

Local knowledge of the Sundanese community on traditional foods to enhance the family food security

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ABSTRACT

Sundanese people in rural West Java have a rich the local knowledge on a variety of traditional foods. However, studies on the local knowledge of Sundanese rural communities on the variety of traditional foods are still rare. The objective of this article is to elucidate the local knowledge of Cijambu Village community, Tanjungsari Sub-district, Sumedang District, West Java, on the traditional foods. The method used in this study was qualitative with Gastronomic Ethnobiological approach. It may be defined as the study of the complex interactions between human societies, food, and their environment. The result of study showed that there are at least 26 types of traditional foods that are usually created by the local community of Cijambu Village. The producing of a variety of traditional foods is based on local knowledge of the rural people as a result of inheritance from one generation to another. The basic ingredients for creating a variety of traditional foods are mainly used various plants that are produced from village agroecosystem. At least 39 species of plants representing 21 families are predominantly used to create 26 types of traditional food of Cijambu village community. Almost all of those plants are obtained from the production of various village agroecosystems of Cijambu, including homegarden, upland field, and wet-rice fields. The existence of a variety of traditional foods in rural areas, in addition to maintaining the identity of the village traditional food cultures, is also important to support food security in rural areas.

1. Introduction

In their daily lives, human is very dependent on the local environment or local ecosystem (Iskandar, 2017). For example, to meet primary human needs, food sources obtained from the environment or agroecosystems (Suparlan, 2005; Iskandar and Iskandar, 2011). Indeed, Indonesia is known to have a high variety of food since it has a high biodiversity as a source of food. In addition, Indonesia has also ethnic diversity, which is reflected in

the high diversity of local languages. According to Pieroni et al. (2016) the inextricable link between biodiversity and cultural custom related to the domain of food (gastronomy), while study of complex interactions between human society, food, and their environment can be defined as Gastronomic Ethnobiology.

Therefore, based on Gastronomic Ethnobiology, the diversity of traditional foods in rural areas is strongly influenced by the diversity of the local biophysical environment and the diversity of local cultures (Pieroni et al., 2016; Wijaya, 2019). Based on the culture of the Sundanese people in West Java, they are known to have a hereditary habit of consuming fresh vegetables. The consumption pattern of the rural Sundanese people towards fresh vegetables is a cultural wisdom of the Sundanese people in adapting themselves to the mountainous environment, having cold air, suitable for growing various species of fresh vegetables in the countryside. The consumption of the Sundanese vegetables is really good for human health and skin (Amrinanto et al. 2019). The reason is, the variety of fresh vegetables has a high source of nutrients and vitamins.

Another cultural wisdom of the Sundanese people have is that a tradition of consuming a variety of foods other than rice as the staple food. For instance, fermented cassava (**peuyeum sampeu**), burnt cassava (*singkong bakar*), bioiled cassava (**singkong rebus**), boiled corn (**jagung rebus**), burnt corn (**jagung bakar**), boiled sweet potato (**kulub hui**), and boiled taro (**talas rebus**) that ar as non-rice additional staple food are commonly consumed by Sundanese people (Igarashi, 2005). This is closely related to the habit of the Sundanese people that before eating rice every day, they usually consume a variety of traditional foods with drinking. Consuming traditional food is usually undertaken two or three times a day, which is commonly called **nyaneut** or **ngopi**, namely **nyaneut/ngopi isuk** (in the morning), **nyaneut/ngopi siang** (in the midday), and **nyaneut/ngopi sonten** (in the afternoon). At the time of **ngopi/nyaneut**, a variety of traditional foods are usually provided made from cassava, banana, taro and others, as well as a variety of drinks such as tea, coffee, and coffee mixed with milk (Igarashi, 2005).

In general, various Sundanese traditional foods are created by the families themselves based on Local Knowledge (LK) or Traditional Ecological Knowledge (TEK) and embedded with local tradition. The TEK is as “a cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationships of living beings (including humans) with one another and with their environment” (Berkes 2008).

The basic ingredients for creating the Sundanese traditional foods are obtained by various types of agro-ecosystems, such as homegarden (**pekarangan**), gardens (**kebun**), mixed-garden (**kebun campuran/talun**), and wet-rice field (**sawah**) (Iskandar and Iskandar, 2011). Therefore, the creation of rural people in producing a variety of traditional foods is important to improve food security in the rural area. Some Sundanese traditional food, however, have been replaced by the urban food (**panganan kota**). This is due to many factors, including a lot of the urban foods are predominantly traded in many village smallshops (**warung-warung**), and perceived as goo quality (Adiansyah & Brahmana, 2015; Risnawati, 2015; 2017).

The purpose of this article is to elucidate the local knowledge of the rural people of Cijambu Village, Tanjungsari District, Sumedang Regency, West Java on traditional foods.

2. Method

The method used in this study was a qualitative method with a Gastronomic Ethnobiological approach (Alburquerque et al., 2014; Pieroni et al., 2016; Iskandar, 2018). Gastronomic Ethnobiology may be defined as the study of the complex interactions between human societies, food, and environment (Pieroni et al., 2016). Several techniques, such as field observations, participant observation, and semi-structured or deep interviews, and were employed to collect primary field data. Field observations were carried out by observing the environmental conditions of rural settlements, various types of village agro-ecosystems, and forest ecosystems. Semi-structured interviews were conducted on purposively selected informants who were considered competent instead of representative of population (Bernard, 1994; Iskandar 2018), but various categories, including category of kind food specialist maker, such as opak makers (para pembuat opak), karedok makers (pembuat karedok), and bajigur makers (pembuat bajigur). Those informant are commonly called as called as a local expert or key informants (Martin, 1995). The informants were 20 of housewife who commonly create the traditional foods, 3 informants of housewife who specially used to make traditional foods to serve customers from other families who have specials celebrations, including circumcision, wedding, et cetera; and 3 hamlet small shop (**warung**) owners who sell traditional foods. While in participant observation, researchers actively participated with informants who happened to be carrying out activities related to making traditional foods at their homes.

Data analysis was carried out by cross-checking, summarizing, synthesizing, and making narratives (Newing et al., 2011). Some data, including field notes, interview transcripts, and document are validated by cross-checking by triangulating between different sources, including within-subject triangulation, between-subject triangulation, and cross technique or different techniques triangulation. Moreover, the validated data are summarized, synthesized, and made a narrative as descriptive analysis.

3. Result and discussion

- **Variety of traditional foods**

Based on the tradition of the rural people in Cijambu Village, generally they have the habit of eating twice a day, namely breakfast which is usually called '**tuang enjing**' and eating in the afternoon which is usually called '**tuang sonten**'. However, there are also some people who have the habit of eating 3 times a day, namely breakfast, lunch, and dinner. For rural people who usually eat lunch, in general for lunch (**ngawadang**) they usually consume rice and side dishes left over from breakfast. Consequently, they do not need to cook specifically for lunch.

In addition to the habit of eating rice two or three times a day, the rural people of Cijambu Village are also familiar with non-rice consumption patterns, in the form of various traditional foods. Consumption for non-rice food is usually undertaken in the

morning before breakfast which is commonly called **nyaneut** or **ngopi enjing**. In addition, the habit of consuming non-rice food is also usually done during the day which is usually called **nyaneut sonten**. At the coffee break event, a variety of traditional specialty foods made by village households are usually served. Various kinds of local family food are usually served to treat guests who are visiting, commonly called **lalawuh**. In addition, a variety of traditional foods are also commonly served for various rural family celebrations, such as circumcision celebration, weddings, **tarawih** offerings at mosques during the fasting month of Ramadhan, Eid al-Fitr, and Eid al-Adha celebrations.

Various types of local food in Cijambu Village are usually made by the families themselves or they usually buy from other families in the village. In particular, various kinds of food for celebrations are usually not only made by families who have an intention, they also usually buy them from other families who specialize in making traditional snacks for sale to hamlet small shop (**warung kampung**) or to families who have an intention.

Based on the results of interviews with informants, it can be documented that at least, 26 types of traditional foods are commonly made by families in Cijambu Village (Table 1).

Table 1. Various traditional food documented in Cijambu Village

Vernacular name		Vernacular name	
1	Opak	14	Jalabria
2	Rengginang	15	Comring
3	Tumis Pakis	16	Kecimpring
4	Salé pisang kering	17	Karédok
5	Keripik singkong	18	Loték
6	Keripik pisang	19	Minum kunyit bubuk
7	Dodol tomat	20	Minuman jahe bubuk
8	Dodol waluh	21	Ali agrem
9	Dodol nanas	22	Bajigur
10	Angléng ketan	23	Bandrék
11	Manisan terong	24	Saroja/Kembang goyang
12	Apem banjur	25	Sasagon/Kue singapur
13	Loder	26	Rengginang

As can be seen from Table 1, the amount of traditional food diversity in Cijambu Village is almost the same as the amount of traditional food diversity recorded in Salamungkal Village, Cegentur Village, Bandung Regency 27 varieties (Igarashi, 1985) and in Ciamis Regency, namely 24 varieties (Masduki, 2012), and 22 varieties in Kuningan Sub-district, West Java (Hardiyaniah, 2016). Among the various types of traditional foods, 6 types of traditional foods, such as **opak**, **apem**, **angleng**, **kiripik singkong**, **kiripik pisang**, and **ranginang**, were also recorded in Cigentur Village, Bandung Regency, and Ciamis Regency (Igarashi, 1985; Masduki, 2012).

- **Species, family, and part of plants**

Various basic ingredients in the form of non-plants and species of plants are commonly used by rural people of Cijambu Village in creating 26 kinds of traditional foods. Some

non-biological food ingredients, including salt, butter, fish paste, chicken egg, and water are mainly used to make 26 types of traditional foods. While for various plants, there are at least 39 species, representing 21 plant families that are commonly used to make 26 types of traditional foods in the Cijambu Village community (Table 2, Figure 1).

Vernacular name of Traditional food	Basic gradient material made of plant			Other non-plant material
	Plant material used	Scientific name	Part of plant used	
Opak	Glutinous rice or non- glutinous rice	<i>Oryza sativa</i> L	Seed	Water, Salt
	Palm cooking oil	<i>Elais guineensis</i> L	Fruit	
Rengginang	Glutinous rice	<i>Oryza sativa</i> L	Seed	fish paste (optional), Salt, Water
	Garlic	<i>Allium sativum</i> L	Bulb	
	Onion	<i>Allium ascalonicum</i> L	Bulb	
Tumis pakis	Pakis	<i>Diplazium esculentum</i> (Retz.) Swartz	Fronnd bud	Water, Salt
	Sugar/sugarcane	<i>Saccharum officinarum</i> L	Stem	
	Palm cooking oil	<i>Elais guineensis</i> L	Fruit	
	Onion	<i>Allium ascalonicum</i> L	Fruit	
	Garlic	<i>Allium sativum</i> L	Bulb	
	Galangal	<i>Alpinia galanga</i> (L.) Willd	Rhizome	
	Hot chili	<i>Capsicum frutescens</i> L.	Fruit	
Salé pisang kering	Banana of var.Ambon	<i>Musa x paradisiaca</i> L	Fruit	Butter
	Wheat flour	<i>Triticum aestivum</i> L	Seed	
	Sugar/sugarcane	<i>Saccharum officinarum</i> L	Stem	
	Palm cooking oil	<i>Elais guineensis</i> L	Fruit	
Keripik singkong	Cassava	<i>Manihot esculenta</i> Crantz	Tuber	Salt
	Bell pepper	<i>Capsicum annum</i> L	Fruit	
	Black pepper	<i>Pipier nigrum</i> L	Fruit	
Keripik pisang	Banana of var.Kapas	<i>Musa x paradisiaca</i> L	Fruit	Salt
Dodol tomat	Tomatoes	<i>Lycopersicon esculentum</i> Mill	Fruit	
	Sugar/Sugarcane	<i>Saccharum officinarum</i> L	Stem	
	Jelly Flour	<i>Kappaphycus alvarezii</i>	Thalus	
Dodol waluh	Waluh	<i>Cucurbita moschata</i> Duschesne	Fruit	
	Sugar/Sugarcane	<i>Saccharum officinarum</i> L	Stem	
	Jelly Flour	<i>Kappaphycus alvarezii</i>	Thalus	
Dodol Nanas	Pineapple	<i>Ananas comosus</i> (L.) Merr	Fruit	
	Sugar/Sugarcane	<i>Saccharum officinarum</i> L	Stem	
	Jelly Flour	<i>Kappaphycus alvarezii</i>	Thalus	
Angléng ketan	Glutinous rice	<i>Oryza sativa</i> L	Seed	Water
	Rice flour	<i>Oryza sativa</i> L	Seed	
	Glutinous-rice flour	<i>Oryza sativa</i> L	Seed	
	Sugar/Sugarcane	<i>Saccharum officinarum</i> L	Stem	
	Palm sugar	<i>Arenga pinnata</i> (Wurmb) Merr	Flower stalk	
	Coconut	<i>Cocos nucifera</i> L	Fruit	

Manisan terong	Egg plant	<i>Solanum melongena</i> L	Fruit	Lime betel, Water		
	Sugar/Sugarcane	<i>Saccharum officinarum</i> L	Stem			
Apem banjur	Palm flour	<i>Arenga pinnata</i> (Wurmb) Merr	Stem	Water		
	Fermented Cassava (Tape singkong)	<i>Manihot esculenta</i> Crantz	Tuber			
	Sugar/Sugarcane	<i>Saccharum officinarum</i> L	Stem			
Loder	Palm flour	<i>Arenga pinnata</i> (Wurmb) Merr	Stem	Water		
	Palm sugar	<i>Arenga pinnata</i> (Wurmb) Merr	Flower stalk			
	Grated coconut	<i>Cocos nucifera</i> L	Fruit			
Jalabria	Black glutinous rice flour	<i>Oryza sativa</i> L	Seed	Salt, Water		
	Rice flour	<i>Oryza sativa</i> L	Fruit			
	Coconut milk	<i>Cocos nucifera</i> L	Fruit			
	Grated coconut	<i>Cocos nucifera</i> L	Fruit			
	Sugar/Sugarcane	<i>Saccharum officinarum</i> L	Stem			
	Palm cooking oil	<i>Elais guineensis</i> L	Fruit			
Comring	Cassava flour	<i>Manihot esculenta</i> Crantz	Tuber	Petsin, Salt		
	Cassava	<i>Manihot esculenta</i> Carantz	Tuber			
	Black pepper	<i>Piper nigrum</i> L	Fruit			
Kecimpring	Cassava	<i>Manihot esculenta</i> Crantz	Tuber	Salt, Water		
	Chili	<i>Capsicum annum</i> L	Fruit			
	Garlic	<i>Allium sativum</i> L	Bulb			
	Onion	<i>Allium ascalonicum</i> L	Bulb			
	Coriander	<i>Coriandrum sativum</i> L	Fruit			
	Palm cooking oil	<i>Elais guineensis</i> L	Fruit			
Karédok	Cabbage	<i>Brassica oleraceae</i> L	Leaf	Salt, Water		
	Cucumber	<i>Cucumis sativus</i> L	Fruit			
	Green bean sprouts	<i>Vigna radiata</i> (L.) R.Wilczek	Fruit			
	Long bean	<i>Vigna unguilata</i> (L.) Walp	Fruit			
	Leunca	<i>Solanum nigrum</i> L.	Fruit			
	Basil	<i>Ocimum tenuiflorum</i> L	Leaf			
	Lime	<i>Citrus amblicarpa</i> Ochse	Fruit			
	Peanut	<i>Arachys hypogaea</i> L	Seed			
	Hot chili	<i>Capsicum frutescens</i> L	Fruit			
	Garlic	<i>Allium sativum</i> L	Bulb			
	Aromatic ginger	<i>Kaempferia galanga</i> L.	Rhizome			
	Palm sugar	<i>Arenga pinnata</i> (Wurmb) Merr	Flower stalk			
	Loték	Potato	<i>Solanum tuberosm</i> L		Tuber	Salt, Water
		Palm sugar	<i>Arenga pinnata</i> (Wurmb) Merr		calegonius	
Peanut		<i>Arachys hypogaea</i> L	Seed			
Minum kunyit bubuk	Soaked tamarind	<i>Tamarindus indica</i> L	Fruit	Water		
	Tumeric	<i>Curcuma longa</i> L	Rhizome			
Minuman jahé bubuk	Sugar/Sugarcane	<i>Saccharum officinarum</i> L	Rhizome	Water		
	Red ginger	<i>Zingiber officinale</i> var. <i>rubrum</i> Roscoe	Rhizome			
	Sugar/Sugarcane	<i>Saccharum officinarum</i> L	Stem			

Ali agrem	Rice flour	<i>Oryza sativa</i> L	Seed	Water
	Palm sugar	<i>Arenga pinnata</i> (Wurmb) Merr	Flower stalk	
	Coconut milk	<i>Cocos nucifera</i> L	Fruit	
	Vanili	<i>Vanilla planifolia</i> Andrews	Seed	
Bajigur	Palm sugar	<i>Arenga pinnata</i> (Wurmb) Merr	Flower stalk	Water
	Coconut milk	<i>Cocos nucifera</i> L	Fruit	
	Sugar palm fruit	<i>Arenga pinnata</i> (Wurmb) Merr	Fruit	
	Fragrant pandan leaves	<i>Pandanus amaryllifolius</i> Roxb	Leaf	
	Ginger	<i>Zingiber officinale</i> Roscoe	Rhizome	
Bandrék	Red ginger	<i>Zingiber officinale</i> var. <i>rubrum</i>	Rhizome	Water
	Palm sugar	<i>Arenga pinnata</i> (Wurmb) Merr	Flower stalk	
	Cinnamon	<i>Cinnamomum burmannii</i> Bl	Bark	
	Clove	<i>Syzygium aromaticum</i> (L.) Merr. & L.M.Perry	Fruit	
	Fragrant pandan leaves	<i>Pandanus amaryllifolius</i> Roxb	Leaf	
	Sugar/Sugarcane	<i>Saccharum officinarum</i> L	Stem	
Saroja/Kembang goyang	Wheat flour	<i>Triticum aestivum</i> L	Seed	Chicken egg, Water
	Cassava flour	<i>Manihot esculenta</i> Crantz	Tuber	
	Rice flour	<i>Oryza sativa</i> L	Seed	
	Sugar/Sugarcane	<i>Saccharum officinarum</i> L	Stem	
	Coconut milk	<i>Cocos nucifera</i> L	Fruit	
	Vanili	<i>Vanilla planifolia</i> Andrews	Seed	
Sasagon/Kue Singapur	White glutinous rice	<i>Oryza sativa</i> L	Seed	Salt, Water
	Wheat flour	<i>Triticum aestivum</i> L	Seed	
	Grated coconut	<i>Cocos nucifera</i> L	Fruit	
Rengginang	Rice	<i>Oryza sativa</i> L	Seed	Fish paste, Salt, Water
	Cassava flour	<i>Manihot esculenta</i> Crantz	Tuber	
	Aromatic ginger	<i>Kaempferia galanga</i> L.	Seed	
	Garlic	<i>Allium sativum</i> L	Bulb	

Out of the 21 families of plants that are used to make the traditional foods, it can be documented that 5 families, namely the Family *Poaceae* (27 food types), *Arecaceae* (25 food types), *Solanaceae* (9 food types), *Alliaceae* (8 food types), and *Euphorbiaceae* (7 food types) are predominantly used (Figure 2). For example, the *Poaceae* family, the rice flour (*Oryza sativa* L) is commonly used to make traditional foods such as **opak**, **ranginang**, **angléng ketan**, **jalabria**, and **ali agrem**. Based on the *Arecaceae* family, palm sugar (*Arenga pinnata* (Wurmb) Merr) is commonly used to make traditional foods, such as **tumis pakis**, **loder**, **karedok**, **lotek**, **ali agrem**, **bajigur**, and **bandrek**. *Solanaceae* family, such as **cabe rawit/céngék** (*Capsicum frutescent* L) is predominantly used to make traditional snacks, including **tumis jamur**, **karédok** and **loték**. The *Alliaceae* family, such as garlic (*Allium sativum* L) is commonly used to make **rengginang**, **tumis pakis**, **karédok**, and **rengginang**. Meanwhile, the *Euphorbiaceae* family, such as cassava (*Manihot*

esculenta Crantz) is frequently used to make **kiripik singkong**, **apem banjur**, **comring**, and **saroja/kembang goyang**.

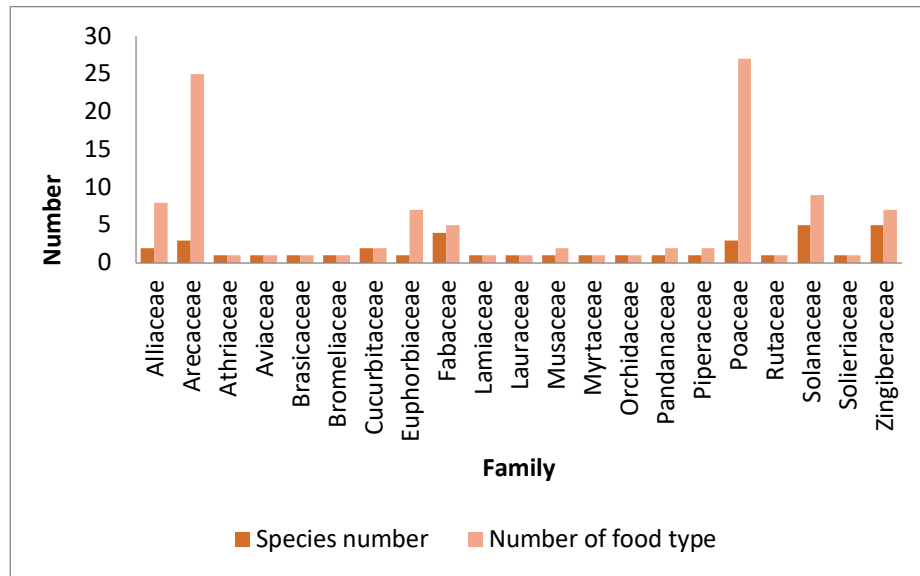


Figure 2. Various plant families used to make traditional food

On the basis of plant parts, 9 parts of plants commonly used for creating traditional foods in Cijambu Village, namely fruit, seed, stem, tuber, bulb, flower stalk, leaf, bark, and front bud. Of those 9 plant parts, the fruit (38.29%), seed (19.14%) and tuber (8.51) are predominantly used for creating traditional foods in Cijambu Village (Figure 3).

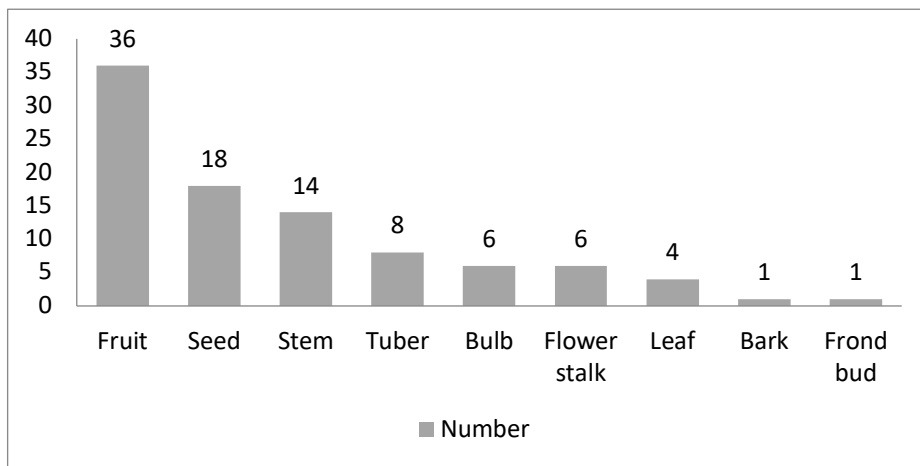


Figure 3. Part of plant used in making traditional food

- **Homegarden production**

It revealed that most of plant species that have been created for 26 types of traditional foods of Cijambu village are produced of various local agroecosystems of Cijambu Village, namely homegaden and garden (38.46 %), garden (34.61 %), wet-rice (3.84%) and forests (3.84%). Meanwhile, the remaining (19.23 %) of the types of plants used to make traditional foodstuffs came from buying products from the market (Figure 4).

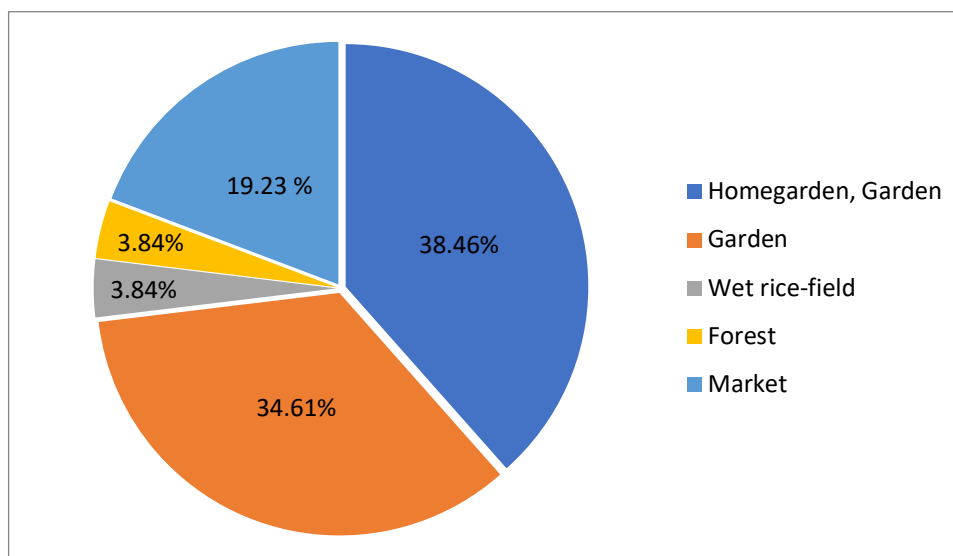


Figure 4. Origin of plant material

It can be seen from Figure 4 that the various species of plants commonly used as traditional food ingredients in Cijambu Village come from local sources, such as homegarden and garden. This is because in the homegarden and garden there are many species of plants are predominantly used for creating the traditional food ingredients. For example, from the results of botanical survey of the homegarden based on 86 homegarden samples, it can be documented 164 species representing 63 families of plants. Of the 164 plant species, 97 species are recoded as edible plants, consisting of the additional food carbohydrates (5 species), spices (25 species), vegetables (26 species), and fruits (41 species). Moreover, from the total 97 edible plant species, 17 plant species, namely bawang merah (*Allium ascalonicum* L), laja/lengkuas (*Alpinia galanga* (L.) Willd), nenas (*Ananas comosus* (L.) Merr), kacang tanah (*Arachys hypogaea* L), kol (*Brassica oleraceae* L), cabe (*Capsicum annum* L), cabe rawit (*Capsicum frutescens* L), kayu manis (*Cinnamomum burmannii* Bl), pandan wangi (*Curcuma longa* L), cikur/kencur (*Kaempferia galanga* L), singkong (*Manihot esculenta* Carantz), pisang (*Musa x paradisiaca* L), pandan wangi (*Pandanus amaryllifolius* Roxb), Terong (*Solanum melongena* L), Cengkeh (*Syzygium aromaticum* (L.) Merr. & L.M. Perry), kacang panjang (*Vigna unguilata* (L.) Walp), and jahe (*Zingiber officinale* Roscoe) are commonly used as creating traditional food ingredients of Cijambu Village.

Since the homegarden system of Cijambu Village has a variety of traditional food ingredients, the homegarden has been considered to be an important role for supporting food security and ecological functions, including carbon sequestration, biodiversity conservation, wildlife habitat, fertilizing the soil, protecting the soil from the dangers of erosion, and maintaining the balance of the hydrological system in the water shed area (Iskandar and Iskandar, 2011; Iskandar, 2017).

- **Food diversity and food security**

The Sundanese people in Cijambu Village, Tanjungsari, Sumedang have Local Knowledge (LK) or Traditional Ecological Knowledge (TEK) on creating a variety of traditional foods. It has been transmitted from one generation to other generations consists of three main stages, namely parental, peer, and individual learning (Ellen and

Harris, 2005; Iskandar and Iskandar, 2005; Pam et al., 2017). Parental learning is the learning of childhood knowledge, through a process from parents /older siblings to children, is a learning process from the older generation to the next generation or vertically cultural transmission. Peer learning, in adolescence is a learning process to share knowledge from the same age group or adolescent peer group. While in adulthood, learning knowledge through each individual.

The diversity of traditional foods in Cijambu Village is also tended to determine by local biophysical environmental factors. For example, because various vegetable plants, including tomatoes (**tomat**) and eggplant (**terong**) plant has commonly planted in the homegarden and garden, the special traditional food made of **tomat** and **terong**, which is dodol **totamat** and **manisan terong**, are predominantly made by rural people. In addition, in Cijambu Village there are also many ferns (**pakis**) that grow wild in natural forest areas. So, in Cjambu Village, it is known that there is a special traditional food, called as **tumiis pakis** which uses the main ingredients of fern shoots.

In general, the Sundanese people particularly in Cijambu Village, generally have cultural wisdom, such as having a food pattern adapting to the typical local environment of the West Java countryside by having many mountains, a suitable place for the cultivation of various species of vegetable crops. Therefore, in Cijambu Village, there is a popular traditional food is called **karédok**, the basic ingredients of which use various vegetable crops, such as cucumber (**mentimun**), cabbage (**kol**), long beans (**kacang panjang**), basil leaves (**daun kemangi**), peanuts (**kacang tanah**), and others. **Karédok** is one of the traditional Sundanese foods that are good for human health. This is because the various ingredients used to make **karédok** contains a lot of calories, protein, fat, carbohydrate, calcium, phosphorus, iron, and vitamins which are needed by the human body (Table 3) (Figure 5).

Table 3. Nutrition contents of Karedok in 100 gr

Plant vernacular name	Calories (Kcal)	Protein (gr)	Fat (gr)	Carbohydrate (gr)	Calcium (mg)	Phospor (mg)	Iron (mg)	Vitamin C (mg)
Mentimun	8.0	0.2	0.2	1.4	29.0	95.0	1.0	1.0
Toge	34.0	3.7	1.2	70.7	166.0	74.0	0.8	5.0
Kol	51.0	2.5	1.1	8.0	100.0	50.0	3.4	16.0
Kacang panjang	30.0	2.3	0.4	68.6	71.0	68.0	0.8	15.0
Daun kemangi	43.0	5.5	0.3	8.5	35.0	106.0	1.0	30.0
Terong	28.0	1.1	0.2	5.5	15.0	37.0	0.4	5.0
Cabe merah	36.0	1.0	0.3	7.3	29.0	24.0	0.5	18.0
Cabe rawit	120.0	4.7	2.4	19.9	45.0	85	2.5	70
Bawang putih	112.0	4.5	0.2	23.1	42.0	40.0	1.0	15
Kacang tanah	220.0	10.6	18.0	25.5	89.0	273.0	1.9	0
Air asam	267.0	2.8	0.6	62.5	74.0	113.0	0.6	0
Gula kawung	368.0	0	0	92.0	75.0	35.0	3.0	0

Since the diversity of traditional foods in Cijambu Village has been considered as a high, the potential for supporting the food security is also high. The food security consists of

food availability, food access, food utilization, and food stability (Saediman et al. 2021). Food availability of the household refers to the food supply in the rural. It can be fulfilled by various food resources, including the local traditional foods that are mainly made of using local sources. Food access means the ability to access food physically and economically. Various local agroecosystem types, homegarden, garden, and wet-rice fields enable constant physical access to food because of proximity to home, particularly the homegarden system. Regarding the food utilization, traditions of the rural people commonly make various traditional foods enhance the village household ability to access a higher diversity of food that are made of themselves instead of buying from market. While the village people tradition of making various traditional foods are expected to improve stability since the materials for making various traditional foods come from the local productions of the agroecosystems, such as homegarden that can be easily assessed almost all year around with a high stable with various environmental changes, including climate changes.

Based on the Gastronomic Ethnobiology study on traditional food diversity in Cijamabu Village, it was revealed that food diversity can be related to the food security of rural households, and is also related to various other aspects such as aspects of biodiversity, nutritional adequacy of community food, human health, production of various types of agroecosystems, cultural identity, and adaptation of human culture to local ecosystems (Pieroni et al., 2016; Iskandar, 2017; Risnawati, 2017; Sartika, 2018; Hernawati, 2022).

4. Conclusion

Based on this Gastronomic Ethnobiology study--the study of the complex interactions between the Sundanese village human societies, food, and their environment- it can be studied the relationship between people's consumption patterns, local food ingredients that are made by residents, and local sources of ingredients that are used to make variety of local food, particularly in the studu area.

In the past, rural Sundanese people had a habit of consuming a variety of non-rice food ingredients. An example is the habit of *ngaleueut* in the morning, afternoon, evening by serving drinks and non-rice snacks independently in the family without having to buy from small shops or markets. But nowadays, due to the intensification of rice cultivation in the wet rice paddy fields (*sawah*), the consumption patterns of villagers for a variety of non-rice local foods tend to decrease. As a result, rural communities tend to depend more and more on soft drinks, biscuits and noodles from urban stalls and markets in the the urban, whose basic ingredients are imported, such as wheat flour rather than using local botanical materials. For example, Indonesia is recorded to import around 4 tons of wheat flour a year. Wheat consumption is mainly used for wet noodles (32%), instant noodles (20%), biscuits (20%), bread (15%), egg noodles (8%) and the remaining 5% is consumed directly by the public (Sasongko, 2006). Consequently, rural food security is very vulnerable, considering that food sources are increasingly dependent on external products. Even the wet rice field production system, which was previously a farming business by maximizing internal inputs using low external inputs (LEISA=Low-External-Input and Sustainable Agriculture), has changed drastically by adopting rice field farming using various inputs from the outside, adopted HEI (High-External Input

Agriculture System. As a result, it is very vulnerable to various market changes and environmental changes, such as fertilizer scarcity, climate anomalies and pest attacks (Iskandar and Iskandar and Iskandar, 2011).

In addition, in the past, the agro-ecosystem of homegrden and mixed garden also used to grow a variety of plants, which had various socio-economic and cultural functions, such as a source of local food, as a main source of carbohydrates, spices, vegetables, traditional medicines, and others. However, now the diversity of types of garden plants and talun-garden has also decreased, partly due to the commercialization of commercial vegetable, ornamental and fruit plants.

The consequences are due to changes in the pattern of people's food consumption, the tradition of making a variety of people's food, and changes in the environment, due to changes in the farming system that are more commercial, and the intensification of the penetration of the market economy system into rural areas can lead to a tendency for the rural communities to produce a variety of local foods in rural areas to decrease.

On this study, can be concluded that the local community of Cijambu Village, Tanjungsari, Sumedang, West Java, recognize at least 26 types of traditional food that are still commonly created by households. To create a variety of the traditional foods are used 39 species of plants representing 21 families. Of the 21 families, five families namely *Poaceae* family (27 food types), *Arecaceae* (25 food types), *Solanaceae* (9 food types), *Alliaceae* (8 food types), and *Euphorbiaceae* (7 food types) are predominantly used for various traditional foods in Cijambu Village. Meanwhile, the main parts of plants that are commonly used to make various traditional foods, especially 9 parts of plants, namely fruit, seed, stem, tuber, bulb, flower stalk, leaf, bark, and front bud, with the most widely used plant parts, especially fruit (38.29%), seed (19.14%) and tuber (8.51%).

In general, various plant materials to make various traditional foods in Cijambu Village are mainly obtained from various types of local agro-ecosystems, including homergaden (38.46 %), garden (34.61 %), wet-rice (3.84 %), and also from forest (3.84 %). Meanwhile, the rest (19.23 %) of the types of plants used to make traditional foodstuffs came from buying products from the market.

Based on the results of this Gastronomic Ethnobiology study, it revealed that food diversity in rural areas can be potentially related to the food security of rural households.

Conflicts of Interest: authors declare no conflict of interest.

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References

- Adiasih, P., & Brahmana, R. K. (2015). Persepsi terhadap Makanan Tradisional Jawa Timur: Studi Awal terhadap Mahasiswa Perguruan Tinggi Swasta di Surabaya. *Kinerja: Economics and Business Journal*, 19 (2): 112-125. DOI: <https://doi.org/10.24002/kinerja.v19i2.538>.
- Albuquerque, U.P., Ramos, M.A., Paiva de Lucena, R.F., Alencar, N.L. (2014). Methods and Techniques Used to Collect Ethnobiological Data. Dalam Albuquerque U.P.,

- Cruz da Cunha, L.V., F., Piva de Lucena, R., F., P, Alves, R.R.N (eds), *Methods and Techniques in Ethnobiology and Ethnoecology*. Humana Press, New York, Pp.15-37.
- Amrinanto, A.H., Hardinsyah, H., Palupi, E. (2019). The Eating Culture of the Sundanese: Does the Traditional Salad (*Lalapan*) Improve Vegetable Intake and Blood β -Carotene Concentration? *Future of Food: Journal on Food, Agriculture and Society*.104:1-10. DOI:10.17170/kobra-20190709593.
- Berkes, F. (2008). *Sacred Ecology*. Routledge, New York and London. Second Edition.
- Bernard, H.R. 1994. *Research Method in Anthropology: Qualitative and Quatitative Approaches*. Sage Publications, London.
- Ellen, R and Harris, H. (2000). Introduction. Di Dalam Ellen, R., Parkes, P., Bicker, A. (eds), *Indigenous Environmental Knowledge and Its Transformations: Critical Anthropological Perspectives*. Hardwood Academic Publisher, Amsterdam, Pp.1-33.
- Hernawati, D., Putra R.R., Meylani, V. (2022). Indigenous Vegetable Consumed as Lalapan by Sundanese Ethnic Group in West Java Indonesia: Potential, tradition, Local Knowledge, and Its Future. *South African Journal of Botany* 151: 133-145. DOI: 10.1016/j.sajb.2022.09.007.
- Igarashi, T. (1985). Some Notes on the Subsistence in a Sundanese Village. Dalam Suzuki, S., Soemarwoto, O., Igarashi, T (eds), *Human Ecology Survey in Rural West Java in 1978 to 1982*. Nissan Science Foundation, Tokyo, Pp.9-77.
- Iskandar, J. (2017). *Ekologi Manusia dan Pembangunan Berkelanjutan*. PSMIL, Unpad. Edisi Revisi.
- Iskandar, J. (2018). *Etnobiologi, Etnoekologi, dan Pembangunan Berkelanjutan*. Plantaxia, Yogyakarta.
- Iskandar, J. & Iskandar, B.S. (2005). *Pengobatan Alternatif Ala Baduy*. Humaniora, Bandung.
- Iskandar, J. & Iskandar, B.S. (2011). *Agroekostem Orang Sunda*. PT Kiblat Buku Utama, Bandung.
- Martin, G.J. (1995). *Ethnobotany: A Methods Manual*. Chapman & Hall, London.
- Masduki, A. (2012). Masakan Tradisional di Kabupaten Ciamis. *Patanjala* 4 (2): 89-99. DOI:10.30959/patanjala.v4i2.142.
- Newing, H., Eagle, C.M., Puri, R.K., Watson, C.W. (2011). *Conducting Research in Conservation: Social Science Methods and Practice*. Routledge London and New York.
- Nurhalimah. (2016). Tentang Makanan Khas Indonesia. *Jurnal Prodi PBSI UNWIR*.
- Pam, G., Zeithlyn, D., Gosler, A. (2017). Ethno-ornithology of the Mushere of Nigeria: Children's Knowledge and Perception of Birds. *Ethnobiology Letters* 9 (2): 48-64. DOI: 10.14237/ebl.9.2.2018.931.
- Pieroni, A., Pawera, L., Shah, G.M. (2016). Gastronomic Ethnobiology. Di dalam Albuquerque, U.P., Alves, R.R.N (eds), *Introduction to Ethnobiology*. Springer International Publishing Switzerland, Pp.53-62.
- Oda. (2012). Pengembangan Pusat Kuliner Nusantara Kota Bandung Sebagai Tujuan Wisata. *Khasanah Ilmu* III (1): 51-60.
- Rahmalianti, R., A, M. N., & Riyadi, D. (2016). Pelestarian Makanan Tradisional Kejos Sebagai Sumber Karbohidrat di Desa Tarikolot Kecamatan Jatininggal Kabupaten Sumedang Provinsi Jawa Barat. *The Journal Gastronomy* 3 (2): 58-66.
- Rahmaniah M. (2020). Pengetahuan Lokal Masyarakat Mengenai Pemanfaatan Tumbuhan dan Hewan Sebagai Pangan di Dusun Sindang Desa Rancakalong Kabupaten Sumedang Jawa Barat. Skripsi pada Prodi Biologi FMIPA, Unpad.

- Risnawati, T. (2017). Peranan Srabi Sebagai Makanan Khas Untuk Mempertahankan Nilai Kearifan Lokal. *Dinamika Sosial Budaya* 19 (2): 300-307.
- Saediman H, Gafaruddin A, Hidrawati H, Salam I, Ulimaz A, Rianse IS, Sarinah S, Taridala 2021. The Contribution of home food Gardening Program to Household Food Security in Indonesia: A Review. *WSEAS Transaction of Environmental Development* 17:795-809. DOI: 10.37394/232015.2021.1775
- Sartika M. Kearifan Lokal di Pedesaan: Kajian Praktik Budaya Religi di Desa Nyatnyono. *International Journal Ihya 'Ulum Al-Din* 20 (1): 109-128. DOI: 10.21580/ihya.20.1.2997
- Sasongko, T.H. (2006). Jeratan Pangan Global. *Jurnal Analisis Sosial* 11 (1): 57-81.
- Setyawati, V. A., & Rimawati, E. (2016). Pola Konsumsi Fast Food dan Serat sebagai Faktor Gizi Lebih pada Remaja. *Unnes Journal of Public Health*, 5(3): 275-284.
- Suparlan, P. (2005). Kebudayaan dan Pembangunan. Dalam Rudito, B., Kusairi, Rahmiati, L., Amini, R. (eds), *Sustainable Future: Menggagas Warisan Peradaban Bagi Anak Cucu Seputar Wacana Pemikiran Surna Tjahja Djajadiningrat*. ICSD, Jakarta, pp.113-136.
- Wijaya, S. (2019). Indonesia Food Culture Mapping: A Starter Contribution to Promote Indonesia Culinary Tourism. *Journal of Ethnic Foods* 6 (9): 1-10. <https://doi.org/10.1186/s42779-0009-3>