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

\[
\text{Relative frequency (FR)} = \left( \frac{\text{Frequency one species}}{\text{Frequency all species}} \right) \times 100\% 
\]

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 daging, bale daja, bale daub, 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). Yudantini (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.

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 surattensis, and Michelia champaca. The home garden also provides medicine function which has an advantage as the first curative before going to the

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).
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 |
|----|---------------------------|--------|-----|-------|-------|--------|----------------------------------|--------------------|
| 1  | *Cordyline fruticos*a (L.) A.Chev (Andong) | Asparagaceae | Ceremony | 1 | 1 | 3 | 2.29 | Flower | LC |
| 2  | *Cassia surattensis* Burm.F. (Kembang kuning) | Fabaceae | Ceremony | 1 | 1 | 3 | 2.29 | Fruit | LC |
| 3  | *Averrhoa carambola* L. (Belimbing besi) | Oxalidaceae | Medicine, Ceremony, Food | 1 | 1 | 2 | 1.53 | Leaf | LC |
| 4  | *Phoebe indica* (L.) Less (Beluntas) | Asteraceae | Medicine | 1 | 1 | 1 | 0.76 | Stem | LC |
| 5  | *Anis satia* L. (Buah) | Areceae | Medicine, Ceremony | 1 | 1 | 1 | 0.76 | All part | LC |
| 6  | *Nephelium lappaceum* L. (Rambutan) | Sapindaceae | Ceremony, Food | 1 | 1 | 1 | 0.76 | All part | LC |
| 7  | *Michelia campasa* L. (Campaka putih) | Magnoliaceae | Ceremony | 1 | 1 | 1 | 2.29 | Flower | LC |
| 8  | *Acorus calamus* L. (Jangu) | Acoraceae | Medicine, Ceremony | 1 | 1 | 1 | 0.76 | Flower | LC |
| 9  | *Syzygium aromaticum* (L.) Merr.&L.M.Perry (Cengkeh) | Myrtaceae | Ceremony | 1 | 1 | 1 | 2.29 | Flower | LC |
| 10 | *Syzgium ammation* (L.) Merr.&L.M.Perry (Cengkeh) | Myrtaceae | Medicine | 1 | 1 | 2 | 1.53 | Tuber | LC |
| 11 | *Sauropus androgynus* (L.) Merr. (Kayu manis) | Phyllanthaceae | Ceremony, Medicine | 1 | 1 | 1 | 0.76 | Stem | LC |
| No | Species name (Local name) | Use | Areal | Total | FR (%) | Part of plant which usually used | Conservation status |
|----|--------------------------|-----|-------|-------|--------|----------------------------------|-------------------|
| 12 | *Piper betle* L. (Base)  | Ceremony, Medicine | 1 | 1 | 0.76 | | 1 |
| 13 | *Alpinia galanga* (L.) Willd. (Isen) | Medicine | 1 | 1 | 0.76 | Fruit | 1 |
| 14 | *Alamanda cathartica* L. (Bunga ceblong) | Ceremony | 1 | 1 | 2.29 | Flower | 1 |
| 15 | *Gardenia jasminoides* J.Ellis (Jempiring) | Ceremony | 1 | 1 | 2.29 | Flower | 1 |
| 16 | *Plumeria acuminata* W. T. Aiton (Jepun) | Ceremony, Medicine | 1 | 1 | 2.29 | Flower | 1 |
| 17 | *Bougainvillea spectabilis* Wild. (Kembang kertas) | Ceremony | 1 | 1 | 2.29 | Flower | 1 |
| 18 | *Caesalpinia pulcherrima* L. (Sw) (Kemerakan) | Ceremony, Ornamental | 1 | 1 | 2.29 | Flower | 1 |
| 19 | *Hibiscus rosa-sinensis* L. (Pucuk bang) | Ceremony, ornamental | 1 | 1 | 2.29 | Flower | 1 |
| 20 | *Rhododendron mucronatum* (Bl.) G. Don (Rododendron) | Ceremony, ornamental | 1 | 1 | 2 | 1.53 | 1 |
| 21 | *Cananga odorata* (Lam) Hook. f &Thomson (Sandat) | Ceremony, ornamental | 1 | 1 | 2 | 1.53 | 1 |
| 22 | *Isona coicoides* L. (Soka) | Ceremony, ornamental | 1 | 1 | 2 | 1.53 | 1 |
| 23 | *Medinilla speciosa* (Reinw. ex Bl.) Bl. (Trijata) | Ceremony, ornamental | 1 | 1 | 2 | 1.53 | 1 |
| No | Species name (Local name) | Family | Use | Areal | FR (%) | Part of plant which usually used | Conservation status |
|----|--------------------------|--------|-----|-------|--------|----------------------------------|--------------------|
|   |                          |        |     | T     | UM     | M/M | NM | Total | Flower | Fruit | Leaf | Tuber | Stem | All part |
| 24 | Musa paradisiaca L. (Pisang) | Musaceae | Ceremony, Food | 1 | 1 | 1 | 0,76 | 1 | 1 |
| 25 | Zingiber officinale Roscoe (Jahe) | Zingiberaceae | Medicine | 1 | 1 | 1 | 0,76 | 1 | 1 |
| 26 | Psidium guajava L. (Sotong) | Myrtaceae | Medicine | 1 | 1 | 1 | 3 | 2,29 | 1 |
| 27 | Persea americana Mill. (Alpukat) | Lauraceae | Food, Medicine | 1 | 1 | 1 | 0,76 | 1 | 1 |
| 28 | Citrus aurantifolia (Christm.) Swingle (Jeruk lengis) | Rutaceae | Ceremony, medicine | 1 | 1 | 1 | 2 | 1,53 | 1 | 1 |
| 29 | Foeniculum vulgare Mill. (Adas) | Apiaceae | Food | 1 | 1 | 1 | 0,76 | 1 | 1 |
| 30 | Annona muricata L. (Sirsak) | Annonaceae | Medicine | 1 | 1 | 1 | 2 | 1,53 | 1 | 1 |
| 31 | Brugmansia sp. (Kecubung Kebun) | Solanaceae | Ornamental | 1 | 1 | 1 | 2 | 1,53 | 1 | 1 |
| 32 | Citrus maxima (Burm.) Merr.(Jeruk Bali) | Rutaceae | Ceremony, medicine | 1 | 1 | 1 | 2 | 1,53 | 1 | 1 |
| 33 | Carica papaya L.(Gedang) | Caricaceae | Food | 1 | 1 | 2 | 1,53 | 1 | 1 |
| 34 | Saccharum officinarum L. (Tebucemeng) | Poaceae | Ceremony | 1 | 1 | 2 | 1,53 | 1 | 1 |
| 35 | Arenga pinnata (Wurmb) Merr.(Aren) | Areceae | Ceremony | 1 | 1 | 1 | 0,76 | 1 | 1 |
| No | Species name (Local name) | Family | Use | Areal | Total | FR (%) | Part of plant which usually used | Conservati on status |
|----|---------------------------|--------|-----|-------|-------|--------|---------------------------------|---------------------|
| 36 | Phyllanthus buxifolius (Blume) Mull.Arg.(Kayu sisih) Phyllanthaceae | Ceremony, protector | 1 | 1 | 2 | 1,53 | Flower | 1 |
| 37 | Schefflera elliptica (Blume) Harms (Kayutulak) Araliaceae | Ceremony, protector | 1 | 1 | 2 | 1,53 | Fruit | 1 |
| 38 | Cordyline terminalis (L.) Kunth (Andong gadang) Asparagaceae | ceremony | 1 | 1 | 3 | 2,29 | Stem | LC |
| 39 | Pandanus sp. (Pandan meduwi) Pandanaceae | Ceremony, protector | 1 | 1 | 0,76 | Leaf | 1 |
| 40 | Erythrina hypaphorus BoerLex Koord (Dadap) Fabaceae | Ceremony, medicine | 1 | 1 | 0,76 | Flower | 1 |
| 41 | Canis narifera L. (Kelap) Arecales | Ceremony, medicine | 1 | 1 | 2,29 | Leaf | 1 |
| 42 | Dendrocalamus asper (Schult.) Backer (Tiing Betung) Poaceae | ceremony | 1 | 1 | 0,76 | Flower | 1 |
| 43 | Artocarpus integer (Thunb)Merr. (Nangka) Moraceae | Ceremony, food | 1 | 1 | 2,29 | Leaf | 1 |
| 44 | Caryota mitis Lour.(Uduh) Arecales | Ceremony, food | 1 | 1 | 2,29 | Leaf | 1 |
| 45 | Manilkara zapota (L) P. Royen (Sabo) Sapotaceae | ceremony | 1 | 1 | 2,29 | Flower | LC |
| 46 | Syzygium sp. (Jambu) Myrtaceae | ceremony | 1 | 1 | 2,29 | Flower | 1 |
| 47 | Durio zibethinus L. (Duren) Myrtaceae | ceremony | 1 | 1 | 0,76 | Flower | 1 |
| 48 | Garcinia x mangostana L. (Mangis) Clusiaceae | Ceremony, Medicine | 1 | 1 | 2,29 | Flower | 1 |
| No | Species name (Local name) | Family | Use                | Areal          | FR (%) | Part of plant which usually used | Conservations status |
|----|--------------------------|--------|-------------------|----------------|--------|-------------------------------|---------------------|
|    |                          |        |                   | T  | UM | M  | NM | Total | Flower | Fruit | Leaf | Tuber | Stem | All part |
| 49 | Codiaeum variegatum (L.) Rumph.ex A.Juss. (Puring) | Euphorbiaceae | Ceremony | 1  | 1  | 1  | 3  | 2.29 | 1      |
| 50 | Nymphaea sp. (Tunjung) Nymphaeaceae | Ceremony | 1  | 1  | 0.76 | 1      |
| 51 | Graptophyllum pictum (L) Griff. (Temen) Acanthaceae | Ceremony | 1  | 1  | 0.76 | 1      |
| 52 | Ficus rumphii Blume. (Ancak) Moraceae | Ceremony | 1  | 1  | 2.29 | 1      |
| 53 | Draeana angustifolia Roxb. (Kayusugh) Asparagaceae | Ceremony | 1  | 1  | 1.53 | 1      |
| 54 | Punica granatum L. (Delima) Lythraceae | Ceremony | 1  | 1  | 0.76 | 1      |
| 55 | Citrus limon (L.) Osbeck (Lemo) Rutaceae | Spices | 1  | 1  | 0.76 | 1      |
| 56 | Pandanus amaryllifolius Roxb. (Pandan arum) Pandanaceae | Ceremony | 1  | 1  | 2.29 | 1      |
| 57 | Schizostachyum brachycladum (Kurz) Kurz (Bambu tali) Poaceae | Ceremony | 1  | 1  | 0.76 | 1      |
| 58 | Syzygium polyanthum (Wight) Walp. (Jangarulam) Myrtaceae | Spices | 1  | 1  | 0.76 | 1      |
| 59 | Draeana duno L. (Prakso) Asparagaceae | Ornamental | 1  | 1  | 2.29 | 1      |
| 60 | Cyrtostachys lakka Becc. (Palem merah) Arecaceae | Ornamental | 1  | 1  | 2.29 | 1      |

Table 1. Contd.
| No | Species name (Local name) | Use | Areal | FR (%) | Part of plant which usually used | Conservati on status |
|----|---------------------------|-----|-------|--------|----------------------------------|---------------------|
|    |                           |     |       |        | Flower | Fruit | Leaf | Tuber | Stem | All part |
| 61 | *Cyathea contaminans* (Wall. ex Hook.) Copel (Paku lemputu) | Ornamental | 1 | 1 | 1 | 0.76 | 1 | |
| 62 | *Cycas rumphii* Miq. (Pakis Aji) | Ceremony | 1 | 1 | 2 | 1.53 | 1 | NT |
| 63 | *Morinda citrifolia* L. (Tibah) | Medicine | 1 | 1 | 2 | 1.53 | 1 | |
| 64 | *Rhapis excelsa* (Thunb.) Henry (Bengai) | Ornamental | 1 | 1 | 2 | 1.53 | 1 | |
| 65 | *Clerodendrum paniculatum* L. | Ornamental | 1 | 1 | 0.76 | 1 | |
| 66 | *Sansiviera sp.* | Ornamental | 1 | 1 | 2 | 1.53 | 1 | |
| 67 | *Cuphea hyssopifolia* Kunth (White) | Ornamental | 1 | 1 | 0.76 | 1 | |
| 68 | *Ophiopogon jaburan* (Siebold) Lodde | Ornamental | 1 | 1 | 2 | 1.53 | 1 | |
| 69 | *Rosa sp* (Mawar) | Ceremony, Ornamental | 1 | 1 | 0.76 | 1 | |
| 70 | *Coffea arabica* L. (Kopi) | Food | 1 | 1 | 0.76 | 1 | |
|    | **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), Isora vocitata (LN: Soka), Cordyline terminalis (LN: Andong gadang), Codiaeum variegatum (LN: Puring), and Cryptophyllum 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 Yudantini (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 integr, 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 according to Yudantini (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 Drecena Draco which has an ornamental function, has vulnerable conservation status found in telajakan and madya mandala, Coffee 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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REFERENCES
Ambarani, D. P. L., Sudarsana, A. G. D., and Sarwadana, S. M., 2017, The placement of ritual plants as soft elements of garden reviewed from aspect of Balinese culture philosophy in District of Payangan, Gianyar Regency, Province of Bali, Jurnal Arsitektur Lanskap vol.3(1), 1-11.

Aryani, N. P., & Tanuwidjaja, G., 2013, Sustainable Architectural Design in a Traditional Balinese Housing in Accordance to the Concept of Tri Mandala, Journal of Architecture &ENVIRONMENT, 12(2), 113, http://doi.org/10.12962/j2355262x.v12i2.a561.

Darman, I. D. P., Lestari, W. S., Priyadi, A., & Iryadi, R., 2018, Paku epifit dan pohon inangnya di Bukit Pengelelang, Tapak dan Lesung, Bedugul, Bali [Epiphytic ferns and the phorophyte tree in Bukit Pengelelang, Bukit Tapak and Bukit Lesung], Journal Penelitian Hutan dan Konservasi Alam, 15(1), 41–50, http://doi.org/10.1017/CBO9781107415324.004.

Evita, R., Sirtha, I. N., & Sunartha, I. N., 2012, Dampak perkembangan pembangunan sarana akomodasi wisata terhadap pariwisata berkelanjutan di Bali [The impact of the construction of tourist accommodation facilities towards sustainable tourism in Bali], Jurnal Ilmuah Pariwisata, vol 2(1),109-222, https://ojs.unud.ac.id/ index.php/jip/article/ view/3684.

GBIF, 2020, Global Biodiversity Information Facility, Downloadable from: http://www.gbif.org. Accesed: May 17, 2020.

Hakim., L., 2014, Etnobotani dan Manajemen Kebun-Pekarangan Rumah: Ketahanan Pangan, Kesehatan dan Agrowisata [Etnobotany and Management of Home Grounds: Food Security, Health and Agro Tourism], Selaras Publisher, Malang.

Hazrinah, N.D., Nihayati, E. & Sitawati, 2016, Pengaruh Adat Dalam Penentuan Jenis Tanaman di Taman Bali [Culture effect in determination of plants in the Balineses garden], Jurnal Produksi Tanaman, 4 (3), 240 – 248.

IUCN, 2020, The IUCN Red List of Threatened Species, downloadable from: http://www.iucnredlist.org. Downloaded on May 17, 2020.
Kato, S., Hishiyama, K., Darmadi, A. A. K., Dwijendra, N. K. A., & Suprapta, D. N. 2019. Functional analysis of telajakan plants and space in Northern Denpasar, Bali, Indonesia, Open Journal of Ecology, 9, 15-24.

Leksono, S. M., Syachruroji, A., & Marianingsih, P., 2015, Pengembangan bahan ajar biologi konservasi berbasis etnopedagogi [Development of biology conservation teaching materials based on etnopedagogy], Jurnal Kependidikan: Penelitian Inovasi Pembelajaran, 43(2), 168-183.

Lim, T. K. 2015. Cordyline fruticosa. In Edible medicinal and non-medicinal plants, pp. 627-632, Springer, Dordrecht.

Mogea, J. P., Gandawidjaja, D., Wiriadinata, H., & dan Irawati, R. E. N. 2001, Tumbuhan Langka Indonesia [Indonesian rare plant species], Pusat Penelitian dan Pengembangan Biologi-LIPI, Balai Penelitian Botani, Herbarium Bogoriense, p.86.

Paramita, L. R., Sarwadana, S. M., & Astawa, I. N. G., 2017, Identifikasi tanaman obat-obatan sebagai elemen lunak Lanskap di Kecamatan Kediri, Kabupaten Tabanan, Provinsi Bali [Identification of the medicinal plants as landscape softscape element in District of Kediri, Tabanan Regency, Province of Bali], Jurnal Arsitektur Lanskap, 3(2), 117, http://doi.org/10.24843/jal.2017.v03.i02.p01.

Pranditha, I. D. G. A. S., Sugiantara, A. A. G., & Pradnyawathi, N. L. M., 2018, Tata letak tanaman pada rumah berkonsep arsitektur tradisional Bali di Kota Bangli, Kabupaten Bangli Provinsi Bali [The plants layout on Balinese traditional architecture concept houses in Bangli City, Bangli Regency], Jurnal Arsitektur Lanskap, 4(2), 144. http://doi.org/10.24843/jal.2018.v04.i02.p03.

Prantawan P, D., & Sunarta, I., 2015, Studi pengembangan Desa Pinge sebagai daya tarik ekowisata di Kecamatan Marga Kabupaten Tabanan [Study of rural development Pinge as ecotourism attraction in Marga district, Tabanan Regency], Jurnal Destinasi Pariwisata, 3(1), 1-8. http://doi.org/10.24843/JDEPAR.2015.v03.i01.p01.

Sujawiro, W., & Caneva, G. 2015. Ethnobotanical study of cultivated plants in home gardens of traditional villages in Bali (Indonesia). Human Ecology, 43(5), 769-778.

The Plantlist, 2020. The Plantlist Database. Royal Botanic Gardens, Kew and Missouri Botanical Garden, downloadable from: http://www.theplantlist.org. Accessed: May 17, 2020.

Wisnumurti, A. A. G. O., 2017, Distribusi dan diversitas spesies tumbuhan simbol tubuh (Tri Angga) masyarakat Bali Majapahit pada Tri Mandala, Desa Budakeling, Kabupaten Karangasem, Bali [The development of Bali tourism through cultural and local wisdom of Pakraman Village], Journal of Tourismology, 3(2) 38-43.

Yudantini, N. M., 2012, Natah and Telajakan: The role and identity in indigenous villages, In Proceedings of International Seminar on Place Making and Identity,179-187.