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Article

The Marão Cattle as a Companion Species: Reflections on Multispecies Relationships and Environmental Culture in Trás-os-Montes and Alto Douro*

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ABSTRACT

This article analyzes Marão cattle as a companion species to the human inhabitants of the Trás-os-Montes and Alto Douro region, discussing multispecies relationships, environmental culture, and *habitus*. It provides a historical context for the presence of the Maronesa breed in the Marão and Alvão mountain ranges and adjacent areas, linking the long-standing human transformation of the landscape, the memory of the Iberian aurochs, and the breed's establishment in a mountainous territory marked by extreme climatic conditions, subsistence agricultural practices, and strong symbolic and cultural significance. Drawing on documentary and bibliographic sources, interviews, and *on-site* observation, the text explores the interactions between Maronesa cattle, the Iberian wolf, people, and their dogs, highlighting practical schemes of management, defense, and cooperation that give rise to transgenerational social practices and local knowledge. It also analyzes the so-called "natural working aptitude" of the Maronesa, highlighting the breed's role in plowing, transporting people and goods, and at regional fairs, where the cattle are displayed as economic and symbolic capital and an element of family prestige. It is further argued that the Maronesa cattle transcend strictly utilitarian interpretations, emerging as a central companion species in the production of a specific environmental culture, in the maintenance of community practices and memories, and in the construction of a sense of belonging to the land, reflecting on mountain management models that integrate biodiversity conservation, family farming, and contemporary local development projects.

Keywords: rural landscape; animal; environmental culture; social practice; companion species.

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RESUMO

O artigo analisa o gado maronês enquanto espécie companheira dos humanos habitantes da região de Trás-os-Montes e Alto Douro, discutindo relações multiespécie, a cultura ambiental e *habitus*. Contextualiza historicamente a presença da raça maronesa nas serras do Marão, Alvão e zonas adjacentes, articulando a longa antropização da paisagem, a memória do auroque ibérico e a inscrição da raça num território serrano marcado por condições climáticas extremas, práticas agrícolas de subsistência e forte densidade simbólica e cultural. A partir de fontes documentais e bibliográficas, entrevistas e observação *in loco*, o texto explora as interações entre maronesas, lobo ibérico, pessoas e seus cães, evidenciando esquemas práticos de manejo, defesa e cooperação que produzem práticas sociais e saberes locais transgeracionais. Analisa-se ainda a chamada "aptidão laboral natural" da maronesa, destacando o papel da raça na lavra, no transporte de pessoas e mercadorias e nas feiras regionais, onde o gado é exibido como capital económico e simbólico e elemento de prestígio familiar. Argumenta-se, ainda, que o gado maronês excede leituras estritamente utilitaristas, configurando-se como espécie companheira central na produção de uma cultura ambiental específica, na manutenção de práticas e memórias comunitárias e na construção de pertenças telúricas, refletindo sobre modelos de gestão de montanha que articulam conservação da biodiversidade, agricultura familiar e projetos contemporâneos de desenvolvimento local.
Palavras-chave: paisagem rural; animal; cultura ambiental; prática social; espécies companheiras.

Introduction

In northern Portugal, more specifically in the Trás-os-Montes mountain ranges—a series of hills that surround the demarcated region of origin known as the Alto Douro Wine Region—a breed of cattle popularly known as Maronesa has been domesticated for generations. Set within a landscape of agricultural tradition, the presence of Maronês cattle is a component of the many social practices related to farming and the traditional local ways of life that have been shaped in these long-anthropized landscapes.

This reflection discusses the relationships between traditional social practices and the environmental culture of Trás-os-Montes and the Alto Douro regarding Maronesa cattle, in light of the notion of companion species, as proposed by Donna Haraway in "The Companion Species Manifesto" (2021)[1] . These practices have been incorporated and shared by the region's inhabitants over time, as they developed strategies and "schemes" for managing these animals, adapting their actions to the needs of this type of livestock and drawing on transgenerational experiences to refine the development of multispecies work. The study also aims to demonstrate how the multispecies relationships discussed contribute to the production of popular knowledge, fueled by inherited traditions and experiences and through a set of social practices adopted by these populations.

Methodologically, the research is qualitative and primarily employs bibliographic and documentary sources, alongside participant observation, which explores the liminal space between ethnography and oral history. Theoretically, the research seeks to be situated within the environmental humanities, an interdisciplinary field that emerged between the late 20th and early 21st centuries and seeks to overcome the culture vs. nature dualism that underlies many contemporary ecological problems (Emmett & Nye 2017).

Thus, the following section, "Environmental culture, social practices, and companion species," presents a conceptual discussion of human relationships with nature based on fundamental assumptions of the environmental humanities—specifically environmental history and multispecies anthropology—linked to the key concepts of social practice, environmental culture, and companion species. This section also explains the methodological procedures adopted. Next, in "Before the Maronesa: The Landscape and the Aurochs," the characteristic landscape of the study area is described, referring to the past existence of the Iberian aurochs as an animal bearing a strong physical resemblance to the Maronesa cattle breed. In "Maronesas, People, and the

[1] The original English-language text, "The Companion Species Manifesto: Dogs, People, and Significant Others," was published in 2003.

Wolf," the discussion focuses on certain multispecies social practices arising from the coexistence of humans, Maronesa cattle, and the Iberian wolf. The final section before the concluding remarks, "The Maronesa's 'Natural Work Capacity' and Regional Fairs," focuses on the traditional use of the breed as a labor force and the display of cattle ownership at regional fairs, particularly linked to the local family context and collective memory.

Environmental Culture, Social Practices, and Companion Species

The proposed discussion is based on the fundamental assumption that every human society alters, to a greater or lesser extent, the physical and geographical environment in which it exists (Schüler et al. 2023, drawing on Schama 1996; Duarte 2013). Within the body of other analyses involving history, culture, and nature developed by the authors of this research, it is worth noting that the way a given cultural system relates to nature transcends the utilitarian need for the use of natural resources to be shaped by historical, economic, and geographical factors, but also by effectively cultural ones. Specific cultural elements, such as knowledge, beliefs, values, norms, and symbols (Marconi & Pressotto 2010), are determinants of the ways in which a given social group relates to the environment. To refer to these elements and their historical, geographical, economic, and cultural dynamics, we propose here the use of the term "environmental culture."

Environmental culture is a concept frequently associated, in scientific and academic literature, with Environmental Education (Dias 2001; Carson 1962; Loureiro & Torres 2014) and with the development of a positive and sustainable human attitude toward the environment (Miranda Murillo 2013). The article presented here conceives of environmental culture from a perspective outlined within the context of Cultural Studies, taking cultural diversity and the resulting diversity of cultural forms of shaping, using, and perceiving nature as its starting point. This theoretical framework must be grounded in the connection between the various approaches within the environmental humanities (Emmett & Nye 2017), with particular consideration given to environmental sociology (Hanningan 2006), the anthropology of more-than-human relations (Tsing 2012, 2019; Haraway 2021), and environmental history (Worster 1991; Duarte 2013; Schama 1996).

In this context, we propose the use of the term "environmental culture" to refer to the set of social practices and perceptions developed by a human collective regarding nature and its aspects, which establish behavioral patterns and the adoption of stances considered appropriate within the cultural and temporal context. This notion thus stems from what Pierre Bourdieu (2004) refers to as *habitus*: the set of dispositions, perceptions, and human actions determined by the process of enculturation and socialization that shape the way individuals in a cultural group think and behave. It is characterized as a durable yet transposable system that acts as a predictive apparatus stemming largely from past experiences, both of the individual and of the social group.

Habitus functions as a behavioral code, determining the appropriate manner in which individuals should act in social situations within a specific cultural context, while simultaneously mediating the relationship between the social structure (objectivist) and individual actions and interactions (subjectivist). This context includes the historical-social component of the formation of a given cultural system, but also considers the agency and participation of individuals in the composition of the system of social practices. These practices, thus, are not fixed and immutable, but rather processual and resulting from the very effective agency of individuals within the cultural context.

The understanding of environmental culture employed here also refers to the considerations put forth by Luisa Margarita Miranda Murillo in "Environmental Culture: A Study from the Dimensions of Value, Beliefs, Attitudes, and Environmental Behaviors" (2013), who argues that "environmental culture establishes the

parameters of social relations and reproduction in relation to nature" (p. 95), and is underpinned by the human relationship with the environment in which "implicit is the set of lifestyles, customs, and living conditions of a society with its own identity, based on traditions, values, and knowledge" (pp. 95–96).

The values referred to point to the cognitive representations that respond to human needs in the context of cultural life, and these are responsible for guiding, selecting, and evaluating behaviors that serve to establish relationships with value priorities and determine what is considered legitimate and encouraged in the social context under analysis. These are conceptions of what is good or bad, desirable or und , within a given cultural context, underlying practices, norms, beliefs, and social institutions. According to Miranda Murillo (2013), the development of value systems is linked to universal human needs: the needs inherent to human beings as biological organisms; the requirements for integration into the social life of the group; and the needs for the survival and well-being of the social group, establishing themselves as the basis for determining human attitudes toward nature.

Nevertheless, the notion of belief is established as a variable that precedes and predicts attitudes and behaviors: it refers to the ideas and cognitive, interactional, evaluative, attributional, and informational aspects that predispose an action or behavior toward nature, establishing itself as a set of evaluative behaviors developed from a given cultural system, shaping what the individual puts into practice. In the author's words,

> beliefs function as interactive strategies between social groups and the environment, and therefore, different ecological aspects and culture establish relationships of mutual influence. Thus, beliefs, as a cultural product, constitute a social premise that underpins culture and its cultural forces. This underscores the importance of understanding cultural and conventional factors as determinants of individual behavior, in order to identify the similarities found in people's actions, by virtue of the support provided by the social group. (Miranda Murillo 2013, p.99)

Attitudes reside in the realm of feelings—whether positive or negative—that are formed in relation to the environment or an issue related to nature. They act as a direct determinant of the predisposition toward effective actions. Effective actions, related to conduct and behavior, in turn, are reflected in more concrete acts, which may be intentional or based on learning and internalization derived from people's everyday practices: "in other words, humans construct representations of the world through their beliefs, values, and attitudes, and these representations are the elements that organize and give meaning to their behavior" (Miranda Murillo 2013, p.100).

The reflective path concerning human relations with nature has historically positioned them as opposing fields, placing human beings outside or above the natural world and its components (Schüler, Magalhães, Ribeiro, 2025). It is therefore essential to acknowledge that human beings are shaped by both nature and culture, both of which are simultaneously conditioning and fundamental to their existence (Schüler et al. 2025, drawing on Eagleton 2000), recognizing that contemporary socio-environmental realities are embedded in the reality of the Anthropocene. This period should not, here, be understood as a new geological era, but rather as the time that Anna Tsing (2019) conceptualizes as the period of the spread of human disturbance in natural contexts, in which multispecies landscapes and diversities are contaminated by the human species and in which humans play a central role in management, both fostering biocultural diversity and compromising ecosystems, depending on the practices employed in each context.

It is precisely within the framework of the Anthropocene that Haraway (2021) establishes the notion of companion species, referring to more-than-human contexts in which coexistence and codependence among species construct narratives of interspecific sociabilities, coexistence, and coevolution. This involves conceiving the relationships between nature and culture not as opposing poles, but rather reflecting on other

typological and relation y possibilities (Haraway 2021). Although the author takes the human relationship with domesticated canids as the object from which she develops her reflection, she explains that the concept of companion species goes beyond the notion of companion animals or domesticated animals to refer to co-evolutionary conditions formed from "co-constitution, finitude, impurity, historicity, and complexity" (p.15). These constitute contexts in which the worlds of animals and other non-human beings, such as fungi, as explored by Tsing (2012), are mobilized and shaped in their relations with human existence—relations not always marked by harmony and romanticization, but rather by multiformity, danger, and consequences (Haraway 2021, p.23).

Based on the establishment of an applied methodology—exploratory in its objectives and qualitative in its approach—the procedural framework of the investigation employed specific techniques of environmental historiography, drawing on a set of documentary and bibliographic sources. This body of sources consists of specific zootechnical literature on the breed, but also, and primarily, of academic studies in the humanities and social sciences that focused on the Trás-os-Montes and Alto Douro regions. Furthermore, the use of lectures, news reports, and journalistic documentaries is also noted.

It is also worth noting, regarding methodological approaches, the exploration of the boundary between history and anthropology to highlight not only the abstract level of perceptions but also lived experience (Schüler & Magalhães, 2021). The use of unstructured interviews and *on-site* observation of social practices aimed at "the 'being there' of ethnographic practice as part of the observation for constructing an understanding of the study context, which is marked by complex, intertwined, implicit, and irregular structures" (Schüler & Magalhães 2021, p.280). In practical terms, the use of empirical data involved participant observation for the collection of primary data, including field visits to breeders of the breed, as well as participation in meetings, fairs, presentations, and local exhibitions involving Maronês cattle, specifically between the years 2022 and 2026. During these interactions, dialogue with breeders and individuals involved in the breed's management processes was prioritized, filling information gaps not available in documentary sources or corroborating previously documented ideas. These conversations were not recorded but conducted spontaneously with the interlocutor's consent regarding the academic and scientific purposes of their use.

Specifically on this point, multispecies ethnography was employed (Kirksey & Helmreich 2010; Tsing 2019), taking into account relational and sensory components as the main categories of analysis in interpreting the subjective conceptions emerging from human contact with Maronês cattle. Relationships will be referred to, as indicated by Haraway (2021), "as the smallest possible unit of analysis" (p.17), considering the existence of significant otherness at the scales analyzed (p.19), which are established at both the symbolic and strictly physical and biological levels.

Before the Maronesa: The Landscape and the Aurochs

The spatial scope of the research begins in the highest lands of Marão, Alvão, and Padrela, specifically in the mountain ranges of the Portuguese Trás-os-Montes region, but extends to neighboring areas encompassing parts of the districts of Vila Real (Ribeira de Pena, Mondim de Basto, Vila Pouca de Aguiar, Alijó, Boticas, Chaves, Montalegre, Murça, Sabrosa, Valpaços, Vila Real), Braga (municipalities of Cabeceiras and Celorico de Bastos), and Porto (part of the municipality of Amarante), following the pattern of dispersion of Marão cattle farming (Faria 2019), as shown in Figure 1.

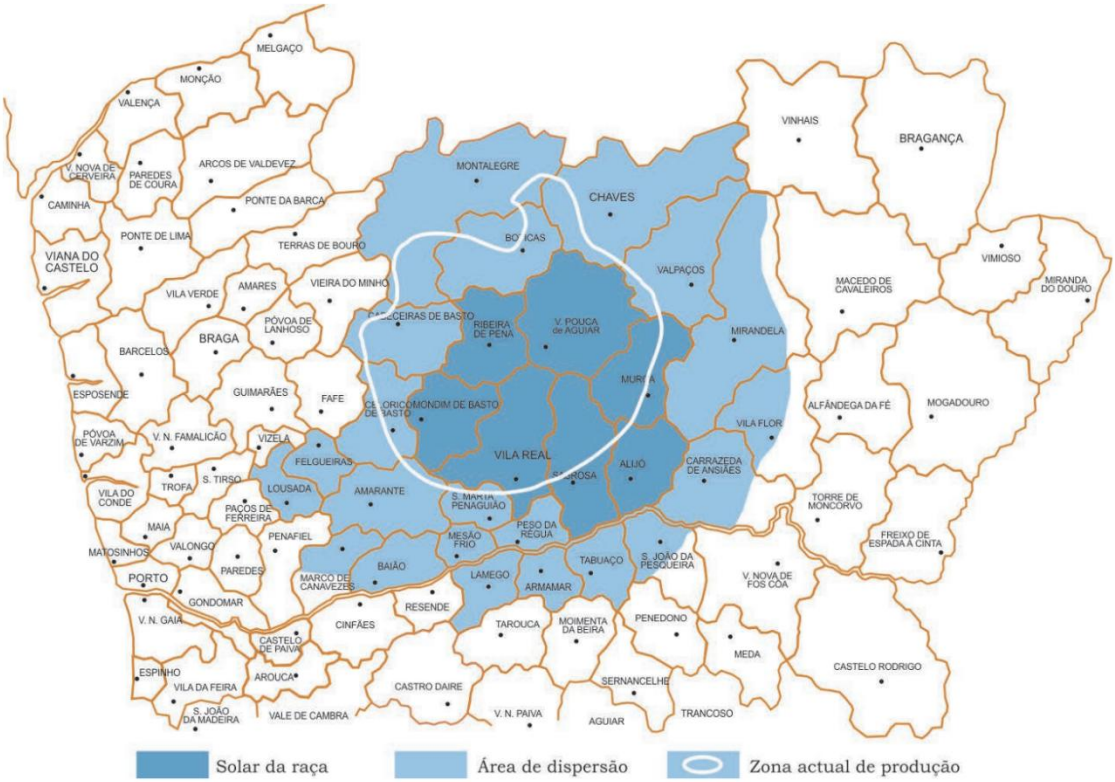

Figure 1: Area of dispersion of Marão cattle, in the context of Trás-os-Montes and the Upper Douro. Source: Faria 2019, p.172

These "cold lands" of Trás-os-Montes (Teixeira & Alves 2006, p. 04) encompass altitudes between 800 and 1,200 meters, covering part of the Alto Douro Wine Region, where altitudes are lower. The landscape in question alternates between mountains and plateau regions separated by valleys and depressions, located on the north bank of the Douro River (Vieira 2015). These so-called "inland mountain ranges" are, in economic terms, considered suitable for raising

> sheep and cattle. The low-lying areas in the valleys have excess water for the production of winter cereals—wheat and rye—and lack the climatic conditions for corn production, making them dominated by marshes, the rich pastures that form the basis for the region's robust cattle production. (Santos 2017, pp.24-25).

The local climate is known by the saying that proclaims "nine months of winter and three of hell" (Schüler et al. 2023, p.16): it features constant frost, bringing cold and rainy winters with snow in the higher elevations, while summers are hot and dry, with occurrences of forest fires. This climatic characteristic is commonly and, in the realm of common sense, used as a justification for cultural traits related to the preservation of local traditional practices, according to a 1932 statement by geographer Vergílio Taborda in the book **Alto Trás-os-Montes. Geographical Study,* which was reissued in 2011: "in addition to eliminating or endangering certain delicate crops, [the climate] exerts a depressing influence on the peasant's mentality, leading him to view all innovation with suspicion" (Taborda 1932/2011, p.25). It is considered that "life in the mountains exists within an extreme scope" and that it is directly related to rural exodus, the abandonment of traditional practices, labor constraints, and population aging in the villages of Alvão and Marão (Ortega García & Ribeiro 2025, p.135).

The vegetation, predominantly forested with sub-Atlantic and Oro-Atlantic plant communities, featuring areas of scrub and woodlands, is also marked by rocky outcrops, with commercial activities involving the

extraction of stones such as schist and granite, widely used in the construction of houses and structures in the area. This cultural landscape has a long history of human settlement, with human presence likely dating back some 80,000 years, evidenced by stone artifacts and rock art, particularly at the sites located at the mouth of the Côa River (Abreu 2019). Although the various human groups that have settled in the north of what is now Portugal since that time engaged in activities that altered the landscape, the arrival of Roman groups around the 2nd century B.C. proved decisive in transforming social practices involving nature. According to Abreu (2019, p.50), "[the Romans] attracted mainly by the riches linked to mineral resources—that is, the presence of tin, silver, and gold—(…) eventually settled and also exploited the area's other riches, developing agricultural activity (land) and thermal baths (waters)." According to the author, among the many archaeological remains left by these groups are "roads, bridges, 'villas,' landmarks, inscriptions, epigraphs, and coin hoards" (Abreu 2019, p.50). At the time of the region's occupation, the Romans had already widely employed native cattle as a source of power, especially on rural farms in the western part of the peninsula, where they played a central role in traction work, particularly in agriculture and the transport of goods. In this regard, Image 2, of the Via Romana do Marão, located near the Parish Church of Mondrões, is identified as an archaeological site with evidence of such activities, in which cattle were preferred for plowing the land and moving heavy carts, known to the Romans as *plaustrum*.

Image 2: Roman Road of Marão. Source: https://pt.wikiloc.com/. Author: João Marques Fernandes

The intense and long-standing human activity in the region has been decisive in shaping distinctive and characteristic environmental features: terraces, mines, chestnut groves, marshes, wastelands, pine forests—landscapes imbued with symbolism, traditions, and a love of place[2] . Considered a native cattle

[2] The term "topophilia," proposed by Yi-Fu Tuan in *Topophilia* (1980), is used here to refer to the existence of emotional bonds between people and places as physical environments (Schüler et al. 2025, p. 06).

breed of this region, the Maronesa's morphological characteristics are associated, in zootechnical studies (Alves & Teixeira 2006), with this "rustic" ecological and agrarian environment. The animals are described as athletic in build, "of medium stature, with a light skeleton and hard hooves" (Alves & Teixeira 2006, p.02), with their skull and the "blunt" shape of their horns being the distinguishing features regarding their pulling strength. The breed is also characterized by sexual dimorphism (size differences between males and females): while cows typically measure about 1.26 meters in height, 1.50 meters in length, and weigh around 445 kilograms, males tend to have a more developed anterior third, reaching 1.38 meters in height, 1.57 meters in length, and weighing around 786 kilograms (Faria 2019).

Zootechnical studies also establish the Maronesa's ancestral relationship with the Iberian Aurochs (*Bos primigenius*), considering it the contemporary breed with the greatest morphological similarity to the extinct species. The Aurochs was a large breed of cattle considered the ancestor of modern cattle breeds (Bro-Jørgensen et al. 2018). It inhabited large areas of Eastern Europe, the Iberian Peninsula, Southern Europe, China, and North Africa (Kunzler & Oliveira 2021) and was domesticated approximately nine thousand years ago (Bro-Jørgensen et al. 2018).

This animal held great cultural significance for the earliest human groups settled in northern Portugal. It is widely depicted, alongside deer and goats, in the aforementioned Foz Côa region. Figure 3 shows one such depiction, identified by archaeologists in 2021 at the Fariseu site:

Image 3: Depiction of the Iberian Aurochs, Rock 09, Fariseu Site (Foz Côa, Portugal). Source: Crespo 2021, n.p.

Although the scientific literature links the aurochs' extinction to habitat loss and exposure to diseases transmitted by domestic livestock, intensive hunting across Europe appears to be the direct cause of its disappearance. This practice appears to have been linked to the symbolic and cultural significance of this animal in the Middle Ages, when, for example, a tradition developed among Scandinavian populations of using the adorned horns of slaughtered aurochs as drinking vessels (Bro-Jørgensen et al. 2018). Nevertheless, and in other parts of Europe, studies highlight that the rarer aurochs specimens became, the more prestigious their hunting became as a means of asserting nobility (Van Vuure 2002).

The last aurochs populations are believed to have lived in the Jaktorów Forest in Mazovia, in present-day Poland, managed as part of the royal hunting grounds. There, the last male aurochs was killed in 1620, and one of its horns was turned into a hunting horn, currently on display in the collection of the Livrustkammaren Museum in Stockholm. On this subject, Bro-Jørgensen et al. (2018, p. 48) write:

> The horn measures 46 cm in length . Based on historical records related to the specimen and the inscription on the metal mount of the hunting horn itself, which reads: *"Horn of the last aurochs from the primeval forest of Sochaczewski, sent by the voivode of the Rawski province, Stanislaw Radziejowski, the starost of Sochaczewo, in the year 1620*," it is believed that this is one of the horns of the last aurochs bull. The historical record details how this aurochs bull was killed in 1620, after which both horns were removed. One of them was sent to Warsaw to King Sigismund III Vasa (King of Poland, Grand Duke of Lithuania, monarch of the united Polish-Lithuanian Commonwealth, and King of Sweden) by Stanisław Radziejowski, who was a nobleman and governor of the Rawski Province, including the Jaktorów Forest . This horn was fitted with metal rings and transformed into a hunting horn , an artifact used to signal during hunts. During the military conflict in 1655, the horn was taken from Warsaw as a war trophy by the Swedish army, then recorded in 1656 in Marienburg (Malbork) near Gdańsk en route to Sweden. It subsequently entered the collection of the Livrustkammaren in Stockholm[3] .

The species was officially considered extinct in 1627, with the death of the last female (Bro-Jørgensen et al. 2018).

More-Than-Human Relations on the Mountain

The oldest known historiographical reference to Marão cattle is attributed to António Lobo de Barbosa Ferreira Teixeira Girão, Viscount of Vilarinho de São Romão, who, in 1835, wrote about the milk production of cattle he referred to as "molar cows of Trás-os-Montes":

> These cows are very good, and the finest breed is found in the villages on the slopes of Marão, such as Tojendes, where I saw them at the home of Messrs. Cabraes. – Some of them can produce as much as a jug of milk [14 liters], but they must be large and well-fed; the more common ones yield three or four jugs [7 to 10 liters], very creamy, and excellent for making butter and cheese. – They like and require mountain pastures, tough grasses, tree leaves, straw, corn stalks, etc.; they also greatly enjoy the green grasses of cultivated meadows, but not exclusively; it is necessary to make a mixture of some and others; they are very suitable for cold regions; they are strong and robust; their coat is dark brown in color, with very

[3] Free translation of "The horn measures 46 cm in length. Based on both the historical records related to the sample and the inscription on the metal mounting of the hunting horn itself, which reads: '*Horn of the last aurochs of the Sochaczewski primeval forest, sent by the voivode of the Rawski province, Stanisław Radziejowski, the starost of Sochaczewo, in the year* 1620,' this is believed to be one of the horns of the last aurochs bull. Historical records detail how this aurochs bull was shot in 1620, after which both horns were taken. One of these was sent to Warsaw to King Sigismund III Vasa (King of Poland, Grand Duke of Lithuania, monarch of the Polish–Lithuanian Commonwealth, and King of Sweden) by Stanisław Radziejowski, who was a nobleman and governor of the Rawski province, including the Jaktorów Forest. This horn was fitted with metal rims and made into a hunting horn, an artifact used to signal during hunts. During military conflict in 1655, the horn was taken from Warsaw as war booty by the Swedish army, then registered in 1656 in Marienburg (Malbork) near Gdańsk on its way to Sweden. It subsequently entered the collection of the Royal Armory in Stockholm."

> short hairs. (…) The Molares de Tras os Montes are suitable for the Serra de Ossa, should it ever be cultivated, and also for the neighboring villages of the Serra da Estrela and the entire Beira Alta; it is indeed worth noting that there are so few of them in the aforementioned province, which seems unworthy of them. (Girão 1835 *cited in* Faria 2019, p.166).

The description in question is set within a rural family context characteristic of northern Portugal from the 19th century through the mid-20th century. At this time, prior to industrialization and the widespread use of motorized traction, the way of life of small communities was grounded in the operation of the farmstead, "both in terms of their place of residence and the physical basis of their activities" (Portela & Caldas 2003, p. 324). It was an autonomous rural society, "whose social ties were woven through intense human labor, requiring great physical effort and the cooperation of many hands and coordinated skills" (Wall 1998, p. 23) . In "Families in the Countryside: Past and Present in Two Parishes of the Lower Minho" (1998), Karin Wall explains that each member of the household performed a specific role in a society where everyone—"men, women, young people, and children—worked or 'helped' those who worked":

> An eight- or nine-year-old child ran errands, carried food back and forth between the fields and the house, fetched baskets and utensils, gathered grass and firewood from pruning, swept the house, and looked after the livestock and younger children. Likewise, the situation of a domestic woman, who devoted herself solely to domestic work, was rare and possible only in bourgeois families and in some segments of the petty bourgeoisie (Wall 1998, p. 24).

In this context, domestic animals—which are historically used as tools to realize human intentions related to progress (Haraway 2021, pp. 21–22)—played a decisive role, occupying spaces or stables around or inside the house. Cattle, for example, were housed in the lower levels of the house to provide heat. In addition to meat production, these animals supported agricultural production through plowing the land (associated with planting and harvesting) and transportation.

Haraway (2021) notes that it is common for societies organized around agricultural and livestock practices, as is the case in the context analyzed, to disregard the co-evolutionary nature of the relationship between humans and animals in order to center their practices on a utilitarian and anthropocentric logic, which has been (and still are) at the heart of human-natural relations in the context of Western societies, especially those of Judeo-Christian tradition (Tsing 2019; Schama 1996; Thomas 1988). Particularly with regard to the Portuguese context, it can be inferred that the traditional Catholic influence "deepened the dualistic divide that relegated animals to an inferior status, as objects to be manipulated and used for human benefit, since they were created by God for human enjoyment and subordination" (Duarte 2019, p.22).

Cereal production was essential for the livelihood of families in the Alto Douro and Trás-os-Montes regions, both for making bread and for trading other goods. They also grew vegetables and various fruits. Certain crops were produced on a larger scale, depending on the region. In the colder inland areas of Trás-os-Montes, chestnuts were (and still are) produced, while in the warmer areas, almonds, olive oil, and wine were produced. Other products were grown on a smaller scale, such as cabbage, potatoes, or onions. Surplus production was used to trade for goods that the farm did not produce, such as salt or sugar. Some were sold at regular markets or traded directly between people or families in the same village.

Agricultural and livestock production was common in virtually all villages in the Trás-os-Montes interior. In "Monografia do Concelho de Vila Pouca de Aguiar" (2012), Albertino Saraiva de Sousa refers to agricultural production work, supported by mountain cattle, which began in the spring: "with the arrival of spring, the bustle in the fields begins. The fields are manured or fertilized. After the manure has been placed

in scattered mounds, it is spread using pitchforks." (2012, p. 329). Next, a team of oxen, led from the front by a person with a goad ([4]), pulled the plow using a yoke called a cambão. Holding the plow, or harrow, by the handle, another person guides it along the ground, helping here and there, where it is more difficult to plow, to turn over and consequently align the furrow (the soil that was pushed aside when opening the furrow). Once plowing was finished, the soil was ready for sowing. Before or after sowing the seed into the ground, harrowing is performed. This is done with an iron or wooden harrow—a quadrangular tool usually with four crossbars: "At this time, potatoes, corn, and beans are mainly sown. Once the task is finished, one prays to God to bring good harvests. A few days later, the plants begin to emerge" (Sousa 2012, pp. 329–330).

From the end of the 20th century, the model of agricultural and livestock production transformed with the "promotion of native cattle breeds (through, for example, the payment of compensatory allowances)," making the activity "economically attractive" (Portela & Caldas 2003, p.326). Since then, the existence of "a significant number of farmers over 65 years of age" has become more evident; these farmers have no successors in agricultural and livestock activities but "continue to produce, focusing their efforts on production for direct consumption and on permanent crops." (Portela & Caldas 2003, p.325).

Zootechnical studies indicate that the presence of Marão cattle in the mountainous landscape of Trás-os-Montes is intrinsically linked to the physical development of the breed. The Maronês cattle's wide peripheral vision, which allows for a 320-degree panoramic view, is believed to have developed—along with its cunning and agility—throughout its evolutionary process and shaped by its status as constant prey (Leitão 1981). Teixeira and Alves (2006) associate the development of these characteristics with a sense of constant alertness, largely caused by the presence of the Iberian Wolf (*Canis lupus signatus*) as a natural predator. A strictly protected species in Portugal[5] , the Iberian wolf is a subspecies characteristic of northern Portugal and Galicia (Spain) that, since the 1950s, has experienced a significant population decline due to hunting and the reduction of its habitat areas (Pimenta & Álvares 2005).

The presence of wolves in the study area, analyzed below, is based on the account provided by António Moutinho, a Maronesa sheep farmer in the village of Souto (in Vila Pouca de Aguiar, at the foot of the Serra do Alvão), during a public conference held in November 2021. The breeder's perspective is based on the establishment of a tripartite relationship between the wolf, the livestock, and the shepherds. As a management strategy and for guarding livestock, Maronesa breeders frequently use so-called "Cattle Dogs," the most popular breeds of which in the region are the Transmontano Cattle Dog and the Serra da Estrela (Image 4). The latter breed, according to Ana Clara Ramos Farias in *Herding and Livestock Guard Dogs in Animal Production* (Farias 2024, p.16), is one of the oldest on the Iberian Peninsula. These herding dogs, with characteristics selected over thousands of years, are also part of the traditional livestock protection system that allows for the coexistence of extensive pastoralism and the presence of wolves, aiming to reduce persecution of this endangered predator as well as illegal hunting, as explained by Duarte Marques, a member of the Terra Maronesa Project, in an interview granted to the authors in 2024 (Ribeiro 2024). They are large dogs—males measure about 65 to 73 cm with weights ranging from 45 to 60 kg—with a friendly and companionable nature, hardy and imposing in demeanor.

[4] Long pole with an iron tip (spike).

[5] Law on the Protection of the Iberian Wolf. Law No. 90/88 of August 13 and Decree-Law 54/2016 of August 2.

In the mountains, when herding Maronesa cattle, it is common for herding dogs to wear collars with spikes (Image 5) facing outward, as a strategy to prevent them from being bitten on the neck in the event of a direct conflict with wolves.

Images 4 and 5: Estrela, a crossbred female of Serra da Estrela and Transmontano Cattle Dog, and her working collar in the mountains . Source: images captured by the authors (Lamas d'Olo, January 13, 2026).

Because they are less domesticated than other breeds, the herd of Maronesas develops defense strategies and behavioral techniques that signal the threat of a wolf. The breeder describes a situation he observed involving a wolf pack chasing a Maronesa and a calf: "In an instant, the herd gathered and scared the wolf away. If there is a cow making a sound in the mountains, within minutes all the cows gather together; the wolf doesn't stand a chance. An intruder among the cows doesn't stand a chance." (Moutinho 2021).

The interviewee explains that, traditionally, in areas where natural predators are present, older, sick, or slow cattle that lagged behind the herd were captured by the wolf. But the wolf's attention, the rancher explains, is mainly focused on the calf, the most vulnerable member of the herd, with captures typically occurring within a short window of time: "After nursing, the calf lies down. At midday, the cow goes to eat and moves away from the calf; only at that moment is it most vulnerable and exposed to the wolf. But under normal circumstances, it is not easy to catch it." (Moutinho 2021).

The analysis of such findings arising from multispecies contact allows us to reflect on the notion of the "socialized body" (Bourdieu 1989, p. 64), in which the relationship between wolves, people, dogs, and maronesas functions systematically, promoting practices based on "schemas" acquired from previous experiences. Such interventions are capable of modifying the environment, practices, but also the very bodily form of the species involved, consolidating transformations related to "sign and flesh" (Haraway 2021, p.16).

The Maronesa's "Natural Work Ability" and Regional Fairs

With regard to the socioeconomic, labor, and technological domains, field research indicates the possibility of two complementary main approaches to human-animal relations involving the Maronesa cattle breed. The first, recent, and community-based approach refers to the Terra Maronesa Association, which has

developed a proposal for the "sustainable recovery of environmentally, socially, and economically degraded mountain areas through a *community-based* approach" (Terra Maronesa 2021, p. 2). It is, therefore, an initiative based on the systemic enhancement of the Serra do Alvão through the use of this cattle as an element of landscape regeneration, considering, above all, that the "Maronês" system of management and stewardship of this territory

> enables the maintenance of pasture as a landscape element and the establishment of other species—contributing to biodiversity; the retention of the population engaged in other agri-food productions and the resulting diversity and greater availability of local, fresh, and seasonal foods, which, if well managed, can enhance food identity, more economical and ecological consumption, and better health (Terra Maronesa 2021, p.02)

A second approach, on which this text focuses, seeks to highlight a more intimate and familiar context related to the domestication of the Maronesa breed in local subsistence agriculture. This approach, still very much present, dates back to a period preceding local industrialization, manifested in the development of agricultural tools and implements with distinctive characteristics. In this context, the utilitarian conception of the animal highlights its importance also in the provision of meat and draft power, including in wine production itself, to the point of establishing a "natural aptitude for labor" (Alves 1993, p. 47), particularly related to work in the fields (Leitão 1981). It is well known that, in this rural context of the 19th and 20th centuries, the Maronesa cattle breed represented an important labor force, playing a key role in the development of subsistence agriculture.

In the introduction to the dossier "Animal Labor, Human Labor" (2021) of *the Revista Uruguaya de Antropología y Etnografía*, Fanaro et al. point out that the social function of labor, once defined as exclusively human, is questioned on the grounds that intentionality occurs in the action and not prior to it: planning and action unfold in the very act of doing, with no distinction between theory and practice (Fanaro et al. 2021, p.3). Especially in the context of industrial societies or those undergoing industrialization, as is the case with the scenario analyzed, animal labor occupies a space of invisibility by being classified as work with animals. This is because, in the case of the functions assigned to Maronesas by humans, these are not performed spontaneously: the use of force, coercion, and specific domestication practices are essential cultural elements for the execution of these activities.

In support of the argument regarding the "work capacity" of Maronês cattle—a notion present not only in zootechnical discourse but also in popular discourse within the studied region—their use as a draft animal is cited, a practice that predated the use of tractors in land cultivation and the transport of heavier materials. Often, this propensity is also related, beyond physical characteristics, to behavioral traits, which describe the breed as resilient and easily bonded to the handler.

According to Alves (1993, pp. 47–48), Maronesa cattle exhibit "greater docility, patience, and resistance to fatigue," which, "combined with the possibility of complementary use in high-yield production, such as meat and milk, has made them particularly suited, under certain conditions, for this role." Behaviorally, this cattle is characterized by smooth movements and a shrewd temperament, with its behavior depending on its interaction with the herd, the surrounding environment, and interactions with humans—such as its handler—as well as with other animals, domestic or wild, that inhabit the mountains (Teixeira & Alves 2006).

The most robust and docile specimens were used for the most difficult work, such as plowing or carrying heavier loads, with the latter also being selected for breeding (Leitão 1981). The females, but mainly the Marão males used for transport, were paired using a system known as "juntas." Typically, an older, more

experienced animal was paired with a younger one still in training, so that the latter could learn behaviors associated with domestication.

Among the animals chosen for this task were, above all, castrated males (oxen), which were more robust in terms of strength and pulling capacity but adopted physical characteristics similar to those of females. The oxen evolved into a more rectangular shape, resembling cows, unlike bulls, which maintained a triangular shape with a more developed back than the hip area. Thus, these oxen were selected for heavier work requiring greater intensity of effort, "such as dragging heavy loads, tilling compact soil, and plowing deeper furrows" (Alves 1993, p. 47).

According to the same author, the continuous use of this cattle breed in the region's agricultural activities made it

> the driving force par excellence in the Trás-os-Montes mountains and in the regions of the Douro, Vale de Chaves, and Mirandela, Barroso, and even in the vast areas of the northern coast," which, until the mechanization and motorization of agriculture and transportation, was "the primary reason for its high economic value" (Alves 1993, p. 47).

Leitão (1981, p. 115) also describes Marão cattle as "extraordinarily hardy and energetic," yet "docile," "becoming truly impressive when put to the test of endurance, given the ease with which they move under such conditions." The same author also notes the ease with which it "carries heavy loads along goat trails and performs, under equally difficult conditions, all the tasks inherent to local farming." The author therefore highlights its "extraordinary hardiness and ability to adapt to one of the most rugged regions of our country, set against the backdrop of the Alvão and Marão mountain ranges, and the ease with which it moves across the region's roughest and most rugged terrain," considering that, among working breeds, it will be "the last to disappear or, perhaps, one of the few to survive" (Leitão 1981, p. 115).

The animal's strength, concentrated in the rear of its body, gives it greater traction, and even the way the harness is attached to the traditional oxcart—consisting of a wooden yoke, whose load was supported by "estadulhos"[6] —demonstrates this (Alves 1993, p. 47). Field research, especially informal interviews with breeders during participant observation, revealed that, before the load was placed, the oxen were "jungidos," referring to the ritual of preparing the oxen before they were hitched to the cart. During a visit to Mr. Augusto's property[7] in January 2026 with a group interested in the Terra Maronesa Project, the breeder of the breed and other project stakeholders described the traditional practices associated with the activity: first, the molhelhas or moelhas—padded leather pieces—are placed on the animals' heads to free their horns. The yoke ([8]) is then inserted over the molhelhas and secured with sôgas, which are leather straps. The front of the cart (Image 6) or plow is attached to the yoke by means of a long wooden beam known as a cabeçalha in the case of the cart, and as a cambão in the case of the plow.

[6] Vertical stakes used on animal-drawn carts to support and secure the load.

[7] Fictitious name assigned by the authors to protect the interviewee's identity.

[8] Heavy wooden piece that connects the two draft animals.

Image 6: Maronesas pulling an ox cart loaded with a barrel, late 19th century. Source: Panel at the Quinta do Ventozelo Interpretive Center (São João da Pesqueira, Portugal).

The molhelhas, connected by these leather straps to the complex system, were intended to soften or cushion the impact of the yoke caused by the cabeçalha. The molhelhas can be simple or adorned, and " ly, these have fringes of colored wool or are covered with a hide to protect them from the rain" (Oliveira 1985, n.p.). The yokes, in turn, were produced by yoke-makers, men who carved these wooden pieces into various shapes, but almost always from ash wood, a more durable material. The local skill of knowing how to yoke these animals was specific to certain individuals, who had to pay close attention to the legs of the animals, whose hooves had to be well cared for: "it was necessary to clean the hooves frequently, fit new shoes, and whoever did this had to be a good farrier," stated historian Hilário Néri Oliveira at the conference "Conversas à Sexta - 48 horas," delivered in 2021.

On occasions when ox carts were used to transport goods, such as lime, they might travel long distances, always accompanied by the oxherder or cart driver, the man responsible for guiding the animals. In the summer,

> part of the journey was made at night, because of the heat, so the cattle wouldn't suffer from the flies. Broom was carried on top of the cart, which was also used to ward off insects. This was a job for the younger ones. (…) The driver always carried a lamp or a flashlight to light the way, and the cart had to be registered, within the legal limits, at the time. (Oliveira 2021, n.p.).

The pike or sting was a metal instrument used to prod the ox, encouraging it to move more quickly. This "had to be within the limit, between one centimeter and one and a half centimeters, because otherwise the authorities would impose fines" (2021). On trips, it was common to bring some food, such as

> a small piece of bread, to slowly, from time to time, give to the animals, which would take a sip of water when they needed it. Other times, they would stop for a break and everyone would eat. The farmer would also bring a piece of serro, which was a chunk of fatty meat, along with some cornbread and a three-liter wineskin to replenish supplies (Oliveira 2021, n.p.).

When the path was more difficult or steep, the oxen were "acamboados"[9] , a process in which the oxcart was pulled by another team using a rope to help climb the slope. This happened, for example, on the route between the Douro River and the Serra do Alvão, marked by a more rugged road, while in places with flatter roads, "the younger ones [the children] could ride in the chedas, at the back of the cart, which was a privilege for them" (Oliveira 2021, n.p.). Large wine jugs, small tools, or other utensils were hung from the animals' horns; these horns, after the animal's death, "were used by the farmer to carry the scythe-sharpening stone on his belt, which was used to cut hay" (Oliveira 2021, n.p.).

Throughout the 19th and 20th centuries, Maronesa breed animals were used from north to south of the Vila Real district for many labor functions, especially in the Alto Douro Vinhateiro demarcated region, which "is the result (…) from a centuries-long process of adapting specific techniques and knowledge of vine cultivation to soils with special potential for producing wines of quality and distinctiveness recognized worldwide" (Sousa 2012, p.144). In an evolving and living landscape, centered on land management for viticultural tion across different historical and cultural periods, Maronesa cattle had very specific functions, being used to transport baskets during the grape harvests and wine barrels to the Rabelo boats on the Douro River, which then traveled downstream to Porto, steered by the boatmen. When these vessels returned to Peso da Régua, against the river's natural current, the journey of the Rabelo boats was accompanied, along the bank, by teams of oxen which, given the strength of the current, helped the small vessels loaded with empty barrels to travel back up the Douro River, pulled by tow ropes (Teixeira 2002). The documentary **Barcos Rabelo** (1960), available in the RTP Archive, describes the activity in question:

> On the riverbanks, the boatman keeps his eyes fixed on the river, his hands firmly on the tiller. The rabelo stands out against the dark silhouette of the banks. And there are the men, climbing rocks forever marked by the friction of the tow ropes, pushing forward with each pull. They and the oxen pull the Rabelo forward on the arduous ascent of the Douro (RTP Archive 1960).

Upon reaching Régua, the empty barrels were replaced by casks loaded with wine, brought by teams of Marão oxen from the cellars where they were stored. Soon after,

> against the sandy banks, the Rabelos are already resting. Now the work is different. And the ox drivers are arriving. On the carts, the casks filled with local wines. Upon arrival, the oxen sniff the water, thirsty from the journey from the cellars. (RTP Archive 1960).

While in the Douro River region the Maronesa breed was used to transport grapes (during the harvest) and barrels (of finished wine), further north, in the Upper Tâmega River region, the same cattle were used to transport Água das Pedras, naturally carbonated spring water from the region known as Pedras Salgadas, which was taken to Peso da Régua to be transferred by bucket to the coast of Porto, from where it was shipped for export. A description of this route was presented at the exhibition "48 Hours," organized by the Terra Maronesa Association between November and December 2021 at the Peso da Régua Municipal Auditorium. The oxcart was loaded with wooden crates containing ordinary green glass bottles, with fire-branded corks and capsules bearing inscriptions. On top, they would carry, for example, broom, which,

[9] The act of connecting two or more teams of oxen to a yoke.

according to the exhibition organizers, served as plant fuel to supply bakeries in Porto. On the return trip, the cart drivers brought back the empty containers or other materials intended for them. This transport was chartered and resulted from a contract signed between the water company (VMPS—Vidago, Melgaço, Pedras Salgadas) and the cart drivers in 1884.

The constant reproduction of social and labor practices related to Marão cattle, in the context in question, legitimizes them as techniques, methods, and procedures that are shared and frequently practiced, to the point of being considered a "legacy of traditions, norms, rules, and routines generated and repeated" (Bourdieu 1989, p. 67) in everyday activities.

Many of these practices can still be observed, particularly in Trás-os-Montes. Beyond pastoral activities, where the symbolic and telluric relationship attributed to Marão cattle becomes most evident, cattle fairs—particularly in the district of Vila Real—are events of great tradition and economic, social, and cultural significance, with centuries-old roots linked to the region's agricultural cycle. Dating back to the Middle Ages, these fairs are sometimes associated with religious festivals and pilgrimages, in which traditional religiosity— t to rural ways of life—is evident. In addition to being prime opportunities for the purchase, exchange, and sale of animals—especially native cattle breeds such as the Maronesa (Cordeiro 2025)—religious festivals and traditional processions utilize Maronesa cattle to parade the largest, most ornate floats. One occasion where the human-animal relationship involving Maronesa cattle can be observed is the Annual Fair of Vila Real, known as the Feast of Saint Anthony (as it takes place on June 13, the day dedicated to the saint), which has been held continuously since the mid-14th century and was formally established by King Pedro II in 1688 (Aires 2021, pp. 617–618).

On such occasions, the Marão cattle are proudly displayed by the breeding families, who ensure in advance that they are well cared for and well fed. During the contest, Oliveira (2021, n.p.) recounts, the cattle were "cleaned, greased, and their horns were well polished, in order to win the prize, which was a great honor, a source of prestige for the animal and the family, but especially for the handler."

Final Considerations

The research demonstrates that the daily interactions between Maronesa cattle, humans, the Iberian wolf, and other agents constitute a historically rooted multispecies system that integrates work, defense, and care for the territory, allowing for the reconciliation of family farming, biodiversity conservation, and the continuity of local ways of life. In this sense, it becomes clear that the symbolism and local representations involving people and Maronesa cattle go beyond the utilitarian perspective regarding the animal in the context under study and are built upon the domestication of Maronesa cattle in family and subsistence farming. From the Paleolithic rock art depicting the Iberian Aurochs, through livestock competitions, to its presence in local literature and social practices that establish an intrinsic closeness between people and the animal, the results of this research allow us to infer the construction of a whole set of cultural practices that are present in transgenerational memory, social practices, and the interplay of land and social belonging.

By linking the historical trajectory of the Marão breed to contemporary management and valorization practices, it becomes evident that these multispecies relationships constitute a privileged laboratory for reflecting on the challenges of the Anthropocene from rural contexts in Northern Portugal. The experiences accumulated through the coexistence of people, Marão cattle, the Iberian wolf, and other more-than-human agents offer a glimpse into models of territorial management that combine productive uses, biodiversity conservation, and the continuity of local ways of life, avoiding both the romanticization of the rural and its reduction to a mere landscape reserve.

The continued presence of this breed in the landscapes of Marão and Alvão stands as a testament to human-animal adaptation to mountainous environments and to strategies of multispecies coexistence, demonstrating Tsing's (2012, p.144) observation that domestication, though often understood solely through the lens of human control over a species, must also consider that the human and cultural components are transformed by this relationship.

Daily interaction with the Marão cattle is evidence of shaping by what Bourdieu (1989) terms *habitus,* referring to the systematized body of practical knowledge that combines durable and transferable dispositions derived from past experiences, which operate to legitimize perceptions, judgments, and actions. Thus, the Marão cattle emerge not only as an economic resource, but above all as a companion species, a unifying force for regional identity and memory, and associated with essential local elements in the collective and cultural life of Trás-os-Montes and Alto Douro. Its presence constitutes the center of development for a particular environmental culture, shaping practices, linguistic expressions, the manufacture of objects, and characteristic uses of local resource.

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