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Wild edibles supplementing the food security of Guji Oromo semi-pastoralists, SuroBarguda District, Oromia, Ethiopia

E A Mersha*

Department of Biology, College of Natural and Computational Sciences, Bule Hora University, P.O. Box 144, Ethiopia

*E-mail: mae19590917@gmail.com

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In rural livelihoods, wild foods are important assets for complementing main foods, safeguarding food safety, and providing nutritional variation. These plants are used as dietary supplements and as a means of survival during times of food shortages. The objectives of this study were to record, collect, classify, and analyze the native uses and management of wild edible plants by the local semi-pastoralist people in SuroBarguda District, west Guji Zone, Ethiopia. Ethnobotanical data collection was conducted on various groups of 10 kebeles (the smallest administrative units of Ethiopia) households within the district. Data were collected using semi-structured interviews, guided field walks, field observations, and discussions. A total of 70 species of edible wild plants belonging to 50 genera and 36 angiosperm families were identified by local residents. Most (80%) of edible plants were consumed to compensate for regular food shortages during March- April (rainy season) when the stock of edible plants gradually decreased. The research region is endowed with a variety of wild edible plants that are used by the local people as food sources and for other reasons, helping them to address their problems with food insecurity. Unquestionably, the preservation of wild edible plants is important for ensuring household food security and dietary variety, both of which support the continued occurrence of biodiversity.

Keywords: Indigenous knowledge, Supplementing food, Wild edible plants

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More people around the world are interested in collecting ethnobotanical data on underutilized wild food supplies[1]. In areas with low agricultural productivity, pastoralists frequently use these foods. Edible wild plants are an important supplement to the diets and livelihoods of rural households in Africa. Despite their role in improving diets, extenuating famine periods, and creating income, there is a lack of extensive evidence on their uses in broader areas[2]. In Ethiopian regions with food insecurity, feeding wild edibles is increasingly prevalent. Comparative research on edible wild plants used by diverse Ethiopian tribes or civilizations could point to the most popular species for specialized nutritional analysis investigations[3]. Wild edibles play a significant role in many cultures' traditional feeding practices across most of Ethiopia. Forest foods frequently make up a tiny but essential portion of bland and nutritionally significant meals. The study area's wild plants have known uses as food, and traditional knowledge is becoming more main stream for their use and conservation. Indigenous knowledge about the usage of wild food plants is occasionally diminishing because of things like ignorance, cultural mingling, the loss of plant biodiversity, a lack of culture surrounding archiving information, and failure to preserve important wild plants for use in the future. This study was implemented in SuroBarguda District, West Guji Zone, Ethiopia. The study's goals included documenting, gathering, identifying, and analyzing traditional management practices for wild edible flora. A population census has not been done because the district was only recently created (administrative boundaries were redrawn a few years ago). However, the GujiOromo people, who speak the Oromo language with a distinctive dialect, make up 99.9% of the district's population and live primarily in rural areas. The people's primary means of subsistence are pastoralists and subsistence farmers. The primary rainy season, which lasts from March to May, is becoming inconsistent and late in the southern Ethiopian regions where the study area is located, leading to a lack of water and pastures. When unusual environmental conditions occur at specific times of the year, these pastoralists soon experience food shortages. The relevance of wild foods is of the

utmost importance during these difficult times since, for these families, the natural vegetation serves as a crucial source of sustenance. In this study region, a range of forest and woodland plants' fruits, roots, leaves, seeds, barks, flowers, and gums are ingested at various times. The value of foraging for wild food plants and the rapidly dwindling knowledge of these plants have not previously been attempted to be documented in this study region. Therefore, it was imperative to carry out an ethnobotanical study on the various wild edible plants in the area and their corresponding indigenous knowledge in order to investigate, gather, and record the pertinent information before it became more challenging to obtain the knowledge of the indigenous people. The study was built around the following key questions to get the data:

- What kinds of wild foods are consumed by the local population?
- Which plant parts or species are commonly used as food sources?
- Are there multipurpose wild edible plant species that need conservation priority?
- What causes the difference in aboriginal knowledge acquisition among diverse social groups**?** (e.g., female vs. male, uneducated vs. educated, youth vs. seniors)?

Materials and Methods

Study area

The current study was carried out in SuroBarguda District, West Guji Zone of Oromia Regional State, Southern Ethiopia, which is situated 30 km from BuleHora town, the center of West Guji Zone, and 497 km south of Ethiopia's capital Addis Ababa. The district, which is located between the latitudes 5°30'0" and 5°50'0" N and the longitudes 37°50'0" and 38°20'0" E, is mainly known for its rocky and mountainous topography (Fig. 1). The altitude varies from 900 to 2350 meters above sea level. The lowlands in this district range from 900 to 1500 meters above sea level, while the medium altitude

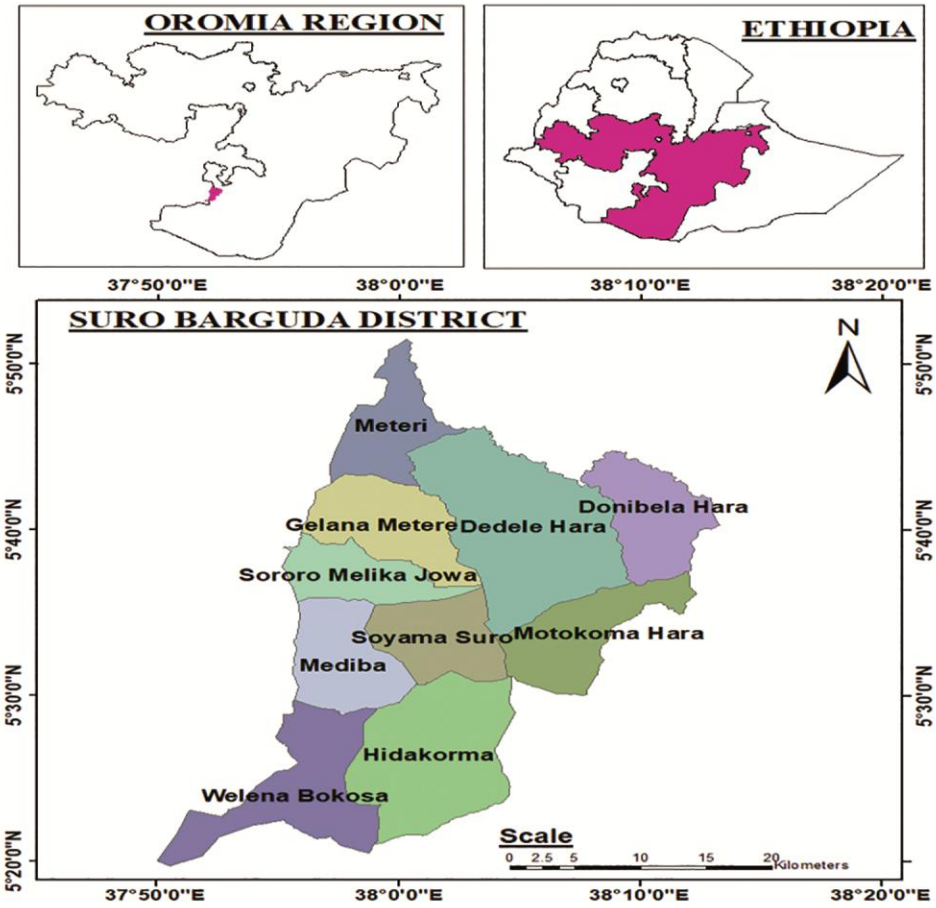

Fig. 1 — Map of SuroBarguda District (the study area)

zone is between 150 and 2500 meters above sea level. This agro-ecological classification is mainly based on altitudinal variations that have a strong impact on temperature and rainfall. So, there are differences in climate patterns between the two agro-ecological zones. The study area is located in Ethiopia's southern bimodal rainfall regime[4].

Site and informant selection

Ten semi-pastoralist kebeles—the smallest administrative units—made up the study district. Based on the distance from the administrative town (Suro town) and the availability of food crops for the data collection on wild edible plants, study locations from among the ten kebeles were chosen.

Informant size determination

The author proposed a more straightforward formula for determining the informant size in a population[5]. He believes that for a 95% confidence level and p=.05, the sample size should be:

$$n = \frac{N}{1 + N(e^2)}$$

where, n is the informant size for the research, N is the population size (total number of households in all 10 kebeles), e is the level of precision of 5%, and 1 is the likelihood that the event will occur.

There were 193 total homes spread among the district's 10 pastoralist kebeles. Thus, the number of informants in the sample is:

= 193/ 1 + 193 $(0.05)^2$ = 193/1.4825 = 130 informants

The required informant (respondent) size was 130. A total of 24 key informants were taken from all study groups. These key informants were chosen purposefully (non-probability sampling) after contacting local elders, leaders, and development specialists in each kebele. They were individuals who had regularly consumed these wild foods (wild food users). The remaining 106 individuals were general informants, chosen at random to include people who occasionally eat wild foods. 15–68 years old was the age range of all informants, and gender-wise, 84 males and 46 females were included. The district administration and BuleHora University gave their official written consent for this study to begin. In order to foster goodwill and an understanding between informants and the researcher, the study's purpose was briefly and unequivocally conveyed. After the informants received a thorough explanation of everything, the community opted to work with the researcher to gather the necessary data, and each informant verbally and fully agreed with the researcher, and the interview was conducted. Therefore, based on inclusive involvement, positive relationships, and the preparedness of informants, ethnobotanical data were gathered. For ethical considerations, ethnobotanical information was gathered with each informant's permission for the publication of the study's findings.

Data collection

Field observations were done with the help of native guides, and ethnobotanical data were collected following[6,7]. Based on a list of questions, guided field trips, market analyses, and interviews with randomly selected key informants were used. Semi-structured interviews were used to interview the chosen informants at the sample site, with the main focus being on the use and management of wild edible plants. Semi-structured interview questions were developed and carried out after being translated into the regional language (Oromo). During the guided field tour, the informants who took part in answering the questions also demonstrated the plants they used as food. The use and significance of wild food plants were discussed in detail by the informants from each kebele. The BuleHora University Herbarium received specimens of plants identified by informants as voucher specimens for scientific study. In this study, GPS, a digital camera, a plant press, cutting and digging utensils, as well as writing materials, were used.

Data analysis

To organize ethnobotanical data, a Microsoft Excel spreadsheet was employed. Descriptive statistics were also applied to identify the number and percentage of species, genera, and families of wild edible plants used their habits, and the proportions of parts harvested. The most popular and widely used wild edible plants were identified using values of preference ranking, especially in the context of the locals who used them when food was scarce. To rank the cultural importance of wild edible plants across a group, informants' preferences for these species were evaluated. Data from eight randomly chosen key informants, who assessed the five most often reported wild foods based on their level of feeding in the area, were used to calculate this ranking. Ten informants

(six key and four randomly chosen) were asked to rate the high usage values of ten wild foods in a pair-wise comparison experiment. All potential combinations of the selected items were combined into a list of pairs, and the order of the pairs as well as the sequence in which they were shown to the informants were then randomly chosen[7,8]. After each pair was presented to the informants, their replies were recorded, the total score was added up, and the scores were then graded. Out of the total species collected, ten multipurpose wild edible plant species were ranked and ordered using a direct matrix, and eight use categories were taken into account for the evaluation of their relative importance or use in the informants' respective localities by taking into account each of their various characteristics one at a time. Each informant was asked to rate the level of use (best = 5, very good = 4, good = 3, less used = 2, least used = 1) and not used (0 = not used).

The most often mentioned plants among the informants were found using informant consensus, and the dependability of the data was assessed using this way of ranking the wild foods. Additionally, the informant consensus factor (ICF), which was developed using the method below[9], was used to identify the most popular wild edible plants that may be exploited to make up for the seasonal food shortfall in the district.

$$ICF = \frac{n_{ur} - n_t}{n_{ur} - 1}$$

Where, n_{ur} is the number of use reports in each category and n_t is the number of taxa used. Wild edible plants with a high use value had a higher informant consensus factor value. This factor's product has a range from 0 to 1.

For a specific purpose, a species' value was measured using fidelity level (FL). Using an index termed Fidelity Level (FL), the relative food potential values of the five most often used wild edible plants reported to meet food requirements at various times were calculated[8].

$$FL\% = (Np/N) \times 100$$

where, Np is the repeated use of a species and N is the total number of informants who mentioned the plant for any application. Additionally, a comparison of wild edible plant knowledge between the sexes and among the various social groups in the neighborhood was done.

Use value rating is usually used to quantify the relative importance of useful plants. It combines the frequency with which a species is mentioned with the number of uses mentioned per species and is often used to highlight noticeable species of interest. Using the following formula, the use value index (UV) of five wild edible plants identified in the research region was determined[10]:

$$UV_{is} = \Sigma U_{is}/n_{is}$$

where, $UV_{\mathbf{is}}$ is the value of a species "**s**" for informant' **i**', $U_{\mathbf{is}}$ is the number of uses that informant "**I**" mentions in each event, and $n_{\mathbf{is}}$ is the total number of events involving informant "**I**" and species "**s**".

Results

A variety of delicious wild plants

In the district, there are reportedly 70 wild edible plant species from 36 angiosperm families and 50 genera. Trees (25 species) and shrubs (26 species) were the two most common growth forms. Burseraceae and Rubiaceae were the next most numerous families, with five species apiece, followed by Fabaceae and Anacardiaceae, with seven species each (Supplementary File 1).

The significance of wild edible plants in terms of food use and family food security

Out of all the edible wild plants, 80% of the species were intended to be used to make up for seasonal food shortages, 14.3% of the species were reported as being edible during times of famine, and 5.7% were reported as being edible to supplement the staple diet.

The consensus among informants regarding the most widely consumed wild food plants in the study area

Resident informants frequently mentioned the most commonly used plants, which they thought filled the gap created by the seasonal food shortage. *Pappea capensis* Eckl. & Zeyh. (its ripe fruits are eaten) was cited as a great food resource filling the gap of seasonal food scarcity by 120 informants, followed by *Amaranthus dubius*Thell. (its leaves are cooked as a vegetable), cited by 115 informants.

Informant consensus factor (ICF)

The number of usage citations in each species (n_{ur}) was 48, and the number of the selected species utilized (n_t) was 10 when the ICF of the aforementioned wild foods was determined. ICF thus becomes 0.8. This product is quite close to one, which shows that a significant section of the local community uses a small number of species for various purposes.

The availability of traditional knowledge about edible wild plants among various social groups in the area

The status of indigenous knowledge among different social groups is depicted in Table 1.

Utilized plant parts and methods of consumption

Eighty plant parts, including 54 fruits, eight roots, eight barks, six leaves, one seed, one stem, one nectar, and one gum, were included as food sources (Fig. 2). Seven plant parts could be eaten cooked, three could be either cooked or uncooked, and 70 plant parts were consumed uncooked. Figure 3 depicts pictures of a few wild plants that are edible.

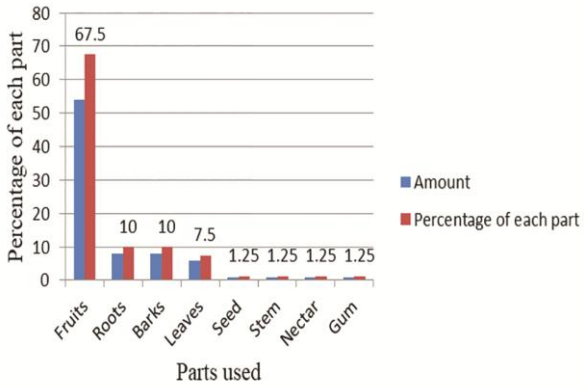

Fig. 2— Wild foods made from plant components

District favoritesfor wild edible plants

We were able to determine the two most popular plants in the region by using the favourite ranking that eight key informants conducted on five wild edibles that were frequently mentioned for use at various times (Table 2). Accordingly, *Vangueria apiculata* K. Schum came in second with a total score of 35 out of 40 prospective points, trailing behind *Solanum nigrum* L. in first with a total score of 37 out of 40 likely points.

Use variety of wild food plants that were discovered in the study region

There have been reports of potential uses for the wild edible plants found in the research region other than food production. According to the importance of each use category, the additional use categories were as follows: forage with 55 species, fuel wood with 52 species, building with 35 species, remedy with 21 species, utensils with 16 species, and living fence with 2 species. A complete list of all applications for all wild edible plants gathered from the study region is provided in Supplementary Table 1.

Wild edible plant comparisons on a pair basis

To determine the level of significance of the species, ten wild edible plants were compared pair-

Fig. 3 — Some wild edible plants of the study area. (A) *Acokanthera schimperi* (Apocyanaceae), (B) *Cordia africana* (Boraginaceae), (C) *Ziziphus abyssinica* (Rhamnaceae) and (D) *Flacourtia indica* (Flacourtiaceae); Wild edible plants Photo by Mersha Ashagre, 2019; SuroBarguda District, Oromia, Ethiopia

Table 1 — Status of indigenous knowledge on foraged foods among the various social groups in the area

Accounts	Informed parties	No.R.	Average ± SD	t -value**	p–value
Sex	Male	79	16.99±2.89	- 0.27	p≤0.79
	Female	51	17.12±2.49		
Age	Youngsters	99	17.36±2.64	2.36	p≤0.02*
	Elders	31	16.00±2.81		
Literacy	Illiterates	68	16.60±2.72	-1.53	p≤0.13
	Literates	62	17.35±2.82		
Vicinity to the centre	Near	22	16.36±3.18	-1.1	p≤0.28
	Far	108	17.17±2.62		
Groups of informants	Key	26	18.92±1.73	5.36	p≤0.00*
	Randomly taken	104	16.57±2.74		

*Significant difference (p<0.05); ** t (0.05) (two-tailed), Average degree of freedom (df) =75.44, No. R.= number of respondents

wise by ten informants (six key and four randomly selected informants), and the top three plants were *Carissa spinarum* L., *Rubus steudneri* Schweinf, and *Acokanthera schimperi* (A. DC.) Schweinf (Supplementary Table 2).

Identification of wild food plants with several uses and their priority for conservation

According to the key informants, out of the 70 wild edible plant species that were discovered, ten species were suggested for direct matrix ranking. Eight use values-medical, diet, fodder, building, charcoal, fencing, and utensil production-were used to rank the species. Supplementary Table 3 presents the findings of this inquiry.

The ongoing exploitation of multipurpose species in the study area is illustrated in Figure 4.

Fidelity level index of wild edible plant nutrition potential

Psophocarpus grandiflorus Wilczek showed the highest fidelity level value among the five most commonly used wild edible plants cited for their wider consumption at different times to fulfill food requirements (Table 3).

The food value of selected wild edible plants

Among all identified wild edible plants, the highest food use values (UVfo) were noted for *Psophocarpus grandiflorus*, *Solanum nigrum*, and *Physalis peruviana* L. (Table 4).

Discussion

Are there several types of edible wild plants in this study area?

According to the results of this investigation, the study area is frequently endowed with a variety of wild edible plants that benefit the local populations by

Table 2 — Favorites for wild edible plants in the district

Plant species consumed	Informants appointed A to H								Total score	Rank
	A	B	C	D	E	F	G	H		
Syzygium guineense (Willd.) DC.	3	5	4	4	5	3	4	4	32	3rd
Ximenia caffra Sond.	3	4	4	3	4	3	4	4	29	4th
Vangueria apiculata	4	5	4	4	5	4	4	5	35	2nd
Rhus vulgaris Meikle	3	4	3	3	4	4	3	3	27	5th
Solanum nigrum	5	4	5	5	4	5	5	4	37	1st

Table 3 — Five edible wild plants' faithfulness (fidelity) level index

Wild plant that is edible	Why wild food is used for	IP	Iu	Fl	Fl%	Rank
Vangueria apiculata	To bridge the void	36	44	0.82	82	4th
Physalis peruviana	To fill the gap	76	80	0.95	95	3rd
Psophocarpus grandiflorus	To supplement the staple food	58	60	0.97	97	1st
Solanum nigrum	To bridge the void	72	75	0.96	96	2nd
Ximenia caffra	To fill the gap	24	30	0.80	80	5th

Table 4 — The most frequently quoted wild edible plants' food utilization values (UVfo)

Species of edible wild plants	Number of individuals mentioning the species	Sum of citations	Used parts number	UV fo.
Amaranthus dubius	82	542	2	6.6
Dioscorea schimperiana Kunth	73	446	1	6.1
Physalis peruviana	94	705	1	7.5
Psophocarpus grandiflorus	110	1034	2	9.4
Solanum nigrum	102	898	2	8.8

N.B. UVfo= Usefulness of food

Fig. 4 — (A-D) Ongoing plant extraction in the study area's natural forest; Photo by Mersha Ashagre, 2019; SuroBarguda District, Oromia, Ethiopia

serving as food sources and other necessities (Supplementary Table 1). This is because several plant species can grow under favorable climatic conditions. Even though 130 informants took part in the study, the bulk (98%) of them cited identical plant species that were exploited as wild foods. The total number of wild edible plants that are ostensibly consumed in the study area exceeds the numbers reported by[11,12], who respectively acknowledged 48 wild edible plants among the tribes of Gaya District, Bihar, India, and 64 wild edible species among the Messiwa people, Morocco. There have never been records of such a wide variety of wild edible plant species in a single district in Ethiopia.

Which growth mode and plant family produced a sizable proportion of the wild edible plant species?

Regarding their growth types, shrubs contributed a significantly higher number of wild edible plants. Fabaceae and Anacardiaceae were the families with the highest number of wild edible plants (7 species each) (Supplementary Table 1). The Fabaceae family was one of the most prevalent among all the plant families they collected, and in terms of the growth patterns of wild edible plants, shrubs were more prevalent in Sedie Muja District, South Gondar Zone, and Northwestern Ethiopia[13].

For what other purposes are wild edible plant species used by the local people?

Informant consensus analysis clarified that relatively few (ten) wild edible plant species were used for different purposes in the study area. Regarding their use diversity, most of the identified wild edible plants were used for fodder and firewood (55 spp. and 52 spp., respectively) (Supplementary Table 1).

What contribution have wild edible plants made to fulfilling the food shortage in the local community?

Pappea capensis was reportedly frequently used during this time. The majority (56) of the wild edible plants were thought to be used to fill the gap of a periodic food shortage for those people who couldn't get proper food at the required time due to various reasons. In evaluating the level of importance of some selected wild edible plants, *Carissa spinarum* stood out first (Supplementary Table 2). Calculating the degree of importance and the fidelity level index of wild edibles may provide insight into their potential value as food. In this investigation, *Psophocarpus grandiflorus* had the highest fidelity level value (Table 3), which points out its significance in complementing the food necessities of the indigenous community. This discovery necessitates further scientific nutritional research to conserve and bring the *Psophocarpus grandiflorus* species into cultivation for wider use in the country.

Wild edible plants are essential food sources for food-insecure families living in poverty and for several communities living in the rural villages of the current study area. They are important sources of fruits, tubers, and even green leafy vegetables, which are relevant in ensuring food supply and increasing nutritional value. The importance of wild edible plants in increasing nutritional value through the delivery of important nutrients, including useful micronutrients, particularly beta-carotene, zinc, and iron, all of which are reported to result in "hidden" hunger[14]. The main problem for family food safety in the study area is the inability to obtain adequate food crop products when they are most needed. One of the reasons could be the very short duration and highly irregular rain that has been falling in the area for several years. As a result of this situation, agricultural survival activities have been reduced and run inefficiently. These semi-pastoralist individuals had more familiarity with a variety of wild foods, which might be leveraged to increase resilience and expand sources of support for coping with and adapting to climate change. Semi-pastoralists consume wild edible plants to supplement their main diet, to make up for occasional food shortages, and even as a backup food source during times of famine, protracted drought, and social unrest. 5.7% of the wild edibles are utilized during periods of sufficient food production to support the primary diet; 80% of the species are used to fill the problem of seasonal food shortages; and 14.3% of the species are used during periods of starvation. The wild edible plant species *Acokanthera schimperi* (Apocyanaceae) is reported to be poisonous if its fruits are eaten as they are; however, the local community had ancestral knowledge of minimizing this danger by removing the poisonous part (the pericarp) and using only the fleshy part of the fruit.

Which social group is more knowledgeable about wild edible plant species?

The number of wild edible plants counted by men and women, illiterate and literate participants, as well as informants close to and far from the center, did not differ significantly. The number of wild edible plants

transmitted by seniors (> 36 years old) and youths (< 37 years old) differed considerably ($p<0.05$). The younger age group (rural children and herders) has more innate knowledge about eating wild edible plants (17.36±2.64) than the elderly. The perceived powerfully significant difference ($p\leq0.02$) could be because of greater acquaintance and being harmoniously cohesive with wild edible plants by rural children, particularly herders (Table 1). The new discovery is also consistent with the information from[15] where younger groups were better familiar with wild food plants in Northern Ethiopia. The amount of wild edible plants conveyed by the main informants is higher than that reported by randomly chosen informants. This could be attributed to the former's extensive exposure to and knowledge of wild edible plants.

In what way does indigenous knowledge transfer from generation to generation?

Awareness is formed and transmitted through communications inside particular communities and agro-ecological settings. As a result, ethnobiological evidence and exercise within several customs have been conveyed to differ depending on issues such as environmental origin, customs, beliefs, living, instructive contextualization, communal prominence and relationships, revenue amount, age, and sex. Through observation, simulation, the unrestricted exchange of knowledge among members of the public, history telling, and myths[16], the transmission of knowledge from elders to young people and its resulting improvement are openly communicated[16]. In this research area, word of mouth was the primary scheme of customary knowledge transmission on varieties of wild edible plants. Customary knowledge is built with years of experience. Nonetheless, in the circumstances of customary information about wild foods in this specific study area, youngsters and children were more familiar with them than seniors. This may be due to differences in favorite wild edible plants (young people may use a wider variety of species), familiarization with some species that were not previously known to be edible, and direct and consistent contact with the forest and natural surroundings, which allows them to have more knowledge in gathering many edible species (great expertise with wild foods) and their high chance of learning more about wild edibles from their peers when acting differently from their peers.

What portion of the plant is eaten, and how is it eaten?

Fruits were the primary plant parts consumed, followed by roots and barks. Because of their suitability for consumption, accessibility, and capacity to satisfy consumers, fruits are used widely. Regarding their manner of eating, most of them were eaten raw, and only seven species were eaten in their cooked form. This may be due to the users' propensity for eating these items regularly and their quick consumption in response to their wants or desires. The edible plant parts were harvested from the wild at various points during the year, with the bulk of them being picked and consumed between the months of March and May and September and November. In the study area and many other areas of southern Ethiopia[4], these two seasons are rainy times when most plants blossom and bear fruit. For the most part, wild foods were consumed to make up for the recurring food shortage from March to April, when deposited cultivated food crops were progressively declining. These plants were used as a substitute, filling the gapsof food scarcity that happen between harvesting periods. The preference ranking exercise revealed that *Solanum nigrum* and *Vangueria apiculata* are the best-preferred species used as wild foods (Table 2). The output calls for the need to run subsequent nutritional analysis studies on the most preferred plants so that they can be promoted for wider use across the drylands of Ethiopia, where food insecurity is evident despite the availability of both species. Though all identified wild edible species have food usage values (UVfo), *Psophocarpus grandiflorus* has the highest UVfo, followed by *Solanum nigrum* (Table 4). This might be as a result of their nutritive value, palatability when coupled with common foods, and flavor.

What seems to be the conservation status in the study area?

Overgrazing, charcoal production, fuel wood gathering, and forest clearing for construction or timber use were cited as man-made causes of the decline in forest resources (Supplementary Table 3). The Dry Evergreen Afromontane Forest is not properly managed and conserved (Fig. 4), so the forest is currently highly disturbed and affected. As depicted in Figure 4A the area was highly depleted by overgrazing and changed nearly to bare ground; 4B indicated the cutting down of big trees like *Syzygium guineense* (Willd.) DC., *Olea europaea* L. subsp. *cuspidata* (Wall. ex G. Don) Cif., *Juniperus procera* Hochst. Ex Endl., and *Podocarpus falcatus*

(Thunb.) Mirb. for timber production to generate income; 4C clarified how the forest was affected due to firewood collection and 4D showed the collection of *Rhamnus prinoides* L 'Herit (non-timber product of the forest) for sale. The rest of the woodland area was also harshly tainted due to overgrazing by a huge livestock population and illegal charcoal-making and firewood gathering. Although some management practices were used in a specific region of the district, this did not guarantee the security of plant diversity and their contribution to the survival of life in the region. Residents of the study area just went to the forest, woodland, or grazing area to gather wild foods when they need to use them and did not concern about the long-standing existence of these plants. The reason given by the majority of these interviewees (93.9%) was that wild edible plants were easily accessible in their surroundings, negating the need for personal effort to maintain and domesticate these plants. As a result, many plants (60%) were under grave risk due to both natural and human-caused factors. Wild edible plant species were impacted by erratic and infrequent wet seasons, as well as protracted and recurrent droughts. Therefore, effective land management is necessary to lessen the load and harm caused by usage of the natural resources. This includes planting enrichment crops, repairing degraded fields, and both protecting and enhancing the current vegetation cover. This could be done by addressing the problems associated with unrestricted access to forest resources through sustainable forest management, which includes native communities living in or near the vegetation as co-managers and co-beneficiaries of any form of access to wild edible plants and subsequent revenue generation.

Conclusion

The presence of diversified wild foods in the study areaprovided a chance for the local community to get supplementary foods, especially during food shortages (80% of species are used during seasons of food shortage). It could be a compelling reason to encourage and involve local residents in the conservation of identified wild edible plants, as well as to promote their subsequent domestication for wider use. It is also a timely endeavor to promote nutritional analysis studies on the most preferred wild edible plants to identify their exact potential for improving dietary diversity. It is high time to run a coordinated effort to bring more wild edible plants into the national food basket as tools to fight the evident food insecurity.

Supplementary Data

Supplementary data associated with this article is available in the electronic form at https://nopr.niscpr.res.in/jinfo/ijtk/IJTK_22(03)(2023)557-566_SupplData.pdf

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Conflict of Interest

The author declares that he has no competing interests.

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