Tri Mandala* in Balinese daily life are

expected to support plant conservation activity and give economic benefits in Penge Pakraman village.

Tri Hita Karana's philosophy, which means three sources of goodness, is a reference for the Balinese people in their daily lives. This philosophy is also reflected in the division of space in traditional Balinese architecture known as the *Tri Mandala* concept. The purpose of this concept is to create a harmonious connection between God, Humans, and the environment. *Tri Mandala* divides space into three, namely: *utama mandala* (sacred) where the sacred area is for worshipping the God Almighty, *madya mandala* (middle) is an area where humans interact with society and *nista mandala* (profane) is a place of interaction with the environment (Aryani & Tanuwidjaja, 2013; Wastika, 2005).

Some research on the application of *Tri Mandala* and the use of home gardens in Bali has been carried out Widyastuti *et al.* (2020) studied

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about the suitability of plant placement based on *Tri Mandala* concept in Pura, Paramita *et al.* (2017) studied about medicinal plant use in home gardens, Pranditha *et al.* (2018) studied about plant placement based on *Tri Mandala* concept in Bangli home garden, and Sujarwo and Caneva (2015) studied about ethno botanical plants in traditional Balinese home gardens. However, research that focuses on the relation between *Tri Mandala* concept and plant conservation on Pakraman village is still rare. Therefore, the objective of this research was to determine the role of *Tri Mandala* concept in plant conservation at Pakraman Penge home garden.

MATERIALS AND METHODS

The study was conducted in Pakraman Penge Village, Baru Village, Marga district, Tabanan Regency, Bali from January-March 2020. This village was the only tourism village in Tabanan regency (Figure 1). A total of 16 houses were used as research samples. The selection of sample locations was done by purposive sampling of houses that apply the *Tri Mandala* concept. The Floor plan was drawn manually. Inventory of plant diversity was carried out referring to the division of *Tri Mandala* space, namely *utama mandala*, *madya mandala*, and *nista*

mandala, including green space called *telajakan*.

The parameters measured in the field include the name of the species, the number of individuals of each species, and the location of growth. Plant specimens were identified in the field by the first author. Furthermore, unknown plant species were then made in vouchers and identified in herbarium Bali Botanic Garden. The scientific nomenclature used in this study was derived from the existing database (The Plantlist, 2020). A Literature study was conducted to find the utilization of each species of plant and divided into the following six use categories: ceremony, medicine, food, ornamental, protector (*tolak bala*), and spices. The same plant could fall into more than one category. However, the conservation status from each species checked with the International Union for Conservation Nature (IUCN) red list of threatened species website (IUCN, 2020).

Data Analysis

Standard statistical methods were used to calculate data using MS Office Excel. Furthermore, data from each location were analyzed to find the abundance of plant species in the village of Pakraman Penge by calculating the relative frequency (FR) values (Darma

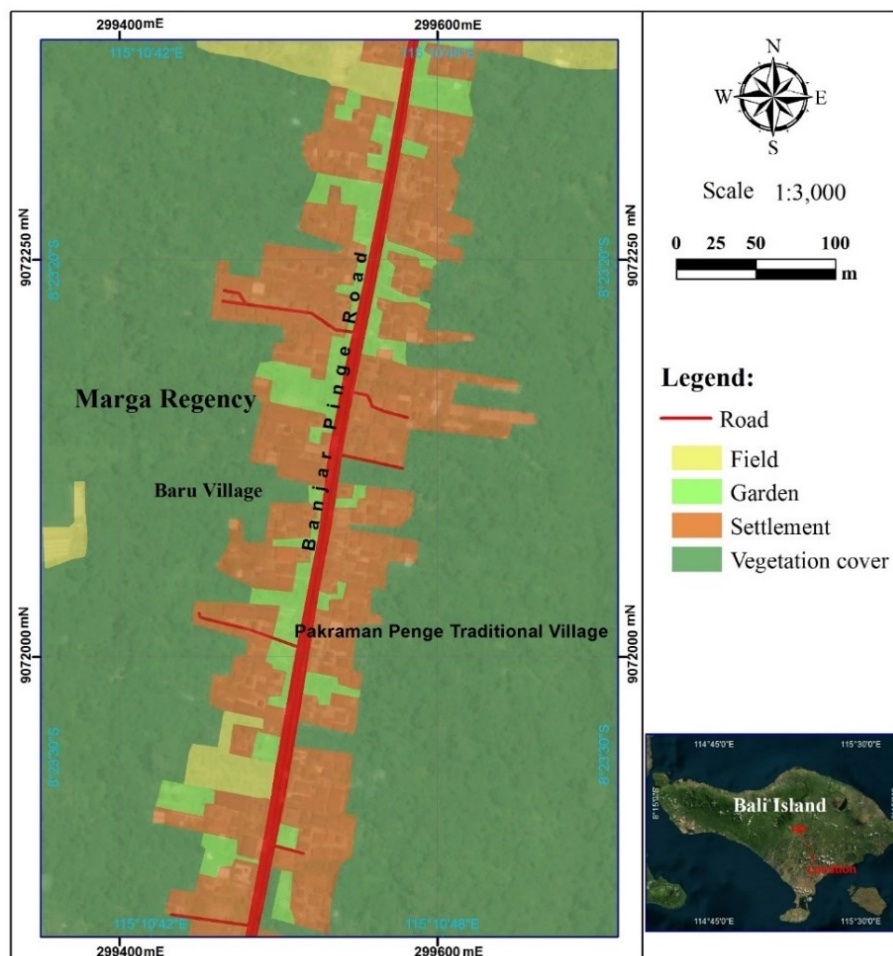


Figure 1. Map showing the location of Pakraman Penge village, Baru village, Marga district, Tabanan regency, Bali (Documentation by Rajif Iryadi, 2020).

et al., 2018). The Relative frequency used to determine the plant species distribution in home gardens.

$$\text{Relative frequency (FR)} = \frac{\text{Frequency one species}}{\text{Frequency all species}} \times 100\%$$

RESULTS AND DISCUSSION

Plant composition and cultivated plant uses in the Pakraman Penge Village home garden

The Pakraman village's concept is related to the garden space planted with various types of plants. One part of *Tri Hita Karana* concept is the harmonious relationship between humans and the environment which makes the concept of garden design to have various types of plants that have a special value for the surrounding community (Wisnumurti, 2017). Balinese garden has a high touch in terms of their culture and this plant has a function as a complement to *upakara* (ceremony plant), *usada* (medicinal plant) philosophy of placement, and enhancement of the aesthetics of the park. Therefore, the dominance of plant type determination is influenced by culture (Hazrinah et al., 2016).

Plant inventory record 70 species belong to 43 families (Table 1). The most common family are *Arecaceae* (6 species) followed with *Asparagaceae*, *Myrtaceae*, *Rubiaceae* (4 species each), *Fabaceae*, *Poaceae*, *Rutaceae* (3 species each) and *Annonaceae*, *Apocynaceae*, *Lythraceae*, *Moraceae*, *Pandanaceae*, *Phyllanthaceae*, *Zingiberaceae* (2 species each). Our results showed a higher number of recorded plants in Pakraman Penge village home garden compared with the other 13 traditional home gardens village in Bali which only recorded 36 species. (Sujarwo & Caneva, 2015). This difference because the 13 village lead a traditional lifestyle and located near to the forest or natural areas so the number of plant species in their home garden is lower.

The most frequently used part are leaves, fruit, and flower (Table 1). This result in line with Ambarani et al. (2017) who mention that plant parts in Payangan home garden mostly used are leaves, flowers, and fruits because those parts are used in Hindu's ceremony.

Application of *Tri Mandala* concept on Traditional Architecture house at Pakraman Penge village

Based on observations of 16 houses that were sampled, it is known that the division of traditional architectural houses in the village of Pakraman Penge follows the *Tri Mandala* concept which consists of *utama mandala* /sacred, *madya mandala*/middle, and *nista mandala*/profane. *Utama mandala* in

the form of performance is to worship the greatness of God. *Madya mandala* is called *pekubonan* which is useful for the activity of its owner. Inside it was built a house consisting of *bale dangin*, *bale daja*, *bale dauh*, *bale tengah*, *paon* (kitchen), and *jineng* (granary). *Nista mandala* in the form of *tebe* is an area that serves as a place for raising livestock and growing plants that have large tree habit. In addition, there is also a green space called *telajakan* which is a barrier between the main road and the front of the house home garden (Figure 2). Yudiantini (2012) revealed *telajakan* is an integral part of traditional housing patterns in an indigenous village in Bali, but often forgotten about in contemporary housing development in Bali.

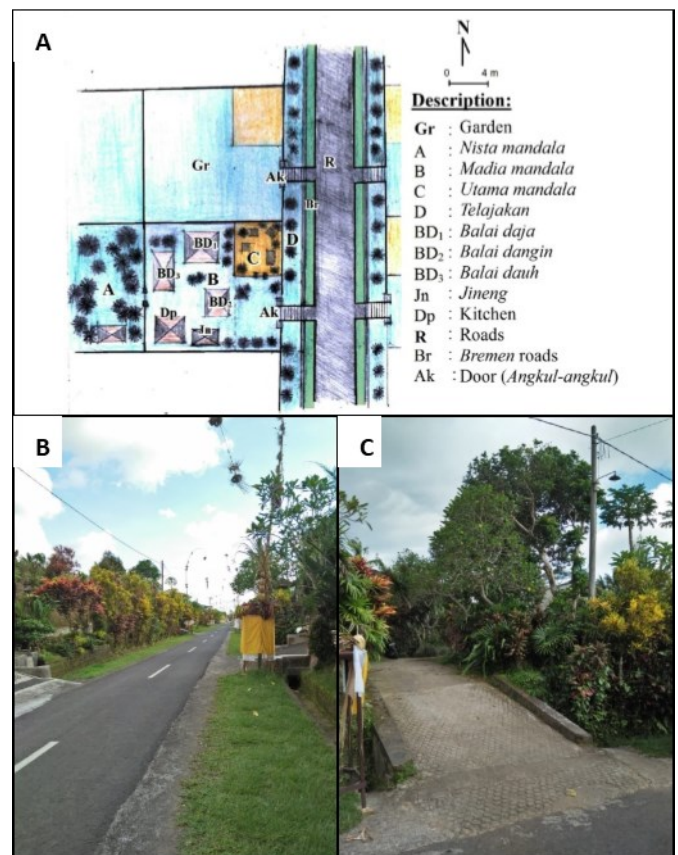


Figure 2. Home garden sketch at Pekraman Penge village, Baru village, Marga district, Tabanan regency, Bali (A). *Telajakan* planted with plant (B), 2C Home garden plant composition (Sketch and Photo by I Dewa putu Darma, 2020).

Plant preference and their location in Pakraman Penge village home garden

The home garden in Pakraman Penge village is dominated by ceremony and medicine plants (Figure 3). The garden provides quick and easy access to ceremony plants for their daily ritual religious, such as *Cordyline frutticosa*, *Cordyline terminalis*, *Cassia surratensis*, and *Michelia champaca*. The home garden also provides medicine function which has an advantage as the first curative before going to the

Table 1. Plant diversity in every sampled home garden in the Pakraman Penge village.

No	Species name (Local name) Family	Use	Areal					Total	FR (%)	Part of plant which usually used						Conservati on status	
			T	UM	M	M	N			Flower	Fruit	Leaf	Tuber	Stem	All part		
1	<i>Coryphine fruticosa</i> (L.) A.Chev (Andong) Asparagaceae	Ceremony	1	1	1	1	1	3	2,29	1							LC
2	<i>Cassia surattensis</i> Burm.F. (Kembang kuning) Fabaceae	Ceremony	1	1	1	1	3	2,29	1								LC
3	<i>Averrhoa carambola</i> L. (Belimbing besi) Oxalidaceae	Medicine, Ceremony, Food			1	1	2	1,53	1	1	1	1					
4	<i>Pluchea indica</i> (L.) Less (Beluntas) Asteraceae	Medicine			1	1	1	0,76			1						
5	<i>Areca catechu</i> L. (Buah) Areaceae	Medicine, Ceremony				1	1	0,76	1	1							
6	<i>Nephelium lappaceum</i> L. (Rambutan) Sapindaceae	Ceremony Food	1			1	1	0,76	1								LC
7	<i>Michelia campaca</i> L. (Campaka putih) Magnoliaceae	Ceremony	1			1	1	2,29	1								LC
8	<i>Acorus calamus</i> L. (Jangu) Acoraceae	Medicine, Ceremony			1	1	1	0,76					1	1			LC
9	<i>Moringa oleifera</i> Lam. (Kelor) Moringaceae	CeremonyM edictine, Food	1			1	1	2,29							1		
10	<i>Syzygium aromaticum</i> (L.) Merr.&L.M.Perry (Cengkeh) Myrtaceae	Medicine	1			1	2	1,53	1								
11	<i>Sauropus androgynus</i> (L.) Merr. (Kayu manis) Phyllanthaceae	Ceremony, Medicine				1	1	0,76							1		

Table 1. Contd.

No	Species name (Local name) Family	Use	Areal					Total	FR (%)	Part of plant which usually used					Conservation status	
			T	UM	M	N	M			Flower	Fruit	Leaf	Tuber	Stem		All part
12	<i>Piper betle</i> L. (Base) Piperaceae	Ceremony, Medicine			1			1	0,76			1				
13	<i>Alpinia galanga</i> (L.) Willd. (Isen) Zingiberaceae	Medicine			1			1	0,76				1			
14	<i>Allamanda cathartica</i> L.(Bunga ceblong) Apocynaceae	Ceremony	1	1	1			3	2,29						1	
15	<i>Gardenia jasminoides</i> J.Ellis (Jempiring) Rubiaceae	Ceremony	1	1	1			3	2,29						1	
16	<i>Plumeria acuminata</i> W. T. Aiton (Jepun) Apocynaceae	Ceremony, Medicine	1	1	1			3	2,29						1	1
17	<i>Bougainvillea spectabilis</i> Willd. (Kembang kertas) Nyctagynaceae	Ceremony	1	1	1			3	2,29						1	
18	<i>Caesalpinia pulcherrima</i> L. (Sw) (Kemerakan) Fabaceae	Ceremony, Ornamental	1	1	1			3	2,29						1	1
19	<i>Hibiscus rosa-sinensis</i> L. (Pucuk bang) Malvaceae	Ceremony, ornamental	1	1	1			3	2,29						1	
20	<i>Rhododendron mucronatum</i> (Bl.) G. Don (Rododendron) Ericaceae	Ceremony, ornamental	1		1			2	1,53						1	
21	<i>Cananga odorata</i> (Lam) Hook. f &Thomson (Sandat) Annonaceae	Ceremony, ornamental			1		1	2	1,53						1	
22	<i>Ixora coccinea</i> L. (Soka) Rubiaceae	Ceremony, ornamental	1	1	1			3	2,29						1	1
23	<i>Medinilla speciosa</i> (Reinw. ex Bl.) Bl. (Trijata) Melastomataceae	Ceremony, ornamental			1			2	1,53						1	

Table 1. Contd.

No	Species name (Local name) Family	Use	Areal				Total	FR (%)	Part of plant which usually used					Conservati on status			
			T	UM	M	M			UM	M	Flower	Fruit	Leaf		Tuber	Stem	All part
24	<i>Musa paradisiaca</i> L. (Pisang) Musaceae	Ceremony, Food			1		1	0,76			1			1			
25	<i>Zingiber officinale</i> Roscoe (Jahe) Zingiberaceae	Medicine			1		1	0,76				1					
26	<i>Psidium guajava</i> L. (Sotong) Myrtaceae	Medicine	1		1		3	2,29				1					LC
27	<i>Persea americana</i> Mill. (Alpukat) Lauraceae	Food, Medicine			1		1	0,76				1					LC
28	<i>Citrus aurantifolia</i> (Christm.) Swingle (Jeruk lengis) Rutaceae	Ceremony, medicine			1		2	1,53				1	1				
20	<i>Foeniculum vulgare</i> Mill. (Adas) Apiaceae	Food			1		1	0,76				1					LC
30	<i>Annona muricata</i> L. (Sirsak) Annonaceae	Medicine	1		1		2	1,53				1					LC
31	<i>Brigmansia</i> sp. (Kecubung) Solanaceae	Ornamental	1		1		2	1,53	1								
32	<i>Citrus maxima</i> (Burm.) Merr. (Jeruk Bali) Rutaceae	Ceremony, Medicine			1		2	1,53				1	1				LC
33	<i>Carica papaya</i> L. (Gedang) Caricaceae	Food			1		2	1,53				1					
34	<i>Saccharum officinarum</i> L. (Tebucemeng) Poaceae	Ceremony	1		1		2	1,53						1			
35	<i>Arenga pinnata</i> (Wuumb) Merr. (Aren) Arecaceae	Ceremony			1		1	0,76				1					

Table 1. Contd.

No	Species name (Local name) Family	Use	Areal				Total	FR (%)	Part of plant which usually used						Conservation status	
			T	UM	M	M			Flower	Fruit	Leaf	Tuber	Stem	All part		
36	<i>Phyllanthus buxifolius</i> (Blume) Mull.Arg.(Kayu sasih) Phyllanthaceae	Ceremony, protector	1	1	1	1	2	1,53		1					1	
37	<i>Schefflera elliptica</i> (Blume) Harms (Kayutulak) Araliaceae	Ceremony, protector	1	1	1	1	2	1,53							1	LC
38	<i>Cordyline terminalis</i> (L.) Kunth (Andong gadang) Asparagaceae	ceremony	1	1	1	1	3	2,29	1							
39	<i>Pandanus</i> sp. (Pandanus meduwi) Pandananaceae	Ceremony, protector			1	1	1	0,76	1						1	
40	<i>Erythrina hypaphorhus</i> Boerl. Koord (Dadap) Fabaceae	Ceremony, medicine			1	1	1	0,76	1				1			
41	<i>Cocos nucifera</i> L. (Kelapa) Arecaceae	Ceremony, medicine	1		1	1	2	1,53	1							
42	<i>Dendrocalamus asper</i> (Schult.) Backer (Tiing Betung) Poaceae	Ceremony			1	1	1	0,76					1			
43	<i>Artocarpus integer</i> (Thunb) Merr. (Nangka) Moraceae	Ceremony food	1		1	1	2	1,53	1	1						
44	<i>Caryota mitis</i> Lour.(Uduh) Arecaceae	Ceremony	1		1	1	2	1,53	1							
45	<i>Manilkara zapota</i> (L.) P. Royen (Sabo) Sapotaceae	Ceremony	1		1	1	2	1,53	1							
46	<i>Syzygium</i> sp. (Jambu) Myrtaceae	Ceremony			1	1	2	1,53	1							
47	<i>Durio zibethinus</i> L. (Duren) Myrtaceae	Ceremony			1	1	1	0,76	1							
48	<i>Garinia x mangostana</i> L. (Mangis) Clusiaceae	Ceremony, Medicine	1		1	1	2	1,53	1							

Table 1. Contd.

No	Species name (Local name) Family	Use	Areal				Total	FR (%)	Part of plant which usually used					Conservation status		
			T	UM	M	M			NIM	M	Flower	Fruit	Leaf		Tuber	Stem
49	<i>Codiaeum variegatum</i> (L.) Rumph.ex A.Juss. (Puring) Euphorbiaceae	Ceremony	1	1	1	1	3	2,29			1					LC
50	<i>Nymphaea</i> sp. (Tunjung) Nymphaeaceae.	Ceremony			1		1	0,76	1							
51	<i>Graptophyllum pictum</i> (L.) Griff. (Temen) Acanthaceae	Ceremony	1	1	1		3	2,29			1					
52	<i>Ficus rumphii</i> Blume. (Ancak) Moraceae	Ceremony	1				1	0,76			1					
53	<i>Dracaena angustifolia</i> Roxb. (Kayusugih) Asparagaceae	Ceremony	1	1			2	1,53			1					
54	<i>Punica granatum</i> L. (Delima) Lythraceae	Ceremony			1		1	0,76			1					LC
55	<i>Citrus limon</i> (L.) Osbeck (Lemo) Rutaceae	Spices			1		1	0,76			1					
56	<i>Pandanus ameryllifolius</i> Roxb. (Pandani arum) Pandanaaceae	Ceremony			1		2	1,53			1					
57	<i>Scheuchzeria palustris</i> L. (Kurz) Kurz (Bambu tali) Poaceae	Ceremony			1		1	0,76						1		
58	<i>Syzygium polyanthum</i> (Wight) Walp. (Jangarulam) Myrtaceae	Spices			1		1	0,76			1					
59	<i>Dracaena draco</i> L. (Prakso) Asparagaceae	Ornamental	1		1		2	1,53							1	Vu
60	<i>Cyrtosperma lakka</i> Becc. (Palem merah) Areaceae	Ornamental	1		1		2	1,53							1	

Table 1. Contd.

No	Species name (Local name) Family	Use	Areal			Total	FR (%)	Part of plant which usually used					Conservation status		
			T	UM	M			M	NM	Flower	Fruit	Leaf		Tuber	Stem
61	<i>Cyathea contaminans</i> (Wall. ex Hook.) Copel (Paku lemputu) Cyatheaceae	Orna-mental	1			1	0,76							1	
62	<i>Cycas rumphii</i> Miq. (Pakis Aji) Cycadaceae	Ceremony	1	1		2	1,53			1					NT
63	<i>Morinda citrifolia</i> L (Tibah) Rubiaceae	Medicine	1			1	1,53			1					
64	<i>Rhapis excelsa</i> (Thunb.) Henry (Beregi) Arecaceae	Orna-mental	1	1		2	1,53							1	
65	<i>Clodendrum paniculatum</i> L. Lamiaceae	Orna-mental	1			1	0,76							1	
66	<i>Sansiviera</i> sp. Ruscaceae	Orna-mental	1	1		2	1,53							1	
67	<i>Ciaphia lysiofolia</i> Kunth (White) Lythraceae	Orna-mental				1	0,76							1	
68	<i>Ophiopogon jaburan</i> (Siebold) Lodd Aspragaceae	Orna-mental	1	1		2	1,53							1	
69	<i>Rosa</i> sp (Mawar) Rosaceae	Ceremony, Orna-mental		1		1	0,76			1					
70	<i>Coffea arabica</i> L. (Kopi) Moraceae	Food				1	0,76			1					En
Total			39	16	49	27	131	100	15	22	24	3	5	11	

Note: T: Telanjakan, UM: Utama Mandala, MM: Madya Mandala, NM: Nista Mandala, FR: relative frequency. LC: Least Concern, NT: Near Threatened, En: Endanger

health center. This result in line with Sujarwo and Caneva, (2015) who found medicine function as number two plant function in a traditional village in Bali after vegetables.

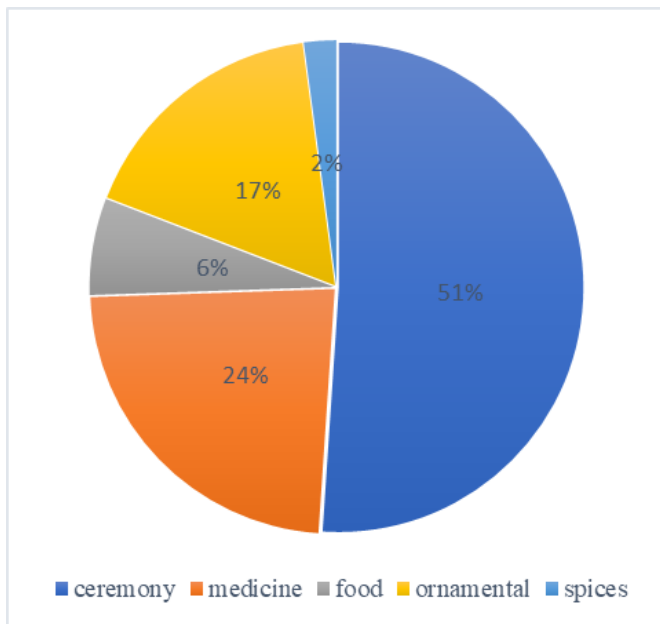


Figure 3. Plant species percentage base on function.

However, the abundance of species classified in three categories consists of high abundance with index is 2.29, middle abundance with index is 1.76 and low abundance with index is 1.53 (Table 1). High abundance means this plant species found in three areas, middle abundance means this plant species found in two areas and low abundance means this plant species only found in one area. The following fifteen species are with high abundance consist of *Cordyline fruticosa* (Local name (LN): Adong), *Cassia surattensis* (LN: Kembang kuning), *Allamanda cathartica* (LN: Bunga ceblong), *Gardenia jasminoides* (LN: Jempiring), *Plumeria acuminata* (LN: Jepun), *Bougainvillea spectabilis* (LN: Kembang kertas), *Caesalpinia pulcherrima* (LN: Kemerakan), *Hibiscus rosa-sinensis* (LN: Pucuk bang), *Ixora coccinea* (LN: Soka), *Cordyline terminalis* (LN: Andong gadang), *Codiaeum variegatum* (LN: Puring), and *Graptophyllum pictum* (LN: Temen). These 15 species are abundant because they are found in more than one location in one house. This index related to the abundance of this plant which means this plant mostly planted in home gardens and support conservation concept because this plant can survive and used regularly for human life. Five of these abundant plants are included in the status of least concern at conservation status IUCN (*Cordyline fruticosa*, *Cassia surattensis*, *Psidium guajava*, *Michelia champaca*, and *Codiaeum variegatum* (IUCN, 2020)), there are distributed mostly from Indonesia (Lim, 2015; GBIF, 2020). This result in accordance with

Ambarani *et al.* (2017) who also found *Cordyline fruticosa* as the most abundant plant in Payangan home gardens. The result also shows that *madya mandala* is a space with the highest number of plant species, consists of 49 species (37%), followed by 39 species of *telajakan* (30%), 27 species of *nista mandala* (21%) and 16 species of *utama mandala* (12%) (Figure 4). *Madya mandala* and *telajakan* show the highest number of plant species because the area can be planted with plants from every category while *utama mandala* is only planted with ceremonial plants. This result in accordance with Yudiantini (2012) who said that *telajakan* in indigenous villages in Bali is planted with spiritual and economic function. However, Kato *et al.* (2019) found *telajakan* plant function in northern Denpasar as aesthetic, economic, and ritual (ceremony).

This result also in accordance with Pranditha *et al.* (2018) which states that based on the *Tri Mandala* philosophy it is better to place plants whose flower parts are used in the ceremony are preferably planted in the *utama mandala* area because there is a family temple for praying located. This result also in line with Ambarani *et al.* (2017) who mention *madya mandala* in Payangan home garden has the highest plant number.

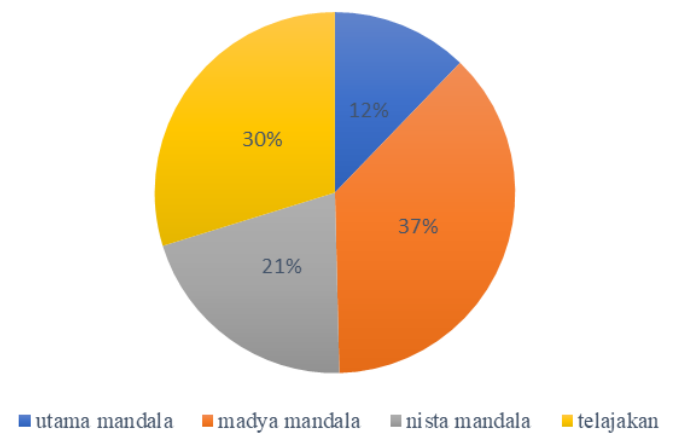


Figure 4. Plant species percentage on traditional architecture house based on *Tri Mandala* conception.

Tri Mandala concept relation with plant conservation and economic benefit

The structure and composition of vegetation in the home garden of Pekraman Penge village is a representation of the art of local community architecture in the processing of their home garden. The *Tri Mandala* concept is important to maintain because it has the meaning of socially, environmentally, and economically sustainable use (Aryani & Tanuwidjaja, 2013). The people in Pakraman Penge Village use more of the remaining land in their homes by planting plants for the needs

of Hindu religious ceremonies because all respondents are Hindu. This is in accordance with the definition of home gardens according to (Hakim, 2014) which states that the home garden is the land around the settlement which is managed by the family of the house owner intensively-semi-intensively to support the fulfillment of the diversity of needs of the homeowner that can be facilitated by the function of the home garden.

Ceremony plants can be found in *utama mandala*, *madya mandala*, *nista mandala*, and *telajakan*. Fruit plants such as *Musa paradisiaca*, *Carica papaya*, *Averrhoa carambola* found in *madya mandala* while screen plant such as *Artocarpus integrus*, *Arenga pinnata*, *Dendrocalamus asper* found in *nista mandala*. Moreover, ceremony, medicine, and ornamental plant function are also found in *telajakan* (Table 1). This result not in accordance with Sardiana in Ambarani *et al.* (2017) who said ceremony plants should be planted at *utama mandala* because this location is a sacred place. However, the plant placement in *madya mandala* and *nista mandala* in accordance with Sardiana in Ambarani *et al.* (2017) who said *madya mandala* should be planted for fruit or flower tree and *nista mandala* should be planted with screen plant function. Furthermore, plant placement in *telajakan* accordance with Yudiantini (2012) who said *telajakan* should be planting with aesthetic plants, rituals, and medicines.

In addition, several plants in Pakraman Penge village has conservation status such as *Dracaena draco* which has an ornamental function, has vulnerable conservation status found in *telajakan* and *madya mandala*, *Coffea arabica* which has a function as beverages, has endangered conservation status found in *nista mandala* and the last were *Cycas rumphii* which has a function for ceremonies has near threatened status found in *telajakan* and *utama mandala*. Moge *et al.* (2001) said vulnerable status means this plant suffers a high risk of extinction in nature, Endangered status means this plant runs a very high risk of extinction. This founding shows that *Tri Mandala* concept in Pakraman Penge village has a role to conserve plant especially plant with conservation status.

CONCLUSION

This study documented the relationship between *Tri Mandala* concepts with plant conservation in the home garden of Pakraman Penge village. In all, 70 plant species were documented, 18 of them have conservation status. Most of the plant functions as ceremonial plants used in Balinese daily life. *Tri Mandala* concept able to support plant conservation in home gardens and give economic benefit

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