

LANDRACES, UTILIZATION, AND MANAGEMENT OF BAMBOO IN SUKAMENAK VILLAGE, SUMEDANG, WEST JAVA

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ABSTRACT. There are many species of bamboo a rural ecosystem of West Java, growing wild or being cultivated. Both bamboo species and bamboo gardens have various ecological, economic, and socio-cultural functions. However, many bamboo gardens in rural West Java have been converted to other land uses. Consequently, the reduction or loss of various ecological, economic and socio-cultural functions of bamboo. The purpose of this study was to assess the local knowledge of the rural people on the landraces, utilization, and management of bamboos among rural people of Sukamenak Village, Sumedang of West Java. The method used in this study was mixed-method, a combination of qualitative and quantitative with an ethnobotanical approach. Some techniques, including observation and in-depth interviews with competent informants were employed. Data analysis was carried out by cross-checking, summarizing and synthesizing, and building up narrative. The results showed that 9 bamboo landraces were recorded in Sukamenak Village. The nine landraces of bamboo are classified by local people according to the morphology and color of the internode, edible and non-edible shoots, and their ecological functions in the rural ecosystem. The landraces of bamboo are commonly used by rural people for economic, social and ecological purposes. The utilization and management of bamboo gardens are undertaken by rural people based on local knowledge and are strongly embedded with local culture. We suggest the further studies on bamboo ethnoecology need to be continued due to bamboos have various socio-economic, cultural and ecological functions.

Keywords: bamboo; conservation; local knowledge; utilization; Sukamenak Village

KERAGAMAN PEMANFAATAN, DAN PENGELOLAAN BAMBU DI DESA SUKAMENAK, SUMEDANG, JAWA BARAT

ABSTRAK. Jenis-jenis bambu di kawasan perdesaan Jawa Barat banyak ragamnya, tumbuh secara liar atau dibudidayakan. Jenis-jenis bambu dan kebun bambu memiliki aneka ragam fungsi bagi ekologi, ekonomi, dan sosial budaya. Namun, banyak kebun bambu di perdesaan Jawa Barat dikonversikan menjadi tataguna lahan lain. Konsekuensinya, berkurang atau hilangnya berbagai fungsi ekologi, ekonomi dan sosial budaya bambu. Tujuan penelitian ini mengkaji pengetahuan penduduk tentang variasi, pemanfaatan, dan pengelolaan bambu di Desa Sukamenak, Sumedang, Jawa Barat. Metoda yang digunakan metoda kombinasi, kualitatif dan kuantitatif, dengan pendekatan etnobotani. Beberapa teknik, seperti observasi dan wawancara mendalam dengan informan kompeten. Analisis data dilakukan dengan pemeriksaan silang, perangkuman dan mensintesis, dan membuat narasi secara runut. Hasil penelitian menunjukkan bahwa terdapat 9 variasi bambu di Desa Sukamenak, Sumedang. Kesembilan variasi bambu tersebut diklasifikasi oleh penduduk berdasarkan morfologi dan warna ruas bambu, rebung dapat dimakan dan tidak dapat dimakan, dan fungsi ekologi di ekosistem. Jenis-jenis bambu biasa dimanfaatkan penduduk untuk kepentingan ekonomi, sosial, dan ekologi. Sementara itu, pemanfaatan dan pengelolaan bambu oleh penduduk dilakukan berlandaskan pengetahuan lokal dengan lekat budaya. Kami menyarankan studi etnoekologi bambu dilanjutkan mengingat bambu memiliki aneka ragam fungsi sosial-ekonomi, budaya, dan ekologi.

Kata kunci: bamboo; konservasi; pengetahuan lokal; pemanfaatan; Desa Sukamenak

INTRODUCTION

There are many species of bamboo in the world. Indonesia is a country that has a high diversity of bamboo species. In Indonesia, at least 176 species of bamboo are documented or 10.76% of the total 1642 species of bamboo in the world (Voronsova et al., 2016; Widjaja 2019, 2021). Among the 176 species of bamboo in Indonesia, 60 species are

recorded in Java Island, with 9 species of which are endemic bamboo species found only on the island of Java. Meanwhile, various research results in rural areas of West Java, has also fairly high various bamboo species. For example, in Kampung Naga, Tasikmalaya, West Java, 7 species and variations have been recorded, and in Karangwangi Village, South Cianjur, 14 species have been recorded (Setiawati et al, 2017).

Bamboo species have a wide distribution in nature, found in diverse ecosystems, including the lowlands, on the river banks and moist swamps, in dry and wet areas, to forests in the mountains (Kelchner 2013; Buziquia et al., 2019; Paudyal et al., 2019). Besides growing wild, bamboo species are also found in various types of agroecosystems, such as home gardens, mixed gardens, and *talun* system (Iskandar and Iskandar, 2011).

These species of bamboo have various benefits, for the economy, socio-culture and ecology in a rural ecosystems (Partasmita et al., 2017; Setiawati et al., 2017; Irawan et al, 2019). However, nowadays, due to the increasing population, and the influence of the infiltration of the market economy system in rural areas, many bamboo gardens in the villages are being converted into other uses, such as commercial vegetable farming, settlements and other land uses (Iskandar and Iskandar, 2016; Amelia et al., 2018). Bamboo is considered economically unprofitable compared to commercial vegetable gardens. In fact, bamboos have many functions, such as besides having economic functions, they also have social, cultural and ecological functions (Partasmita et al., 2017; Akoto et al., 2018; Sharma et al., 2018; Abdullah et al., 2019; Paudyal et al., 2019).

Consequently, bamboo gardens are decreasing, the diversity of bamboo species is also decreasing, and the risk of loss of ecological functions of bamboo gardens, such as for carbon sequestration, maintaining the balance of the hydrological system, controlling soil erosion and landslides, and rare animal habitats, including Java slow loris (*Nycticebus javanicus*), and heron and egret birds (Iskandar and Iskandar, 2016; Amelia et al., 2018; Iskandar and Iskandar, 2020). Therefore, the existence of bamboo gardens in rural areas is very important to maintain sustainability, and various studies, such as studies on bamboo ethnobotany, are very important to be carried out in various rural areas, to understand the various changes in the social system of society and bamboo ecosystems in rural areas.

The purpose of this study was to assess the local knowledge of the village people on the landraces, utilization, and management of bamboo among rural people of Sukamenak Village, Sumedang of West Java.

METHOD

Research was conducted in Sukamenak village, during 1-31 July 2020, before the Covid-19 pandemic. Sukamenak village is one of the villages in the Darmaraja Sub-district, Sumedang District,

West Java. This village consists of 2 hamlets namely Munjul and Pasir Lempah hamlet. The total area of Sukamenak Village is about 40 hectares. The location is directly adjacent to the Jatigede Reservoir. Topographically, Sukamenak Village is located at an altitude between 130-280 m above sea level, with a land slope of about 20°-45°.

Based on village administrative data, the population of Sukamenak Village in 2018 was recorded at 1,650 people, consisting of 550 households (Head of Families) (Rohmatullayaly et al., 2021). The conversion of agricultural land as a result of the construction of the Jatigede Reservoir has resulted in the loss of a lot of agricultural land for the rural people of the Jatigede Reservoir.

The method used in this study was a mixed, qualitative and quantitative method with an ethnobotany approach (Albuquerque et al. 2014; Iskandar, 2018). Some techniques, including field observation, deep interview, and structured interview were employed in this study. The field observation was conducted to obtain local environment conditions, including bamboo gardens, reservoirs, and human settlements. Deep interviews were undertaken with purposely selected informants who were considered competent, for instance village heads, informal leaders, farmers who own bamboo gardens, and bamboo craftsmen. Interview referred to asking informants about their knowledge on bamboos. The informants gave extensive responses to general questions, some of which have been prepared in advance and some which arise naturally during the course of the conversation. The place and time of the interview with the informant chosen according to the wishes of the informant, and the interview was conducted in a relaxed and informal manner, so that the informants provided various information properly and completely (Iskandar, 2018).

Meanwhile, the structured interview was conducted by a total census of 15 respondents who have bamboo gardens. Qualitative data analysis was carried out by cross-checking, summarizing and synthesizing, and building up the narrative. Cross-checking was carried out from information from various informants, as well as cross-checking data from interviews with informants and observations, and from reports. The data that has been cross-checked is then summarized and synthesized, and then a narrative analysis is made with descriptive analysis. Meanwhile, quantitative data was carried out by statistical analysis by calculating the frequency of the respondent's answers to the total respondents, and the results were narrated by descriptive analysis (Newing et al., 2011).

RESULTS AND DISCUSSION

Various bamboos (landraces)

Bamboo plants by the people of Sukamenak Village, Sumedang District, like the Sundanese people in general, are usually called as *awi* or in Indonesian, it is usually called *bambu*. Based on local knowledge of the Sukamenak people, it is known that there are 9 bamboo landraces. We use the word landrace (following Soemarwoto and Iskandar, 2021 to distinguish local people of Sukamenak, Sumedang, categories for sub-division of ancestral plant species from varieties in the conventional Western taxonomic sense). Thus in this context, a landrace is the local category for grouping the bamboo plant according to characteristics reflected in specific vernacular names.

On the basis of 9 bamboo landraces according to the village community, botanically there are 6 species and sub-species of bamboo. The reason is, according to the village community, the 3 bamboo landraces, such as *Awī surat*, *Gombong* and *Gombong hideung* are only 1 species, namely *Gigantochloa verticillata* (Willd) Munro, and 2 landraces *Haur hejo* and *Haur koneng* according to the village community, but according to botany there is only 1 species, namely *Bambusa vulgaris* Schard ex. J.C. with 2 varieties, namely *Bambusa vulgaris* var. *vulgaris* and *Bambusa vulgaris* var. *striata* (Table 1).

Based on the 9 bamboo landraces, according to the people of Sukamenak Village, it can be classified (folk classification) into 3 main categories, namely based on the morphology and color of the internodes, edible and non-edible shoots, as well as their ecological functions in the village ecosystem. Based on the size of the bamboo internode, according to the residents, the 9 bamboo landraces can be divided into 3 main categories, namely the known population of small bamboo internode sizes such as *tamiang* (*Schizostachyum silicatum* Widjaja); medium size bamboo internodes, such as *awi bitung/awi hideung* (*Dendrocalamus asper* (Schult.f.) Backer ex Heyne), *awi tali* (*Gigantochloa apus* (Schult.f.)

Kurz), *awi temen* (*Gigantochloa atter* (Hassk.) Kurz) and *haur konéng* (*Bambusa vulgaris* Schard. ex J.C. Wendl.var. *striata* (Lodd.ex Lindl.) Kuntze); and the size of large bamboo internodes, namely *awi surat* (*Gigantochloa verticillata* (Wild.) Munro), *gombong héo* (*Gigantochloa verticillata* (Willd) Munro) and *gombong hideung* (*Gigantochloa verticillata* (Willd)).

Bamboo landraces are also classified by the village community as 'edible' and 'non-edible shoots'. Several landrace bamboos, including as *awi surat* (*Gigantochloa verticillata* (Wild.) Munro), *awi temen* (*Gigantochloa atter* (Hassk.) Kurz), and *haur héjo* (*Bambusa vulgaris* Schard. ex JC Wendl.var. *vulgaris*) are recognized as edible bamboo shoots, while other bamboo landraces are known as non-edible shoots. According to village people's perception, based on ecological functions, it is known that 2 landraces can have important functions to control soil erosion and landslides, namely *haur héjo* (*Bambusa vulgaris* Schard. ex JC Wendl.var. *vulgaris*) and *haur konéng* (*Bambusa vulgaris* Schard. ex JC Wendl.var. *striata* (Lodd. ex Lindl.) Kuntze (Table 2). Therefore, these 2 bamboo landraces are often planted by village people on steep lands or riverbanks for control of soil erosion, landslides, and riverbank abrasion. Other species and varieties of bamboo can be considered as serving to regulate hydrological systems, such as storing water systems in bamboo gardens.

To sum up, based on the earlier discussion, it can be inferred that the village people of Sukamenak have a profound local knowledge of bamboo diversity. The local knowledge is culturally inherited from his parents and personal experience. This local knowledge is usually embedded with the local culture of the community (Hindaryataningsih, 2016). The culture itself can be defined as everything that humans think, have, and do as members of the community (Alfian et al., 2020). Therefore, the local knowledge with embedded with culture is important for regulating community order, including for environmental management and biodiversity, including bamboos in the village.

Table 1. Various bamboo landraces based on the people and botanical names in Sukamenak Village, Sumedang West Java

| No | Vernacular name (landrace) | No | Scientific name |
|----|----------------------------|----|---|
| 1 | Awī bitung/awi hideung | 1 | <i>Dendrocalamus asper</i> (Schult. f.) Backer ex Heyne |
| 2 | Awī surat | 2 | <i>Gigantochloa verticillata</i> (Wild.) Munro |
| 3 | Awī tali | 3 | <i>Gigantochloa apus</i> (Schult.f.) Kurz |
| 4 | Awī tamiang | 4 | <i>Schizostachyum silicatum</i> Widjaja |
| 5 | Awī temen | 5 | <i>Gigantochloa atter</i> (Hassk.) Kurz |
| 6 | Gombong héjo | | <i>Gigantochloa verticillata</i> (Willd) Munro |
| 7 | Gombong hideung | | <i>Gigantochloa verticillata</i> (Willd) Munro |
| 8 | Haur héjo | 6 | <i>Bambusa vulgaris</i> Schard. ex J.C. Wendl.var. <i>vulgaris</i> |
| 9 | Haur konéng | | <i>Bambusa vulgaris</i> Schard. ex J.C. Wendl.var. <i>striata</i> (Lodd.ex Lindl.) Kuntze |

Source: Tabulation of the primary data.

Table 2. Folk classification of bamboo based on village people of Sukamenak, Sumedang.

| No | Local name (landaces) | Internode | | Adibe and non-edible | Ecological function |
|----|--------------------------|---|----------|-------------------------|--|
| | | Color | Size | | |
| 1 | Awī bitung/hideung | Blackish or dark brown | Moderate | Non-edible | Water storage |
| 2 | Awī surat | Green with white stripes | Big | Edible | Water storage |
| 3 | Awī tali | Green | Moderte | Non-edible | Water storage |
| 4 | Awī tamiang | Green | Small | Non-edible | Water storage |
| 5 | Awī temen | Green with white circles on each internode | Moderate | Edible | Water storage |
| 6 | Gombong héjo | Green | Big | Non-edible | Water storage |
| 7 | Gombong hideung | Black | Big | Non-edible | Water storage |
| 8 | Haur héjo | Green | Moderate | Edible | Soil erosion control and landslide, riverbank abrasion |
| 9 | Haur konéng | Yellow | Moderate | Non-edible | Soil erosion control and land slide, riverbank abrasion |

Source: Tabulation of primary data

Based on the number of bamboo species recorded in Sukamenak Village, 7 species in general are almost the same as the number of bamboo species recorded in several other villages in West Java, such as in Nagawangi, Rancakalong (8 species and varieties), Putrajawa Village (7 species and varieties) (Irawan, 2020); and Kampung Naga (7 species and varieties) (Irawan et al. 2019). Except in Karangwangi Village, Cianjur, there are relatively high species and bamboo, 14 species and varieties are recorded because in this village there is still a conservation forest area, namely the Bojonglarang Nature Reserve, Jayanti (Setiawati et al 2017). In addition, also in Kaduketug and Kampung Gajebah hamlet, Outer Baduy, Kanekes Village, Banten the species and varieties of bamboo were recorded to be quite high at 12 species (Irawan, 2020). The reason is that in the bamboo gardens in the Outer Baduy area, Kanekes

Utilization of bamboo

In general, for most people in rural Asia, bamboo is a natural resource that has various socio-economic, cultural, and ecological benefits that support the sustainability of daily life. As for people in rural Asia, as well as for the people of Sukamenak, Sumedang bamboo is a plant that has many benefits.

Based on the studies that have been undertaken, the people of Sukamenak Village use bamboo economically, socio-culturally, and ecologically (Table 3). Economically, bamboo is used both to meet subsistence and commercial needs, such as materials for crafts, building construction, rituals, children's traditional toys, food, making household appliances, ornaments, furniture/decorations, musical instruments, fishing equipment, and so on. For example, ordinary *awī tali* and *awī tali ageung* are often used for roof battens (*usuk*), fences, craft materials, such as baskets (*boboko*), strainer (*ayakan*), fans (*hihid*), chicken cages (*kurungan ayam*), winnowing (*nyiru*), fish

traps (*posong*, *korang*, *bubu*), traditional headgear (*beletok*), tofu baskets (*keranjang tahu*), trash cans (*carangka runtah*), traditional toys (*celetok*), and basket (*dingkul*). *Awī surat* is also used as roof battens (*réng usuk imah*), fences, and tendrils. *Awī surat temen* can be used as material for making baskets (*boboko*), fans (*hihid*), winnowing (*nyiru*), and other craft materials. While, *Awī surat bitung*, commonly used as rafts (*rakit*), floating nets (*jaring apung*), and roof battens (*réng usuk*).

According to the Sukamenak residents of the many bamboo races (variations), the best for handicrafts is *awī tali* (Figure 1). The *awī tali* is commonly used for various craft material. Figure 1 shows that (A) a craftsman is making baskets from *awī tali*, (B) *beletok*, a type of traditional head covering that is used in the fields, (C) *jodang* is used by the rural people to dry *kicimpring* snacks, and (D) a resident is showing an unfinished decorative bamboo carft.

Related to commercial needs, bamboo craftsmen can sell various handicrafts to collectors or the nearest market, and to individuals who come to their place. For example, baskets and winnows are sold to individuals who come directly to buy them at a price of around Rp. 15,000, sieve Rp. 25,000, fan (*hihid*) Rp. 7,000, *posong* fish trap Rp. 40,000, and a rice field hat (*beletok*) is sold for around Rp. 7,000. If sold per one bamboo tree, the price of *awī tali* is relatively cheap, which is sold at a price of Rp. 7000. While *awī surat* is sold at a price of Rp. 60,000 per one bamboo tree (*saleunjeur*). Thus, the most widely traded races of bamboo as trading commodities in Sukamenak namely *awī tali* and *awī surat*.

Socio-culturally, the *awī tamiang* is commonly used by the Sundanese community as a flute, '*sumpit*'- a type of equipment for hunting birds, and children's traditional toys such as '*cécéotan*'. *Cécéotan* is a kind of traditional children's toy similar to a flute, but the sound imitates the sound of birds. Meanwhile, *awī tamiang*

iraten is used as a material for traditional musical instruments *calung*, flute, and *angklung*, besides that it can also be used as-craft material to make steamed (*aseupan*). Furthermore, *awi gombong hideung* is not only used as a craft material for porches/chambers, and fences, but is specifically used as a painting medium and *angklung* musical instrument. Meanwhile, *awi gombong héjo* is only used for building construction

materials, *tuturus*, and fences. *Awí haur konéng* is used by rural people as a medium of sacrifice in the *ruwat* ritual (ceremony asking permission from the almighty in order to get salvation) before building a house. In addition, *awi haur konéng* is also used as a belief-based medicine to treat intestinal worms in children, by cutting the stem into small pieces and then draping it around the neck.

Table 3. Utilization of species and variation of bamboo in Sukamenak Village, Sumedang

| Variations (landraces) | Utilization of bamboo | | |
|------------------------|--|---|--|
| | Economic functions | Socio-cultural functions | Ecological functions |
| Awí tali | - Building construction - Craft material - Fish traps material | Children's traditional toys - Proverb | - The litter can fertilize the soil |
| Tali ageung | - Fence material - Bamboo shoots as food | | - Storage water in the ground - Soil erosion control |
| Surat temen | - Building construction - Craft material | | - The litter can fertilize the soil |
| Surat biasa | - Raft material - Bamboo shoots as food | | - Storage of water in the ground |
| Surat bitung | | | - Soil erosion control |
| Tamiang biasa | - Bamboo shoot as food | - Children's traditional toys - Traditional musical instruments - hunting tools, | - Storage of water in the ground - Soil erosion control |
| Tamiang iraten | - Craft material - Bamboo shoot as food | - Proverb - Traditional musical instruments | |
| Haur konéng | - Bamboo shoot as food | - <i>Ruwat</i> ritual (ceremony asking permission from the almighty in order to get salvation) - As a belief-based drug ingredient to treat intestinal worms in children | - Soil erosion control |
| Haur héjo | - Bamboo shoot as food | | - Storage of water in the ground - Soil erosion control |
| Haur <i>gereng</i> | - Bamboo shoot as food | | - The litter can fertilize the soil |
| Gombong hideung | - Building construction material - Bamboo shoot as food | Painting media, musical instruments | - Storage of water in the ground - Soil erosion control |
| Gombong héjo | - Building construction material - Pence material - Bamboo shoot as food | | |

Source: The tabulation of the primary data.



Source: Personal documentation

Figure 1. Bamboo crafts in Sukamenak Village

Landraces, Utilization, And Management of Bambo in Sukamenak Village, Sumedang, West Java
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Still related to socio-cultural uses, bamboo also has symbolic meanings as stated in proverbs taken from *awi tali* such as “*leuleus jejer liat tali*” meaning that people in dealing with problems must be wise, flexible/*liat* like *awi tali*. Then, “*tamiang meulit ka bitis*” this proverb taken from *awi tamiang* implies that every good or bad word and deed will turn ‘*membelit*’ on oneself. Therefore, humans in living life must always be careful and introspective. The symbolic meaning given to the two varieties of bamboo is a representation or perspective which implies that the Sukamenak residents are related to each other with plants and nature in general (cf. Permana, 2015).

Ecologically, people know bamboo as a plant that functions to store water in the ground, hold and social erosion control, but there are only two variations of bamboo that are most dominantly used to hold and to erosion control, namely, *awi haur héjo* and *awi haur konéng*, because they are easy to grow quickly and can grow in various types of ecosystems. The use of *awi haur héjo* and *awi haur konéng* trees to restrain and to erosion control also applies to the Kampung Naga community (Irawan et.al, 2019), the Karangwangi community (Partasasmita, 2017), and the Alune community on Seram Island. It is interesting to note that the Alune people, in addition to using *awi haur héjo* (*Bambusa vulgaris* Schrader ex Wendland var. *vulgaris*) as erosion control, are also used as materials for making traditional combs (*sakulé*).

Considering that bamboo and bamboo gardens have many ecological, socio-economic and cultural functions and are very important for the life of rural communities, as shown in the case of the Sukamenak villagers, bamboo and bamboo gardens can be categorized as cultural keystone species which this concept has recently been widely discussed by some scholars (Grenade 2013; Akoto et al., 2018; Sujarwo et al., 2019; Coe and Gaoue, 2020).

Bamboo management

In general, bamboo plants in Sukamenak Village, Sumedang are not managed intensively. According to the respondents, only 40 percent of them stated that their bamboo was cared for, and another 60 percent stated that their bamboo plants had never been cared for, but just grew naturally. For respondents who stated that the bamboo plants were looked after, the care for the bamboo plants was simply cleaning the thickets that grew around the bamboo trees.

Another management of bamboo plants that are usually carried out by rural people eradicating insect pests (*cangkilung*, *Pyrallidae/Lepidoptera*

larvae) which usually attack young bamboo trees. Several species of bamboo are commonly attacked by *cangkilung*, such as *gombong héjo* (*Gigantochloa verticillata*). The usual countermeasures for rural people are cutting down bamboo trees that are infested with these pests, and *cangkilung* are taken as bait for fishing or given to chickens. The perception of the rural people on these bamboo pests is in line with the opinion of Partasasmita et al. (2017), that several insects that commonly become pests of young bamboo, such as bamboo shoots (*Colleotera curculionidae*), sucking insect (*Homoptera aphididae*), and bamboo scale insect (*Homoptera coccidae*).

Harvesting of bamboo is usually carried out by rural people according to the needs of the owners. Bamboo that is used to make handicrafts such as woven bamboo, usually selected bamboo with an age of about 2 years, which can be cut when it has produced bamboo shoots once during the rainy season. The species of bamboo that is usually made for woven crafts is *awi ali* (*Gigantochloa apus*). In general, bamboo trees aged 2 years usually have a high level of flexibility. Meanwhile, for the needs of building materials and furniture, the bamboo chosen is old or old bamboo, which is more than 2 years old with a maximum age of 4 years. Old bamboo trees can be seen by the presence of a blade (*salumpit*) or midrib on each segment starting to fall and the leaves starting to become sparse or shriveled (*ngarangrangan*).

Regarding the time of harvesting bamboo, 60 percent of respondents said that the harvesting of bamboo plants is usually done at a non-specific time, but according to the needs of the owner. However, 40 percent of respondents stated that bamboo harvesting is usually done in the dry season, and must be done during the day. In the past, it was known that people were not allowed (taboo) to cut bamboo on Saturday. But, but now the taboo is no longer valid in the rural community of Sukamenak Village.

According to the informants, it is better to harvest bamboo in the dry season. The reason is, when cutting bamboo in the dry season, the bamboo water is low, so the stems are strong, not easy to rot. In addition, it is best to cut bamboo before the growth of bamboo shoots (*iwung awi*), i.e. before entering the third month of the rainy season and done when the sun is overhead or midday. This is because the water contained in the bamboo has started to fall so that the dried bamboo meat is not easily attacked by pests so it is believed that bamboo will last. On the other hand, if the cutting of bamboo is carried out in the morning, the water content in the bamboo is still large, it has not decreased. Consequently, the

bamboo stems are not strong and are easily attacked by insect pests.



Source: Personal documentation

Figure 2. Bamboo trees are cut down selectively as needed, but not all bamboo trees are cut down

The bamboo harvesting system that is commonly practiced by the rural people of Sukamenak Village, Sumedang is harvesting bamboo selectively (Figure 2) rather than clear total cutting, and the cutting time is adjusted to seasonal conditions. This practice is considered as the ecological wisdom of the rural people to use bamboo in a sustainably manner based on local knowledge and strongly embedded with local culture.

CONCLUSION

Based on this study, it can be concluded that it was recorded 9 bamboo landraces that are identified by the rural people of Sukamenak. Unlike the traditional knowledge, however, these 9 bamboo landraces are based on botanical classification consist of 7 species and varieties of bamboo. According to the folk classification of the villagers of Sukamenak, the 9 bamboo landraces were traditionally classified into 3 main categories, namely based on the morphology and color of the internodes, edible and non-edible shoots, and their ecological functions in the village ecosystem.

It revealed that the bamboo landraces have been providing various socio-economic, socio-cultural and ecological purposes for the rural community. As a result, bamboos can be considered as cultural keystone species. Generally, various landraces of bamboo have been utilized by the Sukamenak village-based local knowledge which is strongly embedded with local culture. The method of harvesting bamboo, for example, is selective cutting according to needs and the harvest time is not carried out at any time, but at the appropriate time. As a result, the landraces

of bamboo can be continuously used. Considering the important role of bamboo in the socio-economic and cultural aspects of rural communities, we recommend that further in-depth studies on the impact of the loss of bamboo gardens on the rural people lives of rural communities need to be carried out in various rural areas in West Java or Indonesia in general.

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