Ethnobotanical Study of Plants Used by People in Labuhan Ratu Village, East Lampung Regency

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Abstract. The aim of the research was to identify the ethnobotanical (diversity of plant) used by people in East Lampung. Data was collected through literature review, field observation, and sampling, interview (informant selected using purposive sampling and snowball sampling techniques), discussion, and also observation and identification of the plant. All types of data and information were analyzed descriptively. The result showed that many plants are used by people of Labuhan Ratu Village, East Lampung Regency. They were used as food sources, medicines, building materials, ornamental plants, ritual materials, and craft materials.

1. Introduction
Indonesia is a mega biodiversity country with second ranks in the world after Brazil. Indonesia has resources and biodiversity that are very important for the survival of the community. Indonesia is also a mega cultural diversity country with a diversity of cultures of various ethnic populations. Each ethnic group plays a role in contributing local knowledge to use of natural resources in their environment. The traditional and simple pattern of natural resource utilization is the potential in the effort to utilize sustainable natural resources.

Traditional communities have the potential to conserve biological resources. Traditional conservation practices are inseparable from the indigenous knowledge of the community because based on this knowledge, the community practices typical conservation rules in their area. Traditional conservation is basically a system of local knowledge obtained from human interaction with the environment and all aspects of its culture so that it becomes very operational in the community [1]. In order to find out the relationship between humans and natural resources and the environment, ethnobiology studies are used [2], one of the main studies is ethnobotany which specifically discusses the diversity of plants in specific ethnic groups. Ethnobotany is able to produce historical and ecological interactions between people and plants [3].

2. Method
Data was collected through literature review, field observation and sampling, interview (informant selected using purposive sampling and snowball sampling techniques), discussion, and also observation and identification of the plant. All types of data and information were analyzed descriptively.

3. Result and Discussion
This research has been realized in July 2018 in Labuhan Ratu Village, Labuhan Ratu Subdistrict, East Lampung Regency. The number of respondents in this study was 25 people. Characteristic of the distribution of Lampung tribe in Labuhan Ratu village are people whose houses are located on the
main road access, while migrants such as Javanese and Sundanese people inhabit the inner part of a village, not in the main road access.

There are 72 species of plants used by Labuhan Ratu villagers for various purposes such as food sources (40 species), medicines (14 species), building materials (11 species), ornamental plants (9 species), ritual materials (3 species), and craft materials (1 species). The following is presented data on plant species used by Labuhan Ratu villagers with the scientific names of plants, local names, families, uses, and parts used.

Table 1. Plant Species Used as Food Sources.

| Number | Scientific Name                        | Local Name (Indonesian) | Family  | Part Used |
|--------|----------------------------------------|-------------------------|---------|-----------|
| 1.     | Cymbopogon nardus (L.) Rendle          | Serai Wangi             | Poaceae | Rhizome   |
| 2.     | Saccharum officinarum L. Artocarpus heterophyllus Lam. | Tebu                  | Poaceae | Stem      |
| 3.     | Nephelium lappaceum L.                 | Rambutan                | Sapindaceae | Fruit      |
| 4.     | Theobroma cacao L.                     | Coklat (Kakao)          | Sterculiaceae | Fruit  |
| 5.     | Musa paradisiaca L.                    | Pisang                  | Musaceae | Fruit      |
| 6.     | Cosmos caudatus Kunth.                 | Kenikir                 | Asteraceae | Leaf     |
| 7.     | Syzygium aqueum (Burm. f.) Alston      | Jambu Air               | Myrtaceae | Fruit      |
| 8.     | Anacardium occidentale L.              | Jambu Mente             | Anacardiaceae | Fruit          |
| 9.     | Mangifera indica L.                   | Mangga                  | Anacardiaceae | Fruit      |
| 10.    | Manihot esculenta Crantz               | Singkong                | Euphorbiaceae | Tuber, leaf |
| 11.    | Curcuma longa L.                       | Kunyit                  | Zingiberaceae | Rhizome  |
| 12.    | Zingiber officinale Rosc. Etlingera elatior (Jack) R. M. Sm. | Jahe               | Zingiberaceae | Rhizome  |
| 13.    | Manilkara zapota (L.) P. Royen        | Unji                    | Zingiberaceae | Stem     |
| 14.    | Alpinia galanga (L.) Sw.               | Sawo                    | Sapotaceae | Fruit      |
| 15.    | Capsicum frutescens L.                 | Cabai                   | Solanaceae | Fruit      |
| 16.    | Piper nigrum L.                        | Lada                    | Piperaceae | Fruit      |
| 17.    | Citrus sp.                            | Jeruk Kunci             | Rutaceae | Fruit      |
| 18.    | Carica papaya L.                      | Pepaya                  | Caricaceae | Fruit, leaf |
| 19.    | Ocimum basilicum L.                   | Kemangi                 | Lamiaceae | Leaf       |
| 20.    | Durio zibethinus Murray Salacca zalacca (Gaertn.) Voss | Durian                | Bombacaceae | Fruit      |
| 21.    | Salak                                 | Salak                   | Arecaceae | Fruit      |
| 22.    | Sauropus androgynus (L.) Merr.         | Katuk                   | Euphorbiaceae | Leaf      |
| 23.    | Cyclea barbata Miers                  | Cincau                  | Menispermaceae | Leaf      |
| 24.    | Pandanus amaryllifolius Roxb.          | Pandan                  | Pandanaceae | Leaf       |
| 25.    | Persea americana Mill.                | Alpukat                 | Lauraceae | Fruit      |
| 26.    | Annona squamosa L.                    | Srikaya                 | Annonaceae | Fruit      |
| 27.    | Lansium domesticum Correa             | Duku                    | Meliaceae | Fruit      |
| 28.    | Colocasia esculenta (L.)              | Talas                   | Araceae | Stem, tuber |


The number of plant species used as food sources dominates the utilization category of all tabulated data (Table 1) because the food is one of the basic needs of people. Plant parts used as food sources include rhizome, stem, fruit, leaf, and tuber. The tradition found in Lampung people in the use of plant species as food is "nyeruit." "Nyeruit" tradition uses unji and small orange “jeruk kunci” to be eaten together with chili sauce and fried fish or grilled fish. Seruit is a typical ethnic Lampung food. Seruit is a mixture of chili sauce, grilled shrimp paste, grilled onion, then mixed with a little water. Various foods such as fish, boiled eggplants, and oyong can be eaten along with seruit. Almost every day, all kinds of food from Lampung people always there are seruit or at least chili shrimp paste [4].

Table 2. Plant Species Used as Medicines.

| Number | Scientific Name | Local Name (Indonesian) | Family | Function | Part Used |
|--------|----------------|-------------------------|--------|----------|-----------|
| 1.     | Cymbopogon nardus (L.) Rendle | Serai Wangi | Poaceae | Sprains | Rhizome |
| 2.     | Curcuma longa L. | Kunyit | Zingiberaceae | Gastric pain, sprained pain | Rhizome |
| 3.     | Zingiber officinale Rosc. | Jahe | Zingiberaceae | Rheumatic, sprains | Rhizome |
| 4.     | Citrus aurantiifolia (Christm.) Swingle | Jerup Nipis | Rutaceae | Cough | Fruit |
| 5.     | Piper betle L. | Sirih | Piperaceae | Skin disease | Leaf |
| 6.     | Hibiscus sabdariffa L. | Rosela | Malvaceae | High blood pressure | Flower |
| 7.     | Orthosiphon stamineus Benth. | Kumis | Lamiaceae | High blood pressure | Flower |
| 8.     | Garcinia parvifolia Miq. | Asam Kandis | Clusiaceae | Fever | Fruit |
| 9.     | Annona muricata L. | Sirsak | Annonaceae | High blood pressure | Leaf |
| 10.    | Tinospora crispa (L.) Miers | Putra Wali | Menispermaceae | Diabetes, malaria | Stem |
| 11.    | Jatropha curcas L. | Jarak Pagar | Euphorbiaceae | Thrush | Fruit sap |
| 12.    | Psidium guajava L. | Jambu Batu | Myrtaceae | Diarrhea | Leaf |
Species that are used as medicinal plants include plants to cure sprains, gastric pain, rheumatic, cough, skin disease, high blood pressure, fever, diabetes, malaria, thrush, and diarrhea. Plant parts used as medicine include rhizome, fruit, leaf, flower, fruit sap, and stem gum (Table 2).

Table 3. Plant Species Used as Building Materials.

| Number | Scientific Name         | Local Name (Indonesian) | Family       |
|--------|-------------------------|-------------------------|--------------|
| 1      | *Acacia mangium* Willd. | Akasia                  | Fabaceae     |
| 2      | *Tectona grandis* L.f.  | Jati                    | Verbenaceae  |
| 3      | *Intsia bijuga* (Colebr.) Kuntze | Merbau               | Fabaceae     |
| 4      | *Litsea angulata* Bl.   | Mangga                  | Lauraceae    |
| 5      | *Durio zibethinus* Murray | Durian                | Bombacaceae  |
| 6      | *Samanea saman* (Jacq.) Merr. | Trembesi             | Fabaceae     |
| 7      | *Peronema canescens* Jack. | Sungkai              | Verbenaceae  |
| 8      | *Albizia chinensis* (Osbeck) Merr. | Sengon             | Fabaceae     |
| 9      | *Dendrocalamus* sp.     | Bambu                   | Poaceae      |
| 10     | *Hibiscus tiliaceus* L. | Waru                    | Malvaceae    |
| 11     | *Melia azedarach* L.    | Mindi                   | Meliaceae    |

House of the villagers of Labuhan Ratu has been modernized so many people do not use the Lampung traditional house, “rumah panggung.” However, some houses in Labuhan Ratu Village still maintain the architectural form of traditional Lampung houses, “rumah panggung” that use wood materials. Of the 11 woody species used as building materials, merbau wood is believed to be the strongest wood used by the people to build “rumah panggung” (Figure 1).

Residential houses with traditional architecture can be found with very striking characteristics, namely “rumah panggung” made of wood and generally dark because the wood used is merbau or kenango wood. The houses have sturdy poles and the walls are made of wooden boards. The shape of “rumah panggung” provides a space under the house, which is the space between the ground surface and the bottom of the floor of the house which is known as under house (bah lamban). Traditionally, the bottom of this house is usually used as a livestock barn, a place to pound rice, as well as a place to store agricultural or household equipment. In the past, the lower part of the room was not used specifically, only to avoid animal threats and flooding [5].

Some parts of the house such as house poles, walls of houses, floors of houses, and doors of houses in Kampung Wana use merbau wood as their raw material. Merbau wood is hard and strong wood material and can release a kind of oil that can prevent attacks by wood-eating insects such as termites [4]. Merbau wood was first taken from the forest, but now it is no longer found (extinct). Merbau has been used since ancient times for human needs without planting or cultivating. Wood which is still often used as building material includes acacia wood, teak, manggah, durian, trembesi, sungkai, sengon, bamboo, waru, and mindi (Table 3) to build a modern house (Figure 2) or just renovate an old “rumah panggung.”
Figure 1. Lampung traditional house.

Figure 2. Modern house with raw material in wood and bamboo.

Some wood is also used in making equipment for begawi traditional rituals (wedding) (Figure 3) such as merbau, teak, and sapodilla.

Figure 3. Equipment in Begawi Traditional Ritual.
Table 4. Plant Species Used as Ornamental Plants.

| Number | Scientific Name                   | Local Name (Indonesian) | Family            |
|--------|----------------------------------|--------------------------|-------------------|
| 1.     | *Syzygium oleina* Korth.         | Pucuk Merah              | Myrtaceae         |
| 2.     | *Celosia cristata* L.            | Jengger Ayam             | Amaranthaceae     |
| 3.     | *Hibiscus rosa-sinensis* L.      | Bunga Sepatu             | Malvaceae         |
| 4.     | *Impatiens balsamina* L.         | Pacar Air                | Balsaminaceae     |
| 5.     | *Nothopanax scutellarium* Merr.  | Mangkokan                | Araliaceae        |
| 6.     | *Catharanthus roseus* (L.) G. Don| Tapak Dara               | Apocynaceae       |
| 7.     | *Aloe vera* (L.) Burm. f.        | Lidah Buaya              | Asphodelaceae     |
| 8.     | *Anthurium plowmanii* Croat.    | Gelombang Cinta          | Araceae           |
| 9.     | *Ixora coccinea* L.              | Bunga Soka               | Rubiaceae         |

Species used as ornamental plants are shown in Table 4. There were 9 species of plants successfully tabulated. These species are mostly found in the yard, not far from the main house of people. This plant serves to beautify the appearance of the yard of the people's house.

Table 5. Plant Species Used as Ritual Material.

| Number | Scientific Name                   | Local Name (Indonesian) | Family            | Function                  | Part Used |
|--------|----------------------------------|--------------------------|-------------------|---------------------------|-----------|
| 1.     | *Cananga odorata* (Lamk.) Hook.  | Kenanga                  | Annonaceae        | Funeral ritual             | Flower    |
| 2.     | *Areca catechu* L.               | Pinang                   | Arecaceae         | Begawi traditional ritual  | Stem      |
| 3.     | *Aquilaria malaccensis* Lam.     | Gaharu                   | Thymelaeaceae     | Rituals (incense, fragrance oil) | Wood     |

There are 3 species that are utilized by Labuhan Ratu villagers to perform traditional rituals such as kenanga flowers for funeral rituals, pinang stems for begawi traditional rituals, and gaharu wood which is used for incense and perfume (Table 5).

Table 6. Plant Species Used as Craft Materials.

| Number | Scientific Name     | Local Name (Indonesian) | Family | Function                          | Part Used  |
|--------|---------------------|-------------------------|--------|-----------------------------------|------------|
| 1.     | *Dendrocalamus* sp. | Bambu                   | Poaceae | The raw material for making tampah, caping, besek | Wood       |

Bamboo is a species of plant as a craft material for making tampah, caping, and besek (Table 6, Figure 4).
4. Conclusion
There are 72 species of plants used by Labuhan Ratu villagers for various purposes such as food sources (40 species), medicines (14 species), building materials (11 species), ornamental plants (9 species), ritual materials (3 species), and craft materials (1 species).

5. References
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