

## **Karangwangi people's (South Cianjur, West Java, Indonesia) local knowledge of species, forest utilization and wildlife conservation**

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**Abstract.** Partasasmita R, Iskandar J, Malone N. 2015. Karangwangi people's (South Cianjur, West Java, Indonesia) local knowledge of species, forest utilization and wildlife conservation. *Biodiversitas* 17: 154-161. In the past, many West Javan Villages had a high diversity of wildlife. Nowadays, however, the diversity of wildlife in these villages has tended to decrease rapidly. This is caused by many factors, including the loss or destruction of wildlife habitat destruction, intensive use of pesticides in the agricultural sector, and illegal hunting. Animal hunting is typically undertaken by villagers for various purposes, such as to fulfill household meat consumption, as well as for the capture and trading of pets. Traditionally, the use of wildlife by the Sundanese people of West Java is influenced by corpus (local knowledge) and cosmos (beliefs). As a result, the wild animals have been utilized within a sustainable system that enables wildlife conservation. Today, however, a lot of traditional knowledge or local knowledge of wildlife has eroded. This paper elucidates local knowledge of Karangwangi villagers of Subdistrict of Cidaun, District of Cianjur, Province of West Java, Indonesia on various species, utilization, and the conservation of wildlife. Methods used in this study are a combination of qualitative and quantitative techniques based on an ethnozoological approach. The result of study shows that the respondents recognize at least 45 species of wildlife consisting of 15 mammalian species, 21 species of Aves, and 9 species of herpetofauna. Based on the perception of respondents, those wildlife species have various socio-economic and cultural saliences (eg. household meat consumption, pets, trading, and appearing in mythology), as well as various ecological functions (e.g., crop pests, pest controls, and seed dispersal). Some cultural myths related with wildlife have been recorded and partly determine the utilization of wildlife by village people.

**Keywords:** Animal conservation, animal function, ethno-zoology, local knowledge, myth

### **INTRODUCTION**

Indonesia is distinctive because it has a large number of islands and extremely high-levels of both biological and cultural diversity. In terms of biodiversity, more than 720 species of mammals, 1,599 species of birds, 723 species of reptiles, 385 species of amphibians, and 1,248 species of fish have been recorded (Sutrisno et al. 2014). Meanwhile, regarding cultural diversity, Indonesia has more than 30 ethnic groups with 655 mother languages. Indonesia ranks second of the total 25 countries in the world (after Papua New Guinea with 847 mother languages) with respect to its endemic local languages (Maffi 1999).

Historically, various ethnic groups in the world, including Indonesian ethnic groups had temporally deep, close relationships with wildlife (cf Jorgensen 1998, Iskandar 2012). Various wildlife, including mollusks, fish, amphibians, reptiles, birds, and mammals have some socio-economic and cultural functions (Alves 2012).

In the past, village people utilized various wildlife species (praxis) which is strongly embedded by corpus (knowledge) and cosmos (beliefs) (see Toledo 2000, Carlson and Maffi 2004). Local knowledge, indigenous knowledge, and traditional ecological knowledge have

been widely discussed by many scholars (Ellen and Haris 2000). In the course of the 1990s, a major development was the growing recognition that one emergent property of ecosystems is that significant human presence and human resource use over time forms a biocultural system—a system jointly shaped by biological and cultural dynamics. Moreover, this in turn lead to the realization that local ecological knowledge, beliefs and practice have much to contribute to the conservation of biodiversity as well as to sustainable use of natural resources (Carlson and Maffi 2004). Based on this concept, some empirical examples can be provided in Indonesia and other countries. For example, an ethnobiological study of local rice varieties of swidden cultivation (*huma*) undertaken by Iskandar and Ellen (1999) revealed that at least 89 local rice varieties of the swidden system (*huma*) have traditionally been conserved by Orang Baduy through local knowledge and beliefs. In addition, culturally, the Tengger people abstain from killing animals, and they consume more vegetables, whole grain varieties, canna, taro, and cassava. Catapult tool was banned because it can kill birds (Batoro et al. 2012). Another example, the Iban community in Sarawak has traditionally prohibited hunting some animals, such as gibbon (*Hylobates* spp.), barking deer (*Muticus muntjak*),

crocodile (*Crocodylus porosus*) and brahminy kite sea-eagle (*Haliastur indus*) due to their belief that animals consider as sacred animals (Horowitz 1998). As a result those animal species have been traditionally conserved by the local community.

Nowadays, however, the utilization of wildlife by many ethnic groups in Indonesian villages, including the Sundanese villages, is determined by economic factors instead of being based on local knowledge and cosmos. In other words, the sustainable use by local people or village people, based on local knowledge and beliefs, has tended to erode due to various factors including rapid cultural and socio-economic change. Moreover, various species of wild animals are freely and intensively hunted by many people for various purposes, including meet consumption, pet animal, and trading. The hunting of animals by local people out of economic necessity ignores some of the ecological benefits of wildlife (Alves and Souto 2015). Consequently, the diversity of wild animals has tended to decrease. In addition, destruction or loss of animal habitats and intensive use of pesticide in agriculture have caused additional decreases of wildlife diversity.

Based on ecological history, it has been recorded that some animals species became rare or extinct in local areas in Indonesia in the last few decades. For example, the Javan tiger (*Panthera tigris sondaica*) disappeared in Java in the 1980s (Whitten et al. 1999). Similarly, the Javanese lapwing (*Vanellus macropterus*, trulek jawa) was considered extinct in Java since the 1940s (Mackinnon et al. 1992). In addition, in 1991 the straw-headed bulbul (*Pycnonotus zeylanicus*) had been still found in Pananjung-Pangandaran Natural Reserves, but in 2005 have disappeared from this area (Partasasmita 2015). Similar events could likely be occurring in other places, especially in non-conservation areas.

In the past, the Village of Karangwangi, Sub-district of Cidaun, District of Cianjur, West Java had a rich diversity of animal species, due to the large size of forested wildlife habitats found in this village. In addition, in the neighboring village areas, the government establishes the nature conservation area of Bojonglarang Jayanti. Today, however, the wildlife diversity of Karangwangi Village is in decline due to many factors, such as the reduction of forests from conversion to other land use types, such as settlements and agricultural areas. In addition, socio-economic and cultural local people have rapidly changed due to the construction of a new road to connect the village area with the urban area of Cianjur and Bandung. As a result, an ethnozoological study to understand the utilization and conservation of wildlife by Karangwangi people is considered to be important. Hopefully, results of this study will provide information in relation to changes of the diversity of genetics, species, ecosystems, erosion, and utilization as a result of cultural changes, and progress practical information on the interlinked relationships within ecosystems (Rambo 1983). In this study, we focus on local knowledge of wildlife, specifically: (i) local knowledge on the various wildlife species in this area; and (ii) the people's perception of wildlife functions, both cultural/

socio-economic and ecological, including wildlife conservation based on the local people's mythology system.

## MATERIALS AND METHODS

### Study area

Geographically, the study area, Village of Karangwangi lies between 7° 25'-7° 30' S and 107° 23'-107° 25' E. Administratively, this village belongs to Sub-district (*kecamatan*) of Cidaun, District (*kabupaten*) of Cianjur, Province (*propinsi*) of West Java, Indonesia. The location of Karangwangi is approximately 120 km from the city of Bandung and approximately 70 km from the city of Cianjur. To reach this area by vehicle requires a travel time of 5-6 hours from Bandung and approximately 3-4 hours from Cianjur. Karangwangi Village is a relative remote area lies near the south coast of the Indian Ocean. The village is directly bordered by the nature conservation area of Bojonglarang Jayanti Natural Reserve. The north borders Cimaragang Village, extending east to Garut, and west to the Village of Cidamar. The southern boundary is the Indian Ocean. The most common livelihood of the Karangwangi people is recorded as subsistence farmers. Geographical location facilitates the development of the agricultural sector. Approximately 2,000 hectares of land-use type in the Village of Karangwangi is recorded as the rain-fed agricultural land (Figure 1).

### Procedure

The method used in this study is a combination of qualitative and quantitative, which is based on study ethnozoological or biological approach (cf. Martin 1995; Newing et al. 2011; Iskandar 2012). Quantitative methods were used in the form of a structured interview using a questionnaire for 91 respondents. Selection of respondents was using simple random technique determined by the formula of Lynch et al. (1974). Some techniques of collecting qualitative data were applied, namely observation and interviews. Additionally, we observed the diversity of wildlife in the surrounding villages and forests of Bojonglarang Jayanti Natural Reserve. Meanwhile, in-depth interviews with informants was purposively selected informants via snowball sampling, with attention to a diversity of informants was undertaken. Informants include wildlife hunters, informal community leaders, and the formal village leader and his staff.

### Data analysis

The qualitative data were analyzed by means of cross-checking, summarizing, synthesizing, and narrated by descriptive analysis. Meanwhile, quantitative data from interviews with respondents was tabulated by simple statistic, namely by calculated percentages of respondent reply, and narrated by descriptive analysis (Newing et al. 2011).

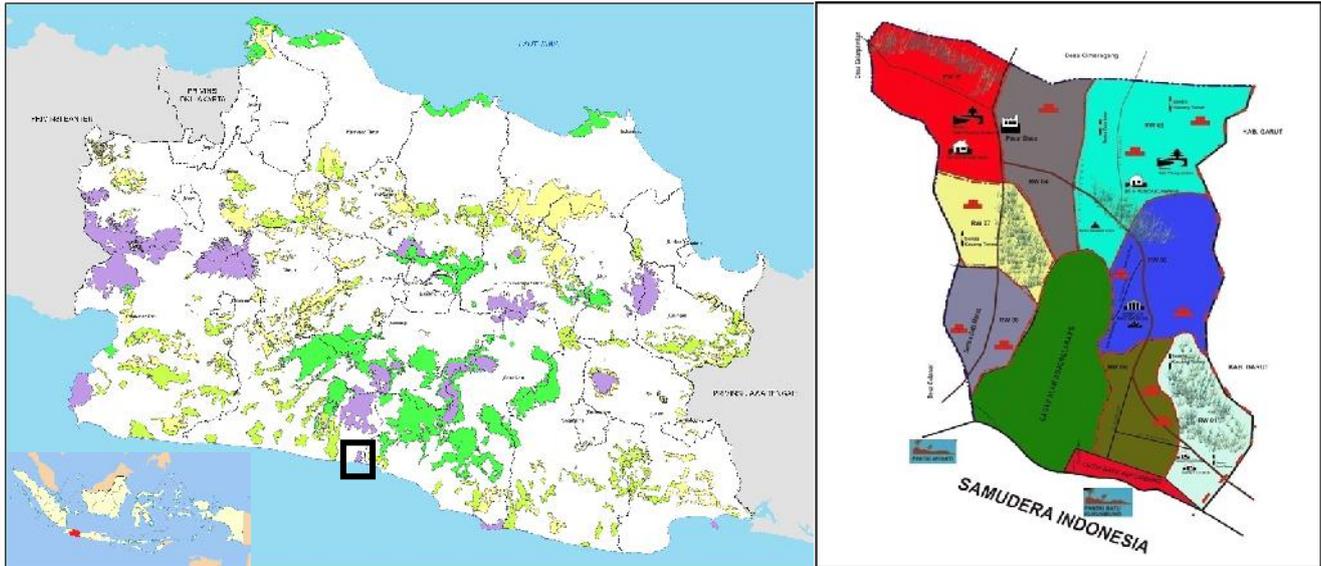


Figure 1. Research location, Karangwangi Village, Cianjur District, West Java, Indonesia

## RESULTS AND DISCUSSION

### The local knowledge on diversity of wild animals

The respondents of Karangwangi community recognize many wildlife species present in the environment both in the forest and around the settlement or hamlet (*kampung*). As many as 15 species of mammals, 21 species of birds, and 9 species of herpetofauna are known to the people (Table 1). The people are able to distinguish wildlife species based on morphological characters, habitats, and ecological role. Based on interviews with 91 respondents, we found that 100% of the respondents know that species of wildlife are in the forest, and 88% of respondents know the pig (wild boar, *Sus scrova*) as the wildlife, while only 1.1% could distinguish between biul and careuh; both are Asian palm civet (*Paradoxurus hermaphroditus*).

Interviews revealed that many people commonly consider the wild boar to be a pest due to frequently entering villages and agricultural land causing damage to crops. In addition, people are able to describe the characteristics of wild boar that become pests as having a body length of about 1-1.5 meters and weighing up to 80 kg as adults. Moreover, based on respondent knowledge that wild boar body size is considered to be smaller in females than in males. The wild boar has grayish black hair, with some brown or reddish hair covering their bodies. Although the Village of Karangwangi is mountainous, wild boar are recognized as one of animals with a very quick running ability.

In addition, the respondents have accurate perception in identifying several other species of wildlife, such as biul and careuh, although there are characteristic distinctions as noted in the description received from the respondents; approximately 98.9% of respondents believed that biul and careuh are considered as animals. Biul has a characteristic reddish gray, while careuh is the mottled gray and black. Careuh sometimes eat fruit or sugar palm fruit (*Arenga*

*pinnata* (Wurmb) Merr), but if biul go into the village they will steal chickens and eat them.

Karangwangi people have knowledge or familiarity with birds. For example, based on interview with respondents, it showed that 89.0% of respondents recognize several different bird species. One bird that is predominantly known by the respondents is the eagle (18.7%). The eagle easy to remember by respondents because the eagle is a large-sized bird, and can be distinguished by the clear color. Respondents recognize two types of eagles in the area of the village of Karangwangi. The first type is a black eagle or so-called ordinary heulang (*Ictinaetus malayensis*) and the second type is the white-bellied sea eagle or called as heulang bodas (*Haliaeetus leucogaster*). Black eagles nest in tall forest trees. Like the white-bellied sea eagle, they are active during the day. White-bellied sea eagle has a characteristic white feather. Food of white-bellied sea eagle is namely fish. In addition, the respondents generally understand about the nesting location of white-bellied sea eagle, i.e. around the forested edge of the nature reserve near beach.

However, people know the birds are believed to be related and considered mystical, but seem unable to describe this clearly (Table 1). For example, bird species which are strongly related with mythology are recognized as *Loklok* bird. The bird is considered the most mysterious bird, so nobody knows the precise species of the original form of this bird. But people believe in its existence and encounters are believed to be sightings of supernatural beings. *Loklok* can be transformed into various forms of birds like the peacock, changeable hawk-eagle (*Nisaetus cirrhatus*), hawks, crows and ayam brontok (Bangkok chicken, *Gallus gallus domesticus*). These birds are named with *loklok* because it has the sound hired as similar to *lok-lok-lok*. These birds are believed to bring misfortune or pain when his voice is heard in the village. As a result

culturally, the people are prohibited to hunt or kill this bird. This bird has been traditionally conserved by local people. As a result, this kind of the traditional conservation has tended more effective compared to that of the governmental formal conservation (see Maffi 2004; Iskandar 2012).

Our results indicate that 90.1% of respondents recognized the different types of herpetofauna as wildlife. The herpetofauna that is most well-known to people (23.2%) is an Indo-Chinese rat snake (oray sawah, *Ptyas korros*), while the lowest was only 1.2% recognition of the tokay gecko (toke, *Gekko gecko*). This is because this animal is often found when people go to the fields. According to the respondents of Karangwangi, snake habitats are rice paddies. Snake scales of Indo-Chinese rat snake are recognized as black and white. The main prey item of this snake is frogs. This snake commonly nests in the holes of moist soil. The length is approximately 30-40 cm and is not venomous. The Indo-Chinese rat snake is active at night.

Although very few respondents who knew the tokay gecko categorized them as wild animals, respondents of Karangwangi community who knew this animal can describe clearly the tokay gecko (*Gekko gecko*). According to the respondents, a gecko is a reptile that slithers like a lizard. They have a size greater than lizards and have a gray color with slightly bluish skin with little red spots. Gecko is active at night and prey on small insects. Geckos prefer a special kind of habitat in trees of the forest, but the gecko can also be found in the houses of village people. Gecko vocalizations are pretty typical, with a very loud call that sounds like *gecko* repeated several times. Geckos are commonly captured and sold for use as traditional, medicinal materials.

Respondent knowledge on amphibians revealed that 12.1% recognize the various species of amphibian as wildlife. According to the respondents, there are three types of frogs. Firstly it is recognized that there are rice frogs or bancet (*Fejervarya limnonectes*). Secondly, there is budug frog that respondents often call it as bangkong korodok (*Bufo melanotictus*). Naming bangkong korodok is based

on its skin texture or as scabies (*budug*). The last type of the frog is the well-known 'Common tree frog' or bancet kole.

### Local people's perceptions on wildlife based upon ecological and socio-economic functions

People's perceptions of wildlife are strongly influenced by the local culture. In general, studies of ethnozoology have revealed that many indigenous peoples' beliefs are related to the use of animals, such as animals being used for traditional medicine as culturally practiced by the Malay and the Kubu community (Maryanto et al. 1993) and used as food and ritual of Tengger community (Baroto et al. 2012). Like the Malay, Kubu and Tengger communities, various animals have also played an important role for the community of Karangwangi Village, West Java.

Based on information from the respondents, in terms of the functions, the wild animals can be grouped into three categories, namely: (i) wildlife that play a role in ecological functions (e.g., seed dispersal, pest control, pest); (ii) wildlife that play a role in social-cultural functions (e.g., mystical, animals for ritual, a sign of the change of seasons); and (iii) wild animals that play an important role in the economic functioning of the community (e.g., food, traditional medicine, souvenirs) (Table 1; Figure 2.C).

The main source of livelihood of Karangwangi community is agriculture, so the presence of gardens (kebun) and perennial mixed-garden (talun) be important for fulfill daily household need of the community. Therefore, any damage of garden crops caused by wildlife can be considered as pests. The existence of these pests eliminated by various means such as by way of being hunted, killed with a knife or poisoned by using chemical toxic. Most pest animals have resided in the forest of nature conservation of Bojonglarang Jayanti. However, when the animal food supply has reduced in the forest and then wildlife have also attacked the crop gardens of the villagers for foraging.

Some wildlife has been considered an important role in the ecological, social and economic function for community of Karangwangi Village includes:



**Figure 2.** Wildlife species in Karangwangi Village, West Java, Indonesia: A. Wild boar in Bojonglarang Jayanti natural reservation; B. Cave swiftlet on swiftlet house; C. Wing feathers of White-bellied sea eagle-flesh removed to be eaten and wings for trading

Tabel 1. Various wildlife recorded in the Village of Karangwangi, West Java, Indonesia

Local name in Sundanese (Vernacular)	English name	Scientific name	Perception of respondents on wildlife		
			Ecological function	Social function	Economic function
<b>Mamalia</b>					
Bagong/Jadok	Wild boar	<i>Sus scrofa</i>	Pest	Myths	
Muka	Sunda slow loris	<i>Nycticebus caucang</i> *		Myths	
Monyet	Crab-eating macaque	<i>Macaca fascicularis</i>	Pest		Traditional medicine
Lutung	Javan lutung	<i>Trachypithecus auratus</i> *	Pest	Myths	Traditional medicine
Biul	Asian palm civet	<i>Paradoxurus hermaphroditus</i>	Pest		
Careuh	Asian palm civet	<i>Paradoxurus hermaphroditus</i>	Seed dispersal		
Meong congkok	Leopard cat	<i>Prionailurus bengalensis</i>	Pest		
Sero	Oriental small-clawed otter	<i>Amblonyx cinerea</i>	Pest		
Tikus	Rat	<i>Rattus rattus</i>	Pest		
Codot	Reusettus	<i>Reusettus amplexicaudatus</i>	Seed dispersal		
Kalong	Large flying fox	<i>Pteropus vampirus</i>	Seed dispersal		
Landak	Porcupine	<i>Histryx javanica</i> *		Myths	Trading, traditional medicine
Peusing	Pangolin	<i>Manis javanica</i> *		Myths	Trading, traditional medicine
Kancil	Java mouse-dee	<i>Tragulus javanicus</i> *			
Mencek	Indian muntjac	<i>Muntiacus muntjak</i> *			Meat for food consumption
<b>Aves</b>					
Heulang	Black eagle	<i>Ictinaetus malayensis</i> *	Pest control		
Heulang bodas	White-bellied sea eagle	<i>Haliaeetus leucogaster</i> *	Pest control		
Toed	Long-tailed shrike	<i>Lanius schach</i>	Pest control/ seed dispersal		Trading
Cikblek	Bar-winged prinia	<i>Prinia familiaris</i>	Pest control/ seed dispersal		Sale
Anis	Orange-headed thrush	<i>Zoothera citrina</i>	Pest control/ seed dispersal		Sale
Ungkut-ungkut	Coppersmith barbet	<i>Megalaima haemachepala</i>	Pest control/ seed dispersal		Sale
Perenjak	Common tailorbird	<i>Orthotomus sutorius</i>	Pest control/ seed dispersal		Sale
Piit	Javan munia	<i>Lonchura leucogastroides</i>	Pest		
Peking	Scaly-breasted munia	<i>Lonchura punctulata</i>	Pest		
Srigunting	Black drongo	<i>Dicrurus macrocercus</i>	Pest control		
Tikukur	Spotted dove	<i>Streptopelia chinensis</i>	Pest		Trading, traditional medicine
Perkutut	Zebra dove	<i>Geopelia striata</i>	Pest		Trading, traditional medicine
Ekek	Red-breasted parakeet	<i>Psittacula alexandri</i>	Pest control/ seed dispersal		
Wallet	Cave swiftlet	<i>Collocalia linchi</i>	Pest control		Nest for trading
Caladi	Fulvous-breasted woodpecker	<i>Dendrocopos macei</i>	Pest insect control		-
Cakakak	Javan kingfisher	<i>Halcyon cyanoventris</i> *	Pest		-
Cangehgar	Red jungle fowl	<i>Galus galus varius</i>	Seed dispersal		
Bueuk	Barn owl birds	<i>Tyto alba javanica</i>		Myths	
Uncuing	Rusty-breasted cuckoo	<i>Cacomantis sepulcralis</i>		Myths	
Gagak	Jungle crow	<i>Corvus macrorhynchos</i>		Myths	
Loklok		Unidentified		Myths	
<b>Herpetofauna</b>					
Ular sanca	Indian python	<i>Pithon morulus</i> *	Pest		
Oray sendok	King cobra	<i>Ophiophagus hannah</i>	Pest control		Trading
Oray sawah	Indo-Chinese rat snake	<i>Ptyas korros</i>	Pest control		
Oray sapi	Radiated ratsnake	<i>Coelognathus radiata</i>	Pest control		
Oray kisi	Striped keelback	<i>Xenochrophis vittatus</i>	Pest control		
Oray kawat	Brahminy blind snake	<i>Ramphotyphlops braminus</i>	Pest control		
Toke	Tokay gecko	<i>Gekko gecko</i>	Pest control		Trading, traditional medicine
Bancet	Common pond frog	<i>Fejervarya limnonectes</i>	Pest control		For food consumption
Bancet kole	Common tree frog	<i>Polypedates leucomystax</i>	Pest control		
Bangkong	Javanese toad	<i>Bufo melanosticus</i>	Pest control		

Note: \*) Protected animal in Indonesia based on UU No.5, 1990 and PP.27, 1999 (Noerdjito and Muryanto 2001). Source: interview with informants and field observations (2015)

Wild boar (*Sus scrofa*) is popularly known as animal crop pest in the agriculture of the Karangwangi community ( $F = 21.067$ ;  $\alpha = 0.05$ ). This animal usually attack legumes,

tubers, cassava and other crops. Because the wild boar has attacked food crops of plantation and agricultural area, it has considered as animal pest. The wild boar has frequently

come to agricultural areas due to limitation of her habitat in the nature conservation forest of Bojonglarang Jayanti. In addition, the village garden areas are directed adjacent to the nature conservation forest area (Figure 1). Pig is also known as one of hunting animals for the local and non-local communities. For example, rural communities of Cimarel Village of West Bandung district have frequently undertaken pig hunting (Ind.: *berburu babi*) in the forest (PLN-LPPM Unpad 2014). Indeed, bearded pig (*Sus barbatus*) has been the most abundant mammals species caught by Penan and Kenyah who reside in Long Peliran, Kalimantan and contributing of all catches and 91% of all edible meat yielded during the study period (Puri 1997). Moreover, according to the respondents of Karangwangi community, pig was considered as a mythical animal in the past time. Pig was considered old animal can turn into very creepy animals, attacking and eating livestock of village community. Based on one of village elder informants of the Karangwangi villagers mentioned that the myths associated with wild boar commonly called *ragujik*. Recorded 62% of respondents of Karangwangi Village community mentioned that they knew the myth of the wild boar and 38% did not know the myth of the wild boar. *Ragujik* pig boar is a large, old, and be able to dig soil with deep enough. The pig stays in the cave, where people find the bones of wild boar. Respondents suspect that consuming wild boar is a pig *ragujik*.

Crab-eating macaque (*Macaca fascicularis*) and Javan langur or lutung (*Trachypithecus auratus*) are considered as pests, hunted for disrupting or damaging crops of Karangwangi Village community. Based on the respondents they believe that monkey is considered as a pest ( $F = 13.853$ ;  $\alpha = 0.05$ ), whereas the Javan langur considered by little a number of respondents as not pests ( $F = 0.594$ ;  $\alpha = 0.05$ ). Hunting monkeys and langurs is done by shot. Apart from being a pest, monkeys and langurs are hunted which its meat are culturally used for traditional medicine, particularly for an asthma medication medicine.

Not all wild animals that went into the gardens of the village community are considered as pest. But some of them are considered as beneficial animals for the village community. For example, the groups of migration butterflies which regularly move from west to south are usually used as an indicator of seasonal change and can be used as agricultural calendar to start planting crops in the agriculture area.

Asian palm civet or careuh (*Paradoxurus hermaphroditus*) is recognized as a fruit-eating animals or palm seed eating. According to the respondents, civet in one hand is considered as pest, but on the other hand has the advantage of spreading seed plants including seeds of kawung or arenga palm seed (*Arenga pinnata* (Wurmb) Merr). Careuh can spread arenga palm seeds by eating the seeds and then released back through her feces. The droppings palm seeds then grow became palm trees. According to respondents mentioned that most arenga palm trees grown in the Karangwangi Village have predominantly been assisted by civet through seed dispersal of her feces. Because, the arenga palm seeds that grown by people have rarely succeeded. However, the

respondents mentioned also that civet (*Biul*) is considered as chicken predator in the village ( $F = 7.115$ ;  $\alpha = 0.05$ )

Orange-headed thrush or anis (*Zoothera citrina*) is recognized as a bird which has various foods, such as grain, insect and other invertebrates. As a result, this bird is considered as beneficial bird due to helping in spreading the plant seeds and pest control. In contrast, however, the villagers of Karangwangi hunt the orange-headed thrush for bird trading in urban bird markets. The bird has been intensively hunted by local people due to has high demand for pet animal and popularly as bird keeping in the cages and has been intensively involved in the contest bird song in a regular time in urban area, conducted in weekly, three monthly and annually, for the level of local, regional and national event, respectively. As a result, this bird has a high economic price and popularly trading in the urban bird markets (Iskandar and Iskandar 2015). Orange-headed thrush is usually sold in the village with price between Rp 800,000 and Rp 2,000,000. The price of this bird will increase more than two or three times, if it is sold in the urban bird markets. This bird is often found in the forest.

The local people of the Karangwangi catch also white-bellied sea eagle which taken flesh to be eaten and wings for trading. In addition, nest of cave swiftlet is traded by the community (Figure 1). Some people of the Karangwangi have involved in hunting animals and ignore some of the ecological benefits of wildlife because by trading wild animals people will get money which is needed for economic household income (cf. Alves and Souto 2015).

Bat (*Pteropus vampirus*) is recognized live in groups in and out of their nests at dusk to search for food at the night. Various fruits, especially sweet fruits and ripe, such as soursop and papaya are usually eaten by bats. Bats nesting is commonly found in large trees or caves in the forest. Based on interview, most respondents know that bats are recognized as animal seed dispersal function. Seeds are usually dispersed when bats eat irregularly scattered so that the seeds of the fruit they eat fall. In addition, bat is culturally used as an asthma drug medicine.

Cobra (*Ophiophagus hannah*) is considered by respondents as dangerous animal but they also realized that the cobra has a function as pest predator or a pest controller. In addition, some respondents culturally use cobra as drugs, including asthma, diabetes and liver disease. In order to trading cobra, special a middleman is found in the Village of Karangwangi.

Porcupine (*Hystryx javanica*) is often sought for their meat because it is believed to be useful as a drug. Based on respondent perception porcupine usually takes 40 kinds of leaves in one day. Therefore, the respondents hunt porcupine to take 40 leaves that have been eaten by porcupine is still stored in their stomach. Some people believe the leaves that have been eaten by porcupine can cure liver disease, diabetes and asthma. Like Karangwangi community, the Malay community and Kubu community also utilize porcupine which is used as traditional medicine (Maryanto et al. 1993). Similarly, rural communities of East Kalimantan and Java believe that porcupine meat is

culturally used as traditional medicine that has medicinal properties value (Putra et al. 2008).

Pangolin or peusing (*Manis javanica*), considered as recorded as one of the protected animals in Indonesia and also protected internationally. According to the International Union for Conservation of Nature (IUCN) pangolin is categorized as Endangered Species, as well as listed in Appendix II of Convention on International Trade in Endangered Species of the Wild Fauna and Flora (CITES) (Soehartono and Mardiasuti 2003). Empirically, however, pangolin is usually hunted by villagers of Karangwangi to eat meat and scales used for trading. The scales of one individual of pangolin have price of Rp. 5,000, whereas a kg of pangolin is valued up to Rp. 200, 000. Pangolin is required a special technique for slaughtering. Before slaughtering, pangolin tongue should be pulled out; it is undertaken so that the pangolins quickly intervening die. Pangolin skin is culturally used as a treatment for skin diseases. This tradition similar that of practiced by the Malay and Kubu community, anteaters are culturally hunted for traditional medicine (Maryanto et al. 1994). Based on the respondent perception, body part of wild animals, such as pangolin is believed to be an antidote for certain diseases by the people of China, especially the scales and meat (Novriyanti 2010). In addition, some rural people of East Kalimantan believe that pangolin can be used as a tonic and food (Putra et al. 2008).

Sunda slow loris (*Nycticebus caucang*), recorded as protected animal both in national and international based on the IUCN category Endangered Species, as well as listed in Appendix I of CITES (Soehartono and Mardiasuti 2003). The Sunda slow loris usually eats fruit and insects. Therefore, this animal is considered as seed dispersal and pest control. In addition, the Sunda slow loris has been known as mystical value in society. Like other ethnic Sundanese groups, the Sunda slow loris has been mythicized as associated with bad luck. Blood dripped of this animal on the ground face is strictly prohibited. Land affected by blood drop of Sunda slow loris will suffers from drought. As a result, blood from the Sunda slow loris has been frightening. Anyone who kills this animal, then the people who live near the site of the slaughter would become seriously ill, even up to 40 homes. Position slaughter advance also determine where misfortune will fall. For example, if the slaughter faces at east, people in the west will be affected by bad luck, and vice versa. In addition, this animal is also believed to be a tool or capital used by herbalists. Narrated by speakers on the practice of using bone shaman nosy advanced for their efforts. The bones were planted sector in the village to make a village the hospital. When people are sick they will be treated to the psychic and then the shaman would heal. Similarly, the village people of upper Cisokan believed that disturbing the Sunda slow loris will get this tradition is also found in the village community unlucky live (PLN-LPPM Unpad 2014). As a result this animal was culturally protected by local community, particularly in the past.

Barn owls or bueuk or koreak (*Tyto alba*) is known by residents as the animals come out at night (nocturnal), eating meats, such as snakes and rats, so it is considered as

beneficial animal due to controlling crop pest, particularly rat. Some respondents also believed that when the barn owl sound is heard in the village, people suspect it is indicated that in the village will be found a woman pregnant without husband. This perception is predominantly found in many places of Sundanese village (Iskandar 2012). Another sign is when the barn owl sounds mean there are spirits around him and an omen of death. The presumption of the population against the messenger, and is associated with the occult into a separate spiritual values are developed within the Sundanese community (cf. Tidemann and Gosler 2010). Presumption or spiritual value becomes effective in order to protect the *Tyto alba* which is strongly embedded by culture (Soemarwoto 2004). Partasmita et al. (2015) say that this perception is different from that of people who reside around the campus of Padjadjaran University at Jatinangor, Sumedang. Understanding of the population about the existence of a barn owl as a highly mystical and sinister cannot be separated. Stories that often arise when talking about barn owl including; barn owl birds are being sounded indicating the bird is being ridden by a demon; if there is the sound of birds, the hearing was lying then he should face down, otherwise it will stomach pain; barn owl birds often come out on Friday night because the devil is often out at night; If a barn owl bird continue to speak for several days in a house resident, then one of the family members in the house will die or sick. Unlike to the perception of the population, one of the scientific evidence relating to barn owl story as news carriers of disease or death in the population, caused by the bacterium *Salmonella* sp., not merely because of the presence of birds. Barn owl pellets or bird droppings that contain the bacteria *Salmonella* sp., can infect humans and cause salmonellosis symptoms are gastroenteritis (Masniari et al. 2005)

Rusty-breasted cuckoo (*Cacomantis pulchellaris*) is considered mysterious *uncuing* mindless and just heard his voice has always been associated with mystical events or a catastrophe. The voice of *uncuing* means signifies the existence of death or the person who will be sick. In addition, voice of *uncuing* indicated as often associated birds always seized with unseen spirits.

Jungle crow (*Corvus macrorhynchos*) also believed by respondents that if this bird voice all the time in the village, it is indicated to bring bad luck or will be found to pass away person in the village. If the crows perched on the house means indicate the house was in the "*send*" something in the form of witchcraft or other occult sciences.

In conclusion, based on this study it can be concluded that: (i) the respondents of the Karangwangi community have recognized at least 45 species wildlife consisting of 15 mammalian species, 21 species of Aves, and 9 species of herpetofauna. Unlike biological classification (etic), the folk classification of the Karangwangi community (emic), the wildlife can be classified as color, voice, habitat, and role in the ecosystem; and (ii) based on the perceptions of the respondents, various wildlife of the Karangwangi have various socio-economic and cultural, ecological functions, including: household meat consumption, for keeping as pets, pest control, and seed dispersal. Some cultural myths

related with wildlife have been recorded and determine the utilization patterns of wildlife by villagers.

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