

Situated Knowledge and Energy Transformations: A Socio-Anthropological Exploration



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Abstract This chapter focuses on San Pietro island case study and uses an ethnographic, micro and qualitative approach. San Pietro island is facing Sulcis, the southwestern corner of the Sardinia, a region of coal-mining and industrial vocation currently involved in a challenging energy transition. San Pietro local residents claim their ethnic difference as descendants of the eighteenth century settlers from Liguria. Today, contrary to Sulcis, the island benefits from several EU grants aiming to improve energy efficiency and renewables. I explore if the orientation of the community towards a shared idea of its past and future could be a determining factor in triggering a positive and stable tipping point towards decarbonization. I use energyscape framework to understand the spatial dimension and ethnography to explore local imaginaries on renewables as context for examination of social agency. I find that the attempt at deep transformations driven by policy plans may experience implementation difficulties, since local residents' futures and horizons do not align to the timescales, worldviews on humans or technology, or many other dimensions and narratives arriving "from outside" the community.

Keywords Ethnicism · Energyscape · Ethnography · Sardinia · Imaginaries · Agency · Renewables

1 Introduction

The case study focused here is located in a region, Sulcis, involved in the Just Transition Mechanism. This mechanism targets the regions of the EU regions with the highest carbon intensity and engagement in fossil fuel sectors, aiming among

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others to facilitate employment in transitioning sectors, particularly among vulnerable communities. Given this context, the current chapter reports on a situated ethnographic analysis conducted on the small-island community of San Pietro, just off the southwest shore of the administrative region of Sardinia, itself a larger Italian island. The community of San Pietro is the beneficiary of several EU grants aimed at upgrading energy efficiency in the housing stock, as well as facilitating access to safe, clean energy at affordable prices, and so combatting energy poverty in general. The research objectives are to better understand the sociocultural and community preconditions that could contribute to determining the engagement of local communities in rapid policy-driven energy transition processes, and to explore alternative routes for such developments considering the dimensions of “justice”, and the real-world transformation processes already under way. Sociocultural transformations are complex, non-linear processes that need to consider multiple ethnographic dimensions. The specific questions examined are: (i) What are the aspirations, and imaginaries of the local community about its own future? (ii) How are these founded in the existing economic conditions and cultural constructs? (iii) How is “sustainability” understood at the local level? (iv) What margins and opportunities for community social agency? (v) How are official policies, in particular descending from the EU Just Transition Fund, being interpreted by local communities, in terms of advantage or even suffering.

The approach is to explore the roles, perceptions and dynamics of agency at the local level, and from this the ability of communities to participate in decision-making processes at the regional, national, and EU scales, as pivotal elements of just and rapid energy transitions. The research method is to contrast a model of a socially just transition, involving strong engagement of local communities and fostering of their transformative agency capacities, against the exploitive and exclusive model of “business-as-usual”, inherent in the production systems of the energy sector as well as other extractive economic sectors, and which, in fact, is often replicated in the current policy energy transition processes (Sovacool et al., 2019). In more detail, the method proceeds through exploration of the **temporal and spatial** horizons, considered here as one of the suitable contexts for examination of **agency**.

2 Anthropological Framework

The ethnographic work reported here is focused on energy transition, in particular on the potential divergences/similarities of projects for green versus carbon-based energy (Sovacool et al., 2019), and how the transitions towards the former may involve the concerns and perceptions (material and discursive) of local communities in regard to their territories. The approach of my ethnographic research, placed within a broader anthropological debate, is to explore the identities materialised in imaginaries of the spatial dimensions of the local territories. Indeed, several now classic anthropological works such as Finney’s, of 2014, and others, mostly by American scholars (Cole & Foster, 2020; Ybarra, 2017; Mendez, 2010; Zimring,

2016; Jarratt-Snider & Nielsen, 2020) have examined how distinct socio-cultural groups have understood and “commodified” natural resources, and even the entire environment. These works illustrate how power asymmetries, economic ratios, and issues of race and ethnicity profoundly influence cultural understandings of the environment, and determine who should have access to it and on what terms. In this regard, anthropologists have made significant contributions in developing social theory on the meaning and role of agency, and recognising the multiple expressions of agency, also as indicators of social justice, in socio-ecological transformation processes. The current analysis pursues the classic ethno-anthropological axes of ethnicity, intergenerational relations and gender. Seeing as the communities studied here are involved (in the sense of affected, much more than engaged), at archetypal local level, in the EU processes of “just transition”, the aim is then to better understand whether and how the conditions for radical breakthroughs could arise: in particular, what could be margin of agency for the local communities, in these processes?

The cardinal work of Appadurai offers theoretical insights useful to several aspects of the current research, particularly in examining **temporal and spatial** horizons, which are here considered as contexts for examination of **agency**.

This study is situated within the anthropological debate on spatiality, temporality and the scales of different imaginaries of energy futures, as recently illustrated by Abram, Waltrip, Ortar and Pink (2023). The approach accounts for the evolutions in collective narratives about the future and visions of the local dimension of the territory (i.e. the island and its relationship with Sardinia and the rest of Italy), focusing on the abilities and inabilities of local agents in transformation of the economic system, and from a perspective of locally perceived justice in the ongoing and desired transformations.

The anthropological study proposed here, through the analysis of collective systems of meaning located in precise spatial and temporal contexts, contributes to identifying the potential tipping points in the decarbonization processes, illustrating the relative issues of social justice, and to an understanding the cultural and symbolic factors involved in such processes.

2.1 Temporality: Who Owns the Future?

The anthropological contribution to research on tipping point rests on the theoretical conception that cultural systems of meaning go through phases and transformations, which may be hetero- or self-induced. The first phases of research were thus based in the notion of the future understood as a cultural phenomenon (Appadurai, 2013), and as a potentially important cognitive resource with regard to a group’s ability to implement projects aimed at transforming their living conditions. This theoretical device enables a focus on social experiences of dispossession, and/or appropriation of individual and group capacities to “aspire”. Reading the

ethnographic data in this key led to the development of two perspectives, emic and etic, with the relative triggers, breakouts and further dynamics.

In *The Future as a Cultural Fact*, Appadurai proposes an analysis of the temporal category of future as a form strategic adaptation to reality, in a manner interactive with social expectations. In an ethnographic study of an NGO operating in the slums of Bombay, the anthropologist describes what he calls “deep democracy”, or “cosmopolitanism from below”, and the “capacity to develop aspirations”. In articulating these aspects, he is then able to define the future as a cultural fact, developed through planning and intentional design. In this construction, the notion of the future becomes a human right, the right of making choices and building a life project, by first aspiring for things good and better. He contrasts the ethics of probability versus those of possibility, and insists that a genuinely democratic polity must augment the latter.

Embedding this notion of the future, we can better understand how different constructions of the future may be determinant in permitting the existence (or not) of communities compactly oriented towards energy transition projects. The existence of this kind of community—this is a premise of our work—could be a determining factor in triggering a positive and stable tipping point over time. Moreover, the perspective offered by Appadurai could overcome the substantivist-formalist dialectic inherent in economics and economic anthropology, instead proposing a more dynamic approach to the reading of material exchanges and prestige. For this current research on tipping points in systems of cultural meanings, this has meant focusing, at the local level, on the intangible aspects and logics of gifts and counter-gifts in the symbolic and material negotiations concerning pivotal infrastructures in energy transition, at the various levels of household and community photovoltaic panels, the large project of a prototype wind farm, and a proposed very large off-shore wind farms.

2.2 *Energyscapes*

The anthropologist Arjun Appadurai had first introduced “scapes” as a concept useful in the analysis of identity-making processes in a globalised landscape, focusing in particular on the chains and flows of global “cultural transactions”, and the locally situated outcomes of these interactions.

Viewed through the energyscape conceptual prism, energy becomes a dimension inherent in multiple aspects of everyday life, and constitutes a cultural artifact, manifest in different ways in different spatial and temporal arrangements, and in different scales (Strauss et al., 2013, 10–11).

Through application of the notions of energyscapes, in parallel with those such as mediascapes, technoscapes, and finance-scapes, we can better understand how the cultural dimension of energy and the infra-political role of the “energopower apparatus” in building “the experience of modernity” (Boyer, 2015: 352), are intrinsic to societies, technologies, and economies. Within the sub-field of the

“anthropology of energy”, seminal authors (Loloum et al., 2021; Pink et al., *in press*) have illustrated the permeating effect of these scapes, and how they intertwine with other dimensions, extending far beyond institutional policies and markets. Again referencing Appadurai’s key work, several scholars have recently adopted this scape-centred approach in the anthropological study of energy issues. For example, Lempinen (2019):

Approaching the regional energy concern and its societal intertwinements as a “scape” indicates that the relations associated with energy are not objectively given or that they “look the same from every angle of vision but, rather, that they are deeply perspectival constructs, inflected by the historical, linguistic and political situatedness of different sort of actors. (Appadurai, 1996, 33).

On the other hand, the way in which the notion of energyscape understands and constructs the energy concern as situated and as a situation is particularly useful, as it does not imply that the content of this energyscape would be the same across different temporal and spatial scales. (Lempinen, 2019: 22)

Referencing the seminal work of Appadurai, Lempinen (2019) and Strauss et al. (2013) I have used “energyscape” as a conceptual prism, concentrating and constructing the energy concern as a situated context and entity. Other authors have applied the concept in interpretative frameworks, among these Smith and High (2017), as a tool in socio-anthropological analysis, and also a number of geographers (Thomas & Erikson, 2021), in addressing the study of energy transitions. Pasqualetti and Stremke (2018) propose a system of classification for “energy landscapes”, and more recently Delina (2020) applies the concept in the analysis of dissent narratives developed by indigenous peoples of the Philippines, against large-scale development projects. Oskarsson et al. (2021) use energyscape in the sense of the “coal geography” of energy infrastructure, and the policies enabling still greater exploitation of coal-fired energy in India. Other scholars examine the energyscape as relational space (Roberts & Henwood, 2018). Departing from the cited literature, my study uses the interpretive frame of “energyscape” by integrating with agency understood as the capacity to inhale, as described by Appadurai (2013).

3 Context

The ethnographic study is conducted in the community of Carloforte, sole town of the island of San Pietro, situated six kilometres across from Portoscuso, the nearest community on the main island of Sardinia. Both Carloforte and Portoscuso fall in the south Sardinian area traditionally known as Sulcis, which has long focused on an economy of coal-based, energy production and ore processing. The core industrial area, known as Portovesme, is situated on the outskirts of Portoscuso. The total land area of San Pietro is five square kilometres. Although the registered inhabitants total some 6000, about a thousand of these maintain their homes as second residences, while living and working most of the year elsewhere.

The Tabarkine colony in Carloforte was founded on the basis of a gift from King Carlo Emanuele III of Savoy (Tiragallo, 2015), who awarded each settler two parcels of land: one in Carloforte town and one agricultural. The primary sources reached through field work agreed with the local historian Vallebona (1975), who reports that Carloforte is an island of “parcel owners”. This peculiarity may cognitively and politically structure participatory processes on the island, including those of appropriation of the energy transition.

In terms of the implementation and effects of policies on rapid decarbonisation and energy transitions, the micro-insular community of Caloforte is integrally bound into the larger dynamics of the Sulcis Coal and Carbon Intensive Region, of Sardinia as a whole, and finally the national Italian and European levels. The current case study responds to these realities.

The citizens of Caloforte claim a unique identity as descendants from a people of Ligurian origin,¹ granted the island in 1738, when they were forced to leave an earlier placement on the Tunisian island of Tabarka, where they had long operated in coral fishing and commerce. The micro-island, however, has also long been included in the functions of the larger Sulcis region, therefore with economic roles in coal mining and the other energy and extractive industries noted above. Given the deep economic crisis affecting all of Sulcis, resulting from the divestment of various heavy industries already underway, the island community is considering how to approach the possibility of installing new large-scale national infrastructure projects aimed at decarbonization through off-shore wind farms, but also smaller-scale initiatives such as the institutional promotion of the island’s energy autonomy through the installation of solar panels, also aimed at better exploitation of renewable energy.

The port of Carloforte, at one time second only to that of Cagliari (capital of Sardinia Region) and especially active in trans-shipping of coal and ores, entered into economic decline in the early twentieth century. The harbour and its docks remain important in a wide range of tourism functions, including as the terminus of ferry routes linking with the main island, and also as point of arrival for the submarine power cable arriving from Portovesme. The Carlofortinian’s historic economic jobs as sailors and fishers, in particular in the traditional tuna fishery, have more recently been somewhat supplanted by a conversion of the local economy to the micro-tourism. The most important local institutions are the municipal government and the two higher-level secondary schools, in particular a Technical Institute (Istituto Globale Carloforte) offering programmes in marine navigation and systems, which attracts students from throughout Sulcis.² This example of a flow of people looking for high level education towards San Pietro, along with that from all Sulcis for the

¹Known as the “Tabarchini” or “Tabarkini” people, sharing the Tabarchino dialect, itself a variety of the Ligurian language (one of the Gallo-Italic languages characteristic of northern Italy), and economic/working traditions as sailors, mechanics, operators in commerce, more recently in tourism.

²The current “Transport and Logistics Technical Educational Institution” inherits the traditions of more than a century of preceding institutional organisations, responsible for forming generations of sailors, navigators and marine officers.

earlier presence of a nautical high-school, are an example of the historic reciprocity of interchanges between Caloforte and the near communities of the larger island (Sardinia).

In recent years, a narrative of Carloforte as a “vanguard island community” has taken hold among local hegemonic socioeconomic actors (institutional representatives, entrepreneurs), but also promoted by external actors (environmental NGOs, journalists, public institutions at higher administrative levels, up to European). In fact, as early as 1993, the island hosted a prototype wind-farm constructed by Ansaldo Industria S.p.A., in what is known as the Nasca locality, followed in 2002 by a municipal photovoltaic system (1 GW capacity), in the same locality. The Nasca area and its energy infrastructures, on the opposite side of the island from Carloforte harbour and town centre, are difficult to reach by vehicle, and in fact although readily mentioned as part of general community knowledge, have been difficult to research in the sense of gaining detailed information about the technologies employed and the current and planned states of function.

3.1 *Claiming Cultural Diversity*

As stated by Felice Tiragallo (2015), anthropologist specialised in Sardinian cultures:

Sardinians and Tabarkines have co-created an accumulation of representations of each other; views and models of vision have stratified over time, in idioms, commonplaces and stories. (...) However, in this context it does not seem appropriate to identify the relationship in the manner of a Sardinian self-narrative that encompasses and includes the “minority” narrative of Tabarkans. Indeed, in observation, there is no discourse of subordination. And the founding myth of the Tabarkina community may encounter, gloss over, or ignore its Sardinian analogue (or is constellation of variants) but does not present itself as necessary for nor dependent on it. (Tiragallo, 2015, pp. 220, translation by the current author)

Tiragallo also identifies the lines of the social poetics (Herzfeld, 1996) that structure the local hegemonic representations, stressing how the San Pietrans present themselves as a group that has been (and still is) “celebrated in the country as the worthy representatives of an ethnic and technical identity that has been considered unique (Vallebona, 1975, p. 196)”, and also celebrating the historic event of the “success of colonisation, intending to eternalise it as a distinctive feature of the social group” (Tiragallo, 2015: 221). According to this anthropologist, the success of this representational effort has been achieved through moral values, including “a spirit of sacrifice, an almost obsessive dedication to work, a peaceful disposition, and a contradictory, unspoken mixture of a spirit of solidarity and a completely ruthless individualism” (*ibidem*). These ethicistic narrative express a “shared image of self, emerging in recent times, in which the strongest feature is that of a community that is able and adept, pledged to modernity and industriousness” (Tiragallo, 2015: 227).

Thus, for addressing the research questions through the fieldwork, we chose a community involved in the decarbonisation processes, but in a marginal manner,

allowing us to observe the processes of distancing between the communities of San Pietro and that of the larger Sulcis district, all involved in the crisis arising from the deactivation of the coal economy.

The municipality of Carloforte, comprising the homonymous town and the rest of San Pietro Island, has maintained an economy of maritime focus, radically different from the main island agro-pastoral context, since the eighteenth century. Carloforte has long deployed sailors and high-rank officers, and today still boasts the sailors “Nautical” high-school quoted above, attracting many students from the neighbouring main-island provinces (mainly Carbonia and Iglesias). Historically, the San Pietro community has been richer than those of main-island Sulcis, thanks to sailors’ and officer’s earnings, and greater involvement in shipping and trade. Still today, given these structural realities, Carloforte has not suffered the alarming unemployment rates of Sulcis, and in fact is perceived as radically different from all of Sardinia, even as the main island has moved from an agro-pastoral to industrial context.

A technological culture in mechanics, iron and steel arose in the early 20th century. Such trades were imported by a French workshop manager, who in the town found some brilliant apprentices, able to respond to orders from the mining industry. In little more than a decade, a body of technical tradesmen had formed, able to both export their skills and use them locally, opening companies that would last long as key elements of the Carloforte economy. Through the remainder of the twentieth century, the community valued the aptitude of their young people in the maritime arts and mechanical technologies, particularly in the naval sector, also treating this as a true export commodity. The petrochemical plants of larger Sardinia, and the Portovesme industrial hub, in particular, welcomed many workers from the island of San Pietro. (Tiragallo, 2015: 227, translation by the current author)

Compared to its historic cosmopolitan positioning within the Mediterranean, Carloforte and San Pietro have since declined to a marginal status with respect to the other communities of Sardinia, and even those of Sulcis. From the view of collective mobility and the related cognitive geographies, both arrival and departure from Carloforte require passage on a privately operated ferry, at substantial cost. The traveller arrives first in Portovesme, then goes on to the larger town of Carbonia, still within historic Sulcis: locations of modern-day frontier, passage and interface.

Looking at the San Pietro community from outside, some processes of marginalization can be observed: aging of the population, as young people migrate in search of work; an upward trend in unemployment; pollution lingering from coal and ore operations, and marginalising or dependency also in some practices involving the use of EU funding for installation of solar panels in private and public buildings. Some of these processes can be perceived in both material and symbolic senses.

The rising prevalence of adult and elderly inhabitants is intertwined with the economic trends of Carloforte. The primary sources (informal talks with local informers), backed by statistical data,³ illustrate rates of unemployment still relatively contained, thanks in part to the reported conversion of inactive steelworkers and marine officials to small-enterprise activities in tourism. Notwithstanding, in

³http://italia.indettaglio.it/ita/sardegna/carloforte.html#dati_istat.

2016, of the 6190 reported residents of Carloforte, 4945 were 15 years of age or more. Considering the subpopulation of working age, 1738 were employed and 186 were previously employed but are now unemployed and seeking new employment. Breaking down still further, among male residents aged 15 and over, 1106 were employed and 113 previously employed, now unemployed and seeking new employment; for female residents the relative figures were 632 employed and 73 previously employed but seeking anew.

4 Methodology

Methodologically, the study relies on ethnographic work, locally situated and started in 2021, with other fieldwork activities including, in addition to participant observation and informal exchanges, stakeholders' workshops, and participatory mapping with local groups chosen by age and gender (female retirees) aimed at investigating specificities of the gender and generational dimensions.

Through the ethnographic fieldwork and through the additional, project-related activities, workshops, focus groups, participatory mapping, remote interviews), the research has investigated how the notion of the future is intertwined with local imaginaries on energy infrastructure, and the community practices of their use. Leveraging the notion of agency, ultimately connected with that of justice, this has then allowed illustration of the evolution of collective narratives and visions, and the capacity of actors to transform the system, or more often, the lack of capacity. The main focus was on imaginaries.

The research integrates the overall ethnographic view with the results from group workshops with cultural actors (writers; radio-journalists; adjoints; intellectuals from or outside the academia) of the area, from other workshops with industrial and political actors on a regional scale, from focus groups involving island participants in a project for installation of private photovoltaic systems, and finally from participatory mapping conducted with a group of older women from a reading group. In this way, the research is able to delve into the gender and generational perspectives, both found to be specific to the island, where the population is aging ever more, and where many males are absent because of long periods at sea for working reasons. Particularly important among the interlocutors were the retired women of Carloforte, mostly born there, and others from the participants in the local reading group, given the developed reflective capacities of these persons.

The mapping workshop began by asking the participants to individually produce a map of the island (see three examples in figures). We then proceeded to discuss the individual representations and work towards a shared map, incorporating the various conceptual points (last map of the figures).

The ethnographic research conducted between May 2021 and October 2022 included: (i) participant observation; (ii) 12 remote structured interviews; (iii) 20 in-person structured interviews; (iv) focus groups (in particular, 12 participants in

the EU Horizon 2020 REACT project,⁴ funding installation and upgrading of single-building photovoltaic systems); (v) a stakeholder workshop with four Carloforte citizens of higher education, or intellectuals, in February 2022; (vi) a stakeholder workshop with Carlofortini and Sulcitan local administrators and representatives of the two nationally relevant environmentalist NGOs, totalling 12 participants, in October 2022; (vii) analysis of secondary sources, among which local newspapers, locally created websites and other publications, and policy plans referring specifically to Sulcis. Finally, the analysis of secondary sources also extended to documents originating from the regional, national, and EU institutional levels, in particular the strategies laid out: for 50% sourcing of energy from renewables at the national level, and the phasing out of coal by 2025; for Sardinia, the construction of new infrastructures for supply and distribution of gas and electricity (National Energy Strategy – SEN 2017; *Piano nazionale integrato per l’Energia ed il Clima* (PNIEC), 2019; *Piano Sulcis*, 2013).

The research question was framed with the collaboration of local stakeholders, then developed and refined to completion in the manner of a hermeneutical loop, involving in particular: (i) Intellectuals and administrators with backgrounds in political science and social anthropology (epistemological loop); (ii) managers of the local tuna fishery; (iii) small business operators in the tourism sector; (iv) teachers; (v) former steelworkers, trade unionists; (vi) environmentalist activists; (vii) intellectuals living on the island, originally from other nations or parts of Italy; (viii) other persons present only part of the year, with principal residence elsewhere.

The design and completion of the case study then went ahead in dialogue with these local stakeholders, with care to also seek advice and views from minority groups, for example minorities in terms of political orientation.

Through direct and participant observation of formal (municipal assemblies at the Ex-Me community center, religious celebrations such as Festa di San Pietro, village festivals such as GiroTonno) and informal exchanges, and in parallel, through solicitation of interlocutors in semi-structured interviews, the ethnographic work was able to extract the different narratives relating to decarbonisation. The issue of social and environmental change, inherent in the idea of transition, constituted an ethnographic device useful for focusing on the social experiences of dis-possession and/or appropriation of the individual and social “capacity to aspire” (Appadurai, 2013).

Also in parallel, the research used the “energyscape” framework in its predominantly spatial dimension, to anchor the empirical work of participatory mapping, as described below. To capture the specificities of the gender dimension, workshops were conducted with a focus group of 12 retired women, mostly native-born, in February and October 2022. These were invited from among the participants in the local reading group, intending to take advantage of the reflective capacities of these individuals.

⁴<https://react2020.eu/>.

5 Key Findings

The insights achieved by applying these methods confirmed previous observations, but suggested a unique finding on the relationships of the local community with the main-island industrial pole.

In particular, the research shed light on the local ethnicist “myth” of the ontologically different and high-ranking (technical, economic, cultural, ecological) identity of these descendants of the eighteenth-century colonist settlers, as compared with the main-island Sardinians, and within these, the inhabitants of main-island Sulcis.

The current research thus demonstrates how a micro and fully qualitative ethnographic approach can be successfully applied to a region of coal-mining and industrial vocation, now involved in an unhappy transition: in San Pietro Island case study, I focus a community that is situated in front of the coal-industrial district of Sulcis, at the southwestern corner of the main island administrative region of Sardinia.

The current chapter thus delves into and provides an overview of the overall body of data collected through ethnographic research, showing how the approach contributes to an understanding of the local-level tipping points (Tàbara et al., 2018), in emic and etic senses,⁵ and what changes in systems of meaning lie upstream of these tipping points.

From daily ethnographic work with primary sources, it emerges that San Pietro and Carloforte are geographically situated in a manner exposed to pollution from the Portovesme thermoelectric and metal-processing plants. My interlocutors, however, will only report this after arriving at a certain level of confidence, and when specifically solicited, then describing the signs of pollution in epidemiological, material and aesthetic terms (Apostoli Cappello, 2023). It has not been possible to retrieve any epidemiological large and long-date data on cancer rates either for San Pietro Island or the Portovesme area, nevertheless, the fact that the relevant authorities have banned all crop cultivation in the lands adjacent to Portovesme industrial centre is highly suggestive of a concrete fact. An interlocutor, retired pharmacist of Carloforte, recounts that since the 1970s, she has noticed an increasing trend in oncological diseases on the island, evinced in the types and dosages of prescriptions presented by her customers. In short, although this issue of various harms from pollution is well known both on San Pietro and the main island, the greater fact is that it is widely dismissed.

These brief comments on the potential cultural diversity of San Pietro and Carloforte within the Sulcis and larger Sardinian contexts can contribute to understanding of some specifically local dynamics, such as the noted marginalisation and dispossession (West, 2016). They can also provide a basis for exploring locally valid factors and processes contributing to agency, either to trigger or to resist socio-environmental transformations, and to the relative “tipping points”. More generally,

⁵In the interpretive anthropology of Clifford Geertz, the emic perspective represents the native’s point of view and the etic perspective represents the analytical point of view of the researcher.

these basic facts provide place for understanding the evolution of the different narratives, both mainstream and non, that we detect on the island.

The attempts to enact positive tipping points toward a more just and ecologically sustainable development must consider, among others, the micro-cultural dimensions and perceptions on coping with climatic change and related socio-environmental crisis. A key finding is that for community members, the main future and horizon for transformation and enactment of positive tipping points is that of their own personal world and home. The attempt at deep transformations driven by policy and plans may experience difficulty in implementation, since it could be that the futures and horizons of the local residents would not adhere to the timescales, worldviews on humans or technology, or many other dimensions and narratives arriving “from outside” the community. Indeed, community imaginaries are in tension with those proposed in policies and plans.

The ethnographic research thus engaged with local attitudes on the possibilities or impossibilities of using their territory for energy transition, in particular: (i) adoption of household photovoltaic systems; (ii) potential transformation of the highly-polluting thermoelectric plants in Portovesme.

The local discourses on energy transition, arose during the ethnographic work, are used to read the local **positionings**.

5.1 The Home as Sole Horizon Subject to Individual Power of Change

All my interlocutors affirmed that the reason for investing in individual or community plants for electrical production from renewables would be the achievement of savings in consumption from the grid. I have argued elsewhere (Apostoli Cappello, 2023) that rather than being understood as an essentialized fact, this is correctly seen as the effect of local economic strategies, in turn revealing the critical positions of the local population face to top-down policy promises. In developing this argument, it is interesting to note that, in describing themselves solely as smart consumers or “pro-sumers”, rather than as citizens or actors of a socio-environmental or cultural change, the local interlocutors are illustrating a completely individualised participation in the transition to renewable sources, through projects led by the municipality and using EU funding.

As stated by a high-level local administrator in the energy security sector, native to the island:

We had the curiosity to see in theory where I was wrong in using energy. This was our first curiosity. Then as we went deeper, we saw that there were many small things that can be improved, and I hope that these observations can serve in improving this project. (Carloforte, May 2021, translation by author)

However, a teacher retired from work on the island, and living alone near Carloforte town, states:

"I wanted to build myself a passive house, but since it's not possible to move a house from its attachment to a border [adjacent structure], I had to give up, being attached to the border of another. [...] and so I couldn't make my dream come true ... I'd wanted geothermal energy, and so on. And so I just bought into a normal house here, with a wood-pellet stove and air conditioner. " (Carloforte, May 2021, translation by author)

All ethnographic observations, including through interviews and informal conversation with interlocutors, confirmed the existence of an attitude among locals in which the privately-owned home is the only horizon over which they hold any power of transformation. An example of witness to this, for example, would be the reiteration of "borders" against action beyond, evoked by the teacher interlocutor. Energy transition, where it emerges, emerges as a private instance.⁶ This household horizon and economic rationale seem to occur cross-gender.

We can interpret this as a retreat to the individual dimension in one's ability to transform living conditions, or as Appadurai would say, to aspire. This occurs in a community that is described by anthropologists and historians as, until a few decades ago, a group capable of collectively projecting itself across time and space, making economic investments and expanding their horizon of action through trade. The margin of agency, therefore, seems to be shrinking over time.

Further, this could mean that the energy meanings proposed by the EU energy policies may, somewhat counter-productively, tend to push individualised solutions to energy issues.

Many informal interactions in the field show that the economic rationale drives many individual choices, while collective choices, where present, do not concern actions aimed at energy transformation. Energy is not considered an issue that involves or affects the community as a whole. The energy infrastructure, however, is what enables the San Pietrans to accommodate substantial numbers of tourists, over the summer season arriving at totals of 40,000 visitors, with significant effects on energy needs. The achievement of energy autonomy through renewables is seen by interlocutors as a material tool to access, stabilise and perhaps increase the flow of private economic resources from tourism, recalling here that the island's tourist lodging and services are entirely micro or family-scale enterprises.

The research targeted the interlocutor's range of action, meaning the scape. As they might plan the installation of photovoltaic systems, and more generally in perceiving their relationships with renewables, by following their own range of action. The scape drawn is that of completely domestic perimeter, in which the only community reference, if any, is limited to family level.

The home, even more than its inhabitants, becomes the main actor, allowing or disallowing access to an H2020 funded⁷ project aimed to support the installing of solar power plants, depending on the surfaces it offers for appropriate mounting of photovoltaic panels, and to more general sustainability, in the aspect of rainwater collection.

⁶This element is also present in the maps provided below, from work by focus groups in February 2022, aimed in part at bringing out the gender dimension.

⁷REACT <https://react2020.eu/>.

The energy issue does not constitute a theme of informal exchanges between local acquaintances. What emerges is a discursive representation of renewable energy sources and devices as an instrumental issue for the safeguard of family economic assets. A separate study (Apostoli Cappello, 2023) focuses on the deep-seated socio-economic reasons and means of this mechanism, which is not at all the amoral familism one might first assume.

Only rarely does the community horizon emerge, not with reference to the roles of citizens, but as projects of past municipal administrations, in any case never completed, as one interlocutor testifies:

“Then, for reasons that I honestly do not know and don’t care to inquire into, it turned out not very well.... But the project was precisely aimed ... so it means that we have the will in our little selves. But the various administrations that have followed one another, and over the years I have seen different ones ... On this point of view, every one really cares a lot.” (Carloforte, May 2021, translation by author)

The excerpt interestingly underlines the fact that “every one really cares a lot” about photovoltaic i to the possibility of installing photovoltaic systems in every home. Instead, the only shared meanings that our interlocutors evoked are daily practices in domestic energy consumption. Similar results emerged during other informal and structured interviews and workshops, when our interlocutors stated that even apart from energy practices, there are no shared horizons of social transformation.

5.2 *Participatory Mapping Experimentations*

As can be seen in the drawings from these workshops, San Pietro is represented as distinctly separated from industrial Portovesme (Figs. 1, 2, 3, and 4), without indications of ferries or other tangible or symbolic links. The industrial area is almost always explicitly represented (Figs. 1, 3, and 4), possibly indicating that this visual method had achieved a different access to implicit knowledge. What would be more significant to the research questions is the hypothesis that this reflects a more limited propensity among women, compared to other interviewed actors, to hide (keep secret) the collective socio-environmental “bads” (as defined by Schlosberg, 2013).

I solicited my interlocutors for their interpretations on the implications of proximity with the industrial centre, aiming to deepen our understanding of the different aspect of their perceptions and verbalisations. The interlocutors consistently recognise the meanings of the industrial centre in terms of risks of pollution and economic dependency. Both in informal group discussions and in drawings, they concentrated, as might be expected, on portions of the energy landscape, and concerning these, but only when deeply solicited, certain implicatory dimension seemed to emerge, as the interlocutors reported present and past actions to counter the risks.

P., a 50-year-old hotelier, native-born, situated the link with Portoscuso in the past, and evoked a purely instrumental link concerning employment. She specifies that Sulcis is poor, building a conception of San Pietro Island in terms of differences:

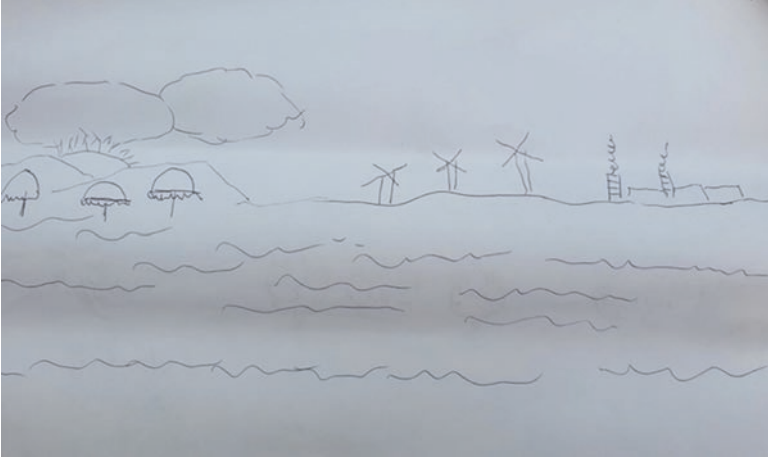


Fig. 1 San Pietro island and Portovesme coal-fired industry and onshore wind farms



Fig. 2 San Pietro island

The only contact with Portoscuso was for people to get work, for the Carlofortini, because they had jobs there. But it wasn't something that felt like community. Speaking of the issue of industrialisation and what are the effects of industries ... in those years those plants were put there because everyone was going in that direction at the time, and we were even privileged compared to other sites. Now, unfortunately ... but then it was an opportunity because Sulcis was poor, even then, and certainly having these industries ... It's loaded us all with pollution. But we didn't know that. That came out later. (Carloforte, June 2021, translation by author).

But the hotelier then specifies that the diseases of main-island Sulcis, caused by Portovesme industrial air pollution, also afflict San Pietro, in this way indicating an

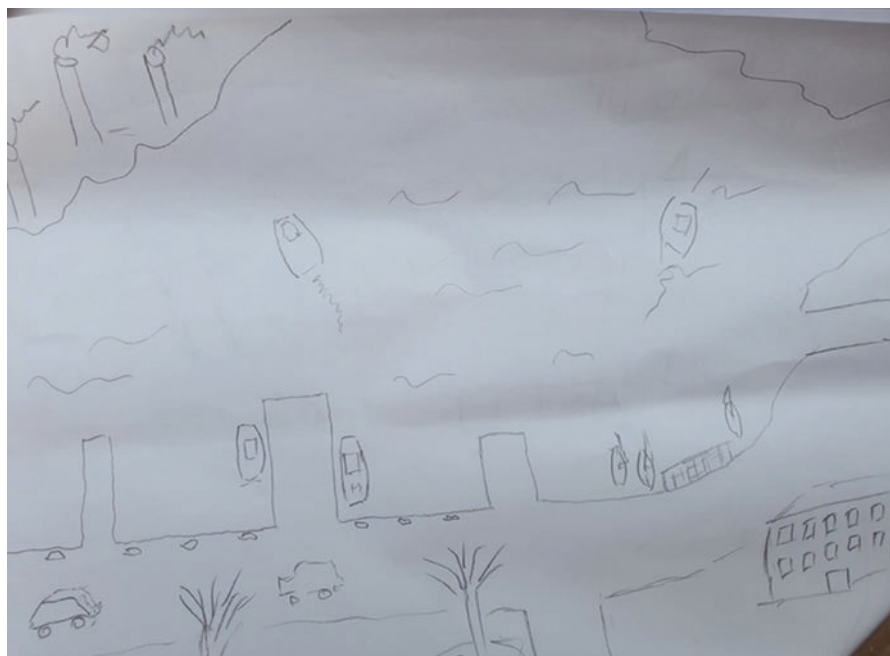


Fig. 3 Carloforte harbor, Portovesme steel industry on the bottom

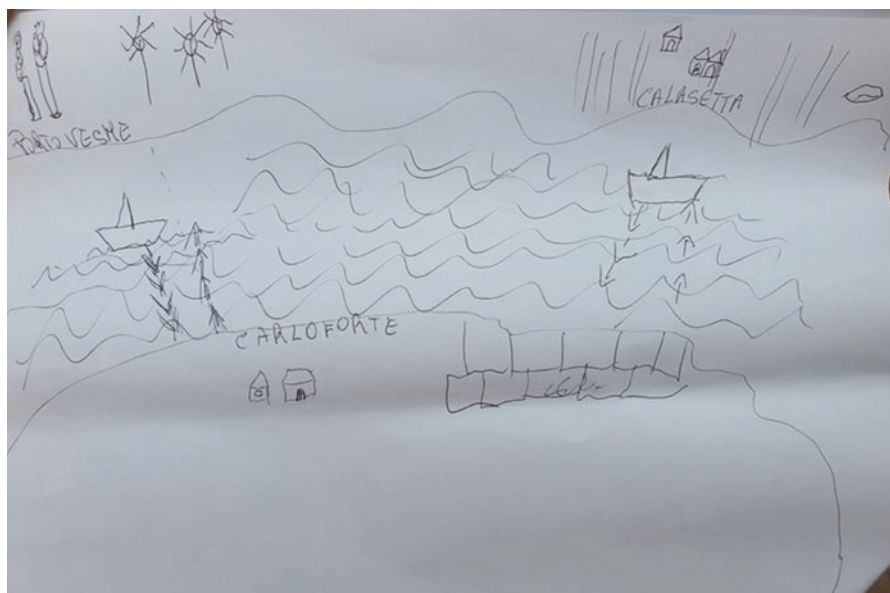


Fig. 4 Carloforte face to Portovesme coast

awareness of a common destiny. Only the wind, an external factor independent of local will, determines the better fate of the island:

But we too are not that ... at Carloforte ... We are silent but ... there is a good percentage [of persons with ailments] We are lucky for the mistral wind that carries on, seawards. We could say the air pollution hardly reaches here. Water, rainfall and wells were often checked. There are many artesian wells, we have one and we have it checked every year but the search for metals is not normally done. Instead we did it ourselves, and there are none. Because it was often said that there was lead. Fortunately, we never found that. (Carloforte, June 2021, translation by author)

Pollution-related ailments are attributed to external actors, distant and different from the local population, formulated as unreachable entities. This substantiates the feeling of helplessness and the lack of agency at the local level.

The daughter of the above-noted hotelier, also engaged in the same business, and one of our main long-term interlocutors, recounts the Portovesme industrial hub as made up of impersonal actors (the plant, the chimney, the shovels, the ships). This depersonalisation offers roots and nourishment to the feelings of helplessness in the local population:

Decarbonisation is a serious problem here because Portovesme, you know, still runs on coal. If I look out I see its chimney, because it stands large. Behind it, there are at least 37 wind turbines that have been mounted over the years, that should somehow help this decarbonisation in some way. And the truck constantly passes by to wash the ground. (Carloforte, May 2021, translation by author)

Among salient projects centered on sustainability, the island hosted the first prototype windfarm in Italy, installed by Ansaldo in the 1990s, in a locality known as Nasca, however the production served the national grid, consistent with a mechanism in which the island is simply a platform for energy experimentation, and any production would be owned and consumed by others. Indeed, the legitimacy of the municipal authorities comes in part from outside, in particular from contact with European funds, and tends to bypass the national sphere.

From the drawings, we can see that the home is the nodal point of representation. Some individuals (e.g. map 2) have also represented the three wind turbines of the Nasca prototype, although not necessarily in true geographic position. As one of the interviewees said, these are more a symbolic presence rather than a technologically concrete productive site. No communitarian vision of renewables emerges.

The first map is exemplary of representation of the three main elements of the San Pietran economic landscape: the Portovesme power station, next to this the wind turbines, and at the other side, the umbrellas and trees characterising the island, with tourist and nature-oriented vocations.

In summary, this section of the analysis has brought together discursive and figurative data, showing that our interlocutors' mental vision of their perimeter of action is very restricted, coinciding with the island, and that the main scape on the island are the private homes. Moreover, it emerges that the island coincides with the inhabited area of the Carloforte town, neglecting the rest. The electrical-industrial giant of Portovesme, opposite, is seen as a passive actor.

Overall, these results confirm the idea that the agency imagined by my interlocutors is very limited in perimeter, and that any energy transition arriving in the community is imposed from outside and above.

6 Ethnic Particularism: Double Edged Sword for EU Promotion of Energy Transitions

From the fieldwork it emerges that all the Carloforte inhabitants, native-born or later arrivals, stress the elements of wealth, competence and cosmopolitanism, as well as a construction of the historical diversity of the island, as a colony of Genoese-Ligurian families who migrated first to the Tunisian island of Tabarka and then to San Pietro Island. In this narrative, often the first recounted, the people of Carloforte are not Sardinians. When they take the ferry, they are “going to Sardinia”, which is discursively distanced not only by the logistical aspects, but also by verbs of displacement.

What is prominent here is the distancing of the main-island administrative region, in the local perceptual dimension. Given this, a next step in the analysis concerned the identitarian claims that might influence processes of the distribution of agency at the local level.

A range of different local actors perform a strong ethnic identity, with different aims (Apostoli Cappello, 2023), underpinning ongoing processes of local differentiation. This key phenomenon represents both an asset and obstacle to triggering radical transformation of energy meanings and practices. Taking an overall view of the primary and secondary sources, one is inclined to interpret the reinforcement of the identity discursive register as a reactive consequence to industrial policies imposed from outside and above: a mechanism accompanied by the already observed extreme individualisation of agency margins.

This chapter also raises an question that lays the groundwork for future insights: are the European and national policies on decarbonisation and energy transition experienced as yet another top-down imposition suffered by local communities, already feeling dispossessed from the decades of industrial policies that have impoverished them in both socio-economic and environmental terms?

On the other hand, for some sectors of this obviously non-homogenous community, ethnic particularism is a symbolic element played for positioning of a claim on the sustainable future of Carloforte, differentiating themselves from the failed and passive politics of any main-island Sulcitans. These sectors, including the current local ruling class, are characterised by high social capital and professional experience of contact with the outside world (i.e. Sardinia, Italy, other European nations), incorporate greater agency, and maintain a proactive, generative vision of social change on energy transition in particular. These local professionals, technicians and administrators are now proposing to the community a whole alternative vision of the future, and of island territorial management, based on a still-embryonic project of

founding a local energy community involving the large majority of the population, in which the entire island would be converted to a model of energy self-sufficiency drawing on wind, solar and other renewable sources. The ability to produce and disseminate socio-environmentally virtuous imaginaries, different energy futures and energyscapes, seems connected with the cosmopolitan education of the elites.

Ethnographic field research has shown that a strong shared imaginary regarding local identity - based on distinctiveness from poorer main-island Sulcis, and on their Genoese history and Tabarkine genealogy (Vallebona, 1975) - has enabled the people of Carloforte to develop a distinct idea of themselves and their futures, which they see as a cultural construct and collective resource. This, we expect, could enable them to acquire agency, or expand the margins of their agency. Such a strongly essentialised identity could help the San Pietran citizens to distance themselves from the logic of dispossession typical of the entire Sulcis area, navigating the island towards a horizon of ecological transition, as some inhabitants already claim.

7 Conclusions

San Pietro Island and the town of Carloforte were chosen as the focus of a case study for several reasons. On the one hand, the island has historically been connected with the Sulcis district, itself based on a carbon economy; for many decades it was a crucial maritime hub for trade in the coal industry, and provided high skilled workers to the mining and related industries of all Sulcis. On the other hand, the change in the maritime routes beginning in the early twentieth century, and the processes of deindustrialisation and exit from coal begun in the 1970s have increasingly marginalized the San Pietro with respect to the rest Sulcis. Also, especially beginning in the 1970s and now still more in the dynamics of the twenty-first century, tourism has become a viable alternative, although the locals still refer to sailors and marine officers as the true backbone of the local economy. Both demographic data and qualitative evidences reveal the effects of an aging population, with the emigration of youth, and also the re-destination of family homes as tourist accommodation (an effect almost invisible in official records). The choice of study framework came thanks to preliminary interviews conducted with privileged observers, focused specifically on energy transition, which claimed Carloforte and at San Pietro Island as an exemplary case of sustainable transition.

The key point emerging from field research is the lack of familiarity of renewable energy devices by the local population, in many cases unaware that the technologies even exist: in other words, a lack of coupling of technological advancement with cultural transformation. The problems observed are present in other coal regions and communities examined in this volume, and although the observations concerning San Pietro may not be representative, they could be illustrative of certain processes also happening in other places.

The evidence emerging from ethnography show a complex picture, in which the island could perhaps be on the cusp of an as yet unexpressed tipping point (Tàbara et al., 2018). This makes the case in examination of particular interest, precisely because of the possibility of observing the progress of such systemic transformation. The local construction of collective identities in ethnic logics seem a key factor, which could explain the inhabitants' potential to tackle system changes but also the persistence of old ones.

From the point of view of communitarian renewables, either installed by the municipality in properties under its own control around the end of the 1990s and early 2000s, or the photovoltaic and wind-power plants that sprung up in the uninhabited Nasca locality, these could have been ways of launching the island's own energy production, however the process were not carried through (for a description of this process see Apostoli Cappello, 2023).

From the emic point of view, household photovoltaic devices are instead of interest to the population as an agglomeration of individuals. Any local energy transition under way, in fact, seems to be driven by the household and the economic rationale of savings, limited to the boundaries of the home, and linked with support from European projects, attracted by local decision-makers and institutional administrators.

A conclusion from field research is that the narrative construction of collective identity would serve as the main local ideology. Rooted in shared memories and in an almost mythical reconstruction of the past, this represents a major resource for local identitarian rhetoric, and could easily trigger a true tipping point, understood as a change in productive paradigm. However, ethnography suggests that identity is the underlying factor in the structuring and organisation of energy narratives, through stress on the "ontologically positive and green" characteristics of the island, and that in fact this contributes to the continuation of the status quo.

Indeed, an ontological difference emically postulated by the islanders, with respect to the inhabitants of Sulcis, prevents the local actors from taking ownership of their own territory, beyond the household dimension, and prevents the population from claiming ownership of the economic and decision-making processes on transition, which although they "involve" the community, appear to taken in places distant and "above" their island. This can be read as the outcome of deep and long-lasting dispossessions occurring everywhere in the Sardinian administrative region, and even in Carloforte, despite its constant rhetorical distancing from the main island. Thus, the only horizon of agency that seems to emerge is that of individual choices: that of the conscious consumer rather than the fully sustainable community.

The actors who seem to have the most agency to activate positive socio-ecological transformations are the institutional ones, in particular local administrators and entrepreneurs, able to strategically (Spivak & Harasym, 1990) use the ethnical essentialism performed in the small island community of San Pietro.

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