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Collector mobilities: Embodiment practices, relationality and sensoriality among seaweed collectors in southern Chile

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ABSTRACT

New approaches to mobility studies have arisen in recent years, though most have focused on practices and experiences in metropolitan contexts. This research aims to expand the theoretical framework with its application in an eminently rural and archipelagic environment, where daily mobility responds to space-time frameworks associated with natural cycles, such as collection, shellfish gathering, fishing and agriculture. We propose the concept 'collector mobilities' to designate the socially produced, embodied, relational and sensory forms of movement through which luche harvesting and its associated practices (including post-harvest processing and domestic rhythms) are organised, experienced, and given meaning. (popularly known as luche (nori)) an activity that has expanded in southern Chile's Los Lagos Region in recent years. Based on in-depth interviews and meetings with women and men engaged in this activity in the municipalities of Ancud and Calbuco, it argues that these 'collector mobilities' are an incarnate, relational and sensory practice where experience and knowledge intermingle. The activity is precisely sustained thanks to the positive sensory networks generated by memory and interaction with nature. While structural factors such as the distance traveled and the time required to collect or sell the seaweed, poor road quality, the lack of transport, poor connectivity or seasonality stand out, it provides a sensitive dimension for these mobilities. Indeed, the body and its performativity, sensoriality, places and non-human beings are some of the elements that shape these collector mobilities.

1. Introduction

Mobility studies have emerged in recent years as a result of the paradigm shift brought about by the introduction of new technologies into societal lifestyles (Sheller & Urry, 2006; Urry, 2007). Scholars in this field have begun to focus not only on fixed structures but also on the dynamic flows of people, capital, information and objects. This shift necessitates a greater effort within the social sciences to adopt interdisciplinary approaches (Di Masso et al., 2019). Some theorists who analyze this paradigm shift observe that, as the pace of life has accelerated, social differences have also increased. Specifically, while the affluent individuals have access to global connectivity networks, marginalized segments of the population often experience enforced immobility (Cresswell, 2010; Hannam et al., 2006; Urry, 2007).

Mobility represents a key element in the construction of landscapes and ways of life in a territory (Milbourne & Kitchen, 2014). Mobility is not fixed and immutable, but rather a space of encounter. Based on this premise, Massey (2005) defines mobility as a "constellation of processes rather than a thing" to emphasize the changing nature of movement. New research has focused on subjective and experiential aspects understand mobilities as incarnate frameworks. That is, not just as mere movements, but also as affective, sensory, and assembled records (Lazo & Carvajal, 2017, 2018; Lazo et al., 2021). In these cases, mobilities are understood as a flow of people, but also a flow that relates humans with the environment, objects (Lazo, 2017; Lazo & Ther, 2014) and other non-humans (Zunino et al., 2017). Thus, local inhabitants' experiences gain value, not just as concrete data, but also as embedded emotions that mobilize forms of action (Hayfield & Pristed Nielsen, 2022; Larsen &

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Johnson, 2017).

In the mobilities paradigm, routes and trajectories have and weave meanings for those who follow them (Giucci, 2017; Vannini, 2012). In the case presented below, daily mobility is a fundamental territorial attractor in seaweed collection. The islanders of Chilean insular-rurality (in stark contrast to continental rurality (Ther-Ríos, 2020)) interact with other insularities and with the continent, creating economic-productive distribution, exchange and consumption routes, in addition to sensorial-emotional trajectories associated with the process. These mobility patterns respond to an ancestral coastal tradition that is cataloged as the first stage of the “conquest of the sea,” one in which no hooks are needed and only requires manual and bodily capacity, in addition to the use of tools, which play a fundamental role in collection (Olea, 2023; Silberman, 2013). This analysis is situated in dialogue with recent research that has highlighted the relevance of mobility outside urban centers. While previous works have utilized Big Data and mobile location data to map interregional flows and functional regionalization patterns in peripheral territories across Europe (Halás et al., 2021; Novak et al., 2013) and Spain (Ventura-Fernández & Quetglas-Llull, 2025), this study proposes a complementary qualitative approach. By focusing on ‘collector mobilities,’ the work transcends macro-spatial flow data to delve into the bodily and sensory dimensions and the human-non-human relationality that defines life in island peripheries, providing a subjective layer that Big Data fails to capture.

Thus, this work proposes understanding seaweed collection as an incarnate and sensory practice of mobility in which relations with other non-humans, places and memories are activated. The collection of shellfish and seaweed is a traditional activity that people have carried out along the southern Chilean coasts since pre-Columbian times (Belmar et al., 2021; Recasens, 2003). However, and despite its ancient nature, currently due to the demands of the global market system (Díaz Pla et al., 2019), this practice has mainly been studied for its biological and ecological, bio-economic-productive, and management aspects (Ceballos, 2010). More recently, its governance aspects have been examined (Outeiro et al., 2015), with little known about the more subjective peculiarities associated with collection and even less about the emotional aspects of collectors’ experience.

This work focuses specifically on collection of the seaweed *Pyropia* spp., better known as luche. It is an edible seaweed with a variable coloring (ranging between reddish-green and dark red) that grows on the seabed (stones and/or rocks) in the intertidal zone of several regions in Chile.

Based on in-depth interviews and ethnographic encounters with *Pyropia* spp. seaweed gatherers in the island municipalities of Calbuco and Ancud, located in the Los Lagos Region, southern Chile, the study pursues a dual objective: first, an empirical goal focused on documenting and understanding traditional luche harvesting practices in the southern Chilean archipelago; and second, an analytical-theoretical goal that seeks to propose the concept of ‘collector mobilities’ as a category that expands mobility studies, demonstrating how these embodied and sensory practices challenge traditionally metropolitan analytical frameworks (including post-harvest processing and domestic practices as constitutive phases of the extractive-productive mobility cycle). We believe that a comprehensive understanding of this activity is crucial. The innovation of this proposal lies in the fact that it transcends the technical description of artisanal fishing to conceptualize collection as an ‘assemblage mobility’. Following Cresswell (2010), we argue that mobility is not just physical displacement but the social production of meaning. Here, the theoretical innovation consists of demonstrating how movement co-constitutes the collector subject through an uninterrupted dialogue with non-human agencies (tides, rocks, seaweed), challenging the anthropocentric and metropolitan visions that have dominated the mobilities paradigm (Sheller & Urry, 2006).

This article makes three specific contributions to mobility studies. First, it demonstrates how embodied labour and haptic knowledge constitute a form of sensory-territorial literacy that operates in

peripheral and archipelagic contexts largely absent from the field’s canonical corpus, thereby complementing quantitative flow analyses that capture macro-spatial patterns but fail to register the bodily and affective dimensions of movement. Second, it operationalises ‘labours of assembling’ (Baker & McGuirk, 2017) as an empirical framework for tracing more-than-human agency within extractive livelihoods, moving beyond abstract claims about non-human actants to ground them in specific moments of friction between collectors’ bodies, tides, seaweed, and living rocks. Third, it reveals how gender modulates the temporality, spatiality and purpose of movement within the extractive-productive cycle, distinguishing between the intense material mobility of extraction and the patient domestic rhythms of processing as co-constitutive (rather than separate) phases of collector mobility. The article is organised as follows: Section 2 develops the theoretical framework of collector mobilities as an incarnate, relational and sensory practice situated within island and assemblage thinking; Section 3 describes the study area; Section 4 presents the methodology; Section 5 reports the empirical results across four analytical dimensions; Section 6 discusses the findings in dialogue with the mobility literature; and Section 7 draws conclusions and identifies avenues for future research.

2. “Collector mobilities” as an incarnate, relational and sensory practice

Island studies seek to overcome the conception of islands as remote places disconnected from everything that happens beyond their geographical boundaries. Quite the contrary: the sea, instead of constituting a barrier for island societies, is the sustenance of their economy, culture and identity (Gough et al., 2010). Research on patterns of social mobility is very useful to deepen island studies, as it helps to understand not only the geographical dimension of movement, but also the emotions experienced by subjects in archipelagic environments, where the collective imaginary transcends the boundaries between emerged and submerged lands. In these territories, daily journeys between islands and even between the archipelago and the mainland are constant, giving their inhabitants a very marked maritime identity (Torres & Gómez, 2024). For this reason, Stratford (2013) suggests rethinking archipelagos not as remote and isolated places, but as spaces of connection and mobility.

Due to the isolation of islands, their inhabitants are dependent on migration and mobility (King & Connell, 1999). As a result, island societies belong to a territory much larger than the one where their home or settlement is located. Currently, as a consequence of globalization, populations tend to move to cities, incorporate urban habits and adapt to new services, which reduces the frequency of movements between islands and shortens the distances of internal journeys (Joseph, 2021). In parallel, the opposite is happening in more traditional coastal societies: as technological modernization transforms means of communication, the extent of lived space expands (Christensen & Gough, 2012).

Vannini has pioneered work on island and archipelagic studies, developing mobility studies focusing on British Columbia (2011; 2012; 2016; 2018; 2020). This author has focused not only on displacement, but also on the feelings and affections linked to the routes and trips that islanders take every day, with special emphasis on understanding how “people, places, times and objects are actors united by openness and the willingness to change, more than by limitation and permanence, who evolve organically and continuously” (Vannini, 2012, p. 39). This ensemble of elements to study mobility involves integrating the material, experiential and affective dimensions of mobility.

From a relational perspective inspired by Latour (1993) and Ingold (2000), mobilities are not seen as isolated human movements, but as processes co-constituted by heterogeneous assemblages of human and non-human entities. In the case of luche collectors, this includes not only the actions and decisions, but also the rhythms of the tides, the resistance of the seabed and the materiality of tools. In the field of island studies, the role played by technologies (boats, ferries, or mobile

devices) is highlighted as elements that enable or hinder mobility. This perspective places strong emphasis on what it means to be an islander and how sea and land travel are part of a ritualized, creative, and adaptive incorporation of mobility. Vannini's work (2012) is enlightening, as it integrates dimensions of island life and mobility that until then had been considered separately, adopting a relational approach to the study of mobilities, the associated waiting times, collective constructs, and the territorial experiences they represent. Thus, movement is not just produced by human associations, but also by the objects and materialities that surround them (Lazo, 2017).

To operationalize this relational perspective and avoid an abstract characterization of non-human agency, we adopt the concept of 'labours of assembling' (Baker & McGuirk, 2017). This framework suggests that mobilities are not accidental or pre-given, but rather 'knowingly and unknowingly held together' through continuous effort. From this view, gathering practices require labour: the alignment of human actors with the enrolment of various materials, techniques, and environmental rhythms. In seaweed collection, mobility is thus revealed as a laboured-over achievement, where agency is distributed across a jumble of bodies, tides, and tools. This perspective decentralizes the individualist conception of movement and provides a robust analytical framework to understand how the success of the trajectory depends on the precarious alignment between the collector's body and the material resistance of the coast.

While islands can be challenging places to move to (due to the distance, lack of transportation, and inclement weather) many choose to remain for cultural reasons (Hayfield & Pristed, 2022). This sense of belonging to a particular place is being lost as a result of increased mobility to more densely populated areas. In sectors where traditional activities (such as small-scale fishing and shellfishing or seaweed collection) continue to be preserved, the mobility patterns characteristic of island or archipelagic populations are maintained (Arp et al., 2013).

In southern Chile, the collection of seaweed such as luche (*Pyropia* spp.) is a practice that not only includes biological aspects but has a strong cultural legacy and sensitivity. The luche collectors participate in a sensorial community that articulates corporal memory, physical adaptations and strategies of territorial appropriation through the mediations that shape their trade. Based on this, we propose 'collector mobilities' not as a descriptive label, but as an analytical framework for understanding the extractive-productive cycle. Following Cresswell (2010), mobility is the social meaning given to movement. Under this premise, even processing and cooking practices (seemingly static) are integrated into this framework as a 'mobility of waiting' (Wright, 2021). In these contexts, movement is not just physical displacement but the performance of rhythms that link the home with the coast, where productive immobility is a constitutive and meaningful phase within the collector's territorial flow.

Mobility is central to the culture and sense of belonging of island populations, especially among those who build their daily lives around access to different territories, such as seaweed collectors. From a geographic perspective, the conception of space is subjective and to a large extent depends on the emotions that places arouse in local actors (Hayfield & Pristed, 2022). It is important to recognize the elements that shape collector mobilities not only to better understand the complexity of the activity and the subjectivities of the islanders who practice them, but also to safeguard them from political, economic and cultural changes. Previous work (Miller, 2021; Vázquez & Barragán, 2024; Álvarez et al., 2019) warns of the degradation of cultural services in southern Chile as a result of pressures from the industrialization of aquaculture, tourism or marine pollution.

The paradigm of the "new mobilities" has also reached the archipelagos, although certain behaviors in more rural environments appear to have changed less dramatically. In these contexts, modernity—materialized in objects such as new means of transport, mobile phones, GPS, etc.) merges with tradition, leading to intermediate mobilities where social patterns have not undergone abrupt transformations

(Hofstede et al., 2023). This research specifically examines the singularities of an activity (and the actors involved in it) that exemplify this model of transitional mobility. To enhance the discussion about the role of mobilities in island settings, this paper also compares the results with other findings that highlight the inseparable connection between the two disciplines.

The mobility approach is fundamental in this case because the static categories of traditional fishing studies fail to capture the fluid and transitory nature of archipelagic life. As Vannini (2012) suggests, 'islandness' is not a condition of isolation but a performance of movement. Utilizing the mobilities framework makes it visible that the collector's work does not occur 'in' a place, but rather 'is' the place in motion; a network of trajectories that links ancestral memory with the biological rhythms of the sea, providing a deeper understanding of cultural resilience in peripheral territories.

3. Study area

This research focuses on studying the mobility patterns of seaweed collectors in Ancud and Calbuco, two municipalities in the Los Lagos Region of southern Chile, between 41° 46' and 42° 01' latitude south (Fig. 1). While Calbuco belongs to the province of Llanquihue, Ancud is part of the province of Chiloé and is specifically the northernmost municipality of South America's second largest island, the Isla Grande de Chiloé. These two districts are mainly coastal and archipelagic in nature and are separated by the Chacao Channel, a 50-m-deep strait that connects the Pacific Ocean with the Chiloé Inland Sea. It is precisely here where the longest bridge in Ibero-America is being built to connect the archipelago with the mainland (Cordero et al., 2023). The two municipalities have a total area of 2342.8 km², which includes numerous islands and islets of very different sizes, among which Puluqui (Calbuco municipality) stands out.

The location and exposure to westerly winds provide the study area with a rainy maritime climate, characterized by very abundant rainfall that ranges from 3000 mm -on the western slope of Ancud-to 1500 mm on the sheltered coasts of the inland sea of Chiloé. Temperatures are moderate due to the influence of the sea, with minimum temperatures of 6 degrees Celsius and maximum temperatures of 19 degrees Celsius (Climate Data, 2024). Thanks to the climatic conditions and geographic isolation, this region of Chile is home to a great biological diversity that extends from the emerged areas to the marine zones, with emblematic species such as penguins (

Spheniscus magellanicus and *Spheniscus humboldti*), whales (*Megaptera novaeangliae*, *Eubalena australis*) and dolphins (*Cephalorhynchus eutropia*, *Lagenorhynchus australis*) (Hucke et al., 2006).

As a result of the fusion and syncretism between the ways of life of indigenous people and European settlers, the cultural elements and values of the field of work are especially unique in the Chilean context. The seafaring lifestyle of its society has allowed preserving a rich mythology associated with the sea and ancestral practices (some at risk of extinction) such as the minga de tiradura (for moving houses using oxen or boats) or the preparation of curanto (a culinary specialty that combines ingredients from the land and the sea) (Bravo, 2004). Likewise, of the 80,150 inhabitants residing in Ancud and Calbuco according to the last census, 25,384 (31.67%) of them are self-proclaimed indigenous people, mostly belonging to the Mapuche people (INE, 2024).

Returning to the activity of interest in this research, according to official National Fisheries and Aquaculture Service (Servicio Nacional de Pesca y Acuicultura, SERNAPESCA) statistics, the resource luche registered a sustained increase in landings, from 4 tons per year in 2014, to production ranging from 100 to as many as 200 tons between 2018 and 2022 in the Los Lagos Region (Table 1). Specifically, of the 23 municipalities in the Los Lagos Region, Ancud, Quellón, Calbuco and Maullín are the ones with the most registered luche harvesters. The activity of luche extraction is carried out by men and women who may or may not be listed in SERNAPESCA records under the shore collector's category.

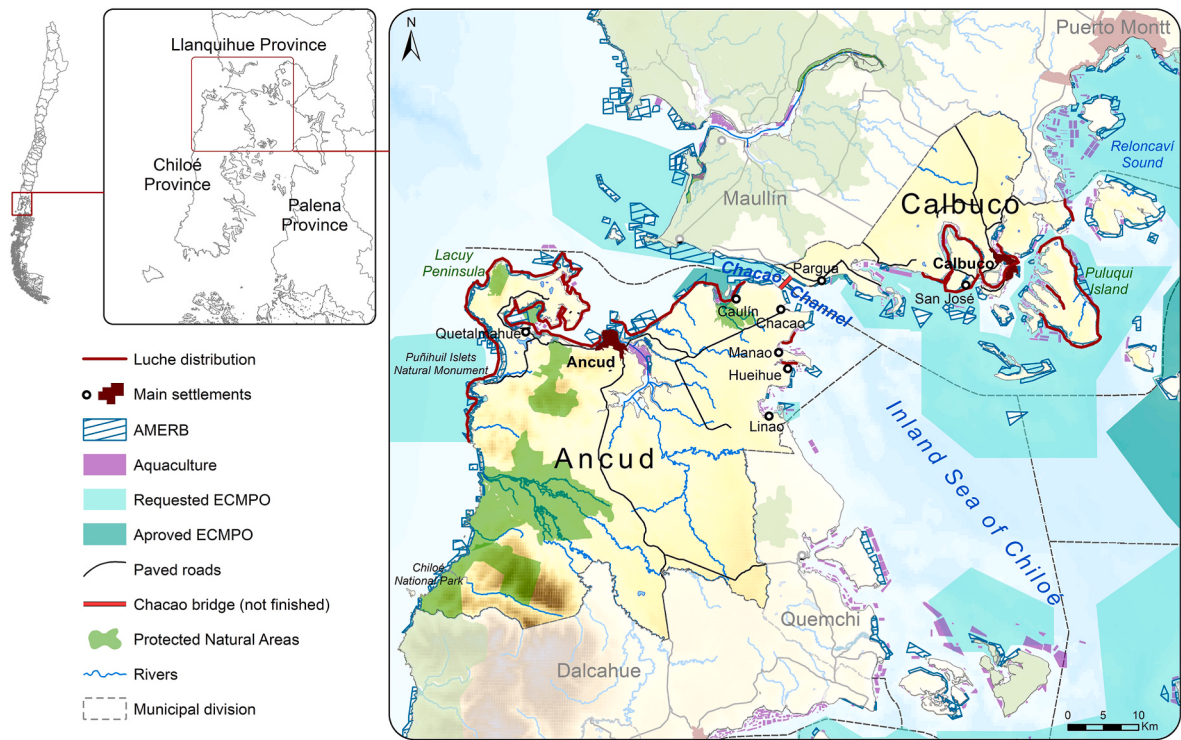


Fig. 1. Spatial location of luche collection sites and main access routes in the northern Los Lagos Region. The map explicitly identifies the distinction between island extraction zones (Puliqui, Chiloé) and mainland areas, highlighting the navigation routes and land paths that shape the analyzed mobility trajectories. Source: own elaboration.

Table 1
Comparison of luche landings in the Los Lagos Region and Chile (in tons).

Year	Los Lagos Region	Chile
2012	0	89
2013	0	90
2014	4	132
2015	1	176
2016	11	105
2017	10	158
2018	108	235
2019	149	319
2020	67	230
2021	155	426
2022	207	305
2023	72	181

Source: own elaboration based on [SERNAPESCA \(2024\)](#).

Extraction is seasonal, although it increases the biomass in winter and spring in different places around the Los Lagos Region (Ávila et al., 2018). Ceballos (2010) recognizes a number of problems associated with collectors' transport and mobility (the need for a vehicle or horse for their transportation, the poor quality of the access roads to the beaches, the lack of proper roads, the existence of ravines, difficulties climbing up with loads of seaweed, back pain, damaged hands, etc.) which are discussed in this article.

The sustained increase in luche landings documented in Table 1 is not an isolated phenomenon but responds to a profound socioeconomic reconfiguration in southern Chile. The environmental and labor collapse of the salmon industry (marked by mass mortality crises and increasing job precariousness) has acted as a centrifugal force, 'pushing' local inhabitants to abandon industrial wage regimes and return to ancestral shore-gathering mobilities. In this context, harvesting is established as a 'refuge economy' (Barton & Román, 2016) and a resilience strategy against deindustrialization. This return is not a simple productive regression but a tactical reoccupation of the coastal edge in the face of

pressures from industrial aquaculture and the lack of clear regulations (Álvarez et al., 2019). Thus, 'collector mobilities' emerge as a pillar of cultural and economic resistance that allows archipelagic communities to navigate the uncertainty of the global market, transforming movement into an act of territorial sovereignty.

4. Methodology

This research was approved by the Scientific Ethics Committee (CEC) of Universidad de los Lagos (Approval No. H008, dated May 2022). All participants provided written informed consent prior to data collection, ensuring the anonymization of their testimonies and the right to withdraw from the study at any time.

The reasons that explain the interest in learning about the experiences of collector mobilities can be found in phenomenology, insofar as it approaches human experience not as an object (reducing it to economic or biological factors), but as the experience of subjects who endow it with meaning. In other words, this approach seeks to reconstruct the experience as the people involved live it and give it meaning, refraining from any judgment about the veracity of their convictions. Thus, phenomenological studies privilege certain techniques (such as semi-structured interviews, life histories or focus groups) over purely objectivist quantitative methodologies (Berger & Luckmann, 1971; Schütz, 2003).

To learn about collector mobilities, the research methodology followed consisted of an ethnographic work carried out between September 2022 and July 2023, which included in-depth interviews and meetings with women and men engaged in this activity in both continental as well as insular areas of the Los Lagos Region to discover these collector mobilities. Specifically, the municipalities of Ancud and Calbuco were chosen because they are the most representative cases of luche extraction and sale.

The sample consisted of 20 women and 10 men, aged between 18 and 75 years (Table 2), intentionally selected to represent the diverse

Table 2

Gender and age codes of participants.

Code	Gender	Age
M01	Woman	18
M02	Woman	57
M03	Woman	54
M04	Woman	56
M05	Woman	68
M06	Woman	27
M07	Woman	39
M08	Woman	58
M09	Woman	74
M10	Woman	59
M11	Woman	24
M12	Woman	55
M13	Woman	66
M14	Woman	49
M15	Woman	67
M16	Woman	52
M17	Woman	31
M18	Woman	69
M19	Woman	60
M20	Woman	45
H01	Man	41
H02	Man	45
H03	Man	51
H04	Man	35
H05	Man	65
H06	Man	40
H07	Man	58
H08	Man	50
H09	Man	24
H10	Man	47

experiences associated with the luche collection in the Los Lagos Region. This composition acknowledges the significant role of women in this activity, many of whom combine extractive labor with caregiving and community organization, thereby offering a comprehensive perspective on mobility practices. The sample size was determined by a combination of criteria: intentional selection to capture diversity across gender, age range, location (insular and continental areas), and union membership, alongside a pragmatic thematic saturation criterion whereby data collection continued until no new themes emerged across the three interview dimensions (corporeality, relationships, and memory). The gender composition reflects the predominance of women among active collectors and the research team's aim to document male participation in extraction as a contrasting case.

Participants were contacted through the collectors' unions, facilitating access to individuals who were not only active in collecting but also recognized for their dedication to the activity. This approach ensured a diversity of experiences and perspectives, allowing us to capture the contemporary experiences and challenges that collectors face in practicing this cultural tradition. Additionally, a focus group discussion was conducted with ten women from the union of women collectors on Puluqui Island in Calbuco. The focus group lasted approximately 90 min and was facilitated by two members of the research team using a semi-structured discussion guide covering the same three dimensions as the individual interviews (corporeality, relationships, and memory). The session was audio-recorded with participants' written consent and transcribed verbatim. Focus group data were coded using the same hybrid inductive-deductive strategy in NVivo 12 and integrated with interview data during the thematic analysis phase. Where the focus group generated themes not present in individual interviews (particularly regarding collective memory and intergenerational transmission of knowledge), this is noted explicitly in the Results.

Lastly, the semi-structured in-depth interviews (with an average duration of 60 min) covered three dimensions: corporeality, relationships, and memory. These took place in the collectors' homes and during their work, with the exception of the union group interview, which was held in the community center. Data analysis was conducted using a

hybrid coding strategy (inductive-deductive) within NVivo 12 software to ensure systematic data traceability. Initially, categories were established based on the theoretical framework of mobility (deductive), then refined and expanded through open coding of the testimonies (inductive). This iterative process allowed themes such as 'haptic knowledge' and 'non-human agency' to emerge organically from the narratives. Furthermore, non-human elements (seaweed, rocks, tides) were operationalized by identifying 'moments of friction' in the narratives: points where the environment's materiality dictated changes in the body's rhythm, effort, or trajectory. Thus, the role of non-human actants was extracted directly from the empirical description of bodily challenges reported by the collectors. Table 3 summarizes this process, linking theoretical dimensions with the empirical categories that structure the results.

5. Results

5.1. Luche collection as incarnate practice

An important aspect of collector mobilities is how they are carried out and the movements it requires, i.e., how the activities are organized and subsequently executed. In general terms, most interviewees report that the timetables of luche collection depend on the tide, so planning is the first step to developing the activity. To do so, they begin with checking the tide tables by consulting them on the Internet, the radio or with the help of a calendar. Afterwards, the necessary implements are gathered (sacks, boots and shoes) and the tasks are organized individually or collectively, if they belong to a union. Once in the field, they walk and collect the seaweed in nets before placing it in sacks weighing

Table 3

Categories of analysis.

Code	Category	Description
1	Incarnate Practices	This category focuses on the physical experiences of collectors during the collection of luche. It explores aspects such as the postures adopted, the movements required and the physical skills necessary for successful collection. Interviews and direct observations were conducted to understand how these practices are integrated into the collectors' bodies and daily lives.
2	Places and Sensorialities	The specific environments where harvesting takes place were examined, including the geographical and environmental characteristics of the coastline. The sensations and perceptions that harvesters experience in these locations (such as touching the water, the sounds of the sea and weather conditions) were also addressed. Maps, interviews and observations were used to document how these factors impact the harvesting experience.
3	Relationalities and Materialities	This category examines the relationships established between collectors and other non-human entities (such as the sea and seaweed) and the objects used (tools, containers, etc.). It explores how these relationships influence the practice of collection and the perception of the environment. Interviews were conducted to understand the role of tools and material elements in the harvesting and how these interact with cultural practices.
4	Sensory Memories of Collection	The sensory and emotional experiences associated with the collection of luche were analyzed, including memories and narratives that collectors share about their profession. This topic was explored through interviews that captured collective memory and examined how sensory experiences influence the cultural identity of the community. The study aimed to identify patterns in memories that connect the practice of gathering to local history and tradition.

around 30 kilos, which requires being in good physical condition. The collection task can last from two to 3 h on the beach, after which they return (generally on foot) to the plant or their homes to drop off the collected material. Generally, and following tidal fluctuations, they work half a day.

Processing begins when they return from collecting the seaweed, around noon. After arriving from the beach, the luche is washed with fresh water at least three times to remove the sand and is then left in trays. The harvest is subsequently stored in nets on the roof of the house or the processing plant owned by the union for one sunny day or two cloudy days. The dry seaweed is then taken off the roof and left in plastic boxes that have been used as organizers, where it can be stored for three to four years. A variety of products are made with the seaweed in the processing plant and then sold, such as ground luche, whole luche, candied luche and luche vinaigrette. The price of these products (including taxes) is not very high and ranges between USD 1.20 and 3.50. They are usually sold in supermarkets, farmer's markets or to private individuals.

The development of this activity, with its established stages and moments, is shared by a community that not only has common sensitive skills that have become knowledge, but also a physical-bodily technology that is gradually embodied in the trade, developing bodily adaptations and controls that coordinate experience with knowledge of collection, making it possible. Thus, a collector's body finds a position and disposition that mimics the very action of collecting.

A: Always bent over because it's the only way you can get it. Because if you worked standing up or sitting down you wouldn't do anything.

A: It's always been the same position. That hasn't changed since the old days; it's always been the same position. For the old folks, for the men and women; this is how it's always been done. (M10)

Collection takes place with a corporality near the rocks, bent over and noting luche's subtleties and its characteristics. This position, universally recognized by collectors, gives account of a learning process that occurs from the body to materiality, adopting a position in which body skills tell of a biography and a reproduced memory. Moreover, the people interviewed mention that these postures, which can be difficult to adopt as a result of repetition, do not present gender distinctions.

M: You pull it off, pull it off; you have the luche in your hand and then you start to squeeze it before putting it in the sack, or else in the net. (M06)

This form of proximity to the luche, with hands on the rocks and a fixed gaze, turns touch into a primary sensitive skill. Collectors develop haptic knowledge (Peláez, 2020): a tactile literacy that allows them to distinguish textures, temperatures, and the seaweed's adherence under humidity. This record is not merely functional; it is a learning process where the hand 'reads' the rock surface, adapting pressure according to the material's resistance. Thus, the body does not just move; it performs a sensitive mobility that decodes the rocky environment through direct contact. In this sense, the luche is harvested by hand, in a pattern like that of agriculture, only in this case there is a pressure that squeezes the excess water from the seaweed. Despite the constant technological revolution, this exercise continues to be practiced manually, without any type of machinery, using only sacks and nets as utensils in the process. This peculiarity differentiates collector mobilities from those which occur in other traditional activities, such as small-scale fishing, where the boats have in many cases undergone modifications to allow them to cover longer distances (Álvarez et al., 2019). Of course, and as will be seen below, modernity has also been noticeable in harvesting, but only in the use of new tools to store seaweed.

M: Everything by hand, that's it. I would take everything ... put it on my shoulder and climb up the ravine with it. I'd bring it all up with two or three rests ... (H02)

This action can well be established as part of an accumulated learning process associated with transporting the seaweed in semi-humid state, unlike in the past when the entire process took place on the beach. In this case, strength is not associated with masculinity, but instead the collectors' bodies also adapt to the needs of the trade regardless of whether they are men or women, including rest paces that facilitate the carrying of sacks. Thus, the autonomy with which collection occurs is part of it, where the people who adopted and incorporated it accept that one aspect of the practice is carrying their seaweed on their shoulders.

A: Yes, let's say that you go down for two hours, but of those two hours you work for like an hour, an hour and a quarter. You can't go luche-ing for longer than that. The rest of the time you walk and stretch. (M18)

It is striking that the interviewee disassociates travel to the beach from work, identifying the latter with the mere act of collecting seaweed. Not in vain does the walk to and along the beach constitute the basis of collector mobility, in the sense that it represents the movements that must be made to engage in the activity. In this context, different sensitivities and sensorialities arise in their trajectories, which are activated and become body. An expression of the above is how the noun becomes a verb, giving account of how the activity adopts a corporeality, temporality and a specific disposition.

V: Yes, you can feel it. Rougher hands.

M: Yes, my hands hurt. Like my fingers become delicate.

E: That's the rubbing of the seaweed with the rock.

V: Or with the finger and piure [a tunicate of the Pyuridae family].

M: Because I think that luche gives off like a sort of iodine, because it burns. Like it's burned these fingertips. That's happened to me.

E: And how do your legs and arms feel?

M: Tired, my legs too. You go down the ravine and you go back up.

V: More going up than going down.

M: Yes, you get tired.

R: Yes, because when you've been collecting shellfish for many years you get into it. But then it's hard to bring it up. (M13)

An associated registry of ailments and therapeutic methods participates in this bodily regime. Regarding the former, they give account of how the body suffers from the activity, where the handling of textures and weight are part of the body uses and the way in which the body becomes a work tool within this community.

A: Yes, luche is easy to harvest; it's a good job for the mind.

E: Why do you say that?

A: It's very relaxing. It's not like being shut up at home or in a vegetable garden all day. No, it's nice; it's good. (M12)

Of the therapeutic methods, collectors recognize a sea-therapy, a relationship between the body and a positive emotion from being in contact with water and the open air, evidencing the sensitivity networks that sustain this trade. In this sense, the bodily dispositions are also interwoven with sensory and affective connections. This latter point is related to the trade's corporealization, turning these sensitive records into forms of mobilization and connection with the surrounding environment. In a certain way, the subjects feel that the repetitive effort and the ailments they suffer during the harvest are compensated not so much by the material benefits they can obtain from the activity, but by the experience itself, the sense of freedom and the connection with nature.

5.2. Places and sensorialities as guides of action

In contrast with farming, where one knows exactly where the harvest will take place, in the case of luche collectors, this work involves a search and reading of a series of spatial milestones that guide movement. Collection is not a static activity that happens in a single place. It occurs in and with movement and following the seaweed's times and seasonality. Inclement weather can affect the mobility and emotions of those who practice the activity. In adverse weather, collectors must remain still and expectant in their homes to see if conditions improve and then go out to work on the beaches. Accordingly, geographical orientations, sensorialities and body dispositions that guide collection are triggered during the activity.

A: On shore, yes, collecting seaweed, luche and cochayuyo [Durvil-laea antarctica].

E: So you don't go collecting all year round, but just in certain months?

A: No, temporary, y'know? It's a season; four or five months.

E: And when does that season begin, more or less?

A: From November onwards.

E: So, it lasts from November through December, January, February and until March?

A: Yes, March; March, April. (H07)

A continuity between collecting bodies and perception of the environment is linked to luche's seasonal nature, which tends to proliferate more abundantly during the summer season. Following an adaptive strategy associated with geo-sensitivity, luche collection takes place seasonally within a biocultural calendar that ensures the seaweed's rest between collection cycles. Thus, a sensitive coordination takes place between the people and the activity they engage in, where continuity of the activity is privileged over extraction that is disconnected from biological rhythms.

A: Because there have also been years when there has not been any luche. Like they rotate years. But at least last year there was and this year you can see that it has been growing nicely. (H06)

However, seasonality does not happen precisely and predictably. It is not immune to the productive and cultural changes around it. Within the sensitivity developed by luche, a floating affectivity can be observed, which is always present even when the activity is not constantly being carried out.

E: And what about the tides? Did everyone know that good tides were coming? Or were you letting each other know.

L: Nope, everyone knew; they were watching it from the edge of their ravine. They were watching the tide and already knew there was a good tide.

E: And did they look at the moon or was it more about watching the sea?

L: They watched the sea. (M19)

As a floating practice, luche collection is anchored in watching the horizon. While science has documented the moon's role on the behavior of the sea, in the experience of some collectors, the old-timers would watch the tidal line as the place where knowledge of their surroundings was acquired. Thus, they looked forward to scheduling the collection, which gives account of a bodily practice associated with the place from which one perceives the world, following the point that organized experiences at the level of the water.

E: Was there any sign on the shore of the beach indicating that there would be tide for collecting? A rock?

H: The Lile rock.

R: Oh yes, where Lile is.

M: Lile rock, yes. Because there's luche there too.

H: The other one; I'm not sure if it has a name, la Tranca.

M: La Tranca, that's what they call that one. When we say we're going shellfish collecting, but with La Tranca, it's because there's a lot of shellfish there.

H: Over here there's another one they call Caballo.

M: Yeah, Caballo. Over that way.

H: There are some big rocks over there.

M: And where I would go down to collect shellfish over on this side, which as I told you my mother showed me, there was a rock they that she called La Picuta. A big rock that sticks out; that's the La Picuta rock. (M12)

Further evidence of the ways in which luche collection is present (even when it is not being exercised directly) has to do with the organization of space through cultural or morphological landmarks. The toponyms of these features (Lile, Tranca, Caballo and Picuta) do not appear on official maps and are passed down from generation to generation. The arrangement of these landmarks according to the tidal intervals is the basis of collector mobilities. It is, once again, a matter of knowledge acquired through experience and wisdom that comes from the elders. In addition, the sharing of skills and knowledge within the collector mobilities between generations forges close ties of familiarity among those who practice the activity that feed the positive sensorialities towards the work.

L: Manao is over here. That's its name. Because the old-timers used to give all the beaches names. Yeah, my grandparents had names for all the beaches over here. (H03)

This reveals the refinement of perceptive qualities for appropriating the sea, building networks of continuity for seaweed collection around geographical markers/landmarks. These markers are an expression of the trade's characteristics, where the mental organization of the waterfront extends a sensory community in the territory. In this sense, there is a community reference in the name of sectors and beaches, to the extent that the waterfront convenes communities. At the same time, the rocks are marks on the earth of different forms of life. This experience of the place gives account of the interconnection between elements of different orders, linking doing with knowing-remembering, with being and feeling.

A: Yeah, sure, and like surnames are respected. Because today they say: were going luche-ing over by the Díazes, over by the Díazes there's plenty; a lot is coming out over by the Hernándezes. (H03)

As a result of the naming of beaches, the incorporation of the place through the very experience of collector mobility takes place, an action that for collectors is closely linked to the place where they collect. Walking along the beach in search of seaweed and carrying it for subsequent processing transforms the action of walking into a veritable new locus of body memory and, as such, the need to name and differentiate areas from each other is always feasible, relevant and current. Identification guides the body and facilitates a practice that has physical costs. In this sense, there is a triangulation between the senses of the place, the body's oralities and the environment where collection takes place. The beaches, roads and climbs up and down are not just a scenario but are present in the memory as participants in the process capable of modulating and inscribing themselves in collectors' bodies.

A: Yes. Just as I would come down here, I would walk along the beach from here and collect seaweed. I would fill my sack and leave it

nice and full. Full. I would take it along with me down the beach itself. And in that way, I would reach Cheumán. (M07)

According to the above, analyzing the practices of luche collection from a sensitive regime involves going beyond the cultural and ecological and moving toward the way in which both become and are expressed in people's bodies. Thus, collector mobilities become continuous perception and action, living knowledge in which involvement with the place and its sensorialities is a substantial part of collectors' strategies to adapt to their environment, where having the extraction and conservation tools and techniques is insufficient without the place's dynamics and rhythms. Hence, collection arises on the path that the map of experience has drawn up. These living maps of sorts are not just geographical and administrative, but above all bodily; they are incarnate. They contain an entire series of landmarks and indications to resolve collection in the best way possible. The weight of having to move along the coast collecting luche is dimensioned around these considerations. Thus, the frameworks sustaining this sensory regime related to collection arise in an integrated manner.

5.3. Relationalities and materialities of collector mobilities

Like any practical trade, a network of relationships participates in luche collection to sustain the activity. These associations include artifacts and non-human entities that participate in, condition and even rub against perception. These mediators play the role of linking the perception between bodies and the environment, from whose encounter a bodily and cognitive knowledge arises. In addition, the objects used by the collectors, formerly employed by their parents and grandparents, are part of the identity that gives meaning to the perceptions of those who practice the activity.

A: We did not use to say, we're going to go get a luche sack or anything like that. Now it's the luche sack, but in the old days we would say baskets, clothes baskets, we'd call them clothes baskets. We did not carry it in sacks or anything, because sacks were not so common before. Or they would be called arpillas these things they would weave, that's how they made them. We used to collect shellfish with a cunquillo [Juncus procerus E. Mey] basket.

E: And the fabric?

A: Woven cunquillo.

E: And what about the clothes basket you mentioned; that big basket ...

A: That was made of quila (Chusquea quila). It's been disappearing because nowadays you go shellfish collecting with pails, with more ... more modern things, of course. (M18)

The tools for collection include reed baskets (the smaller ones) and wicker ones (the bigger baskets), sacks, buckets, boots and wheelbarrows. All the objects transported during luche collection are used to support the operation. While these items have not changed over the years, the variation in materialities indicates the transformation of cultural and sensorial aspects, reorganizing the relationships that participate in collection.

E: And would you dry the luche down on the beach itself or would you dry it up at your house?

A: No, we'd dry it in the pampas, or we would make a drying rack like a pompom. That's what my old grandparents would do. On a rack like this so it could dry well or to drain the water from the luche. And after that it was sprayed with water again so it would stick. To compress it.

E: And that spraying was done with fresh water?

A: Fresh water, fresh water. Because the luche would start to swell. Because luche swells with fresh water. (M18)

Basic elements of life like water, heat and wind participate in this system of relationships. While the presence of these items has varied over time due to innovations in the trade, dependence remains on what this fabric induces in the behavior of luche and, as such, in the activation of its potentialities.

A: Because I'm telling you: collecting the luche on the beach is not so hard, cooking it is the hard part. Because you must be patient; sometimes I have to make myself a hard-boiled egg, a mate or anything because I burned a bread; I'm already having the other, and I get another one out and get another one out. (M13)

The relationship with fire is part of this and takes place during the process of cooking the seaweed, a procedure that does not require great physical effort (as is the case with seaweed extraction on beaches) but is more complex. Like the drying process, processing currently takes place at the domestic level and this moment is impregnated with a culinary and patient sensitivity, mainly supported by dryers, ovens and tin molds. Unlike collection, processing and cooking reveal a marked gender division that shapes differentiated mobility trajectories. While extraction is shared, the management of fire and drying falls to women, who manage a 'mobility of waiting.' As Wright (2021) points out, these domestic-productive practices anchor female mobility to patient rhythms, contrasting with male extractive mobility and demonstrating how gender modulates the intensity and purpose of movement within the archipelago.

A: It can't get wet; you can't let it get wet again. Because it can't get wet again once it's cooked because, like, it comes apart. It can no longer be compacted. Luche can't come into contact with fresh water. It spoils, it rots. It can't be exposed anymore because that's where its gelatinous part comes from. Because the luche already died because it's cooked. The luche already died; it already lost its life. (M15)

As noted, the luche must be kept away from fresh water once it has been cooked/processed. This moment, described as a "biological death," is supported by a sensoriality that transforms, one in which the seaweed releases a vital gelatin, similar to the expulsion of its entrails. However, this process gives the collectors greater responsibility, as they must now prevent fresh water from coming back into contact with the luche. This observation brings attention to the registry of agencies with those the collectors interact with, identifying a network of relationships that emerges during the exercise of this activity.

A: But of course there are rocks with life. There are living rocks and dead rocks. It is very hard to remove luche that is stuck to a living rock.

E: And what is the living rock?

A: It's a rock like any other, but when you try to take a ... It's difficult, you pull at it, you cut your hand and it gets tired.

E: It doesn't let it go.

A: Nope, that's right. That's why they say that living rocks, like they trap the ...

E: And how do they identify them?

A: There are very few of them. They are very smooth. It's a rock that you ... It's hard, not like the other rocks, which if you hit them, they may fall apart. (H10)

The relationship with 'living rocks' (H10) adds a layer of non-human relationality to mobility. Collectors describe these rocks not as static objects, but as actants that 'trap' the seaweed, challenging bodily effort. This empirical interaction supports the idea of co-constituted mobility,

where the agency of the rocky environment dictates the collector's rhythm and fatigue, breaking the dichotomy between active subject and passive nature.

5.4. Sensory memories of collection

The interconnection between the land and the sea generates a scenario conducive to the formation of a sense of island identity and emotions intrinsically linked to mobility (Hayfield & Pristed Nielsen, 2022; Hayward, 2012). Sensitive memories of collection are also part of the imagery surrounding these mobilities. It is a narrative lived by family generations that configures a timeline, a living story of collection over time. The common narrative revolves around the figures of grandparents and their mobilities as transmitters of the collection trade.

A: My grandparents say that when they would go to the island or over here, there was more luche and that the luche there could be obtained by the sack. They would bring back eight or 10 sacks, easily. (M14)

Thus, a memory related to abundance of the resource and social ties is habitual among collectors, where the amount of luche required a workforce on the family level, mobilizing the group to undertake the process. This same impression is illustrated in other traditional activities in the study area, such as small-scale fishing. As the overexploitation of marine resources and the expansion of the aquaculture industry have grown in recent decades, the availability of commercial species close to the coasts has been drastically reduced. As a consequence of these changes, seaweed harvesters or small-scale fishermen must seek alternatives to safeguard their economic and cultural livelihoods.

A: Of course, now it's all on your own. In the old days I would work; I would go shellfish gathering with oxcarts; I'd stop to pick up the neighbor collecting shellfish nearby and say, "Hey, let me give you a lift." Now it's just you; it's more personal. (M14)

There is an emotional and affective memory that connects with this sensory community. The collection and processing of luche is not just a productive act, but also an activity that provokes encounter. This association between collection and family leads to an accumulated feeling and brings a nostalgic component that acts on this practice to the present. Meanwhile, globalization has meant a drastic transition from the communitarian and collaborative sense that prevailed in the past to a more individualistic one, endangering the survival of traditions such as the minga, understood as the system of collaboration and exchange among the members of a community to develop an activity.

L: I learned to make luche bread. That is, I'd watch my granny when she made luche. And when I grew up, I learned and would make it myself. I'd go fishing at the beach and make luche breads that I'd take to Ancud. (M19)

The existence of this nostalgic feeling means that not only was there an oral transmission, but also that luche collection has occurred sensorially, with the senses becoming the channels through which this memory flows. Among these, sight, or learning from watching, reveals networks of repetition among luche collectors, through which connections are configured that are part of an observationally accumulated learning empirically.

E: And was the old luche different from the new luche?

L: Yes, because the old one would become kind of bleached.

E: Ah, it became bleached.

L: As if ... More dyed than black. When it's new it is black, really black. It's like a ... Like a ... Long in part and part clumps. A kind of curly luche. (M18)

In an initial approach to the exercise of collection, observation is a

fundamental pillar for recognizing the seaweed and knowing its condition. Thus, the sensory regime includes an acquired textural and visual literacy, which is registered as knowledge acquired through the experience of working with luche. The changes in color indicate the passage of time, where there is a correspondence between tarnishing of the seaweed and its age. In terms of textures, descriptions of luche range from curly to smooth or hard. Its different textures are linked to the passage of time and reinforce association networks for the trade, fine-tuned with experience and sensorialities.

A: Well, I'm always a bit attentive and if I hear a noise I look to see if a swell is coming. (H05)

Another sense worked on is the soundscape that accompanies collection, on this occasion as an alarm signal for the occurrence of tidal waves. While the sounds of birds or dogs are recognized, luche collectors tend to pay attention to what the entities present on the coast sound like. Thus, decoding the sea and the wind are care knowledges inherent to the practice, to the extent that both have agency to transform the act of collection. For this reason, collectors are aware of the existence of these signs while engaged in their work on the beach, and their ears are alert to emergencies and the interpretation of certain sounds as they work looking at the rocks.

A: Oh yes, of that smoking. You had to leave it at least half an hour to be able to see the luche because it was giving off so much steam. And the smell was great; the smell was of a compact seaweed but tasty. You could taste it from the smell. (M18)

Once collection finishes, the drying process before processing begins. The smoke is part of this moment, as the luche used to be heated on hot rocks to smoke it. This technique used to smoke food in southern Chile is known as *curantear*. This reference is another sensitive memory associated with luche, which while having varied with processing at home, has maintained dehydration as an image of its cooking, sustaining kinesthetic association networks in which the olfactory activates the palate. This bridge between the two is linked to a memory of taste, where the cooking-food relationship is embodied.

L: But I already know when they're ready ... by sight and nothing else. (M14)

According to the above, within the sensory community of luche collection, a naturalist method is practiced in which experience is an engine from which the system of knowledge and practice of this trade is derived. The "eyeball" unit of measure is nothing other than the application of an approximate record that depends on the observer, where the attributes are determined more by qualities ("a browner color") than by times. In this sense, one can well imagine that the result is never the same, as luche collection is a dynamic process even when it is determined by a baggage and accumulated experience. Thus, the method is always in dialogue with present conditions, which validates the permanent updating of this community.

6. Discussion

The findings of this research demonstrate that 'collector mobilities' in Ancud and Calbuco operate as a choreographed response to intertidal rhythms and the strenuous physical fatigue reported by participants. Beyond mere functional displacement, the observed movement is a bodily negotiation with coastal geomorphology, where the start and end of the trajectory are dictated not by a clock, but by the rising tide and the resistance of material 'actants' such as living rocks. By linking these practices with haptic knowledge, the discussion reveals that mobility in these archipelagos is a form of tactical literacy where the body 'reads' and reacts to the roughness and humidity of the environment to optimize extraction. As Lazo and Carvajal (2017) point out, mobility in southern Chile is embedded in material and symbolic conditions that shape their perception of the environment. For instance, the sea breeze can evoke a

sense of freedom and connection to nature, while the sound of the waves resonates with family memories and traditions. This sense of belonging is closely linked to the concept of “haptic knowledge” which refers to the understanding and insights that harvesters acquire through corporeal and sensory experiences in their environment.

While analyses based on spatial big data and interregional flows underscore the importance of geographic proximity and the attraction of major urban centers (Halás et al., 2021; Novak et al., 2013; Ventura-Fernández & Quetglas-Llull, 2025), the findings of this research demonstrate that, in peripheral contexts, mobility is equally governed by an affective and sensory topology. Thus, ‘haptic knowledge’ not only complements quantitative flow patterns but also explains the persistence of trajectories that Big Data, due to its aggregated nature, often fails to capture.

Haptic knowledge is essential in seaweed harvesting, as it enables collectors to identify optimal areas for their work and to understand the dynamics of the sea and tidal cycles. According to Peláez (2020), this type of knowledge manifests in perceptual skills, such as recognizing the precise moment to collect the luche and anticipating weather conditions. This knowledge is not merely technical; it is imbued with emotions and sensations, making it a vital component of the practice. During harvesting, collectors use tools such as baskets and boots, which serve not only as instruments but also as extensions of their bodies and their experience. Tironi and Valderrama (2016) argue that the interaction with these tools and the landscape creates a network of relationships that defines the gathering practice. For example, using an appropriate basket not only facilitates the transport of the luche but also allows the collector to experience the texture of the environment, feeling the humidity of the sediment and the resistance of the wind.

The emotional connection to the environment is reflected in local beliefs, such as the notion of “living stones”, which, as Florido (2020) suggests, challenges traditional distinctions between nature and culture. However, beyond an animistic characterization, the interaction with what collectors term ‘living rocks’ (H10) provides empirical evidence for the labours of assembling (Baker & McGuirk, 2017). We argue that the ‘success’ of the collector’s mobility is not a purely human feat but a precarious, laboured-over achievement that requires the body to actively align with the seaweed’s adherence and the rock’s material resistance. When a participant notes that a living rock ‘does not let it go’ and ‘gets the hand tired’ (H10), they are describing a moment of friction where agency is distributed relationally. In this context, the rock acts as an active ‘actant’ that dictates the rhythm, effort, and trajectory of the body. By framing this through the lens of assemblage thinking, the study moves beyond a descriptive label of agency to a robust analytical demonstration: the rock and the tide do not merely surround the collector; they co-constitute the mobility by imposing physical costs and requiring tactical adaptations.

This contribution does not reside in claiming that non-human agency exists (a well-established proposition in assemblage mobility literature: Baker & McGuirk, 2017; Latour, 1993; Ingold, 2000) but in demonstrating empirically how it operates through specific moments of friction within an extractive livelihood context that has not been examined from this perspective. This relationality also reveals gender dynamics; while the extraction involves this intense material friction, women are often seen as more capable of managing the ‘mobility of waiting’ during processing, which strengthens their role in manipulating the luche (Wright, 2021). The increasing participation of women in all phases indicates a shift toward greater equity in the distribution of these laboured-over achievements, enriching community identity and the transmission of ancestral knowledge.

At the same time, the comparison between Ancud and Calbuco highlights how geography shapes these experiences. In Ancud, where maritime conditions are more challenging, harvesters cultivate adaptive and resilient mobility, relying on their local knowledge to cope with difficulties. Each displacement becomes an act imbued with meaning and collaboration. In contrast, Calbuco, with its greater accessibility,

facilitates a diversification of methods; however, it can also lead to the fragmentation of community practices, transforming mobility into a more individualistic phenomenon.

From the research, several key findings can be identified. First, the study reveals that collector mobilities, particularly in the harvesting of *Pyropia* spp. seaweed (luche), are embodied, relational and sensory practices. This aligns with Lazo and Carvajal (2017), who emphasize that mobilities are not merely displacements, but experiences deeply connected to nature and the environment. This finding suggests that gathering is more than a physical activity; it is an experience that encompasses memory, emotions and interpersonal relationships.

It was also found that luche harvesting is influenced by seasonal patterns that depend on tides and other environmental factors. Indeed, evidence suggests that seasonality and local knowledge play a significant role, consistent with previous studies highlighting the importance of local knowledge in resource management (Ávila et al., 2018). This means that the success of the mobility of seaweed farmers relies not only on harvesting techniques, but also on the accumulated wisdom between generations and shared. This underscores the potential (and need) of integrating this knowledge into sustainable management policies.

The knowledge held by the luche collectors extends beyond mere technical or rational understanding of the coastal-marine environment; it embodies an affective knowledge that is intricately connected to mobilities. Following the work of Farrugia et al. (2015), who analyze the “affective topologies” of young people in rural areas, the concept of territory is rooted in bodily practices, emotions and sensations. In the context of collector mobilities, decisions regarding where, when and how to collect, as well as the selection of tools and routes along the coast, are mediated by a knowledge that emerges from the body, in dialogue with the sea, land and climate. From this perspective, emotions (such as the feelings of freedom or fear) and sensations (such as cold or fatigue) constitute an essential part of a practical and situated understanding of the harvesting activity.

Moreover, the findings indicate that collector mobilities are influenced by a network of relationships that includes non-human elements such as the sea, rocks and climatic conditions. This aligns with “culturality” theories (Florido, 2020), which suggest that interactions between humans and non-humans are essential for understanding collection dynamics. This highlights the importance of recognizing the agency of non-human components in gathering mobility.

Another finding highlights the significance of sensory memories associated with harvesting in the development of territorial memories. The research indicates that sensory experiences play a crucial role in shaping the identity of collectors, creating a sense of belonging and cultural continuity that reinforces territorial memories. This process embodies the notion that ‘what we have been is being practiced’. This finding aligns with the work of Hayfield and Pristed (2022), who argue that sensory experiences are fundamental to identity construction in island contexts, suggesting that harvesting traditions are not only economic practices but also (and above all) vehicles of cultural identity. However, the results also emphasize that modernization and globalization have affected collection practices, transforming traditional dynamics and generating a shift toward a more individualistic approach. This outcome contrasts with the collective perspectives of the past and resembles the observations of Barton and Román (2016), who discuss how industrialization affects traditional practices. To preserve these practices, it is essential to encourage a return to collaborative and community-oriented dynamics that are vital for the cultural and economic sustainability of communities. This could be effectively achieved through initiatives such as community management policies.

These findings not only enhance our theoretical understanding of collector mobilities but also provide practical implications for resource management in coastal contexts. They suggest that policies must consider the complexity of cultural and environmental interactions to be effective. Furthermore, the research underscores the necessity of further exploring the sensory and emotional dimensions of traditional practices,

thereby opening new lines of research in anthropology and mobility studies. In summary, the collector mobilities of luche are not merely physical displacements; they are lived experiences that reflect the interconnectedness of the cultural, emotional and territorial. These practices, rooted in haptic knowledge, emphasize the importance of sensory and emotional experience in seaweed gathering, revealing how harvesters navigate a landscape that is in constant flux. This holistic approach not only deepens our understanding of mobility dynamics but also highlights the relevance of human connections to the environment in the construction of identities and cultural practices.

7. Conclusion: moving collector

Based on the experiences of luche collectors, this article proposes the notion of collector mobilities as a framework for understanding seaweed harvesting practices in coastal communities of southern Chile. This concept highlights the complexity of interactions between collectors and their environment, emphasizing that harvesting transcends the economic activity, becoming a deeply embodied and relational experience that integrates sensory, cultural and emotional dimensions. Collector mobilities emerge as an intrinsic component of the cultural identity of island communities, where sensory experiences, collective memory and practical knowledge play a crucial role in shaping these activities. Through the collection of luche, rituals are manifested that reinforce social ties and cultural continuity across generations. Thus, collectors engage in not only a physical activity but also a process that shapes the body, memory and sensorialities, sculpting the places where this trade occurs.

This study demonstrates that collector mobilities are conditioned by multiple factors, ranging from environmental conditions to tool usage, underscoring the need for an interdisciplinary perspective. Such an approach not only enriches anthropological analysis but also creates opportunities for collaboration with disciplines such as ecology, economics and sociology, allowing for a more holistic understanding of the relationship between communities and their resources.

The study acknowledges several limitations that should inform the interpretation of its findings and guide future research. First, the geographical scope is restricted to two municipalities (Ancud and Calbuco) within the Los Lagos Region; while this focus allows for analytical depth, it does not support generalisation to other seaweed-collecting territories in Chile or the broader Pacific coast. Second, participant recruitment was facilitated primarily through collectors' unions, which may introduce a sampling bias toward more organised, institutionally embedded collectors, potentially underrepresenting informal or unaffiliated harvesters whose mobility practices may differ substantially. Third, the study does not incorporate a longitudinal dimension; the ethnographic fieldwork captures a specific temporal window (September 2022 to July 2023), and longer-term transformations driven by climate change, industrial aquaculture expansion, or regulatory shifts remain beyond the scope of this analysis. Finally, while the research acknowledges that gender and age shape differentiated mobility trajectories (particularly in the contrast between extraction and domestic processing), the qualitative design does not permit systematic comparison across these dimensions; this represents a productive avenue for future inquiry combining ethnographic and participatory methods.

Moving forward, it is crucial to investigate the intersection of collector mobilities with climate change and the sustainable management of marine resources. This will not only help preserve ancestral knowledge but also contribute to the development of policies that promote territorial resilience.

Furthermore, as suggested by recent developments in the field, the future of mobility studies must increasingly address environmental impacts and sustainable planning (Halás et al., 2021; Ventura-Fernández & Quetglas-Llull, 2025). Understanding 'collector mobilities' provides a critical lens for designing coastal protection policies that transcend human-centric governance. Since the collector's movement is

co-constituted by the health and availability of non-human actants (such as the seaweed and the 'living rocks') any environmental degradation caused by industrial pollution or the unchecked expansion of aquaculture directly breaks this delicate life assemblage. In this regard, the challenges for establishing a sustainable blue economy in Chiloé underscore the urgent need to protect the connections within this fragile socio-ecological system (Vázquez & Barragán, 2024). By highlighting these vital dependencies, our study connects local archipelagic practices with the global debate on the Anthropocene and sustainability. We argue that the protection of the coastal edge is inseparable from the preservation of the mobilities that inhabit and signify it, as the collapse of the non-human actants implies the extinction of the ancestral trajectories that define the territory.

In conclusion, this research has not only enhanced our understanding of collector mobilities within Chilean coastal communities but has also introduced new challenges and opportunities to explore the relationship between culture, environment and sustainable practices. The study of collector mobilities represents a rich area of inquiry that, when examined in depth, has the potential to provide valuable insights into the interaction between humans and their environment, ultimately contributing to a more sustainable and equitable future.

CRediT authorship contribution statement

Alejandra Lazo Corvalán: Writing – original draft, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Conceptualization. **Marcela Ávila Lagos:** Writing – review & editing, Writing – original draft, Supervision, Funding acquisition, Data curation. **Francisco Ther-Ríos:** Writing – review & editing, Writing – original draft, Methodology, Conceptualization. **Isabel Yáñez Mena:** Writing – original draft, Investigation, Conceptualization. **Andrés Mansilla Muñoz:** Writing – review & editing, Writing – original draft, Data curation. **Gesica Aroca Sánchez:** Writing – review & editing, Visualization, Formal analysis, Data curation. **Francisco José Vázquez Pinillos:** Writing – review & editing, Writing – original draft, Visualization, Investigation, Conceptualization.

Ethics approval

Approving body: Scientific Ethics Committee (CEC), Universidad de los Lagos.

Approval number: H008.

Approval date: May 2022.

Participant consent: Written informed consent obtained from all participants prior to data collection.

Data availability

The raw data (interview transcripts) are not publicly available to protect participant confidentiality, in accordance with the approved ethics protocol. The semi-structured interview protocol and an example from the detailed codebook used for the analysis in NVivo 12 are available as Supplementary Material.

Ethics statement and informed consent

The authors certify that all procedures performed in this study involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments. This research was formally approved by the Scientific Ethics Committee (CEC) of Universidad de los Lagos (Approval No. H008, dated May 2022).

Written informed consent was obtained from all individual participants included in the study prior to data collection. Participants were informed about the nature of the research, the voluntary character of their participation, and the strict measures taken to ensure the

anonymization and confidentiality of their testimonies and identities. No animals were involved in this research.

Declaration of generative AI in the writing process

During the preparation of this work, the authors used NotebookLM to enhance the writing style, perform cross-referencing of the bibliography, and assist in the translation of technical terms. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

Declaration of AI use

During the preparation of this work, the authors used NotebookLM to enhance the writing style, perform cross-referencing of the bibliography, and assist in the translation of technical terms. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

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Declaration of competing interests

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Appendix A. Supplementary data

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Further reading

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