Wild Food Thistle Gathering and Pastoralism: An Inextricable Link in the Biocultural Landscape of Barbagia, Central Sardinia (Italy)

Giulia Mattalia 1,2,*, Renata Söukand 2, Paolo Corvo 1 and Andrea Pieroni 1,3

1 University of Gastronomic Sciences, Piazza Vittorio Emanuele 9, 12042 Pollenzo, Italy; p.corvo@unisg.it (P.C.); a.pieroni@unisg.it (A.P.)
2 Department of Environmental Sciences, Informatics and Statistics, Ca’ Foscari University of Venice, Via Torino 155, 30172 Mestre, Italy; renata.soukand@unive.it
3 Medical Analysis Department, Faculty of Science, Tishk International University, Qazi Muhammad, 44001 Erbil, Iraq

* Correspondence: giulia.mattalia@unive.it

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Abstract: In Sardinia, pastoralism has been at the heart of cultural identity for millennia. Such activity has shaped the landscape by sustainably managing its elements over the centuries. We conducted 30 semi-structured interviews regarding the uses of wild plants as well as their contribution to sheep breeding over the last few decades in two villages of Barbagia di Ollolai. We recorded the use of 73 taxa belonging to 35 families. Over one-third of the vernacular food taxa were mentioned as raw snacks. Specifically, 22% were used only as raw snacks, while another 22% were used as raw snacks in addition to other uses. Indeed, there is a subcategory of raw snacks represented by thistle plants, named cardu, referring to thorny herbaceous taxa. Cardu are often related to the pastoral realm in the Mediterranean Basin as they are gathered, often with the help of a knife, peeled with the blade, and consumed on the spot while grazing sheep, but ultimately, their crunchiness provides a pleasant chewing experience. In addition, cardu may have been used as thirst quenchers. We conclude that pastoral activity has significantly contributed to the development of a distinctive food heritage and cultural landscape.

Keywords: cultural landscape; ethnobotany; foodscape; Mediterranean; traditional ecological knowledge

1. Introduction

Transhumance, a form of pastoralism rapidly declining in Mediterranean and Alpine areas, has recently been added to the Representative List of the Intangible Cultural Heritage of Humanity. UNESCO has recognized the crucial role of such traditional ecological practices and associated knowledge in shaping relationships among people, animals and the surrounding ecosystem. Indeed, pastoral societies often possess a rich variety of traditional ecological knowledge, practices and beliefs (TEK) [1–4]. In many contexts all over the world, pastoralism is often regarded not only as a primary source of livelihood, but also of identity [5,6]. In Sardinia, the second largest island of the Mediterranean Basin, pastoralism has been at the heart of local cultural identity for millennia [7–9]. This is still evident in those Sardinian inland areas, like Barbagia, where sheepherding is a daily activity for the majority of families. Barbagian communities continue to depend on pastoralism, from an economic perspective, due in part to agricultural subsidies [10], but especially from a cultural and identitarian perspective as sheepherding is a powerful symbol of Sardinian-ness [9]. Sardinian shepherds are “unaware gardeners” of the landscape, providing maintenance and care [11]. However, in addition to the importance of the
TEK held by shepherds for landscape maintenance, pastoralism may also be crucial in shaping food habits. Indeed, as highlighted by Rivera et al. [12], there is a plurality of dietary patterns under the denomination of the Mediterranean Diet, and the diet developed by the pastoral societies of this area of Barbagia is part of such multiplicity.

Many ethnobotanical studies, mainly focusing on medicinal plants, have been conducted over the past 30 years in several areas of Sardinia [13–17]. However, there is no available literature on ethnobotany in the area of Barbagia di Ollolai, and there are only a few publications regarding pastoralism in Barbagia [18–20], which mainly address historical and ethnographic aspects. Nevertheless, the relationship between pastoralism and wild food has been little investigated and mainly in the Asian and African contexts. Among the few available publications, [21] found that among the Wakhi of Afghanistan, the role of the pastures is not only to represent a grazing-ground, but also they are considered as reservoirs of useful wild food plants. Indeed, pastoralism is often related to specific categories of plants. For example, in Iraq, Kurdish pastoralists were found to consume more snacks than the neighboring more horticulturalist-driven Kakei [22] and much more than Assyrians [23]. Even more specifically, Volpato and Di Nardo [24] explored the pivotal relation between the Sahrawi camel nomads and a specific savannah plant in Western Sahara. Yet, the pastoral activity, if not properly managed, can also negatively affect the presence of wild edible plants [25].

In Europe, the relationship between pastoralism and the landscape has recently been explored in the volume Biocultural Diversity in Europe [26]. In addition, Hungarian scholars have found that pastoralists are “walking encyclopedias of landscape knowledge” [27] (p. 16) as they hold a detailed understanding of landscape history [28] while they often do not have species-specific knowledge about wild plants [29], as of the high productivity at the landscape level as pointed out by Fernández-Giménez and Fillat Estaque [1] in the Spanish Pyrenees. Indeed, in the mountainous ecosystems of the Mediterranean context, the pastoral activity had a major role in shaping landscapes of High Nature Value [30], whilst providing cultural ecosystem services [31]. In this respect, Frascaroli et al. [32] hypothesized an ancient link between pastoralism and sacred natural sites, because of their location along transhumance routes and the high frequency of plants used for ethnoveterinary purposes in the vicinity of the shrines. However, research linking pastoral activity and specific plant uses is still insufficient to be able to understand their coevolution within rural landscapes.

In this study, we aimed to discuss the contribution of pastoralism to the shaping of landscapes through the lens of ethnobotanical knowledge related to the gathering of wild and semi-domesticated species used in food and medicinal preparations, in the context of two pastoralist societies of Barbagia di Ollolai, Central Sardinia. Specifically, our goals were:

1. to document uses of wild and semi-domesticated plants for food and medicinal preparations in Barbagia di Ollolai;
2. to describe the impact of local pastoralism-related practices on the use of wild food and medicinal plants in the study area;
3. to discuss the possible role of pastoralism in shaping local food heritage and cultural landscapes in the Sardinian context.

2. Materials and Methods

The study was conducted in two villages of Barbagia di Ollolai (Figure 1). Barbagia is an historical sub-region of Central Sardinia, whose main town is Nuoro. The landscape is mainly mountainous, and population density is rather low (around 37 inhabitants/km² [33]). Lodine and Teti, the two municipalities in which we conducted interviews, are only 10 km from each other, but about 28 km by road. Lodine is located at an altitude of 850 m above sea level and has around 350 inhabitants, while Teti has 680 inhabitants and lies at 750 m above sea level. Most of the inhabitants of both villages are, or used to be, shepherds, as the high altitude does not allow agricultural activities such as olive or wheat cultivation. This geographical region, called Barbagia, like most of Sardinia, was under the Spanish Crown for four centuries until 1720, when it was annexed to the Kingdom of Piedmont and
then later, in 1861, to Italy. The main language is Sardinian, which is spoken all over the island, with some important differences between historical regions. In Teti and Lodine, the Nuorese dialect is spoken. However, many differences persist not only in terms of vocabulary but also in pronunciation, as a glottal stop (a stop sound made by rapidly closing the vocal cords) is present in Lodine but not in Teti.

![Map of the area.](image)

The study area is characterized by a warm and temperate Mediterranean climate. Average temperature is around 13 °C, with the lowest peak in January (average of 6 °C) and the highest in August (average 22 °C). Precipitation is 810 mm of rain per year, and it is concentrated in the period from October to March.

2.1. Pastoralism in Barbagia

Pastoralism has undergone some serious changes over the last century. Older male informants reported that in their youth, they used to spend their winters in milder coastal areas and return at the end of the spring to graze their herds in mountainous areas of Barbagia before moving back to the lowlands at the beginning of autumn (the so-called “inverted transhumance”). In general, shepherds were also in charge of cheese-making and slaughtering. Nowadays, Sardinian pastoralism is sedentary, yet most of the flocks graze permanent grasslands most of the year [34]. Generally, milk is sold to local cooperatives and live animals are sold to slaughterhouses or tradesmen. Currently, the main issue is related to the fluctuation of milk prices and its low profitability due to the high dependency on local processing industries. The majority of interviewed shepherds heavily rely on EU funds, and many others breed sheep only for family consumption, as a way to keep their family tradition alive.

2.2. Data Collection and Analysis

Field work was carried out in June 2018 during which 30 interviews, equally distributed between Teti and Lodine, were conducted. Purposive sampling was chosen because our aim was to study the use of wild and semi-domesticated plants by knowledgeable experts. As many knowledge holders were elderly individuals, it was not always easy to approach them in the street, so we applied the Snowball method to make contact and be invited into their homes. As the local cafes were generally frequented by men, we kindly asked the male interviewees that we met if their wives and mothers had some time to talk to us about the wild plants they used for food and medicinal purposes. The people interviewed (13 women and 17 men) ranged in age from 35 to 93 years (mean age 72 years). All the interviewees were born in the area; however, a few reported to have resided in other Italian regions for a period because of their job. The Code of Ethics of the International Society of Ethnobiology [35] was strictly followed, and prior informed consent was received orally. Interviews were undertaken in the Italian language; however, some interviewees answered mainly in Sardinian. Interviews focused on qualitative and quantitative information about local wild and semi-wild plants gathered in the past or
currently, for culinary purposes, as well as recipes, plant part used and methods of preparation and consumption. We define semi-wild plants as taxa that were intentionally planted, but then abandoned (such as some fruit trees). Subsequently, informants were asked to indicate remedies for treating illnesses by naming each part of the body and related diseases. Interviews were semi-structured, and an in-depth conversation was conducted when possible. Whenever possible, informants were asked to show mentioned plants growing around the house in order to harvest voucher specimens for herbarium preparation. The mentioned species were collected, when available, and identified according to the Flora d’Italia [36]. Forty-three voucher specimens of herbaceous wild and semi-domesticated plants were deposited at the University of Gastronomic Sciences. Taxonomic identification, botanical nomenclature, and family assignments followed the Plants of the World Online [37], The Plant List database [38], and the Angiosperm Phylogeny Group IV [39].

As the two communities are located in the same area and share a strong pastoral background, we can assume that they are homogenous from an ethnobotanical perspective, and therefore, we merged the ethnobotanical data of Teti and Lodine. Nevertheless, they maintain an interesting phytolinguistic diversity, which is reported in Table 1.

| Botanical Taxa | Recorded Local Name | Parts Used | Food Use | Teti n = 15 | Lodine n = 15 |
|----------------|---------------------|------------|----------|-------------|---------------|
| Carduus pycnocephalus L. | (g)ardu molentinu (T, L) | Tubers and Stems | Raw as a snack | 10 | 12 |
| Carlina acaulis L. | gardu pisiau (L) | Stems | Raw as a snack | 8 |
| Carlina corymbosa L. | gardu pintu (L) | Roots | Raw as a snack | 3 |
| Cynara cardunculus L. | gardu anzolinu (L) | Roots | Raw as a snack | 5 |
| Galactites tomentosa Moench | gardu biancu (L) | Stems | Raw as a snack | 3 |
| Scolymus hispanicus L. | gardu varju (L) | Stems | Preserved with olive oil | 4 |
| | gardu mele (L) | Stems | Raw as a snack | 1 |
| (g)ardu gureu (T, L) | Stems and roots | Raw as a snack | 4 | 5 |
| Sa chimma (T); gardu cuccu (L) | Stems | Raw as a snack | 14 | 11 |
| | | Soup | 2 |

We entered the gathered data into an Excel database that included the plant’s scientific name, taxonomic family, local name(s), and part(s) used, as well as the purpose of use (food or medicine), its preparation, and the number of citations per village. We considered emic categories for both medicinal and food uses of plants. We then calculated the number of food and medicinal uses.

In order to discuss the salience of thistles in Sardinia, we reviewed all ethnobotanical studies conducted in Sardinia to detect food, medicinal or veterinary uses of such plants, whose names include gardu, cardu, cadru, caldu and canciof*.

3. Results

3.1. The Ethnobotany of Barbagia di Ollolai

We recorded the use of 73 taxa belonging to 35 families (see Appendix A). We found 54 plants used for food preparations, 9 for medicinal preparations and 10 for both uses. The most well-represented families were Asteraceae (13 taxa) and Rosaceae (12 taxa).
Most common plants were used for the preparation of soups (s’erbutzu), such as Apium nodiflorum, Oenanthe pimpinelloides, Rumex pulcher, and Silene vulgaris, and as a seasoning, such as Mentha pulegium and the autochthonous Thymus herba-barona, while others were eaten raw (Nasturtium officinale and Rumex acetosa) or simply boiled (Asparagus angustifolius). Malva sylvestris showed high versatility being used for two food (soups and salads) and twelve medicinal preparations. Pirus was also very popular as pears were prepared using eight different methods, including the very traditional sa pilarda and in cuffettu. Sa pilarda is a way to sunder and preserve fruits and vegetables in general and pears in particular. In cuffettu is a preparation method which uses vinegar to preserve pears.

Regarding the most quoted uses, we found 22 plants consumed raw as a snack, and 18 used in soups. The low number of medicinal taxa may be the result of different factors, including the overlapping of nutritional and medicinal values within the same taxa, which is often expressed by the exclamation “It’s healthy!” However, traditional medicinal knowledge may have also been eroded by the widespread availability of commercial medicinal products.

3.2. Snacking from the Wild

Almost one-third of the recorded plants are snacks as they are consumed raw, at the place of harvest, between main meals. Often their consumption is preceded by their unintentional finding. Interviewees reported 10 taxa belonging to this group including fruits and leaves (Rumex acetosa) and part of the stem (Hypochoeris). Other taxa include flowers which are sucked such as Digitalis purpurea, Oxalis spp., and Scrophularia trifoliate. One interviewee referred to snacking on the roots of Smyrnium perfoliatum as a “child’s game”. These plants were mainly consumed by children, since they started to help with the herd at the age of 10. Other plant taxa were also used, although not exclusively as raw snacks, and these included mainly fruit trees such as Corylus avellana, Ficus carica, Juglans regia, Morus spp., Opuntia ficus-indica, Prunus cerasus, and Prunus amygdalus.

In addition, 10 vernacular names under the phytonym cardu were recorded and indicate thistles consumed as snacks, particularly relevant in the past when shepherds were transhumant (Figure 2). Therefore, we may refer to such a category of snacks as pastoralist snacks.

3.3. The Role of Pastoralism in Shaping the Cultural and Food Landscape of Barbagia di Ollolai

Sheepherding plays a multiplicity of roles in traditional local ecological narration. Indeed, pastoralism permeates every sphere of life in Barbagia. Thus, traditional food habits were also shaped by such activity. Indeed, a staple food of shepherds was fresh (or rotten casu martzu) cheese and pane fresa (local dry bread). Vitamins, fiber and other nutrients were mainly introduced by wild species. As an older interviewee reported: “Sa melacra (Rumex acetosa) is bloody, it’s bright and makes your blood happy”.

Indeed, despite global shifts and the sedentarization of this form of pastoralism, sheep and sheepherding are vital and valued in the Barbagian cultural landscape. Here, pastoralism provides several tangible and intangible services. For instance, sheep milk is made into ricotta cheese, used as
filling for local dumplings called culurgiones or sabadas, into hazau de murza, another fresh cheese which is used in s’erbutzu soups, or into the famous pecorino cheese. Mutton and lamb meat is also prepared according to different recipes; however, our interviewees reported the preparation of a specific dish called sa vrente which is based on sheep blood cooked in its stomach in ash. This dish is especially relevant as it does not require the use of a kitchen, because it is still cooked directly in the field. Another distinctive recipe is sa horda which is an agglomerate of roasted intestines. Blood is not only cooked in the stomach, but it is also an ingredient for dumplings and desserts, after it has been seasoned with wild taxa such as su puleu (*Mentha pulegium*), s’armidda (*Thymus herba-barona*), or su gusathu (*Allium subhirsutum*).

In addition, sheep provide wool, which used to be a valuable raw material for handicrafts and clothes, but is now undergoing a market crisis. Some shepherds still remember some plants used for dying wool fibers including s’alinu (*Alnus glutinosa*), sa castanza (*Castanea sativa*), and su samucu (*Sambucus nigra*). Moreover, a local inhabitant reported the beneficial use of dirty wool for treating hair, which would grow stronger. The fat of the sheep was employed as a base for medicinal ointments, while sheepskin was used for handicrafts, especially to custom-make Carnival masks, which are another expression of the centrality of pastoralism in Barbagia di Ollolai. However, sheep also provide intangible values such as the tradition of s’ispinu, which can be summed up with the phrase “a taste for sharing”. Indeed, when refrigerators were not available and meat could not be stored for a long time, there was a rotational system for slaughtering. Every family provided the community with meat at a different time, so that every household had fresh meat available. At the moment, this tradition is no longer practiced, but persisted in the memory of our interviewees.

4. Discussion

4.1. Cardu: A Key Emic Plant Group in the Pastoral Cultural Heritage of the Mediterranean

Pastoralist snacks in Barbagia di Ollolai are mainly represented by thistles, locally named cardu, referring to thorny herbaceous taxa primarily belonging to the Asteraceae family, but also to other families such as Caprifoliaceae and Apiaceae.

The interviewees in Teti and Lodine could not fully agree on the correspondence between local names and samples of the plant. Indeed, most of them are called cardu—cardoon—followed by an adjective, such as “of the donkey”, “white”, etc. This under-differentiation, also highlighted by Paulis [40], may be due to the isolation of shepherds in their daily lives, and thus, the lack of a precise definition. However, it may also be due to mobility and thus, to different names depending on the location, or to the current ongoing erosion of TEK related to those plants. Table 1 reports the names and uses of records belonging to such a phytonym mentioned in Lodine and Teti, where we can trace back the ten local phytonyms to five taxa belonging to the Asteraceae family.

Cardu are generally consumed raw, although some (such as gardu varju and (g)ardu molentinu) can be cooked to be preserved with vinegar. Both men and women are able to name some cardu, probably due to their abundance as well as to childhood memories; however, it is likely that men eat them more because of the time they spend on a daily basis in the pastures where cardu grow abundantly. In most cases, the names reported in Teti and Lodine differed, indicating the (linguistic) individuality of each Barbagian village, despite the short distances between them.

Review of the ethnobotanical data regarding the phytonym cardu in Sardinia revealed its cultural relevance all over the island. We found 10 publications reporting 16 taxa and 25 local phytonyms distributed across Sardinia (Table 2). Specifically, we found 25 food uses, 33 medicinal uses and 8 veterinary uses, including fodder and nectar for bees. Of the food uses, in the majority of cases, cardu stems, tubers or young inflorescences are consumed raw, sometimes they are boiled or blanched, and rarely, they are preserved in olive oil, or used in soups, omelets and liquors. Medicinal uses of cardu are usually administrated as decoctions (mainly of roots) but also as infusions.
Table 2. Review of thistle taxa used in Sardinia.

| Taxa                                      | Local Name | Site          | Use                                      | Reference        |
|-------------------------------------------|------------|---------------|------------------------------------------|------------------|
| *Carduus pycnocephalus* L. (Asteraceae)   | Gardu pissianculu | Dorgali      | F: Raw stems                             | Camarda (1990)   |
| *Carlina corymbosa* L. (Asteraceae)       | Gardu anzoninu | Dorgali      | V: As fodder                             | Camarda (1990)   |
| *Chamaeleon gymnifer* (L.) Cass. (Asteraceae) | Gardu prantarittunu | Dorgali | V: Melliferous                          | Camarda (1990)   |
| *Centaura benedicta* (L.) L. (Asteraceae) | Cardu santu | Laconi        | M: The whole plant before flowering is a pervpirant | Ballero et al. (1997) |
| *Centaurea benedicta* (L.) L. (Asteraceae) | Cardu santu | Laconi        | M: The whole plant before flowering is an anti-catrarrhal | Ballero et al. (1997) |
| *Cirsium scabrum* (Poir.) Bonnet and Barratte (Asteraceae) | Gardu ‘e vrunzu | Dorgali | F: Liquors                               | Capriola (unpublished) |
|                                            | Cadru gureu | Santadi      | F: Tender stems and inflorescences are blanched and preserved with olive oil | Capriola (unpublished) |
|                                            | Fluminimaggiore | Villagrande Straisaili | M: Decoction of the whole plant for liver health | Ballero et al. (2001) |
| *Cynara cardunculus* L. (Asteraceae)     | Canciofa    | Laconi        | M: Root infusion for jaundice            | Ballero et al. (1997) |
|                                            | Sarrabus    |               | M: Leaf decoction for liver colic        | Ballero et al. (1997) |
| *Cynara cardunculus* L. (Asteraceae)     | Cardureu    | Gesturi       | M: Leaf decoction as a choleretic         | Loi et al. (2002) |
|                                            | Arzana      |               | M: Stem infusion as an intestinal antispasmodic | Ballero et al. (1994) |
|                                            | Villagrande Straisaili |         | M: Leaf infusion for liver health        | Loi et al. (2004) |
|                                            | Villagrande Straisaili |         | M: Stalk decoction for digestion         | Loi et al. (2004) |
| Taxa                              | Local Name | Site         | Use                                             | Reference               |
|-----------------------------------|------------|--------------|------------------------------------------------|-------------------------|
| Gardu leu                         | Dorgali    | F: Young leaves in omelets                      | Camarda (1990)          |
|                                   |            | V: As fodder                                      | Camarda (1990)          |
| Gardu reju                        | Orune      | F: Young inflorescences boiled                   | Lancioni et al. (2007)  |
| Gardu reju                        | Orune      | F: Young inflorescences eaten raw                | Lancioni et al. (2007)  |
| Dipsacus ferox Loisel             | Cadru ‘e pastori | F: Raw or blanched                               | Capriola (unpublished)  |
| (Caprifoliaceae)                  |            | M: Root infusion for diseases                    | Ballero et al. (1997)   |
| Gardu cannella                    | Orune      | M: Root decoction as a diuretic                  | Lancioni et al. (2007)  |
| Dipsacus fullonum L.              | Cardu aresti | M: Water harvested on the plant to treat red spots on the skin | Ballero et al. (1997)   |
| (Caprifoliaceae)                  |            | M: Decoction of non-lignified root helps to reabsorb edema | Bruni et al. (1997)     |
| Eryngium campestre L.             | Cardu tingiosu | M: Decoction of non-lignified root contributes to chloride elimination | Bruni et al. (1997)     |
| (Apiaceae)                        |            | M: Decoction of non-lignified root is a diuretic against calculi | Bruni et al. (1997)     |
| Eryngium maritimum L.             | Cadru de mari | M: Root decoction as a spasmyotic                 | Palmese et al. (2003)   |
| (Apiaceae)                        |            | M: Root decoction for colic                      | Palmese et al. (2003)   |
| Galactites tomentosus Moench      | Cadru piscia | F: Stems raw or blanched                         | Capriola (unpublished)  |
| (Asteraceae)                      |            |                                                     |                         |
| Onopordum illyricum L.            | Gardu aininu | F: Young inflorescences eaten raw                | Lancioni et al. (2007)  |
| (Asteraceae)                      |            |                                                     |                         |
| Scolymus hispanicus L.            | Gardu mele  | V: Melliferous                                   | Camarda (1990)          |
| (Asteraceae)                      |            | V: As fodder                                      | Camarda (1990)          |
| Orune                             | Dorgali    | F: Stems and roots eaten raw                     | Camarda (1990)          |
| Orune                             | Dorgali    | F: Young inflorescences eaten raw                | Lancioni et al. (2007)  |
| Orune                             | Dorgali    | V: Melliferous                                   | Camarda (1990)          |
| Orune                             | Dorgali    | V: As fodder                                      | Camarda (1990)          |
| Orune                             | Dorgali    | F: Young inflorescences eaten raw                | Lancioni et al. (2007)  |
| Orune                             | Dorgali    | V: Melliferous                                   | Camarda (1990)          |
| Orune                             | Dorgali    | V: As fodder                                      | Camarda (1990)          |
| Orune                             | Dorgali    | F: Stems and roots eaten raw                     | Camarda (1990)          |
| Orune                             | Dorgali    | F: Young inflorescences eaten raw                | Lancioni et al. (2007)  |
| Taxa | Local Name | Site | Use | Reference |
|------|------------|------|-----|-----------|
| Cadru mulenti | Santadi | F: Stems raw or blanched | Capriola (unpublished) |
| | | F: Young leaves in salads (boiled or raw) | Atzei et al. (1991) |
| | Tempio Pausania | M: Leaf infusion for digestion | Atzei et al. (1991) |
| | | M: Leaf infusion for liver health | Atzei et al. (1991) |
| Caldu asininu; Caldu di Santa Maria | Luogosanto | F: Young leaves in salads (boiled or raw) | Atzei et al. (1991) |
| | Arzachena | F: Young leaves in salads (boiled or raw) | Atzei et al. (1991) |
| | S. Teresa di Gallura | F: Young leaves in salads (boiled or raw) | Atzei et al. (1991) |
| | Telti | F: Young leaves in salads (boiled or raw) | Atzei et al. (1991) |
| Cima de cardu | Laconi | M: Decoction of whole plant as a hypocholesterolaemizant | Ballero et al. (1997) |
| | | M: Decoction of whole plant against hemorrhage | Ballero et al. (1997) |
| | | M: Decoction of whole plant as a perspirant for chronic pneumonitis | Ballero et al. (1997) |
| | | M: Decoction of whole plant as a diuretic | Ballero et al. (1997) |
| Gardu Iloche | Dorgali | F: Raw stems | Camarda (1990) |
| | Gardu mola | Orune | F: Young inflorescences eaten raw | Lancioni et al. (2007) |
| | | F: Young inflorescences preserved with olive oil | Lancioni et al. (2007) |
| | | M: Root decoction as a diuretic | Lancioni et al. (2007) |

In Sardinia, cardu are believed to contribute to diuresis and digestion and they are especially good for the liver. These ethno-medicinal findings are in accordance with scientific evidence indicating that Carduus species are associated with several nutraceutical properties such as antibacterial activity, being beneficial for the liver, as well as being a digestive, a diuretic, and an antioxidant, anti-inflammatory, anticancer, and antiviral agent [41]. These thorny wild plants are traditionally used not only in Sardinia, but across the whole Mediterranean [41]. Indeed, this group of plants is well known for both food and medicinal preparations in Western Mediterranean cultures [42]. For instance, when looking at the words “cardo” or “cardu” in Spanish ethnobotany [43], we found similar results in terms of both uses and taxa belonging to such a phytonym, whose most important representatives are Cynara cardunculus, Scolymus hispanicus and Silybum marianum. It is worth noting that some local phytonyms mentioned use by shepherds (e.g., cadru ‘e pastori for Dipsacus ferox in Sardinia) or cheese-making (e.g., cardo cuaja-leches in Spanish or card per a formatjar in Catalan for Cynara cardunculus), but also some local phytonyms are quite similar in different languages (e.g., cadru mulenti, caldu asinine, cardu mola in Sardinia, and cardo borriquero, cardo burrero, alcachofa de burro, alcacil borriquero in Spanish for Silybum marianum). Indeed, the artichoke may have been domesticated in Roman times in Sicily and later spread by Arabs all over the Western Mediterranean Basin [44,45]. The food use of thistles among pastoral societies has been found not only in Sardinia, but also in other...
inland Mediterranean areas such as Central Italy [46], Spain [47,48], and NE Greece [49]. Moreover, in a few pastoralist communities of the Mediterranean Basin, cardu species have been used as plant rennet in the cheese-making process underlining the long-term link between these species and pastoral activity [50,51].

Interestingly, in strongly horticulturalist-driven societies of the Mediterranean Basin, thistles are not much used; also since their ecology does not match the main foraging areas in these communities that are represented normally by anthropogenic environments close to vineyards or olive tree orchards. In these communities (as pointed out by [52]), thistles are sporadically consumed boiled or fried (e.g., [53] in Apulia and [54] Sicily, Italy, [55] in Catalonia, Spain), yet, in no case are they eaten raw as snacks on the spot. This suggests that, in the Mediterranean Basin, the consumption of thistles is especially relevant among the (historically) pastoral society, yet, can be used also by an agriculture-driven society, yet after cooking. Indeed, in Sardinia, cardu are gathered, often with the help of a knife (due to their thorniness), peeled with the blade, and consumed on the spot, possibly as a way to pass the time while grazing sheep, but ultimately, their crunchiness provides a pleasant chewing experience. Indeed, the texture of the plant may have contributed to the shaping of food preferences in the pastoralist context [22]. In addition, cardu stems or tubers are often watery and may have been used as thirst quenchers, especially in late spring and the beginning of summer when the plants are more turgescent. Indeed, tubers have been reported to be important thirst quenchers and to be loved by shepherds [56,57]. Finally, in Barbagia di Ollolai, the bitter taste has not prevented the consumption of cardu. This may be due to two different reasons: preference for the crunchy texture despite the bitter taste and the widespread perception that bitter plants are healthy (as also reported in [58]). Indeed, the number of medicinal plants recorded during this study is much lower than the number of medicinal taxa generally mentioned in other Italian ethnobotanical studies. In contrast to findings in other European contexts [59], pastoral activity in Sardinia was mainly carried out by men, while women used to take care of the domestic realm. Deiana et al. [60] highlighted the exceptional male longevity in the inner areas of Sardinia and thus, pastoral activity and its diet might have contributed to this. This hypothesis may be strengthened by the fact that pastoralism was often an important male activity in the areas where extreme longevity was found [61], yet, other factors should be preponderant, as other pastoral societies do not share this exceptional male longevity.

4.2. Sardinian Cultural Heritage and Pastoral Foodsystems

Pastoralism in Barbagia di Ollolai, and Sardinia in general, has had an important role in shaping identity from different perspectives [8,62]. One of those perspectives is represented by the landscape. Indeed, the Sardinian landscape preserves valuable evidence of pastoral activity such as drystone vernacular constructions which are the result of traditional knowledge developed in a close dialectic relationship with the surrounding environment [63,64]. Particularly, pastoral activity has developed sos pinnettos (“a truncated cone shape, realizing a dome (tholos) that recalls—with extraordinary typological continuity—the ancient Nuragic construction, fitting harmoniously into the landscape” [65] (p. 468) and sas barracas (with quadrangular base), which are temporal multipurpose buildings for storing tools, milking sheep, and sheltering [66]. Such facilities, as well as the camminos, transhumance pathways surrounded by stone walls, are included in the cultural heritage according to the Regional Landscape Plan of Sardinia [65]. Moreover, pastoral activity has contributed to the maintenance of flora and microflora biodiversity [67,68] and thus, preventing the degradation of valuable landscapes. Finally, landscapes shaped by pastoralism are “one of the strongest manifestations of the historical identity of the Sardinian landscape and its peculiar biodiversity” [69] p. 539.
However, pastoral activity has also developed rituals and practices and particularly, dietary habits. Indeed, pastoralism and food habits have coevolved over centuries. For instance, we observed that cardu, when cooked, are often associated with other pastoral products such as milk or sheep meat, as in the case of the renowned local recipe “stewed sheep and cardu”. Moreover, as reported by our interviewees, pane fresa, the local bread (very dry and thin), used to be rectangular, and not round, to better fit the saddle pack of donkeys which used to follow the herd during transhumance. In addition, cardu were also important plants for curding as they were used as vegetable rennet (they are quite evident in the Spanish and Catalan names reported for *Cynara cardunculus*). Indeed, such food is intangible biocultural heritage, an undervalued resource which embodies different historical and cultural processes that have occurred over centuries. Biocultural heritage and specifically, edible biocultural heritage, reflects the geographical characteristics of the place as well as the human creativity to modify its habitat by managing the surrounding landscape and its elements [70]. Therefore, pastoral gastronomy is a biocultural heritage resulting from the inextricable link between humans and nature which coevolved over time.

5. Conclusions

The overall gathered data show the contribution of pastoral activity in shaping the cultural and gastronomic heritage of Barbagia di Ollolai. Indeed, it is quite significant that over one-third of the food taxa are used as a snack. Even more significant are the use of cardu as pastoral snacks, being evidence of the long time spent by shepherds far from home and therefore, from the domestic realm and its cultivated gardens. Gathered narratives reported the importance of wild plants and sheep products, suggesting that such pastoral food is a salient, intangible cultural heritage which embodies different historical and cultural processes. Pastoral food is, therefore, a biocultural heritage resulting from an inextricable link between humans and nature, coevolved over time, through a sustainable use of rural landscapes. Promoting typical (and often neglected) pastoral foods is a crucial strategy for sustaining the local economy, maintaining traditional practices and values, and supporting invaluable complex landscape mosaics.

Our study calls for further field surveys in other Mediterranean regions, aimed at exploring the complex relationship between pastoral activity, local food heritage, and rural landscapes.

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Table A1. Recorded taxa in Teti and Lodine, Barbagia di Ollolai, Central Sardinia. (T = Teti; L = Lodine; n = number of interviewees).

| Botanical Taxon/a and Family | Recorded Local Name | Parts Used | Food Use | Medicinal Use | Teti n = 15 | Lodine n = 15 |
|-----------------------------|---------------------|------------|----------|---------------|-------------|---------------|
| *Allium subhirsutum* L. (Amaryllidaceae) UNISGSAR003 | Gusathu (L) | Bulb and Aerial parts | Seasoning (for sausage) | | 14 | |
| *Allium triquetrum* L. (Amaryllidaceae) UNISGSAR010 | S’apara (T, L) | Bulb and Aerial parts | Boiled and stir-fried | | 1 | 12 |
| *Alnus glutinosa* (L.) Gaertn. (Betulaceae) | S’alinu (L) | Leaves | To allow foot transpiration (to be put in the shoes) | | 1 | |
| *Apium nodiflorum* (L.) Lag. (Apiaceae) UNISGSAR012 | Su lau (T); Su benale (L) | Aerial parts | Raw in salads | | 11 | 15 |
| *Arbutus unedo* L. (Ericaceae) | Sa mela e lidone (T, L); Su lidone (L) | Fruits | | Jam | 7 | 1 |
| *Asparagus acutifolius* L. (Asparagaceae) UNISGSAR015 | Sparau (T); S’isparagu (L) | Stems | Boiled with eggs | Omelets | 14 | 2 |
| *Asphodelus ramosus* L. (Asphodelaceae) | S’iscraria (L) | Tubers | Omelets | | 1 | 3 |
| *Beta vulgaris* L. (Amaranthaceae) UNISGSAR016 | S’eda (T); Sa veda (L) | Aerial parts | Stir-fried | Boiled and then put in salad | 8 | 2 |
| | | | Boiled and then put in salad | Ravioli filling | 5 | 1 |
| | | | Soup | | 1 | 3 |
| | | | Omelets | | 1 | 5 |
| Botanical Taxon/a and Family | Recorded Local Name | Parts Used | Food Use                  | Medicinal Use                   | Teti \( n = 15 \) | Lodine \( n = 15 \) |
|-----------------------------|---------------------|------------|---------------------------|---------------------------------|-----------------|-----------------|
| *Borago officinalis* L. (Boraginaceae) | Sa mata de sa sucuridda (T) | Omelets | Dried and smoked | 4 | 4 | |
| *Castanea sativa* L. (Fagaceae) | Castanza (T); Hastanza (L) | Fruits | Sundried | 4 | 5 | |
| *Castanza (T); Hastanza (L)* | Baked | 1 | Roasted | 1 | 1 | |
| *Castanza (T); Hastanza (L)* | Boiled | 2 | |
| *Chondrilla juncea* L. (Asteraceae) | S'erba lattosa (L) | Leaves | Boiled and stir-fried | 3 | | |
| *Chondrilla juncea* L. (Asteraceae) | Raw in salad | 3 | Mixed soup (S'erbutzu) | 3 | | |
| *Cichorium intybus* L. (Asteraceae) | Cicoria (T), Sicoria (T), Zicoria (L) | Aerial parts | Raw in salad | 13 | 3 | |
| *Cichorium intybus* L. (Asteraceae) | Mixed soup (S'erbutzu) | 2 | Boiled and stir-fried | 6 | 1 | |
| *Convolvulus arvensis* L. (Convolvolaceae) | Convolvolo (T) | Shoots | Boiled and then put in salad | 1 | | |
| *Convolvulus arvensis* L. (Convolvolaceae) | Omelets | 1 | |
| *Corylus avellana* L. (Betulaceae) | Ninzole (T, L) | Fruits | Dessert | 6 | 11 | |
| *Corylus avellana* L. (Betulaceae) | Oil for dessert | 1 | Raw as a snack | 1 | 4 | |
| *Crataegus laevigata* (Poir.) DC. (Rosaceae) | Calavrighe (T), Calavie (L) | Fruits | Raw as a snack | 4 | 4 | |
| *Crataegus laevigata* (Poir.) DC. (Rosaceae) | Infusion as a depurative | 1 | Liquor | 1 | | |
| *Crepis vesicaria* L. (Asteraceae) | Thorns | Fomentation to treat a bad tooth | 1 | | | |
| *Crepis vesicaria* L. (Asteraceae) | Raw in salad | 13 | 3 | | | |
| *Crepis vesicaria* L. (Asteraceae) | Mixed soup (S'erbutzu) | 2 | Boiled and stir-fried | 6 | 1 | |
Table A1. Cont.

| Botanical Taxon/a and Family | Recorded Local Name | Parts Used | Food Use | Medicinal Use | Teti $n = 15$ | Lodine $n = 15$ |
|------------------------------|---------------------|------------|----------|---------------|--------------|----------------|
| *Crocus minimus* Redouté (Iridaceae) | Zafaranu agreste (T) | Fruits | Ravioli filling | | 1 | |
| | | | Dried | | 1 | |
| | Mela chidonza (T), Sa mela e donza (L) | | | Boiled with sugar to treat flu | 1 | |
| | | | Liquor | | 1 | |
| | | | Boiled | | 3 | |
| | | | Cooked in ash | | 2 | |
| | | | Jam | | 1 | 4 |
| *Cydonia oblonga* Mill. (Rosaceae) | Mela chidonza (T), Sa mela e donza (L) | Fruits | Dried | | 1 | |
| | | | Boiled | 8 | |
| | | | Cooked in ash | | 2 | |
| | | | Jam | | 1 | 4 |
| | | | Boiled | | 3 | |
| | | | Cooked in ash | | 2 | |
| | | | Jam | | 1 | 4 |
| *Digitalis purpurea* L. (Plantaginaceae) | Sa poddigale (T) | Flower | Sucked as a snack | | 9 | |
| *Diplotaxis* spp. (Brassicaceae) | Rucola (L) | Leaves | Raw in salad | 4 | 3 | |
| | | | Pizza topping | | 1 | |
| *Euphorbia* spp. possibly including *E. characias* L. (Euphorbiaceae) | S’erva e Santu Franziscu | Sap | Locally applied to treat the skin (warts) | 2 | |
| | | | Flower | | 9 | |
| | | | Sucked as a snack | | 9 | |
| | | | Jam | | 1 | 4 |
| | | | Boiled | | 3 | |
| | | | Cooked in ash | | 2 | |
| | | | Jam | | 1 | 4 |
| | | | Boiled | | 3 | |
| | | | Cooked in ash | | 2 | |
| | | | Jam | | 1 | 4 |
| *Ficus carica* L. (Moraceae) | Fichi | Fruits | Dried as a seasoning (for pork sanguinaccio) | 4 | |
| | | | Jam | 4 | |
| | | | Soup | 4 | 4 | |
| | | | Seasoning | 1 | 4 | |
| | | | Frittelle | 1 | 2 | |
| | | | Boiled | 1 | |
| | | | Infusion as a diuretic | 1 | |
| | | | Seeds | 1 | 8 | |
| | | | Seasoning (for sausage) | 1 | 8 | |
| | | | Dried as a seasoning (for pork sanguinaccio) | 4 | 4 | |
| | | | Jam | 4 | |
| | | | Soup | 4 | 4 | |
| | | | Seasoning | 1 | 4 | |
| | | | Frittelle | 1 | 2 | |
| | | | Boiled | 1 | |
| | | | Infusion as a diuretic | 1 | |
| | | | Seeds | 1 | 8 | |
| | | | Seasoning (for sausage) | 1 | 8 | |
| | | | Dried as a seasoning (for pork sanguinaccio) | 4 | 4 | |
| | | | Jam | 4 | |
| | | | Soup | 4 | 4 | |
| | | | Seasoning | 1 | 4 | |
| | | | Frittelle | 1 | 2 | |
| | | | Boiled | 1 | |
| | | | Infusion as a diuretic | 1 | |
| | | | Seeds | 1 | 8 | |
| | | | Seasoning (for sausage) | 1 | 8 | |
| | | | Dried as a seasoning (for pork sanguinaccio) | 4 | 4 | |
| | | | Jam | 4 | |
| | | | Soup | 4 | 4 | |
| | | | Seasoning | 1 | 4 | |
| | | | Frittelle | 1 | 2 | |
| | | | Boiled | 1 | |
| | | | Infusion as a diuretic | 1 | |
| | | | Seeds | 1 | 8 | |
| | | | Seasoning (for sausage) | 1 | 8 | |
| | | | Dried as a seasoning (for pork sanguinaccio) | 4 | 4 | |
| | | | Jam | 4 | |
| | | | Soup | 4 | 4 | |
| | | | Seasoning | 1 | 4 | |
| | | | Frittelle | 1 | 2 | |
| | | | Boiled | 1 | |
| | | | Infusion as a diuretic | 1 | |
| | | | Seeds | 1 | 8 | |
| | | | Seasoning (for sausage) | 1 | 8 | |
| Botanical Taxon/a and Family | Recorded Local Name | Parts Used | Food Use | Medicinal Use | Teti n = 15 | Lodine n = 15 |
|----------------------------|---------------------|------------|----------|---------------|-------------|--------------|
| *Juglans regia* L. (Juglandaceae) | Nughe (T); Nue (L) | Fruits | Raw as a snack | Dessert | 6 | 9 |
|                           |                     |           |          | Liquor       | 1 | 2 |
|                           |                     |           |          | Gnocchi      | 1 | 1 |
| *Lathyrus* spp. L. (Leguminosae) | Sa bizzuledda (T), Sughirthalu (L) | Fruits | Raw as a snack | Soup | 1 | 3 |
| *L. articulatus* L. UNISGSAR007 | | Flower | Sucked as a snack | Soup | 1 | 3 |
| *L. latifolius* L. UNISGSAR036 | | | | Soup | 1 | 3 |
| *Laurus nobilis* L. (Lauraceae) | Su laru (T) | Leaves | Seasoning | Infusion as an expectorant | 1 | 1 |
| UNISGSAR011                |                     |           |          | Infusion to treat menstruation pain | 1 | 1 |
| *Malus* spp. (Rosaceae)    | Mele (T, L) | Fruits | Raw | Infusion to treat abdominal pain | 10 | 7 |
|                           |                     |           |          | Infusion to treat bad breath | 1 | 1 |
|                           |                     |           |          | Infusion to treat constipation | 8 | 8 |
|                           |                     |           |          | Poultice to treat infections | 4 | 4 |
|                           |                     |           |          | Poultice to treat toothache | 5 | 5 |
| *Malva sylvestris* L. (Malvaceae) | Sa navrighedda (T); Sa marma, sa marmachedda (L), Sa marmarutza (L) | Leaves (sometimes dried) | Infusion locally applied to treat the eyes | Infusion to treat canker sores | 4 | 4 |
| UNISGSAR014                |                     |           |          | Infusion to treat bad breath | 1 | 1 |
|                           |                     |           |          | Infusion to treat constipation | 8 | 8 |
|                           |                     |           |          | Poultice to treat infections | 4 | 4 |
|                           |                     |           |          | Poultice to treat bad breath | 3 | 3 |
|                           |                     |           |          | For washing hair | 2 | 2 |
|                           |                     |           |          | Fomentation to treat flu | 1 | 1 |
| Botanical Taxon/a and Family | Recorded Local Name | Parts Used | Food Use | Medicinal Use | Teti n = 15 | Lodine n = 15 |
|-----------------------------|---------------------|------------|----------|--------------|-------------|--------------|
| *Matricaria chamomilla* L. (Asteraceae) | Camomilla (T, L) | Aerial parts | Infusion to treat abdominal pain | 8 |
| *Mentha spp.* (Lamiaceae) *M. aquatica* L. UNISGSAR021 | S’amenta (T, L), Sa menta agresti (L) | Leaves | Infusion as a tranquilizer | 1 |
| *M. arvensis* L. UNISGSAR017 | | | Infusion to treat the eyes | 1 | 1 |
| *M. x piperita* L. UNISGSAR026 | | | Infusion to induce sleep | 1 |
| *Mentha pulegium* L. (Lamiaceae) UNISGSAR019 | Su puleu (T, L) | Aerial parts | To treat stomach pain | 4 |
| *Morus alba* L., *Morus nigra* L. (Moraceae) | Sa murighessa (T, L) | Fruits | Seasoning (for sanguinaccio and pork meat) | 9 | 9 |
| *Myrtus communis* L. (Myrtaceae) UNISGSAR028 | Sa murta (T, L) | Fruits | Liquor | 5 | 1 |
| *Nasturtium officinale* R. Br. (Brassicaceae) | Su nastruztu (T); Su martutzu (L) | Aerial parts | Raw in salad (with some cheese) | 11 | 8 |
| *Oenanthe pimpinelloides* L. (Apiaceae) | S’urula (T); S’ungra, S’ungredda (L) | Aerial parts | Mixed soup (S’erbutzu) | 14 | 15 |
| *Opuntia ficus-indica* (L.) Mill. (Cactaceae) | Figu moriscu (T) | Fruits | Boiled and then put in salad | 1 |
| *Oxalis* spp. (Oxalidaceae) | Campanelle (L) | Flower | Raw as a snack | 1 | 1 |
| *Petroselinum crispum* (Mill.) Fuss (Apiaceae) | Perdueimmene (T, L) | Aerial parts | Dessert | 1 |
| *Pimpinella anisum* L. (Apiaceae) | Matafalua (T) | Seeds | Seasoning (sausages and dessert) | 1 |
| *Pistacia lentiscus* L. (Anacardiaceae) | Listincu (T), Lentisco (T, L) | Fruits | To make oil | 5 |
Table A1. Cont.

| Botanical Taxon/a and Family | Recorded Local Name | Parts Used         | Food Use                  | Medicinal Use                          | Teti n = 15 | Lodine n = 15 |
|-----------------------------|----------------------|---------------------|---------------------------|----------------------------------------|-------------|---------------|
| *Portulaca oleracea* L. (Portulacaceae) | Erba procreddina (T) | Aerial parts        | Raw in salad              |                                        | 1           |               |
| *Prunus armeniaca* L. (Rosaceae)       | Su pircocco (T)      | Fruits              | Raw as a snack            | Dried                                  | 3           | 2             |
| *Prunus cerasus* L. (Rosaceae)         | S’eresia (L)         | Fruits              | Raw as a snack            |                                        | 7           |               |
| *Prunus domestica* L. (Rosaceae)       | Pruni (T)            | Fruits              | Raw as a snack            |                                        | 13          | 6             |
| *Prunus amygdalus* Batsch (Rosaceae)   | Sa menduledda (T),  | Fruits              | Raw as a snack            |                                        | 1           | 2             |
|                                      | S’amendula (L)       |                     |                           |                                        | 2           |               |
| *Prunus prostrata* Labill. (Rosaceae)  | Prunitza (L)         | Berries             | Raw as a snack            |                                        | 2           | 3             |
| *Pyrus* spp. (Rosaceae)               | Sa pira, Su pirastru (T); Sa piraca, Sa pire (L) | Fruits | Raw as a snack                  |                                        | 13          | 6             |
| *Quercus* spp. (Fagaceae)             | Quercia              | Phloem               | As a plaster to treat the skin (especially the feet) |                                  | 5           |               |
|                                      |                      | Leaves               | Boiled as a poultice to treat warts  |                                      |             |               |
| *Raphanus raphanistrum* L. (Brassicaceae) UNISGSAR035 | S’ambularza (T); S’ermulantza (L) | Aerial parts        | Boiled and stir-fried       |                                        | 7           | 1             |
| *R. raphanistrum* subsp. *landra* (Moretti ex DC.) Bonnier and Layens UNISGSAR001 | |                     | Omelets               |                                        | 4           |               |


### Table A1. Cont.

| Botanical Taxon/a and Family | Recorded Local Name       | Parts Used  | Food Use                  | Medicinal Use                                      | Teti \( n = 15 \) | Lodine \( n = 15 \) |
|------------------------------|---------------------------|-------------|---------------------------|----------------------------------------------------|-------------------|---------------------|
| Reichardia picroides (L.) Roth (Asteraceae) | Sa mamalucca (L) | Aerial parts | Raw in salad              | Soup                                               | 1                 |                     |
| Rosa canina L. (Rosaceae) UNISGSAR034 | Sa rosa burda (T) Psaliddu (fruit, T), Sa rosa agreste | Fruits      | Liquor                    | Good for the kidneys                               | 5                 |                     |
|      |                                          | Shoots      | Raw as a snack            |                                                    | 2                 |                     |
| Rubus ulmifolius Schott (Rosaceae) UNISGSAR030 | Sa mura (T), S’orrubu (T), S’amura (L) | Shoots      | Raw as a snack            | Liquor, Jam                                        | 6                 | 7                   |
| Ruteaceae |                                         | Fruits      | Liquor                    |                                                    | 1                 |                     |
| Rhamnus alaternus L. (Rhamnaceae) UNISGSAR025 | Sa mariola (T); Sa melacra (L) | Leaves      | Raw as a snack            |                                                    | 11                | 11                  |
| Rhamnus alaternus L. (Rhamnaceae) UNISGSAR037 | Su lampartzu (T); Su lampathu (L) | Aerial parts | Mixed Soup (S’erbutzu)    |                                                    | 12                | 15                  |
| Salvia spp. (Lamiaceae) UNISGSAR038 | Sa salvia (T, L) | Aerial parts | Mixed Soup (S’erbutzu)    |                                                    | 1                 |                     |
| Salvia rosmarinus Sperm. (Lamiaceae) | Rosmarino (T, L) | Aerial parts | Mixed Soup (S’erbutzu)    |                                                    | 1                 |                     |
| Sambucus nigra L. (Adoxaceae) | Sambucu (T), Samuhu (L) | Flowers     | Soultice to treat bronchitis in children |                                                    | 4                 |                     |
| Scrophularia trifoliiata L. (Scrophulariaceae) UNISGSAR005a | No name | Flower | Soultice to treat the eyes |                                                    | 4                 |                     |
| Scrophularia trifoliiata L. (Scrophulariaceae) UNISGSAR005b | No name | Flower | Soultice to treat the joints |                                                    | 4                 |                     |
| Sedum spp. possibly including S. dasyphyllum L. (Crassulaceae) UNISGSAR004 | Erba di Santa Maria (L) | Leaves | Infusion to treat abdominal pain |                                                    | 3                 |                     |
|      |                                          | Berries     | Infusion to treat headache |                                                    | 3                 |                     |
| Sedum spp. possibly including S. dasyphyllum L. (Crassulaceae) UNISGSAR004 | Erba di Santa Maria (L) | Berries     | Sucked as a snack         |                                                    | 2                 | 3                   |
| Botanical Taxon/a and Family | Recorded Local Name   | Parts Used | Food Use       | Medicinal Use                                                                 | Teti n = 15 | Lodine n = 15 |
|-----------------------------|-----------------------|------------|----------------|-------------------------------------------------------------------------------|-------------|---------------|
| *Silene vulgaris* (Moench) Garcke (Caryophyllaceae) UNISGSAR040 | **Su crapicheddu (T); S’apricheddu (L)** | Aerial parts | Mixed Soup (S’erburtzu) |                                                                                         | 13          | 8             |
|                            |                       |            | Raw in salad   |                                                                                         | 1           |               |
|                            |                       |            | Frittelle      |                                                                                         | 1           |               |
|                            |                       | Seeds      | Seeds on ash and then inhaled to treat toothache |                                                                                     | 4           |               |
| *Smyrnium perfoliatum* L. (Apiaceae) UNISGSAR006 | No name | Root | Raw as a snack |                                                                                         | 2           |               |
| *Sonchus oleraceus* (L.) L. (Asteraceae) UNISGSAR043 | Graminzone (L) | Aerial parts | Soup |                                                                                         | 4           |               |
| *Thymus herba-barona* Loisel. (Lamiaceae) UNISGSAR039 | **S’armidda (T, L)** | Aerial parts | Seasoning (for sanguinaccio or goat/sheep meat) |                                                                                     | 7           | 15            |
| *Urtica* spp. (Urticaceae) *Urtica atrovirens* Req. ex Loisel. UNISGSAR041 | **Sa pistiolu (T); Su pistiori (L)** | Leaves | For washing hair | Boiled and then put in salad |                                                                                     | 5           | 5             |
|                            |                       |            | Infusion to treat canker sores |                                                                                     | 4           |               |
|                            |                       |            | Infusion to treat stomach ache |                                                                                       | 5           |               |
|                            |                       |            | Infusion to treat abdominal pain |                                                                                      | 5           |               |
|                            |                       |            | Infusion as a depurative for the kidneys |                                                                                     | 4           |               |
| *Vinca difformis subsp. sardoa* Stearn (Apocynaceae) | Pruinca (L) | Leaves | Poultice to treat bronchitis in children |                                                                                       | 2           |               |
| N.D. Lichen | Sa pedda ’e arbole | Aerial parts | Locally applied as a hemostatic |                                                                                     | 4           |               |
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