



Implementation of The Sustainable Food Program through the Introduction of Wild Plant with Potential Foodstuffs

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Abstract: *The purpose of this community service is to provide counseling about the introduction of edible plants that can be used and techniques or processing methods as an alternative food. Participatory Rural Appraisal (PRA) is used where the community is effectively involved in formulating plans and policies. Data collection is done directly in the form of primary and secondary data. At the same time, the data analysis technique is done by interactive analysis. The results of the service include 1) recognizing wild plant species as alternative food or plants that are always used as garden plants, 2) Potential edible plants that can be utilized can be in the form of leaves and stems or young stalks, roots, and tubers, fruits and vegetables. Nuts or seeds and grains; 3) It contains enough nutrients for nutritional needs and food supplements and health, both of which have the potential as internal and external drugs.*

Introduction

Naturally, humans in their daily life constantly interact reciprocally with nature or their local ecosystem. In interacting with their ecosystems, humans always use and manage plants and other natural resources. It can even implement an adaptive management system to utilize natural resources sustainably. The search for plants as food has been carried out by humans since ancient times until now to find new food sources, seek genetic diversity, preserve local food ingredients, explore healthy alternative food ingredients, local spices, and conservation ^{1,2,3}.

¹ Andrea Pieroni et al., "Resilience at the Border: Traditional Botanical Knowledge among Macedonians and Albanians Living in Gollobordo, Eastern Albania," *Journal of Ethnobiology and Ethnomedicine* 10, no. 1 (2014).

² Meenu Kumari et al., "Solena Amplexicaullis (Lam.) Gandhi: An Underutilized Cucurbit in India," *Genetic Resources and Crop Evolution* 68, no. 1 (2021).

³ P Sureshababu and N Ramakrishna, "Traditional Botanical Knowledge of Local People of

Plants as food ingredients are plants that can produce suitable nutritional substances for humans⁴. The study of ethnobotany is grouped into vegetables, fruit, staple foods, food additives, drinks, and cooking spices⁵; ⁶; ⁷. Although in meeting nutritional needs, humans also use animals and microorganisms; in fact, around 85% of food ingredients come from plants, even up to 100% for vegetarians⁸.

So far, we have forgotten about the natural offerings with the diversity of biota that grows freely in nature and are edible for daily use. It can be seen that the fulfillment of plant nutrition has several advantages over animal nutrition. Plant nutrients are healthier, easier to process, easier to obtain, and cheaper. The choice of this type of food is directly correlated to health⁹. However, the influence of globalization and modernization has had an impact on changes in the diet of local people¹⁰. The implication of these changes is the degradation of local knowledge in the next generation¹¹; ¹². Loss of traditional knowledge is one of the main factors threatening biodiversity conservation¹³; ¹⁴. The residents of Sindang Asih Village, Leuwiliang Village, Kawalu District and Ciharashas Village, Sumelap Village, Tamansari District. This condition is also triggered by many factors, including lack of knowledge and ways to fulfill instant life needs.

For this reason, it is necessary to use the surrounding environment as a support for life. Which produces various kinds of food ingredients needed in daily life¹⁵. One of

Anantagiri and Dhamagundam Forest Area, Vikarabad District Telangana State," *Journal of Scientific and Innovative Research* 7, no. 4 (2018).

⁴ Lukas Neudeck et al., "The Contribution of Edible Wild Plants to Food Security, Dietary Diversity and Income of Households in Shorobe Village, Northern Botswana," *Ethnobotany Research and Applications* 10 (2012).

⁵ Katsura Sano et al., "Effect of Traditional Plants in Sri Lanka on Skin Keratinocyte Count," *Data in Brief* 18 (2018).

⁶ Wawan Sujarwo and Giulia Caneva, "Ethnobotanical Study of Cultivated Plants in Home Gardens of Traditional Villages in Bali (Indonesia)," *Human Ecology* 43, no. 5 (2015).

⁷ W. Sujarwo et al., "Traditional Knowledge of Wild and Semi-Wild Edible Plants Used in Bali (Indonesia) to Maintain Biological and Cultural Diversity," *Plant Biosystems* (2016).

⁸ Kementerian Perdagangan RI, "Laporan Akhir Analisis Dinamika Konsumsi Pangan Masyarakat Indonesia Pusat," *Kementerian Perdagangan RI* 1 (2013).

⁹ Pieroni et al., "Resilience at the Border: Traditional Botanical Knowledge among Macedonians and Albanians Living in Gollobordo, Eastern Albania."

¹⁰ Wawan Sujarwo et al., "Cultural Erosion of Balinese Indigenous Knowledge of Food and Nutraceutical Plants," *Economic Botany* 68, no. 4 (2014).

¹¹ Andrea Pieroni et al., "Wild Food Plants Traditionally Gathered in Central Armenia: Archaic Ingredients or Future Sustainable Foods?," *Environment, Development and Sustainability* 23, no. 2 (2021).

¹² Juan Cruz Pascual and Baudilio Herrero, "Wild Food Plants Gathered in the Upper Pisuerga River Basin, Palencia, Spain," *Botany Letters* 164, no. 3 (2017).

¹³ Muhammad Abdul Aziz, Zahid Ullah, and Andrea Pieroni, "Wild Food Plant Gathering among Kalasha, Yidgha, Nuristani and Khowar Speakers in Chitral, NW Pakistan," *Sustainability (Switzerland)* 12, no. 21 (2020).

¹⁴ Yan Ju et al., "Eating from the Wild: Diversity of Wild Edible Plants Used by Tibetans in Shangri-La Region, Yunnan, China," *Journal of Ethnobiology and Ethnomedicine* (2013).

¹⁵ M E Setiawan, S Suhadi, and S E Indriwati, "Analisis Pengetahuan Mahasiswa Pencinta Alam Tentang Tumbuhan Survival Di Hutan Sebagai Bahan Pengembangan Buku Pegangan Ilmiah Populer,"

the uses of edible plants is the use of plants for consumption^{16; 17; 18}. These plants can be in the form of plants in the yard or wild plants¹⁹. Plants widely used by traditional communities are plants that live in the wild. Wild plants can be interpreted as plants that are not treated directly²⁰. These wild and edible plants can be used directly for consumption. Direct use of plants is intended as the use of plants without using special processing or eating the plants raw²¹.

In using it, the user must pay attention to the plant parts that can be used as consumption materials. The existence of these edible plants will help provide additional food supplies for daily and health purposes. Most of the local Sundanese people who live in villages or villages still harvest semi-wild or wild plants as food ²², although not yet know precisely the benefits for health. The knowledge of the Sundanese people about the use of plants as consumption materials is one of the cultural assets. It can be used as information in utilizing plants in nature. This information is used as reading material in determining the types of plants that can be consumed as additional food supplies and for reasons of herbal health that are safe for daily consumption for the sake of maintaining immunity during the Covid 19 pandemic.

Therefore, based on the situation analysis in the two villages, it is essential to carry out community service activities by providing counseling, guidance, and cultivating potential edible plants in the two villages. In addition to meeting the needs of the two villages for edible plant knowledge, it is hoped that this service activity will also provide inspiration and motivation to be developed into the economic aspect.

Method

The approach used to implement this activity is Participatory Rural Appraisal (PRA). This approach is an approach in formulating plans and policies in rural areas by involving the community as effectively as possible²³. Through this PRA approach, rural

Jurnal Pendidikan Sains (2016).

¹⁶ Pieroni et al., "Resilience at the Border: Traditional Botanical Knowledge among Macedonians and Albanians Living in Gollobordo, Eastern Albania."

¹⁷ Eduardo Estrada-Castillón et al., "Ethnobotany in Rayones, Nuevo León, México," *Journal of Ethnobiology and Ethnomedicine* 10, no. 1 (2014).

¹⁸ Neudeck et al., "The Contribution of Edible Wild Plants to Food Security, Dietary Diversity and Income of Households in Shorobe Village, Northern Botswana."

¹⁹ Łukasz Łuczaj et al., "Wild Edible Plants of Belarus: From Rostafiński's Questionnaire of 1883 to the Present," *Journal of Ethnobiology and Ethnomedicine* 9, no. 1 (2013).

²⁰ Gisella S. Cruz-Garcia and Lisa L. Price, "Ethnobotanical Investigation of 'wild' Food Plants Used by Rice Farmers in Kalasin, Northeast Thailand," *Journal of Ethnobiology and Ethnomedicine* 7 (2011).

²¹ Setiawan, Suhadi, and Indriwati, "Analisis Pengetahuan Mahasiswa Pencinta Alam Tentang Tumbuhan Survival Di Hutan Sebagai Bahan Pengembangan Buku Pegangan Ilmiah Populer."

²² Marina Silalahi Ria Anggraeni and Nisyawati, "Studi Etnobotani Masyarakat Subetnis Batak Toba Di Desa Peadungdung, Sumatera Utara, Indonesia," *Jurnal Pro-Life* (2010).

²³ R. Loader and L. Amartya, "Participatory Rural Appraisal: Extending the Research Methods Base," *Agricultural Systems* 62, no. 2 (1999): 73–85.

communities are actively and effectively involved. The program's suitability and effectiveness can be achieved for the community to guarantee program sustainability. The method used to solve these problems is to provide counseling and cultivation training directly to partners whom the proposer will give. The activity stages can be described as in Figure 1.

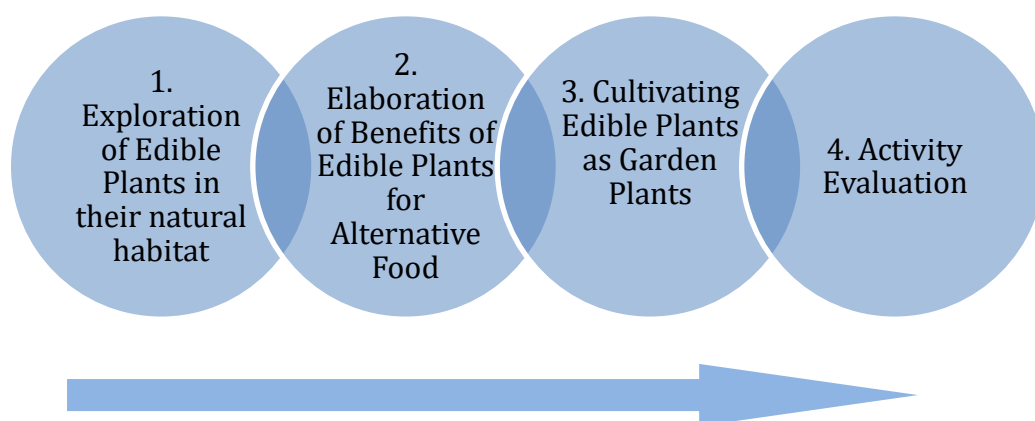


Figure 1. Stages of the Service Activity Process

Before carrying out the community service process, the implementing team first carried out pre-service activities following the PRA stages, namely identifying problems experienced by partners, determining problem priorities with partners, potential analysis, deliberation and consensus with partners, and preparing activity plans.

The subjects of this research are the people who live in two different villages, namely Sindang Asih Village, Leuwiliang Village, Kawalu Subdistrict and Ciharashas Village, Sumelap Village, Tamansari Subdistrict, Tasikmalaya City (village officials, religious leaders, community leaders, and the community including the younger generation and housewives).

Data collection techniques are carried out directly in the form of primary data obtained through questionnaires, appreciative interviews, observations, and focus group discussions on an ongoing basis by involving local stakeholders' active and participatory roles. A literature study was conducted based on relevant studies to support the primary data. The data analysis technique in this study uses interactive analysis to produce sharp and accountable research findings.

Result

Service activities carried out on two different partners resulted in an excellent response. The activities carried out include the following stages:

Counseling on the introduction of edible plants in their natural habitats

Counseling on the introduction and benefits of edible plants was carried out to students and housewives about the biological richness of edibles that can be utilized, which are available in the wild. This activity is carried out by introducing growing habitats for certain plant groups such as aquatic habitats, fields, gardens, or cliffs.

Counseling on the benefits of edible plants for alternative food

Counseling on the benefits of edible plants for alternative food so that people understand more about the benefits of edible plants as alternative food and other benefits such as for the benefit of herbs which are believed to be able to maintain health, or even cure diseases. This activity is carried out while being given examples of native plants and through displaying documentation photos through explanations on power points and booklets provided.

Cultivation of edible plants as garden plants

Cultivation of edible plants is carried out as home garden plants through the direct practice of finding/moving semi-wild or wild plants with simple tools and materials by using used goods or polybags. This activity is expected to be able and accustomed to the community independently to meet the needs of alternative food independently and even cultivate it widely.

Activity Evaluation

Evaluation of activities is carried out after each activity so that there is feedback for both parties (partners and proposers) in realizing service activities. One form of the initial evaluation was the provision of a questionnaire to all participants. The results of the final statistical inferential analysis are as follows (Table 1 and Figure 2):

Table 1. Normality Test Results

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statisti	df	Sig.	Statisti	df	Sig.
	c			c		
PreTes_PostTest	.182	80	.000	.780	80	.000

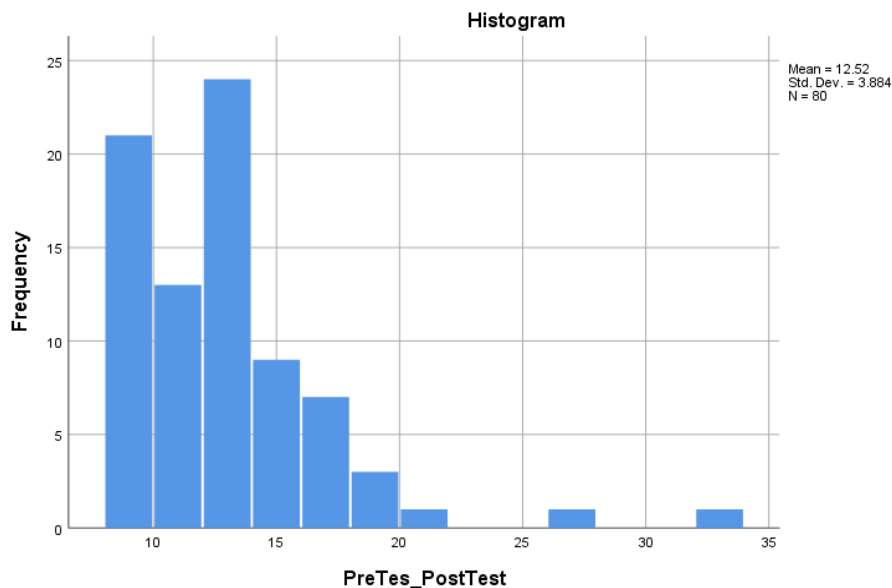


Figure 2. Histogram of Pretest and Posttest Results

Based on the Kolmogorov-Smirnov test, it was concluded that the data were normally distributed. This is based on the calculated significance of 0.182, which is greater than the significance used, which is 0.05.

Table. 2 U Mann-Whitney Test Result

	PreTes_PostTest
Mann-Whitney U	241.500
Wilcoxon W	1061.500
Z	-5.455
Asymp. Sig. (2-tailed)	.000

Based on the Mann-Whitney test, it was concluded that the two groups of data had different averages. Based on the results of the analysis, an **asympt sig** of 0.000 was obtained, which was smaller than the significance used, which was 0.05.

The results of the descriptive analysis carried out before receiving education about edible plants and after receiving education about edible plants showed changes, as shown in Table 3.

Table 3. The results of the descriptive analysis carried out before and after receiving education about edible plants

Plants that exist around our environment can be used for the following purposes...					
Garden ornamental plants/plants	Food potential plants	Plants for ritual	Medicinal potential plants	Industrial plant	
12.5	47.5	0	45	10	Pre-Test
40	62.5	0	62.5	27.5	Post-Test
The following are examples of wild plants that can be used as food...					
Pegagan	Sintrong	Rumput	Semanggi	Anggrek	
17.5	25	37.5	30	10	Pre-Test
47.5	32.5	20	52.5	17.5	Post-Test
The following plants that are often used as garden plants are...					
Bunga sepatu	Chaya-chaya	Melati	Bunga asoka	Mawar	
2.5	5	62.5	15	20	Pre-Test
5	27.5	52.5	17.5	32.5	Post-Test
The following plants that are often used as medicinal plants are...					
Jahe	Cecendet	Nangka	Cocor bebek	Pisang	
97.5	5	15	20	7.5	Pre-Test
97.5	20	20	30	15	Post-Test
The following parts of the “genjer” plant that are often used for consumption are ...					
Root	Leaf stalk	Fruit	Leaf	Flower	
0	42.5	2.5	67.5	5	Pre-Test
12.5	50	12.5	70	15	Post-Test
The “pegagan/antanan” plant can be consumed by means of ...					
Dried like tea leaves	Boiled	Made a juice	Consumed directly as a salad	Stir fry	
5	30	10	80	7.5	Pre-Test

20	37.5	12.5	80	15	Post-Test
The following plants that you consume the most as a salad include...					
Bayam liar/bayam kakap	Chaya- chaya	Semanggi	Daun mangkoka	Pegagan/a ntanan	
45	20	7.5	2.5	40	Pre-Test
60	32.5	20	27.5	50	Post-Test
Your intensity in consuming fresh vegetables when eating...					
Every time	1 time in 2 – 3 days eat	Never	1 time per 3 meals	Rarely	
10	25	0	15	52.5	Pre-Test
20	32.5	2.5	12.5	55	Post-Test
If you are a fan of vegetables as fresh vegetables, one of the reasons behind this is ...					
For health	To complemen t the side dishes	Just as a must	To improve digestion	For alternative consumpti on	
67.5	30	2.5	10	0	Pre-Test
67.5	45	5	10	12.5	Post-Test

Discussion

At first, most people thought that wild plants were weeds that had no benefits for humans; at most, they could be used as animal feed. However, the education provided in detail is motivating enough to stimulate more curiosity. Some edible wild plants have been recognized, although they do not know whether they are safe for consumption, how to process them, and even other functions as natural medicinal plants or herbs, both as internal and external medicines.

Edible plants are selected wild plants that can be eaten by humans around the world ²⁴. This plant can be consumed freely to meet food needs by looking for it in the wild. In principle, they eat a plant that humans can safely consume, especially fresh vegetables, whether consumed directly or raw or processed first, such as boiled and steamed.

Edible plants can be consumed and are safe for humans in particular. Before the

²⁴ Dr Jose Luis Guil Guerrero, "Edible Wild Plants," *Recent Progress in Medicinal Plants*, no. January 2002 (2015).

plant is consumed, it must be identified whether it is safe for consumption or not (it contains poison). As for identifying edible plants, among others, if you try alien plants to eat, try to try them nicely, meaning not too little and not too much. If in doubt, throw it away or have already been swallowed and then have a stomach ache, drink enough water to neutralize it. If it gets worse, vomit by striking the child's throat with the tip of the finger, or it could be by swallowing charcoal so that the poison is inhaled and vomited.

Parts of edible plants that can be consumed in general include fruits, vegetables (leaves), seeds, nuts, and spices.²⁵ As for²⁶ Most of the edible plant parts used have particular uses for certain plant parts (such as fruit, leaves, tubers, seeds, and young leaves). There are several instructions to try or test whether a plant can be consumed or not, including observing the fruit or fruit on the skin, whether the fruit is eaten by caterpillars, worms, or other animals; Smell it when it stings, and it's foreign, throw it away; Apply plant or fruit sap on the skin, wait a while and if irritation occurs throw it away; If there is no reaction to the skin, continue tasting with the tip of the lips, the corners of the lips, the tip of the tongue and under the tongue. Slight tingling if the above methods still have not reacted after waiting for five minutes; Swallow a small amount and wait for five hours. During that time, do not eat and drink anything else; if there is no reaction, then the plant or fruit is safe for consumption²⁷.

Another opinion on how to identify edible plants is explained by²⁸ there is some danger in gathering and eating wild food. For starters, think about the locations you collect and consider the following: as the area sprayed with pesticides or herbicides?; is the area close to a busy road or another source of pollution?; Does the target species have similar poisons?; consider that wild edible plants are often more nutritionally concentrated than store-bought foods; test them before collecting or eating in bulk; 6) If a crop that is harvested infrequently is the only one of its kind at the harvest site or especially if it is endangered, so be it. A good guideline is to collect one-third of the plant material, leaving two-thirds for plant and wildlife regeneration.

²⁹ Explains that most whole grains and vegetables are highly nutritious when consumed as part of a healthy diet. However, to get suitable dietary protein, common grains must be combined with nuts or seeds to produce complementary proteins to supply all the essential amino acids necessary for human maintenance and growth. Meanwhile, wild vegetables have been the leading food for humans for centuries. They are rich in micronutrients and are highly valued in salads, cooked in traditional recipes,

²⁵ Deborah Madison, *Edible An Illustrated Guide to the World's Food Plants*, 2008.

²⁶ Sujarwo et al., "Traditional Knowledge of Wild and Semi-Wild Edible Plants Used in Bali (Indonesia) to Maintain Biological and Cultural Diversity."

²⁷ *Women Jungle Survival Course*, 2019.

²⁸ Farooa Ahmad Khan, Sajad Ahmad Bhat, and Sumati Narayan, "Wild Edible Plants as a Food Resource : Traditional Knowledge," *University of Agricultural Science and Technology, Research Gate*, no. March (2017).

²⁹ Madison, *Edible An Illustrated Guide to the World's Food Plants*.

or consumed directly as vegetables. Edible plants as fresh vegetables are an alternative source of nutrients and bioactive compounds, such as vitamins (B9, C, and E), minerals, fiber, unsaturated fatty acids, and phenolic compounds.³⁰

Edible plants provide food and nutrients, such as essential amino acids, vitamins, and minerals, to keep local people healthy and increase immunity against disease and infection³¹. Several species of edible plants are usually collected and consumed as wild vegetables, spices, condiments, snacks, recreational drinks, and fruits. However, they are also prepared in medicinal infusions and decoctions to treat and prevent various diseases and health conditions³².

The results of closed interviews on community responses after being given education include mentioning the existence of counseling through this sustainable food program, including: being able to add insight, additional knowledge, and rules to utilize plants that are around us; by consuming healthy food so that the body can be healthy; I hope to increase my knowledge about edible plants so that they can be used for health, either for fresh vegetables or for sale, and to make more money; Hopefully, with this activity, we are all aware of what is around us, for what God has given and bestowed on us all; I hope in the future is that this activity can motivate all of us to be able to take advantage of the natural resources around our environment, and hopefully, it can be helpful for us; and I hope that people will know about the plants around us that have the potential as food ingredients and that people know the importance of consuming vegetables.

Conclusion

The conclusion from the service activity is that humans constantly interact reciprocally with nature or their local ecosystem, for that instinctively, we already know adaptive management systems by sustainably utilizing natural resources. Many things are not known about natural resources that are nutritionally good for humans, so it is necessary to explore alternative healthy food ingredients, local spices, and conservation. Must know many plant species, whether wild or growing in their natural habitat, plants as alternative food, or plants that are always used as garden plants.

The content of edible plants contains quite a lot of nutrients for nutritional needs and food supplements and health, both of which have the potential as internal and external drugs. The potential of edible plants that can be utilized can be leaves and stems

³⁰ José Pinela, Ana Maria Carvalho, and Isabel C.F.R. Ferreira, "Wild Edible Plants: Nutritional and Toxicological Characteristics, Retrieval Strategies and Importance for Today's Society," *Food and Chemical Toxicology* 110 (2017): 165–188.

³¹ Sujarwo et al., "Traditional Knowledge of Wild and Semi-Wild Edible Plants Used in Bali (Indonesia) to Maintain Biological and Cultural Diversity."

³² Pinela, Carvalho, and Ferreira, "Wild Edible Plants: Nutritional and Toxicological Characteristics, Retrieval Strategies and Importance for Today's Society."

or young stalks, roots and tubers, fruits and nuts, or seeds and grains.

Identifying edible plants can be done in several ways, including being tested directly for consumption by paying attention to the response to the body with a benchmark that is not too long and by paying attention to where the edible plant is located.

Consistency and control from partners with the community are needed to continue this activity. It is also necessary to have more participation from the community so that the number of wild plants that have the potential to be used for food will be more. Cultivating wild plants with the potential for food can be done by utilizing yards and public facilities as part of education for the younger generation.

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References

- Aziz, Muhammad Abdul, Zahid Ullah, and Andrea Pieroni. "Wild Food Plant Gathering among Kalasha, Yidgha, Nuristani and Khowar Speakers in Chitral, NW Pakistan." *Sustainability (Switzerland)* 12, no. 21 (2020).
- Cruz-Garcia, Gisella S., and Lisa L. Price. "Ethnobotanical Investigation of 'wild' Food Plants Used by Rice Farmers in Kalasin, Northeast Thailand." *Journal of Ethnobiology and Ethnomedicine* 7 (2011).
- Estrada-Castillón, Eduardo, Miriam Garza-López, José Ángel Villarreal-Quintanilla, María Magdalena Salinas-Rodríguez, Brianda Elizabeth Soto-Mata, Humberto González-Rodríguez, Dino Ulises González-Urbe, Israel Cantú-Silva, Artemio Carrillo-Parra, and César Cantú-Ayala. "Ethnobotany in Rayones, Nuevo León, México." *Journal of Ethnobiology and Ethnomedicine* 10, no. 1 (2014).
- Guerrero, Dr Jose Luis Guil. "Edible Wild Plants." *Recent Progress in Medicinal Plants*, no. January 2002 (2015).
- Ju, Yan, Jingxian Zhuo, Bo Liu, and Chunlin Long. "Eating from the Wild: Diversity of Wild Edible Plants Used by Tibetans in Shangri-La Region, Yunnan, China." *Journal of Ethnobiology and Ethnomedicine* (2013).
- Kementerian Perdagangan RI. "Laporan Akhir Analisis Dinamika Konsumsi Pangan Masyarakat Indonesia Pusat." *Kementerian Perdagangan RI* 1 (2013).
- Khan, Farooq Ahmad, Sajad Ahmad Bhat, and Sumati Narayan. "Wild Edible Plants as a Food Resource: Traditional Knowledge." *University of Agricultural Science and Technology, Research Gate*, no. March (2017).

- Kumari, Meenu, G. C. Acharya, P. Naresh, P. K. Bhanja, and Yogesh Kumar. "Solena Amplexicaullis (Lam.) Gandhi: An Underutilized Cucurbit in India." *Genetic Resources and Crop Evolution* 68, no. 1 (2021).
- Loader, R., and L. Amartya. "Participatory Rural Appraisal: Extending the Research Methods Base." *Agricultural Systems* 62, no. 2 (1999): 73–85.
- Łuczaj, Łukasz, Piotr Köhler, Ewa Piroznikow, Maja Graniszewska, Andrea Pieroni, and Tanya Gervasi. "Wild Edible Plants of Belarus: From Rostafiński's Questionnaire of 1883 to the Present." *Journal of Ethnobiology and Ethnomedicine* 9, no. 1 (2013).
- Madison, Deborah. *Edible An Illustrated Guide to the World's Food Plants.*, 2008.
- Neudeck, Lukas, Lebogang Avelino, Phetso Bareetseng, Barbara N. Ngwenya, Demel Teketay, and Moseki R. Motsholapheko. "The Contribution of Edible Wild Plants to Food Security, Dietary Diversity and Income of Households in Shorobe Village, Northern Botswana." *Ethnobotany Research and Applications* 10 (2012).
- Pascual, Juan Cruz, and Baudilio Herrero. "Wild Food Plants Gathered in the Upper Pisuerga River Basin, Palencia, Spain." *Botany Letters* 164, no. 3 (2017).
- Pieroni, Andrea, Kevin Cianfaglione, Anely Nedelcheva, Avni Hajdari, Behxhet Mustafa, and Cassandra L. Quave. "Resilience at the Border: Traditional Botanical Knowledge among Macedonians and Albanians Living in Gollobordo, Eastern Albania." *Journal of Ethnobiology and Ethnomedicine* 10, no. 1 (2014).
- Pieroni, Andrea, Roman Hovsepyan, Ajmal K. Manduzai, and Renata Sõukand. "Wild Food Plants Traditionally Gathered in Central Armenia: Archaic Ingredients or Future Sustainable Foods?" *Environment, Development and Sustainability* 23, no. 2 (2021).
- Pinela, José, Ana Maria Carvalho, and Isabel C.F.R. Ferreira. "Wild Edible Plants: Nutritional and Toxicological Characteristics, Retrieval Strategies and Importance for Today's Society." *Food and Chemical Toxicology* 110 (2017): 165–188.
- Ria Anggraeni, Marina Silalahi, and Nisyawati. "STUDI ETNOBOTANI MASYARAKAT SUBETNIS BATAK TOBA DI DESA PEADUNGUNG, SUMATERA UTARA, INDONESIA." *Jurnal Pro-Life* (2010).
- Sano, Katsura, Takao Someya, Kotaro Hara, Yoshimasa Sagane, Toshihiro Watanabe, and R. G.S. Wijesekara. "Effect of Traditional Plants in Sri Lanka on Skin Keratinocyte Count." *Data in Brief* 18 (2018).
- Setiawan, M E, S Suhadi, and S E Indriwati. "Analisis Pengetahuan Mahasiswa Pencinta Alam Tentang Tumbuhan Survival Di Hutan Sebagai Bahan Pengembangan Buku Pegangan Ilmiah Populer." *Jurnal Pendidikan Sains* (2016).
- Sujarwo, W., I. B.K. Arinasa, G. Caneva, and P. M. Guarrera. "Traditional Knowledge of Wild and Semi-Wild Edible Plants Used in Bali (Indonesia) to Maintain Biological and Cultural Diversity." *Plant Biosystems* (2016).
- Sujarwo, Wawan, Ida Bagus Ketut Arinasa, Francois Salomone, Giulia Caneva, and Simone Fattorini. "Cultural Erosion of Balinese Indigenous Knowledge of Food and Nutraceutical Plants." *Economic Botany* 68, no. 4 (2014).
- Sujarwo, Wawan, and Giulia Caneva. "Ethnobotanical Study of Cultivated Plants in Home

Gardens of Traditional Villages in Bali (Indonesia)." *Human Ecology* 43, no. 5 (2015).
Sureshababu, P, and N Ramakrishna. "Traditional Botanical Knowledge of Local People of Anantagiri and Dhamagundam Forest Area, Vikarabad District Telangana State." *Journal of Scientific and Innovative Research* 7, no. 4 (2018).
Women Jungle Survival Course, 2019.