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# Ethnobotany of food plants used by Minangkabau Community in Lima Puluh Kota District, West Sumatra, Indonesia

**ASIH RAHAYU AJENG AGESTI[1], NUNIK SRI ARIYANTI[2,♥], TATIK CHIKMAWATI[2], YOHANES PURWANTO[3]**

[1]Plant Biology Graduate Program, Department of Biology, Faculty of Mathematics and Natural Sciences, Institut Pertanian Bogor. Jl Agatis, Kampus IPB Darmaga, Bogor 16680, West Java, Indonesia
[2]Department of Biology, Faculty of Mathematics and Natural Sciences, Institut Pertanian Bogor. Jl. Agatis, Kampus IPB Dramaga, Bogor 16680, West Java, Indonesia. Tel./fax.: +62-251-8622833, ♥email: nunikar@apps.ipb.ac.id
[3]Research Center for Biology, National Research and Innovation Agency. Jl. Raya Bogor Km 46, Cibinong, Bogor 16911, West Java, Indonesia

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**Abstract.** *Agesti ARA, Ariyanti NS, Chikmawati T, Purwanto Y. 2023. Ethnobotany of food plants used by Minangkabau Community in Lima Puluh Kota District, West Sumatra, Indonesia. Biodiversitas 24: 2756-2767.* The Minangkabau tribe is well known for its culture and cuisine, but documents on their knowledge and wisdom in the utilization of food plants are still limited. This study aims to inventory plant species used for food by Minangkabau community, assess their importance and economic value, and analyze the important landscapes where the food plants are obtained. This study was conducted in six villages representing different level of modernization in Lima Puluh Kota District, West Sumatra which is one of the centers of origin of Minangkabau ancestral. Data were collected through open, semi-structured and structured interviews with key informants and respondents. The Pebble Distribution Method (PDM) is used for scoring activities. Data were analyzed to show the use values (UVs), local user's value index (LUVI), index of cultural significance (ICS), and economic value of the food plants. The interviewed informants mentioned 154 plant species from 51 families were used for food. *Cocos nucifera* L. has the most various uses as food (highest UVs) and is the most important cultivated plant for the Minangkabau culture (ICS) in all the six villages. The most important food plant species based on a community perspective (highest LUVI) is *Oryza sativa* L. The wild plants having the highest LUVI and ICS differed among the villages. Plants with high economic value include *O. sativa, Durio zibethinus* Murray and *Citrus aurantium* L. The landscapes considered important are paddy fields and fields because they provide staple food. Information from this study can support food diversification to achieve food security based on the local knowledge on the diversity of food plant species and potential landraces in Minangkabau community.

**Keywords:** Ethnobiology, ICS, local wisdom, local knowledge, plant diversity

## INTRODUCTION

Minangkabau is an indigenous ethnic group in West Sumatra, Indonesia. Minangkabau is generally known for its rich natural resources, beautiful natural scenery, and unique cultural traditions. Minangkabau culture is closely related to nature which is reflected in the philosophy of *alam takambang jadi guru*, which means that nature is the way of life for the Minangkabau people. This close relationship with nature forms a unique local knowledge and wisdom, including in the utilization of food plants. Food plants are plants that have one or more parts (tubers, bulbs, stems, leaves, shoots, flowers, fruits, seeds) being consumed in raw or processed as cereals, vegetables, edible fats and oils, spices and flavorings, etc that can be used as human food (FAO 1991). Plants utilized by people are those cultivated (i.e., plants that are intentionally planted by humans) and wild plants (i.e., plants that grow naturally without human intervention). The utilization of food plants by Minangkabau people is influenced by many factors including sociocultural, ecological, environmental, natural resources and subsistence needs (Blancas et al. 2013; Nunes et al. 2018).

Minangkabau culture has been spreading and developing on the mainland (*darek*) and the coastal (*pasisia*) areas within West Sumatra region, as well as outside West Sumatra (*rantau*) (Toeah 1985). One Minangkabau community in the mainland resides in Lima Puluh Kota District, which is one of the centers origins of the Minangkabau ancestors and culture. The culture in this district has been developing since the early AD as evidenced by the existence of menhir megalithic sites in this region (TPTMSB 1984).

One form of well-known culture developed by the Minangkabau people, or often just called Minang, is culinary culture. Each district in West Sumatra where Minang people live has their own culinary characteristics (Nurainas et al. 2022). Nonetheless, one culinary delight of Minangkabau is very popular worldwide named 'rendang', which is a dish of beef or other meat cooked slowly in coconut milk mixed with various spices until fairly dry. Rendang for the Minang people has a philosophy of patience, wisdom, and persistence, furthermore it becomes an honored food called *kepalo samba* (head of the dishes) (Nurmufida et al. 2017). Minang's cuisine generally uses more ingredients from animals and less portion of vegetables (Mardatillah 2020; Nurainas et al. 2022). However, the Minang people in Lima Puluh Kota District

use more vegetables which are cooked into *rendang daun* (leaf rendang). The diversity of vegetables in this *rendang daun* dish has not been documented in scientific reports.

*Rendang daun* is the food specialty of the Minang people in the district of Lima Puluh Kota. The knowledge and culture in using plant materials as the ingredients for making rendang may be related to the region's biological resources and environmental conditions. Lima Puluh Kota District has a varied topography from lowlands to hills (110-2,261 meters above sea level) (BPS 2018). The people in this region have many traditional cultivars (landraces) of food plants that adaptive to local environment which can be used as genetic resources for the development of superior cultivars. Beside the cultivated plants, some of the food plants used by the Minang people in Lima Puluh Kota are wild plants collected from agricultural land, garden, agroforest and forest.

The existence and sustainability of plant foods, especially the wild ones, needs attention because wild plant species may be threatened with extinction due to the rapid rate of deforestation in West Sumatra (Singh and Yan 2021). Therefore, it is urgent to document and study the local knowledge and wisdom of the Minangkabau community in Lima Puluh Kota District, especially in utilizing plants for food sources. This study aims to (i) inventory and identify species of food plants used by the Minangkabau community in Lima Puluh Kota District; (ii) assess the importance and economic value of the food plants, (iii) analyze the important landscape types where the food plants are obtained. We expected this study might provide information on local knowledge and wisdom in utilizing food plants to support diversification and food security.

## MATERIALS AND METHODS

### Study area

This research was conducted from August 2021 to July 2022 in Lima Puluh Kota District (0° 4' 24.24" N, 100° 31' 46.56" E). Data and samples were collected in six villages (Figure 1), which were selected and categorized based on the biophysical conditions and socio-cultural characteristics (e.g. facilities and infrastructure), namely traditional villages (i.e. Maek, Andiang and Galugua), moderately traditional villages (i.e. Koto Alam and Koto Tinggi), and modern villages (i.e. Guguak VIII Koto).

### Data collection procedures

Data were collected through open-ended, semi-structured and structured interviews with key informants and respondents selected using a purposive sampling approach (Neuman 2014). Key informants are indigenous peoples in Lima Puluh Kota District who are very knowledgeable about Minangkabau history and culture, have an essential role in the management and utilization of food plants, such as the headman (*wali nagari*), community leaders (*penghulu, niniak mamak*) and traditional cooks in the village. Respondents were selected based on three criteria: indigenous peoples, having knowledge and utilizing plants as food in daily life, and male or female over 20 years old. In total, we interviewed 10 key informants and 138 respondents representing 20% of people who met the criteria selected through FGD (Focus Group Discussion) (Mills and Gay 2015).

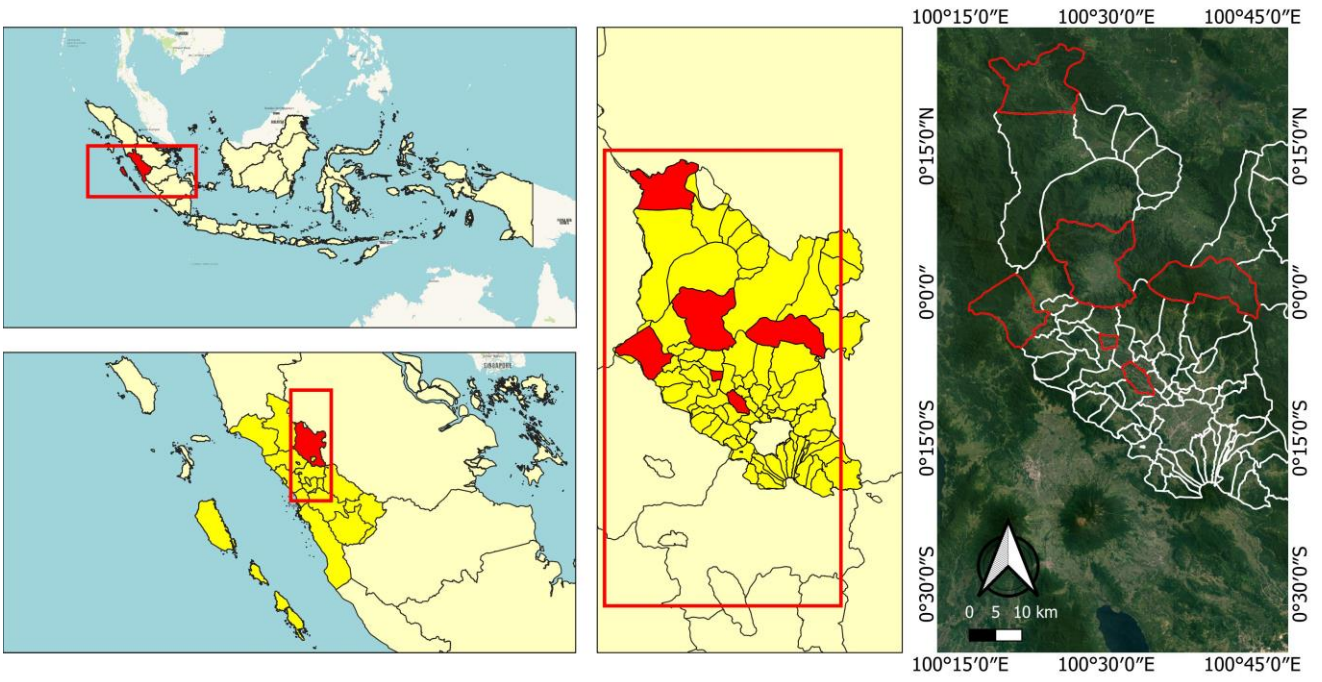


**Figure 1**. Map of the study sites at six villages in Lima Puluh Kota District, West Sumatra Province, Indonesia

The data collected in the interviews included the diversity of food plant species, harvesting locations, parts utilized, processing methods, frequency of utilization, market price, and other uses. Data scoring on the importance values of a food plant species based on people's preferences and perceptions was obtained using the Pebble Distribution Method (PDM) referring to Sheil et al. (2004).

Plant specimen were collected in the field based on information from the interviews. The plant specimen was prepared into herbarium based on standard methods (Das 2020) and identified at the Botany Laboratory of Universitas Riau by using references (Holttum 1950; Backer and Van den Brink 1968; Van Balgooy 1997). The scientific names were verified by referring to the Global online sites Biodiversity Information Facility (GBIF) (https://www.gbif.org/) and Plant of the World (https://powo.science.kew.org/).

**Data analysis**

Valuation of the local importance of each cited plant species was conducted using various ethnobotanical indexes, namely the Use Value (UV) Index, Local User's Value Index (LUVI), and Index of Cultural significance (ICS). In addition, we carried out an economic valuation of the species that contribute to household income and an analysis of perceptions regarding the essential landscape to obtain food plants.

*Use Values (UVs)*

The use value represents the diversity of uses of a plant species and was analyzed using the following formula (Zenderland et al. 2019):

$$UV = \Sigma U / N$$

Where:

U : the total uses of a plant species mentioned by informants

N : the total number of informants interviewed for a plant species

*Local User's Value Index (LUVI)*

This index value indicates the importance value of a plant species from the perspective and preferences of local people. It is analyzed using the formula referred to Sheil et al. (2004) with modification as follow:

$$LUVI = Gij = \Sigma category = jGij = RWj \times Rwij$$

Where:

i : a species,

j : a type of use

Gij : an individual value

RWj : the relative score given to the use of a plant as a food ingredient compared to other kinds of service

Rwij : the relative score for a food plant species i compared to other food plant species. This weighting was obtained through PDM

*Index of Cultural Significance (ICS)*

The Index of Cultural Significance shows the importance value of each food plant species based on the quality value, intensity value, and exclusivity value. This index is analyzed using the formula Turner (1988) referred to:

$$\sum_{i=1}^{n} (q \; x \; i \; x \; e) ni.$$

Where:

$q$ : the quality value which is the total use of a plant species

$i$ : the intensity value which is the intensity of utilization of a plant species

e : the exclusivity value which is the level of exclusivity or preference for a plant species

*Economic Value (EV)*

The economic value was directly valuated based on the local market price (Munawaroh et al. 2011). The economic value of a food plants species is the total monetary value (in Indonesian Rupiah/IDR) obtained from commodity yield per tree or per hectare per year per household.

*The importance of landscape*

This value was analyzed based on the scores obtained from respondents through PDM following the procedure of Sheil et al. (2004). The value of landscape importance is the total score given to a type of landscape divided by the total number of respondents. The representation of this value was analyzed using Chord diagram in the R programming language with EthnobotanyR and Circlize Packages (Gu et al. 2014; Whitney 2022).

## RESULTS AND DISCUSSION

**Taxonomic diversity of food plants**

The Minangkabau community in the six villages studied uses 154 species of food plants belonging to 109 genera and 51 families (Table 1). The most common plant family used is Fabaceae (13 species), followed by Zingiberaceae (11 species), Solanaceae (10 species), Myrtaceae (8 species) and Poaceae (8 species), and 46 other families (1-7 species). Some food plants have been cultivated (95 species), and the others are wild (59 species).

Galugua Village people utilize more plants species (104) than the other villages. In addition, they also use more wild plants. Galugua Village is the most isolated traditional village. The village is 119 km from the nearest town (i.e., Sarilamak) and can only be accessed by road transportation during the dry season. On the contrary, the people in Guguak VIII Koto, a modern village, use only 81 species, of which 18 species are wild plants. This village is only 14 km from Sarilamak and has a good access to the town with a paved highway. Consequently, the people in the village have a modern lifestyle in which they can easily find animal-based and fast food.

People in traditional villages use 34 species of plants that were not mentioned by informants from other village categories (Figure 2), 10 species of which are the main ingredients of 'rendang daun' which are made only in the traditional villages. In contrast, 15 species are only used by people in the moderately traditional villages. Among these plants are vegetables which are generally grown in highland areas, which is in accordance with the topography of the villages Koto Tinggi (altitude 837 meter asl). For example, *Lactuca sativa* L. is vegetable usually planted in highland areas with cool temperature and high humidity (Lenni et al. 2020). Two plant species (*Cassia fistula* L. and *Dracaena angustifolia* (Medik.) Roxb.) are found in yards and utilized only in the modern village (Guguak VIII Koto). *D. angustifolia* is well-known among people in Indonesia and other countries in Asia and Southeast Asia as a natural food coloring and traditional medicine (Putri et al. 2016; Indrasti et al. 2018; Yi et al. 2020). *C. fistula* is used for herbal medicine by people in Asian countries such as Indonesia and India, but information on the use of its flowers as a vegetable is rarely reported (Singh et al. 2013; Khan and Singh 2017; Jannah et al. 2017).

**Usability categories**

*Source of carbohydrates*

Minangkabau people in the studied area utilize nine species of plants as sources of carbohydrates (Table 1). Rice (*Oryza sativa*) is the primary source of carbohydrates. A total of 12 local cultivars (landraces) of rice are cultivated, namely *bawan, sokan, sijunjuang, anak daro, rosna, banang pulau, keritiang, kuniang kuriak, kuniang solok, kuriak kusuik, linduang daun* and *padi ladang*. When cooked, the grains of those landraces produce *pera* rice (fluffy rice), meaning the grains are easily separated without sticking to each other or becoming mushy. *Pera* rice has high amylose content (Anhar et al. 2016). The Minangkabau people in Lima Puluh Kota recognize their landraces rice based on taste, texture, and grain shape. They prefer to cultivate their own landraces rather than modern cultivars because they think local rice has a better taste, texture, and more adaptive to the environmental conditions in their village.

Other sources of carbohydrates are grains (*Z. mays, Sorghum bicolor*), tubers (*M. esculenta, S. tuberosum, I. batatas, C. esculenta, X. sagittifolium*), and fruits (*C. moschata*). The tubers could be processed in various ways including compote, boiled or fried. *I. batatas* tubers are usually cooked into a compote and served during the rice harvest season as an expression of gratitude from the owners of the paddy fields to the workers who harvest the rice. The tubers of *C. esculenta* and *X. sagittifolium* are processed by frying them into typical Minangkabau chips called *sanjai taleh balado*. *C. esculenta* tubers have a high starch content of 70-80% (Temesgen and Ratta 2015), but contain compounds that cause itching. Minangkabau people know to remove itching-causing compounds by soaking the tubers in the river overnight, then soaking them in salt water and lime. *C. esculenta* tubers have alkaloids, glycosides, flavonoids, terpenoids, saponins, and phenols which have the potential as medicines, antioxidants, and anti-inflammatories (Krishnapriya and Suganthi 2017). This plant is also used to treat hypertension by other ethnic groups in Indonesia (Supiandi et al. 2019).

*Source of protein*

Three species of plants are utilized as a source of protein, i.e. *V. radiata, A. hypogaea*, and *C. argentea*. Usually, these species are processed by boiling, roasting, frying, or compote. *V. radiata* grains are usually cooked into porridge and is served as a daily snack or food for open fasting during Ramadan. *C. argentea* is a wild plant that grows naturally in the forest and the people in Andiang (traditional village) consume the seeds by boiling and roasting them. *C. argentea* seeds are also fried by people who live near forests in Riau (Syamsuardi et al. 2022).

*Sources of fats and oils*

Minangkabau people utilize coconut (*C. nucifera*) as a source of fats and oils. Coconut milk contains saturated fat and is an important ingredient in cooking *gulai, pongek* and *rendang.* These cuisines use different kinds of coconut. *Gulai* and *pongek* use young coconut, so it's not greasy. Meanwhile, *rendang* requires ripe coconut with a dark brown shell so that the coconut milk produces more oil and quickly turns blackish brown. Saturated fat in coconut is generally lauric acid which has potential as an antiviral, antibacterial, and antiprotozoal (Suyitno 2003; Nitbani et al. 2022). Coconut milk also has antioxidant activity (Alyaqoubi et al. 2015) and can reduce Low Density Lipoprotein (LDL) (Ekanayaka et al. 2013).

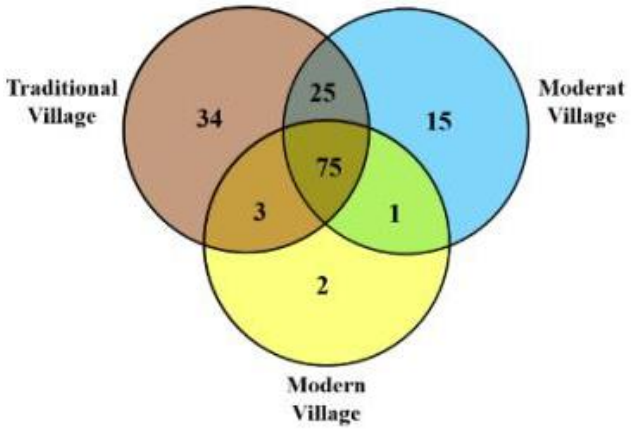


**Figure 2**. A diagram representing the number of food plants species used in tree village categories (traditional, moderate, modern village) in Lima Puluh Kota District, West Sumatra Province, Indonesia

**Table 1.** List of taxa names, category, part used, and cultivated status of food plants used by Minangkabau people in Lima Puluh Kota District, West Sumatra Province, Indonesia

| Family | Scientific name | Local name | Category | Part used | Cultivated status |
|---|---|---|---|---|---|
| Fabaceae | *Arachis hypogaea* L. | Kacang tanah | Protein | Seed | Cultivated |
| | *Archidendron jiringa* (Jack) I.C.Nielsen | Jariang | Vegetables | Seed | Wild |
| | *Cajanus cajan* (L.) Huth | Kacang kayu | Vegetables | Seed | Cultivated |
| | *Canavalia ensiformis* (L.) DC. | Kacang parang | Vegetables | Seed | Cultivated |
| | *Cassia fistula* L. | Simanih kuning | Vegetables | Flower | Cultivated |
| | *Leucaena leucocephala* (Lam.) de Wit | Patai cino | Vegetables | Seed | Wild |
| | *Parkia speciosa* Hassk. | Patai | Vegetables | Seed | Wild |
| | *Phaseolus vulgaris* L. | Buncis | Vegetables | Fruits | Cultivated |
| | *Phaseolus lunatus* L. | Kacang 7 halai | Vegetables, beverages | Leaf, seed | Cultivated |
| | *Psophocarpus tetragonolobus* (L.) DC. | Kacang belimbing | Vegetables | Fruits | Cultivated |
| | *Senna siamea* (Lam.) H.S.Irwin & Barneby | Juar | Vegetables | Fruits | Wild |
| | *Vigna radiata* (L.) R.Wilczek | Kacang padi | Protein | Seed | Cultivated |
| | *Vigna unguiculata* (L.) Walp. | Kacang panjang | Vegetables | Leaf, fruits | Cultivated |
| Zingiberaceae | *Alpinia galanga* (L.) Willd. | Lingkueh | Spices | Rhizome | Cultivated |
| | *Alpinia submutica* K.Schum. | Lome-lome | Fruits | Fruits | Wild |
| | *Curcuma longa* L. | Kunyik | Spices | Leaf, rhizome | Cultivated |
| | *Etlingera elatior* (Jack) R.M.Sm. | Kincuang | Spices | Flower, fruits | Wild |
| | *Hornstedtia elongate* (Teijsm. & Binn.) K.Schum. | Si lolo | Fruits | Fruits | Wild |
| | *Hornstedtia reticulata* (K.Schum.) K.Schum. | Ongkonang | Fruits | Fruits | Wild |
| | *Hornstedtia scyphifera* var. *fusiformis* Holttum | Sijangkang | Spices | Flower | Wild |
| | *Kaempferia galanga* L. | Kencur | Spices | Rhizome | Cultivated |
| | *Plagiostachys sumatrensis* Ridl. | Cikolu | Fruits | Fruits | Wild |
| | *Wurfbainia compacta* (Sol. ex Maton) Škorničk. & A.D.Poulsen | Darma munggu | Spices | Fruits | Cultivated |
| | *Zingiber officinale* Roscoe | Sapadeh | Spices | Rhizome | Cultivated |
| Solanaceae | *Capsicum annuum* L. | Lado | Spices | Fruits | Cultivated |
| | *Capsicum frutescens* L. | Lado kutu | Spices | Fruits | Cultivated |
| | *Solanum betaceum* Cav. | Taruang belanda | Fruits | Fruits | Cultivated |
| | *Solanum ferox* Mill. ex Dunal | Taruang asam | Spices | Fruits | Cultivated |
| | *Solanum lycopersicum* L. | Tomat | Vegetables | Fruits | Cultivated |
| | *Solanum melongena* L. | Taruang | Vegetables | Fruits | Cultivated |
| | *Solanum nigrum* L. | Lumai | Vegetables | Leaf | Wild |
| | *Solanum torvum* Sw. | Rimbang | Vegetables | Fruits | Wild |
| | *Solanum tuberosum* L. | Kantang | Vegetables, carbohydrates | Tuber | Cultivated |
| | *Physalis angulate* L. | Lotuik" | Fruits | Fruits | Wild |
| Myrtaceae | *Psidium guajava* L. | Jambu Biji | Fruits | Fruits | Cultivated |
| | *Syzygium aromaticum* (L.) Merr. & L.M.Perry | Cengkeh | Spices | Flower | Cultivated |
| | *Syzygium aqueum* (Burm.f.) Alston | Jambu aia | Fruits | Fruits | Cultivated |
| | *Syzygium cumini* (L.) Skeels | Duwet | Fruits | Fruits | Wild |
| | *Syzygium malaccense* (L.) Merr. & L.M.Perry | Jambak | Fruits | Fruits | Cultivated |
| | *Syzygium polyanthum* (Wight) Walp. | Salam | Spices | Leaf | Cultivated |
| | *Syzygium zeylanicum* (L.) DC. | Golam | Fruits | Fruits | Wild |
| Poaceae | *Bambusa vulgaris* Schrad. ex J.C.Wendl. | Rabuang | Vegetables | Shoots | Wild |
| | *Cymbopogon citratus* (DC.) Stapf | Sarai | Spices | Leaf | Cultivated |
| | *Dendrocalamus asper* (Schult. & Schult.f.) Backer | Botuang | Vegetables | Shoots | Wild |
| | *Oryza sativa* L. | Padi | Carbohydrates | Seed | Cultivated |
| | *Saccharum officinarum* L. | Tabu | Beverages | Stem | Cultivated |
| | *Saccharum edule* Hassk. | Tabu tolua | Vegetables | Flower | Cultivated |
| | *Sorghum bicolor* (L.) Moench | Gandum | Carbohydrates | Seed | Cultivated |
| | *Zea mays* L. | Jaguang | Carbohydrates | Fruits | Cultivated |
| Phyllanthaceae | *Antidesma montanum* Blume | Bonai | Fruits | Fruits | Wild |
| | *Aporosa octandra* var. *malesiana* Schot | Palangai | Vegetables | Leaf | Wild |
| | *Baccaurea deflexa* Müll.Arg. | Tungau | Fruits | Fruits | Wild |
| | *Baccaurea macrocarpa* (Miq.) Müll.Arg. | Tampui | Fruits | Fruits | Wild |
| | *Baccaurea motleyana* (Müll.Arg.) Müll.Arg. | Rambai | Fruits, spices | Fruits | Wild |
| | *Baccaurea polyneura* Hook.f. | Sijontiak | Fruits | Fruits | Wild |
| | *Baccaurea racemosa* (Reinw.) *Müll.Arg.* | Kapunduang | Fruits, spices | Fruits | Wild |

| | | | | | |
|---|---|---|---|---|---|
| Cucurbitaceae | *Benincasa hispida* (Thunb.) Cogn. | Kundua | Vegetables | Fruits | Cultivated |
| | *Citrullus lanatus* (Thunb.) Matsum. & Nakai | Malikai | Fruits | Fruits | Cultivated |
| | *Cucurbita moschata* Duchesne | Labu | Vegetables, carbohydrates | Fruits, leaf | Cultivated |
| | *Cucumis sativus* L. | Timun | Vegetables | Fruits | Cultivated |
| | *Luffa acutangula* (L.) Roxb. | Pitulo | Vegetables | Fruits | Cultivated |
| | *Momordica charantia* L. | Kambe | Vegetables | Fruits | Cultivated |
| | *Sicyos edulis* Jacq. | Labu siam | Vegetables | Fruits | Cultivated |
| Anacardiaceae | *Mangifera foetida* Lour. | Macang | Fruits, spices | Fruits | Wild |
| | *Mangifera indica* L. | Mangga | Fruits | Fruits | Cultivated |
| | *Mangifera laurina* Blume | Polam | Fruits | Fruits | Wild |
| | *Mangifera odorata* Griff. | Kuini | Fruits | Fruits | Cultivated |
| | *Mangifera sumatrana* Miq. | Pauh | Fruits | Fruits | Wild |
| | *Spondias dulcis* Parkinson | Kedondong | Fruits | Fruits | Cultivated |
| Euphorbiaceae | *Aleurites moluccanus* (L.) Willd. | Dama | Spices | Seed | Cultivated |
| | *Breynia androgyna* (L.) Chakrab. & N.P.Balakr. | Katuk | Vegetables | Leaf | Cultivated |
| | *Hevea brasiliensis* (Willd. ex A.Juss.) Müll.Arg. | Gatah | Vegetables | Leaf | Cultivated |
| | *Manihot esculenta* Crantz | Pucuk ubi | Vegetables, carbohydrates | Leaf, tuber | Cultivated |
| | *Plukenetia corniculata* Sm. | Pino-pino | Vegetables | Leaf, fruits | Wild |
| Rubiaceae | *Coffea canephora* Pierre ex A.Froehner | Kopi | Beverages | Seed, leaf | Cultivated |
| | *Hamelia patens* Jacq. | Pudiang | Vegetables | Leaf | Wild |
| | *Morinda citrifolia* L. | Mengkudu | Vegetables | Leaf | Cultivated |
| | *Spermacoce alata* Aubl. | Asam jati | Vegetables, spices | Leaf | Wild |
| | *Uncaria gambir* (W.Hunter) Roxb. | Gambia | Vegetables | Leaf | Cultivated |
| Clusiaceae | *Garcinia atroviridis* Griff. ex T.Anderson | Asam galugua | Spices | Fruits | Wild |
| | *Garcinia mangostana* L. | Manggis | Fruits | Fruits | Cultivated |
| | *Garcinia parvifolia* (Miq.) Miq. | Kacuburo | Fruits, spices | Fruits | Wild |
| | *Garcinia* sp. | Asam upi | Spices | Leaf | Wild |
| Malvaceae | *Durio zibethinus* L. | Durian | Fruits, vegetables | Fruits | Cultivated |
| | *Hibiscus sabdariffa* L. | Asam kandih | Vegetables | Leaf | Cultivated |
| | *Hibiscus tiliaceus* L. | Sibaru | Vegetables | Leaf | Wild |
| | *Theobroma cacao* L. | Coklat | Fruits, vegetables | Fruits, leaf | Cultivated |
| Rutaceae | *Citrus aurantiifolia* (Christm.) Swingle | Limau kapeh | Spices | Fruits, leaf | Cultivated |
| | *Citrus aurantium* L. | Jeruk | Fruits | Fruits | Cultivated |
| | *Citrus hystrix* DC. | Limau puruik | Spices | Fruits | Cultivated |
| | *Citrus limon* (L.) Osbeck | Jeruk lemon | Fruits | Fruits | Cultivated |
| Sapindaceae | *Nephelium lappaceum* L. | Rambutan | Fruits | Fruits | Cultivated |
| | *Nephelium maingayi* Hiern | Idan | Fruits | Fruits | Wild |
| | *Nephelium ramboutan-ake* (Labill.) Leenh. | Pulasan | Fruits | Fruits | Cultivated |
| | *Pometia pinnata* J.R.Forst. & G.Forst. | Matoa | Fruits | Fruits | Cultivated |
| Amaryllidaceae | *Allium cepa* L. | Bawang merah | Spices | Tuber | Cultivated |
| | *Allium chinense* G.Don | Bawang ladang | Spices | Leaf | Cultivated |
| | *Allium sativum* L. | Bawang putiah | Spices | Tuber | Cultivated |
| | *Allium tuberosum* Rottler ex Spreng. | Kucai | Spices | Leaf | Cultivated |
| Arecaceae | *Arenga pinnata* (Wurmb) Merr. | Anau | Fruits, beverages | Fruits, flower | Wild |
| | *Cocos nucifera* L. | Karambia | Fruits, beverages, fats and oils, spices, vegetables | Fruits, shoots | Cultivated |
| | *Salacca zalacca* (Gaertn.) Voss | Salak | Fruits | Fruits | Wild |
| Moraceae | *Artocarpus elasticus* Reinw. ex Blume | Torok | Fruits | Fruits | Wild |
| | *Artocarpus heterophyllus* Lam. | Campodak | Fruits, vegetables | Fruits | Cultivated |
| | *Artocarpus integer* (Thunb.) Merr. | Camodak Hutan | Fruits | Fruits | Wild |
| Meliaceae | *Lansium domesticum* Corrêa | Lansek | Fruits | Fruits | Cultivated |
| | *Lansium domesticum* var. *duku* Corrêa | Drondan | Fruits | Fruits | Cultivated |
| | *Toona sureni* (Blume) Merr. | Surian | Vegetables, spices | Leaf | Wild |
| Araceae | *Colocasia esculenta (L.) Schott* | Taleh | Carbohydrates | Tuber | Wild |
| | *Leucocasia gigantea* (Blume) Schott | Kemumu | Vegetables | Leaf | Wild |
| | *Xanthosoma sagittifolium* (L.) Schott | Taleh hitam | Carbohydrates | Tuber | Wild |
| Apiaceae | *Apium graveolens* L. | Seledri | Spices | Leaf | Cultivated |
| | *Foeniculum vulgare* Mill. | Adas manih | Spices | Seed | Cultivated |
| Asteraceae | *Bidens Pilosa* L. | Ambuang-ambuang | Vegetables | Leaf | Wild |
| | *Lactuca sativa* L. | Selada | Vegetables | Leaf | Cultivated |
| Vitaceae | *Cissus hastata* Miq. | Asam iang | Vegetables, spices | Leaf | Wild |
| | *Leea indica* (Burm.f.) Merr. | Mali-mali | Vegetables | Leaf | Wild |

| | | | | | |
|---|---|---|---|---|---|
| Annonaceae | *Annona muricata* L. | Durian belando | Fruits, vegetables | Fruits | Cultivated |
| | *Annona squamosa* L. | Sarikayo | Fruits | Fruits | Cultivated |
| Convolvulaceae | *Ipomoea aquatica* Forssk. | Kangkuang | Vegetables | Leaf | Cultivated |
| | *Ipomoea batatas* (L.) Lam. | Ubi jalar | Carbohydrates | Tuber | Cultivated |
| Lauraceae | *Cinnamomum burmanni* (Nees & T.Nees) Blume | Kulit manih | Spices | Stem bark | Cultivated |
| | *Persea americana* Mill. | Pokat | Fruits, vegetables | Fruits, leaf | Cultivated |
| Brassicaceae | *Brassica rapa* L. | Sawi | Vegetables | Leaf | Cultivated |
| | *Rorippa indica* (L.) Hiern | Lobak Ladang | Vegetables | Leaf | Cultivated |
| Melastomataceae | *Melastoma malabathricum* L. | Sikaduduak | Vegetables, spices, fruits | Leaf, fruits | Wild |
| | *Miconia crenata* (Vahl) Michelang. | Sikaduduak rimbo | Vegetables | Leaf | Wild |
| Lamiaceae | *Ocimum basilicum* L. | Kemangi | Spices | Leaf | Cultivated |
| | *Ocimum tenuiflorum* L. | Ruku-ruku | Spices | Leaf | Cultivated |
| Amaranthaceae | *Amaranthus tricolor* L. | Bayam merah | Vegetables | Leaf | Cultivated |
| | *Amaranthus viridis* L. | Bayam | Vegetables | Leaf | Cultivated |
| Oxalidaceae | *Averrhoa bilimbi* L. | Asam belimbiang | Vegetables, spices | Leaf, fruits | Cultivated |
| Caricaceae | *Carica papaya* L. | Botiak | Vegetables, fruits | Leaf, flower, fruits | Cultivated |
| Cactaceae | *Selenicereus monacanthus* (Lem.) D.R.Hunt | Nago | Fruits | Fruits | Cultivated |
| Menispermaceae | *Cyclea barbata* Miers | Cincau | Beverages | Leaf | Wild |
| Pentaphylacaceae | *Eurya acuminata* DC. | Jirak | Leaf | Leaf | Wild |
| Boraginaceae | *Ehretia acuminata* R.Br. | Boncah-boncah | Vegetables | Leaf | Wild |
| Pontederiaceae | *Pontederia vaginalis* Burm.f. | Kalayau | Vegetables | Leaf | Wild |
| Passifloraceae | *Passiflora foetida* L. | Markisa Hutan | Fruits | Fruits | Wild |
| Gnetaceae | *Gnetum gnemon* L. | Melinjo | Vegetables | Seed, leaf | Cultivated |
| Piperaceae | *Piper nigrum* L. | Merica | Spices | Fruits | Cultivated |
| Bromeliaceae | *Ananas comosus* (L.) Merr. | Naneh | Vegetables, fruits | Fruits | Cultivated |
| Athyriaceae | *Diplazium esculentum* (Retz.) Sw. | Paku aia | Vegetables | Leaf | Wild |
| Pandanaceae | *Pandanus amaryllifolius* Roxb. ex Lindl. | Pandan | Spices | Leaf | Cultivated |
| Mackinlayaceae | *Centella asiatica* (L.) Urb. | Pigago | Vegetables | Leaf | Wild |
| Musaceae | *Musa paradisiaca* L. | Pisang | Fruits, vegetables | Fruits, flower | Cultivated |
| Rosaceae | *Rubus alceifolius* Poir. | Rabai-rabai | Fruits | Fruits | Wild |
| Sapotaceae | *Manilkara zapota* (L.) P.Royen | Saos | Fruits | Fruits | Cultivated |
| Muntingiaceae | *Muntingia calabura* L. | Seri | Fruits | Fruits | Cultivated |
| Fagaceae | *Castanopsis argentea* (Blume) A.DC. | Sikasiah | Proteins | Seed | Wild |
| Opiliaceae | *Champereia manillana* (Blume) Merr. | Siminyak | Vegetables | Leaf | Wild |
| Asparagaceae | *Dracaena angustifolia* (Medik.) Roxb. | Suji | Spices | Leaf | Cultivated |
| Araliaceae | *Polyscias scutellaria* (Burm.f.) Fosberg | Tapak leman | Spices, vegetables | Leaf | Cultivated |

*Vegetables*

Minangkabau people utilize 66 species as vegetables (Table 1), of which 24 species are the main ingredients of *rendang daun*, namely *A. octandra* var. *malesiana, T. sureni, E. acuminata, A. bilimbi, L. indica, S. siamea, E. acuminata, D. esculentum, P. lunatus, M. hirta, S. alata, M. malabathricum, C. hastata, P. scutellaria, H. patens, P. americana, T. cacao, B. androgyna, M. esculenta, V. unguiculata, G. gnemon, C. manillana, H. sabdariffa,* and *O. tenuiflorum.* Two species, *A. octandra* var. *malesiana* and *L. indica,* are the most widely known and preferred plants for *rendang daun* because they produce leaves with good flavor and crunchy texture. The use of *L. indica* as a vegetable has not been reported. However, this plant has long been known by people in Asian countries such as India, Malaysia, Thailand, Nepal and India as traditional medicine (Kekuda et al. 2018).

*Rendang daun* is the cultural wisdom of the Minangkabau people in Lima Puluh Kota District in utilizing natural biodiversity. *Rendang daun* is usually served in daily dishes and traditional and religious cultural events. This custom has been practiced for a long time. People through their experience choose plants that can be used as *rendang daun*. Based on the interview with the informants, previously they knew about 40 species of plants as ingredients for *rendang daun.* However, currently they only utilize 24 species. This *rendang daun* dish is only found in the traditional villages (i.e. Maek, Andiang and Galugua). This knowledge is vulnerable to being eroded by modernization and globalization, and it is feared that in the future *rendang daun* dishes will no longer be served. Therefore, it is important to document and promote awareness of plant ingredients and cooking *rendang daun* so that this cuisine will be widely known, just like beef rendang. *Rendang daun* is believed to last longer than beef rendang and is suitable for vegetarians.

The characteristics of the preferred plant species for *rendang daun* are plants with red leaf tips, sour leaves, or hairy leaves. People consider plants with these criteria since they taste good when cooked into rendang. In addition, the sour taste in plants is due to phenol compounds which are antibacterial and antioxidants (Beya et al. 2021), so it might make 'rendang daun' last longer. The seasoning for *rendang daun* is different from beef rendang. The *rendang daun* does not use cinnamon, pepper and star anise. *Rendang daun* is cooked in coconut milk and seasoned with leaves and rhizomes of tumeric (*C. longa*), chili pepper (*C. annuum*), clove (*S. polyanthum*),

leaves of *C. aurantiifolia*, rhizomes of ginger (*Z. officinale*), and *A. galanga*, and red onion (*A. cepa*).

Other vegetables often used by the Lima Puluh Kota people are *M. esculenta* leaves, *A. heterophyllus* young fruits, *D. esculentum* leaves, and *C. gigantea* stalks. These vegetables are cooked in stir fry, *gulai*, and *pongek*. *Gulai* and *pongek* are foods processed using coconut milk. *Gulai* is not the same as curry, but has many similarities; while *pongek* is a *gulai* that is cooked until it dries up (not gravy).

*Source of fruits*

A total of 55 plants species are used as sources of fruits (Table 1), e.g., *D. zibethinus*, *H. reticulata*, *B. racemosa*, *B. macrocarpa*, *B. motleyana*, *B. deflexa*, *M. sumatrana*, *P. sumatrensis*, and others. The fruits of *B. macrocarpa*, *B. deflexa* and *B. motleyana* have antimicrobial and anticancer activity due to the content of alkaloid and terpenoid compounds (Sofiyanti et al. 2022). These fruits are generally sweet or sour when consumed fresh or raw. The fruit that people like more is *B. polyneura* called *sijontiak* (finger snapping) because the fruit will break when snapped with fingers.

*Source of spices*

A total of 41 species of food plants are utilized as spices. The common species used are *C. annuum*, *C. nucifera*, *C. longa*, *Z. officinale*, *E. elatior*, and *H. scyphifera* var. *fusiformis*. These spices are always available in the kitchen which is related to Minangkabau culinary specialties which are spicy and rich in taste. Chili pepper (*C. annuum*) is an important spice for the Minangkabau people, regardless of the type of food cooked (Nurainas et al. 2022). *C. nucifera* is utilized by the community as vinegar made from coconut water. The flowers of *H. scyphifera* var. *fusiformis* is usually used as a spice for *gulai* and *pongek* so that it has a distinctive aroma and taste. Flowers of *H. scyphifera* var. *fusiformis* is a healthy food ingredient because it is reported to have several antioxidant compounds (Hashim et al. 2018).

*Sources of beverages*

Six plant species are used for beverages (Table 1), namely *C. nucifera*, *S. officinarum*, *P. lunatus*, *A. pinnata*, *C. barbata*, and *C. robusta*. People use both seeds and leaves of *C. robusta* to make a coffee drink. The leaves are dried by smoking them on a wood stove and the drink is made of the *C. robusta* leaves called *kopi kawa*. This drink is prepared by boiling dried leaves; then the boiled water is served in a special cup made from coconut shells and placed on a placemat made from bamboo.

**Parts plants used**

The Minangkabau people use food plants primarily obtained from fruits (79 species), followed by leaves (54 species), seeds (15 species), flowers (8 species), tubers (7 species), rhizomes (4 species), shoots (4 species), stems (1 species) and barks (1 species). Other ethnic groups in Indonesia use the same parts of food plants (Amboupe et al. 2019; Pawera et al. 2020; Silalahi et al. 2021). The fruits of various plants have various uses. Some edible fruits can be consumed fresh. Some other fruits, such as the young fruits of *M. paradisiaca* and *D. zibethinus*, are cooked into side dishes; other fruits are used as spice. The leaves of various plant species can be used for vegetables, spices, and beverages. Leaf vegetables are often cooked into *gulai*, *pongek*, and *rendang*. The leaves used for spices include *temulawak* while leaves that can be made into drinks include *P. lunatus*. The use of leaves has several advantages since they are abundant, and available throughout the year.

Seeds as a food source contain complex micronutrients and macronutrients such as proteins, carbohydrates, fats, and various minerals (Cervera-Mata et al. 2021). Therefore, seeds are often used as a source of carbohydrates, protein, vegetables, spices and drinks. Plant tubers are generally used as a source of carbohydrates, but people do not use them as a staple food source. Flowers used as vegetables include *C. fistula*, *S. edule*, *C. papaya*. Flowers can also be used as a spice, for example *E.elatior* and *H. scyphifera var. fusiformis*. Rhizomes, such as galangal, turmeric, and ginger, are generally used as spices and contain essential oils (Sotiboldieva and Mahkamov 2020; Muderawan et al. 2022). The Minangkabau people also use the shoots of several plant species as vegetables, including bamboo shoots which are rich in nutrients. Bamboo shoots contain protein, carbohydrates, vitamins, fiber, minerals and fats (Nongdam and Tikendra 2014). Minangkabau people usually use the stem of *S. officinarum* as a drink and the bark of cinnamon as spices. The use of *C. burmannii* bark as spices is commonly found in other ethnic groups in Indonesia (Susandarini et al. 2021; Jupri et al. 2022).

**Local importance values**

*Use value index*

The Use Value (UV) could indicate the plants considered the most useful to a particular group of people (Albuquerque et al. 2006). UV was determined based on the variety of uses of a species by each person and the number of people who use it. We found that the UV of the food source species varied from 0.36 to 3.40. The most important species with the highest UV in all villages are the same. The first important is *C. nucifera* (UV 2.18-3.40) and the second important is *M. paradisiaca* (UV 1.91-2.72). These two plant species are also considered the most important in tribal communities in other regions of Indonesia (Purnomo et al. 2019). Unsurprisingly, *C. nucifera* has the highest UV because Minangkabau cuisine is famous for always using coconut milk. *C. nucifera* is categorized as a source of vegetables, fruit, fats, oils, beverages; and it is used by almost the entire community.

*Local user's value index*

Local User's Value Index (LUVI) is the relative importance of a species determined from the score given by the respondent for its use as a food source (compared to other use categories, such as medicinal plants, traditional and religious plants, etc.) and the score for the cultivated status (wild versus cultivated). Respondents were asked to distribute 100 pebbles to the ten plant species they selected in each category of cultivation status. We found 26-37 cultivated plant species and 16-28 wild species selected as

an important species in six villages. Respondents in all six villages rated *O. sativa* as the first important species of cultivated plant (LUVI 4.02-4.58%) and *C. nucifera* as the second important species (LUVI 1.59-2.74%). Interestingly, the most important wild plant species are different for each village. *A. jiringa* is considered the most important in the villages of Maek, Galugua and Koto Alam (LUVI 1.24-1.05%), possibly because of its usefulness and economic value. The most important species in other villages are *B. racemosa* (LUVI 0.70%) in Andiang Village, *H. scyphifera* var. *fusiformis* (LUVI = 1.22%) in Koto Tinggi Village, and *Parkia speciosa* (LUVI = 0.87%) in Guguak VIII Koto Village. Those plants are important ingredients or spices for cooking various side dishes.

*Index cultural significance*

Index Cultural Significance (IC) is a value that indicates the utilization of a plant species based on quality value (usefulness), intensity and exclusivity of utilization by the community. Based on the ICS assessment of cultivated plants, *C. nucifera* has scored higher than *O. sativa* in all villages (ICS = 103-148). This species has more than one utilization category as a food plant, such as fruits, vegetables, fats, oils, spices and beverages. In addition, its leaves are used for food wrapping; its stem is used for house or bridge construction; the fronds and shell for firewood; its fruit for medicine; and coconut pulp for natural pesticide mixtures and floor polish. The intensity and preference of utilization *O. sativa* and *C. nucifera* did not differ, but *C. nucifera* has the highest value due to the higher utilization score. *O. sativa* has the second highest ICS score (ICS = 83-98). This species has other uses, such as its straw for cattle or buffalo feed and organic fertilizer; its bran for fish feed and natural pesticide mixture; and its rice for medicinal and cosmetic ingredients.

The species of wild food plants with the highest ICS value differ in each village. *D. asper* is the wild food plant with the highest ICS value (ICS=32) in Maek Village. This species has other uses as building materials and crafts. *Arenga pinnata*, apart from being used as a source of fruit, drinks, and sugar also has other uses as building materials, firewood, and palm fiber, so it has the highest ICS value (ICS = 46) in Andiang Village. *A. pinnata* also has the highest ICS value (ICS=48) in Koto Alam Village that has other uses as medicine and building materials. For the people of Galugua Village, *M. foetida* has the highest ICS value (ICS=30) because its stems are used as building materials by the community with moderate utilization intensity. *E. elatior* has the highest ICS value (ICS=57) in Koto Tinggi Village because besides being used as a spice, it is also used as a cough medicine, fever, and high blood pressure. *B. racemosa* has the highest ICS value (ICS=24) in Guguak VIII Koto Village because the community uses its stems as building materials.

*Economic value*

A total of 15 plant species has economic value as a main or additional source of income (Table 2). Rice (*O. sativa*) has the highest economic value in the Maek, Andiang, Galugua, and Guguak VIII Koto villages. The selling price of local rice is relatively high and the people in these villages have relatively large paddy fields with extent of 2,500-5,000 $m^2$ per household. Rice production in Andiang Village is higher than in other villages.

Durian (*D. zibethinus*) has a higher economic value than rice for people in Koto Alam Village. They cultivate durian in yards, gardens, and fields. Local durian cultivars from the village, *durian kunyik* and *durian tembago* are well known for their delicious taste. The selling price of these durians ranges from IDR 5,000 to IDR 10,000 per fruit.

The people's economy in Koto Tinggi, a village in the hills (837 masl), is supported by the cultivation of the oranges (*C. aurantium*) local cultivar Jesigo, which has been released as a superior national variety. The cultivar Jesigo (*jeruk siam gunung omeh*) has a sweet fruity taste and is cultivated in the highlands. The selling price of these oranges is an average of IDR 8,000/kg. This orange has been marketed outside the province of West Sumatra.

**Table 2.** Economic value per household per year (IDR) of food plants at the six villages in Lima Puluh Kota District, West Sumatra Province, Indonesia

| Species | Maek | Andiang | Galugua | Koto Alam | Koto Tinggi | Guguak VIII Koto |
|---|---|---|---|---|---|---|
| *Oryza sativa* | 14.400.000* | 27.375.000* | 7.500.000* | 6.250.000 | 10.000.000 | 17.250.000* |
| *Cocos nucifera* | 8.640.000 | 720.000 | 3.960.000 | 1.800.000 | 1.800.000 | 11.880.000 |
| *Musa paradisiaca* | 576.000 | 336.000 | 336.000 | 384.000 | 1.800.000 | 912.000 |
| *Vigna unguiculata* | 2.712.000 | 336.000 | 2.500.000 | 625.000 | 1.680.000 | 3.125.000 |
| *Archidendron jiringa* | 8.000.000 | 6.000.000 | 4.000.000 | 6.000.000 | 1.200.000 | 2.000.000 |
| *Parkia speciosa* | 1.800.000 | 1.800.000 | 3.600.000 | 5.400.000 | 1.800.000 | 1.800.000 |
| *Durio zibethinus* | 5.000.000 | 8.750.000 | 4.500.000 | 17.500.000* | 5.000.000 | 10.500.000 |
| *Theobroma cacao* | 288.000 | 1.344.000 | 192.000 | 240.000 | - | 2.400.000 |
| *Capsicum frutescens* | - | 2.000.000 | 2.880.000 | 3.110.000 | 5.760.000 | 4.810.000 |
| *Capsicum annuum* | 13.400.000 | 5.600.000 | - | 4.020.000 | - | 10.020.000 |
| *Arachis hypogaea* | 3.750.000 | - | 3.000.000 | - | - | 2.400.000 |
| *Citrus aurantium* | - | 8.440.000 | - | - | 46.990.000* | - |
| *Baccaurea racemosa* | - | 120.000 | - | - | - | - |
| *Baccaurea polyneura* | - | 160.000 | - | - | - | 120.000 |
| *Hornstedtia scyphifera* var. *fusiformis* | - | - | - | - | 192.000 | - |

Note: *The highest economic value in each village

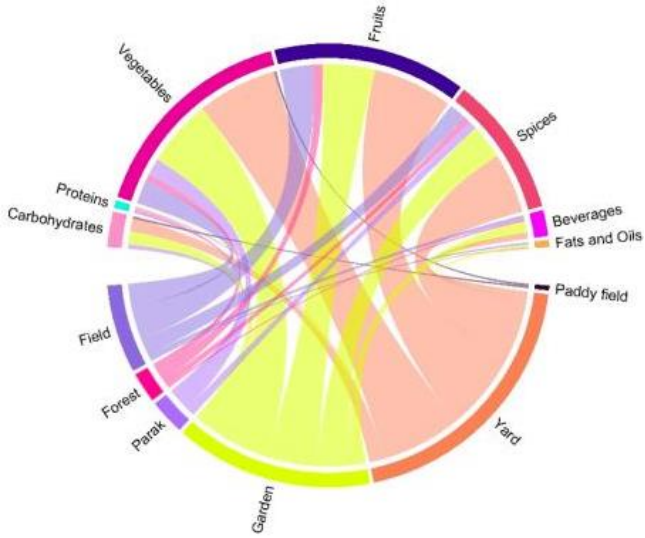


**Figure 3.** Landscapes as sources of particular categories of food plants, the thicker line stream represent more species of food plant are found in that landscape

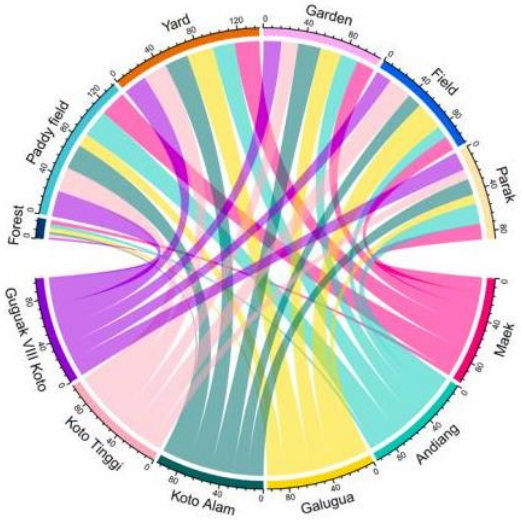


**Figure 4.** The importance of particular landscapes was scored by respondents through the pebble distribution method in six villages. Notes: the scale indicates the importance value

*The importance of landscapes*

The food plants are gathered from various landscapes (Figure 3), namely *laman* (yard), *kobun* (garden), *parak* (dried paddy field in the dry season planted with secondary crops), *ladang* (field), *sawah* (paddy field), and *rimbo* (forest). Some plant species could be found in several landscapes, such as *D. zibethinus* and *C. nucifera* which are often planted in yard, garden, and field. Other plants are found in a specific landscape, such as *S. siamea*, *C. argentea* and *H. patens* which are only found in forest. The highest diversity of food plants is found in the yard (92 species). This indicates the yard is important in providing food. Utilization of the yard with a variety of food crops is one of the sustainable agricultural practices to improve food security and build local food systems (Galhena et al. 2013). The yards might provide species used as sources of carbohydrates, proteins, fats, vegetables, fruits, spices, and beverages (Figure 3). In contrast, the paddy field is the most homogeneous landscape. It is used for growing semi-aquatic crops, especially rice; but people can also get vegetables from the leaves of *P. vaginalis* which often grows as a weed in the paddy fields.

Based on people's perceptions, the importance of landscapes ranges from 1.88 to 27.60 (Figure 4). Paddy fields are the most important landscape in all villages except Galugua. The people in Galugua Village attach great importance to fields, instead of the paddy fields. The Galugua people use the fields to grow dry land rice (*padi ladang*). It appears that people place a high value on landscapes with function to grow rice which is the staple food and important source of income (Table 2).

The second most important landscape is the yard. This is understandable because people can get fruits, vegetables, spices and other things from plants in their yards. In addition, some plants in the yard also have economic value, such as *M. paradisiaca* and *C. nucifera*. The gardens are the third most important landscape in Maek, Galugua and Koto Alam. They generally have large gardens to plant with annual and perennial crops with high economic value, such as *D. zibethinus.* The people of Koto Tinggi value their fields as the third most important landscape where they cultivate oranges (*C. aurantium*) which play a large part in their income (Table 2). Meanwhile, *parak* is the third most important landscape for the people of Andiang and Guguak VIII Koto. *Parak* is often planted with fast-harvesting crops, such as *C. annuum*, *C. frutescens*, and *V. unguiculata*, to increase their income.

In conclusions, Minangkabau people in Lima Puluh Kota District utilize 154 plant species belonging to 51 families as the sources of carbohydrates, proteins, fats and oils, fruits, vegetables, spices and drinks. However, the use of 24 plant species for *rendang daun* was reported only from traditional villages. Accordingly, it is important to preserve the knowledge and tradition of *rendang daun*. People value cultivated plants more than wild plants. The most important food plant based on the perception and culture of the Minangkabau people in Lima Puluh Kota District is *O. sativa* which serves as a staple food source and the main source of income for most people. Apart from that, *C. nucifera* is an irreplaceable ingredient in various dishes. Among the economically valuable species, *O. sativa*, *D. zibethinus*, and *C. aurantium* are the cultivated plants that contribute the most to household income. The landscape with the highest diversity of food plants is the yard, but based on community perceptions, the landscape considered the most important is the landscape that provides staple food (rice), namely paddy fields and fields. The findings of this study provide basic information for the preservation and development of local culinary delights such as *rendang daun* and the diversity of local food plant species. Further research is needed to support this goal, for example the nutritional value of local food sources and genetic resources of local cultivars, such as rice and durian, which are valuable in developing superior cultivars.

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