A Typology of Ecological Intentional Communities: Environmental Sustainability through Subsistence and Material Reproduction

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Abstract

In the context of environmental degradation, it is essential to study alternative, more sustainable models of living and production. Ecological Intentional Communities (EICs) present themselves as good examples or "laboratories" of sustainable development, with a small ecological footprint. However, little is known about their heterogeneity and their long-term viability. The present study proposes an empirically-driven typology of EICs aimed to capture both their heterogeneity and material means of reproduction, qualitatively assessing their capacity of transformation towards a low-carbon society. Through ethnographic fieldwork in 27 EICs in Catalonia (Spain), the article shows that the legal status of land use, the organization of domestic space, and the economic activities undertaken are crucial elements for the viability of the communities. The research allows to go beyond the discourse of these communities and to rethink their role as potential agents of transformation towards a more environmentally sustainable society. The role of the cultural and socio-economic context and public administrations in supporting such grassroots innovation projects is also stressed in the discussion.

Key words:

ecological intentional communities, grassroots organizations, ecovillages, Catalonia, long-term viability and social reproduction.

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1 Introduction

Due to climate change and the degradation of natural resources all over the world, including the European Union (EU), there is growing interest in studying forms of habitation with a smaller ecological footprint and a greater coexistence with nature. Both European and national public policies (e.g., European Commision, 2001; Gobierno de España, 2007) are increasingly recognizing the role of citizen initiatives in the agenda for sustainable development. As Castellani, Beylot and Sala (2019) highlight, home consumption can be considered a point of interest to address the issue of environmental footprint, with special attention to transportation, heating, electricity production or food supply in households. Among the initiatives that seek to reduce this footprint are small rural communities dubbed "Ecological Intentional Communities" (EICs). EICs claim to be an effective response to environmental degradation. They are characterized as a subtype of Intentional Communities and defined as a group of people, not necessarily linked by kinship, who try to create a more sustainable way of life outside the mainstream society through living together (Meijering et al. 2007a, Kozeny 1995). Research (e.g., Fotopoulos, 2006, 2000; Sherry, 2019) confirms that residents of Ecological Intentional Communities in the US have a substantially lower environmental impact than the average resident in the same country.

As EICs are thought to represent a model for more sustainable communities, it is important to understand the factors determining their long-term viability, yet few studies have investigated this issue. This paper contends that the viability of EICs and their environmental impact depends on their means of material reproduction. "Material reproduction" refers to the way in which communities organize their livelihoods, which indicates their provisioning models (Narotzky, 2007). Although the theory of provisioning models considers complex relations of production, distribution, and consumption, this paper narrows its focus to how EICs acquire or produce the basic goods and services needed for their reproduction. The article argues that due to the lack of research into the material means of reproduction of EICs, it is unclear whether EICs can be considered viable models for sustainable, cleaner communities.

Drawing on ethnographic fieldwork in 27 EICs in Catalonia (Spain), this paper aims to fill the gap in the literature by describing the means of material reproduction of EICs. Catalonia provides an exceptional opportunity to investigate EICs, because there are many and diverse environmental communities. The paper reveals the highly dynamic nature of EICs in terms of their emergence, dissolution and the circulation of dwellers, and highly diverse in terms of the ways of organization, which can undermine their long-term existence. It then describes key factors for the material reproduction that may facilitate the survival of EICs, namely the property regime of land, building and facilities, the organization of space for different individual and communitarian uses, and the economic activities employed. On the basis of these factors of material reproduction, a novel, empirically driven typology of EICs is proposed that captures the diversity of the phenomenon observed in our fieldwork. While based on Catalonia, the new typology may be fruitfully extrapolated to other settings, despite

the dynamic and contextualized nature of the phenomenon and the fast transformation of society.

The text is structured as follows. Section 2 describes the emergence of EICs and how they have been labeled and approached in the literature, which identifies the knowledge gap with respect to their means of subsistence. Section 3 describes the methods used for collecting the data, namely ethnographic fieldwork and semi-structured interviews. Section 4 shows the results, including the previously mentioned typology that captures the diversity of the phenomenon in terms of material reproduction in Catalonia. The final section discusses the implications of these results. It is argued that recognizing the role of the material means of reproduction in shaping communities as well as of the context in which they are embedded is crucial for building better models of environmentally sustainable communities.

2 Theoretical background

Social experiments creating intentional communities with different degrees of isolation go back to the 18th century, mainly in the United States of America. Some of these communities have been driven by ecological motivations since the 1960s, when environmentalism made its entry into the political arena (Dunlap, 2006). In Spain, intentional communities started to appear somewhat later, during the transition from political dictatorship to a parliamentary system in the 1970s (Nogué i Font, 1988; Eguizabal and Blas, 1991), mostly in rural areas. The first wave of this urban-rural migration was politically motivated, with the creation of anarchist and libertarian "comunas" (communes), but the second wave that started at the end of the seventies, was driven by environmental motives, typically focused on the production of high-quality, organic products (Nogué i Font, 1988).

Different labels have been used to refer to communities driven by environmental goals. The intentional community label (IC) is mostly used as an analytical term by scholars, and can be defined as a deliberate attempt to create a common, alternative way of life outside the mainstream society (Meijering et al., 2007a). It tends to have at least five members (some of whom are not related by kinship ties, marriage or adoption) who have chosen to live together for a general purpose, cooperating to create a lifestyle that reflects their shared values (Kozeny, 1995). Although it is not common, some respondents used the IC label to describe their communities. The subtype of Ecological Intentional Communities (EIC) can be defined as communities that "withdraw to remote locations, where they (its members) attempt to live up to their ecological ideals by unfolding sustainable lifestyles" (Meijering et al., 2007a). Research on EICs has covered very different aspects including social and environmental motivations to join an EIC (Ergas, 2010; Kirby, 2003), the effects of social capital on the well-being of the inhabitants (Ruiu, 2016, 2015), the environmental impact of the communities compared to mainstream villages (Fotopoulos, 2006, 2000; Sherry, 2019), limitations regarding the political economy (Ergas and Clement, 2015), and the reorganization of human-ecosystems (Kasper, 2008, 2009) among others.

Various attempts have been made to classify intentional communities with the purpose of capturing their heterogeneity, but as Meijering et al. (2007a) remarked, most of these classifications are based on case studies between 1960 and 1970, and the characteristics of communities may have changed since then. The typology developed by Metcalf (1984) is a good example. The author classified the alternative-lifestyle groups into spiritual, political and secular communities, further divided by geographical location (rural or urban), using eight criteria: power, gender equality, political tendency, family structure, social networks, social accessibility, openness to research, and the type of ownership. Ecological communities would fit in multiple categories.

Meijering et al. (2007a) proposed a classification based on a survey of 496 intentional communities in Europe, North America, and Oceania. The typology identifies four types of communities considering their ideology, with distinct levels of geographical, ideological, social and economic "withdrawal" from the mainstream society: (i) ecological communities, (ii) religious communities, (iii) communal communities, and (iv) practical communities. Ecological communities (23% of their sample) were based on shared ecological ideals and their economy on self-sufficiency. They were typically situated in rural, remote areas. Religious communities (18%) shared an ideology based on spirituality and religion, they were located in both rural and urban areas and their economy was limited to basic services. Communal communities (26%) emphasized interpersonal contact between members. They were located in rural areas and had gardens, communal houses, dining halls and other structures promoting interaction among members. Lastly, practical communities (the largest category with 33%) were located in suburban zones, did not have any particular ideology, their economy was focused on working outside the community, and they were socially integrated into the mainstream society.

EICs are also a subgroup within the concept of "cohousing". Cohousing refers to "communities [that] consist of private homes around a common network of facilities, for example: shared kitchen, dining rooms, childcare facilities, libraries, laundries, gymnasiums, cafeterias, offices, gardens, guest rooms etc" (Ruiu, 2015). The ecological sub-type is labelled "ecological-oriented cohousing" (Kirby, 2003).

The term "eco-community" has also often been used to refer to communities that exhibit ecological values (cf. Sullivan, 2015). Some communities have chosen the label "ecovillage", linked to the creation of the Global Ecovillage Network (GEN). GEN was founded in Germany in 1995 with the intention to "create an alternative to mainstream culture: green islands, lifeboats, a place of hope in a world of destructive capitalism" (Andreas, 2013). An ecovillage is defined as a "human-scale full-featured settlement in which human activities are harmlessly integrated into the natural world in a way that is supportive of healthy human development, and can be successfully continued into the indefinite future" (Gilman, 1996). Researchers and practitioners have also classified ecovillages. Jackson (2002) differentiated among ecologically oriented ecovillages, with a perspective of developing a low impact lifestyle; socially motivated ecovillages with the community house as their centre and focus; culturally oriented ecovillages, which normally have a cultural/celebration hall in their centre; and spiritually oriented ecovillages, which may have a

meditation hall in the centre. Currently, approximately 10,000 communities and related projects are associated to the GEN network worldwide, many of which are under construction as noted on the GEN website. The GEN network strives for communities to be sustainable "in ways that increase biodiversity and regenerate ecosystems", but also socially and economically, working to achieve the UN Sustainable Development Goals and Climate Agreement.

Communities that meet the requirements to be considered ecovillages only appear in the network if they nominate themselves on the website, leaving many others with similar characteristics out, that is, communities whose inhabitants did not choose the label eco-village to self-refer, sometimes due to ideological disparity, sometimes due to ignorance. Ergas (2010, p.34) too argues that the lack of representation may be caused by the rejection that some of these communities express toward being measured.

An important shortcoming of value-based classifications is that it groups ecological communities together in a single category, thus depicting them as homogeneous, as if all ecological communities have the same internal features. The EICs observed in this paper are far from internally homogenous, as Section 4 will show. The four categories of Meijering are furthermore depicted as mutually exclusive, whereas fieldwork for the present paper showed that many EICs were closer in nature to the description of practical and/or communal communities, due to their geographical location or economic model, than to ecological communities, despite their ecological projects. Also, none of these studies have contemplated the variability regarding the material means of reproduction, which this paper argues is the most influential factor for their long-term survival and therefore for the impact EICs can have in terms of achieving a low-carbon society.

As the paper argues, researchers have traditionally focused on identifying the form EICs take (e.g., Meijering et al., 2007a; Jackson, 2002), rather than on examining their material means of reproduction. Although the economy of the communities, understood in a broad sense, has been contemplated for the elaboration of typologies, this article argues that it has not had the central place it deserves, given the implications that material means of reproduction may have for the position of EICs as agents of change towards an environmentally more sustainable society. With the growing expansion of the market economy in all areas of life, analyzing the forms of subsistence of the communities is a necessity and an imperative.

3 Methods and materials

3.1 Sample

No sampling frame was available for the selection of EICs in Catalonia, that is, there is no existing inventory of such communities nor an estimate of their number. Therefore, non-probabilistic sampling methods were adopted. To define the sampling unit, the paper follows Metcalf's selection criteria of an Intentional Community, except for community size.

Metcalf´s criterion was: "Five or more persons, drawn from more than one family or kinship group, who have voluntarily come together for some purpose, in the pursuit of which they seek to share certain significant aspects of their lives together, and who are characterized by a certain consciousness of themselves as a continuing group" (Metcalf, 1984; cf. Kozeny, 1995). In contrast to the cited research, no minimum number of inhabitants was specified, as high temporal fluctuations in group size were observed. For instance, some communities consisted of only a few people shortly after an internal conflict, but a larger number once they had recovered their former stability. In addition, the following criteria were used:

- The residents have moved in with the motivation of achieving more environmentally sustainable lives.
- The governance of the community is based on a series of shared values, which can be grouped together under the umbrella of both "ecology" (the ideology of protecting and caring for the environment), and "participative" or "democratic" organizational systems.

Cases were identified and selected by searching for the phrase "ecovillage in Catalonia" (translated to Catalan) using the Google search engine in 2013, which resulted in the identification of four communities. After contacting these communities, the sample was expanded using chain references (snowball sampling) until 27 cases were obtained that met the formerly mentioned criteria. This number was delimited through the qualitative research concept of "saturation", which refers to the point at which no new information is obtained (Guest, 2006). Although the exact number of communities in Catalonia is unknown, eight communities have been contacted that declined to participate and in a later phase of the research, knowledge about the existence of 10 other communities was gained.

3.2 Data collection

Data were collected through ethnographic fieldwork in 17 communities, as well as through telephone conversations (n=4), email exchanges (n=3) and short visits (n=3) with inhabitants of the remaining 10 communities (see annex for details). Ethnographic fieldwork was performed between December 2013 and March 2015, including stays in the communities that lasted between three days and several weeks. Participant observation, semi-structured interviews and questionnaires with a range of EIC inhabitants were performed during these stays. The semi-structured interviews were carried out, whenever possible, with the people who had lived in the community the longest. When this was not possible (e.g., for lack of time or interest in the research), people who had lived in the communities for a shorter time were interviewed. Respondents were asked to sign an informed consent form.

During the visits, participant observation was also performed in formal and informal community meetings, which revealed how communities are organized and their relationships to various other groups and associations. The participation in two meetings between different communities and three social events was used to complete missing data.

Two types of data were collected for each community: (1) General data: name, a brief spatial description of the environment where the community is established and how it was

created, its goals, location, year of creation, the number of inhabitants at the time of observation, legal status for using the space (squatting, renting, ownership, etc.), the form of cohabitation (shared dwelling, shared land, etc.), and collaboration networks; (2) Economic activities: size of productive land (if applicable), activities that generate revenues in the community, the frequency of revenue production, productive projects within the community, the currency used, other sources of income, fixed community costs and other considerations.

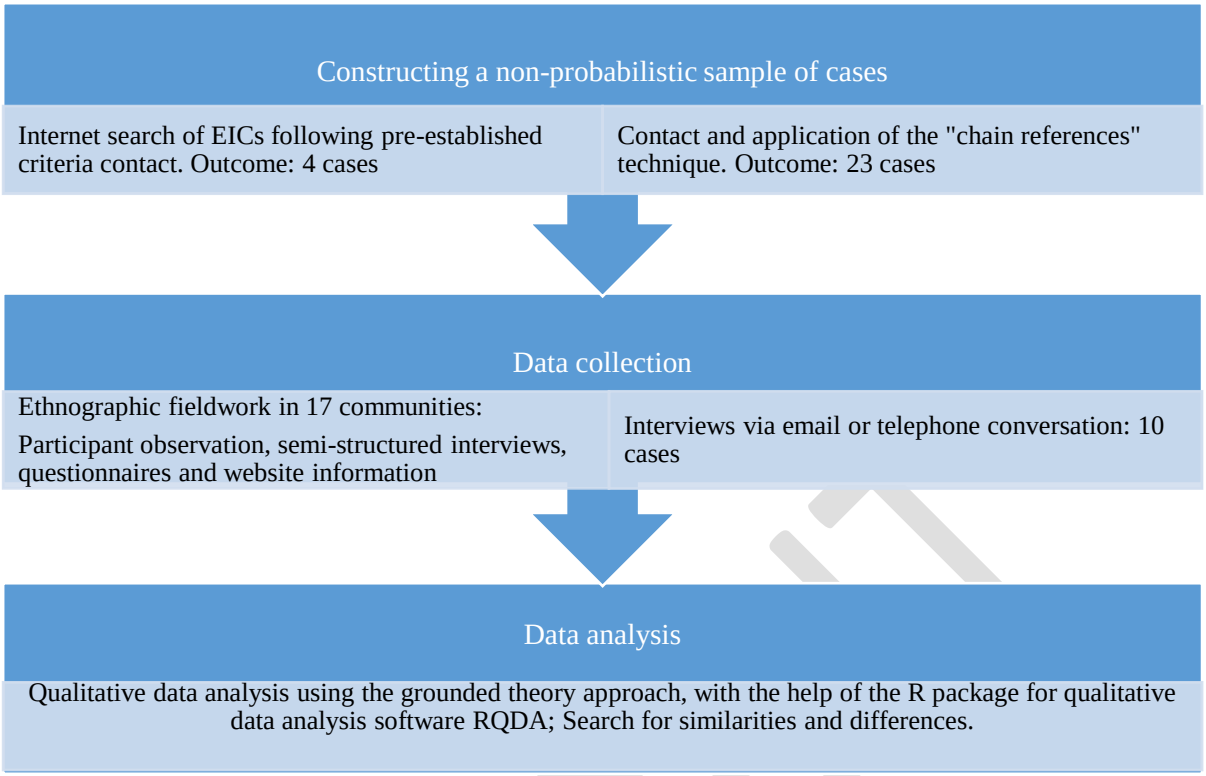
Participant observation was reported in a daily fieldwork diary, where notes were taken of the observations. The interviews were recorded and fully transcribed with the consent of the informants. In case the informants refused that the interview was recorded, a written report of the interview was made. Communities' websites were a source of further information.

3.3 Data analysis

The fieldwork diaries, transcriptions, written interview reports, website texts and photos were analyzed using a program for qualitative data analysis, RQDA (Huang, 2009), available in the R software environment. The Grounded Theory approach was adopted for analysis (Corbin and Strauss, 1990), to detect emerging themes and relations among the themes (data codes and categories) that are repeated a significant number of times. The qualitative analysis of the materials, especially fieldwork-diaries based on descriptions, has also allowed us to bring conceptual order with the aim to propose a typology. As Strauss and Corbin maintain, "the description is also basic to what we call conceptual ordering. This refers to the organization of data in discrete categories (or sometimes, classifications), according to their properties and dimensions and then to the use of the description to elucidate these categories" (2002, p. 29).

To construct the typology, the data collected of the communities have been structured in separate files and a search for similarities and differences among communities was performed. Thus, the typology is empirically derived. The comparison has resulted in a typology with two main categories and three subtypes within the first category. Figure 1 summarizes the qualitative methodology of this research.

Figure 1. Diagram of the qualitative methodology



To guarantee the safety and anonymity of the communities and their inhabitants, the article does not cite the names of the communities nor of the people, assigning instead a unique identification number to each community. The annex gives basic data of all communities and Table 1 shows the factors involved in subsistence and material reproduction of the 27 communities. The maps show the approximate geolocation.

4. Results and discussion

4.1 Description of basic characteristics

This section describes three basic characteristics of the sample of 27 EICs in Catalonia: the geographical location of the communities, the current number of inhabitants, and the years of activity.

Figure 2 shows that most communities in the sample are situated in the eastern part of Catalonia, coinciding with the main axes of transportation (railways and motorways). Many communities are located close to three of the four provincial capital cities: Girona, Barcelona and Tarragona. An especially high concentration is found around Barcelona (which has 1.6 million inhabitants; 21% of the total population of Catalonia), as Figure 3 shows. Nine of the 27 communities are located close to the northernmost part of Barcelona and four near its southernmost part. Four communities are close to the city of Girona (97.000 inhabitants). The locations allow the EICs to maintain community-city and community-community connections, which help them to create and maintain economic, social and other relationships between both worlds.

The size of the population of the communities varies between 2 and 32 individuals, with an average of 11 (n=23), a smaller number than seems common in communities in other countries (Fellowship for Intentional Community, 2019). The communities have been active during 1 to 32 years, with an average of 10 years (n=24; see Figure 5). The oldest community has been created in the second wave of Spanish urban-rural migration (Nogué i Font, 1988). Figure 4 shows that older communities can be found both far from urban centers as well as on the outskirts of Barcelona.

Figure 5 presents the scatterplot of the bivariate association between the number of years since communities were founded and their number of current inhabitants. Most communities were young and small, with older communities being only slightly larger (by approximately 1 person per 5 years, as the regression coefficient suggests, but the explained variance is less than 5% as many cases diverge from this tendency).

Figure 2. Geolocated representation of the sample of EICs on the map of Catalonia (n=27).

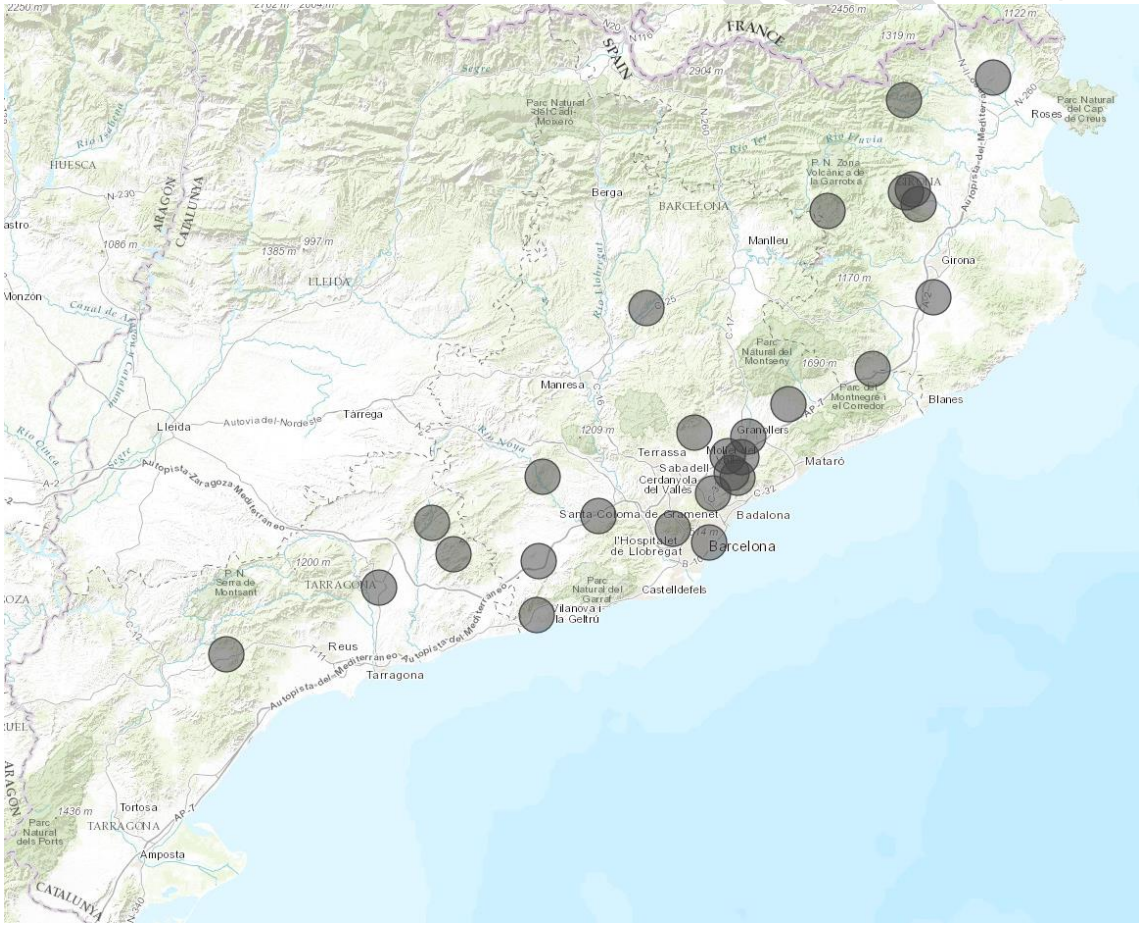


Figure 3. Map grouping the distribution of EICs (n=27). The communities which are not closely located together (n=3) are not depicted in the figure.

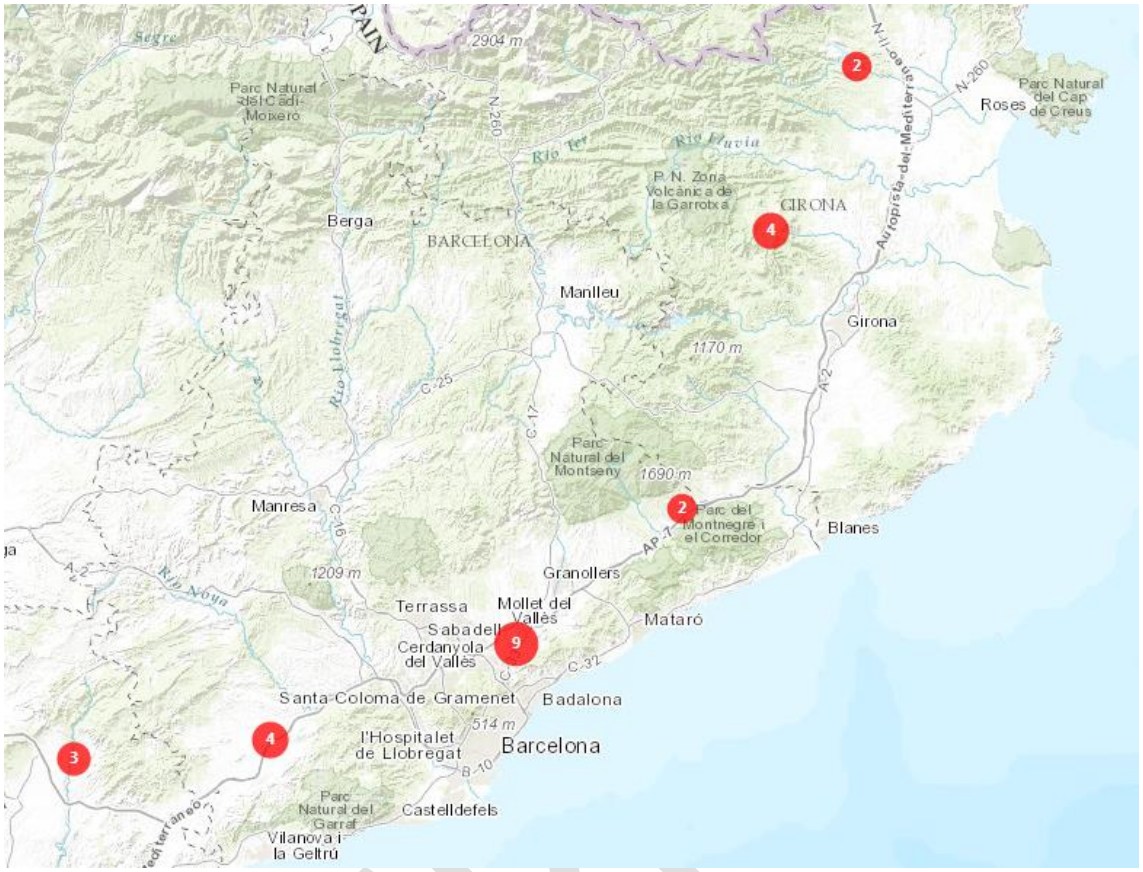


Figure 4. Location of the EICs according to how long they have been active (n=26). Larger symbols indicate that the community has existed for a longer period.

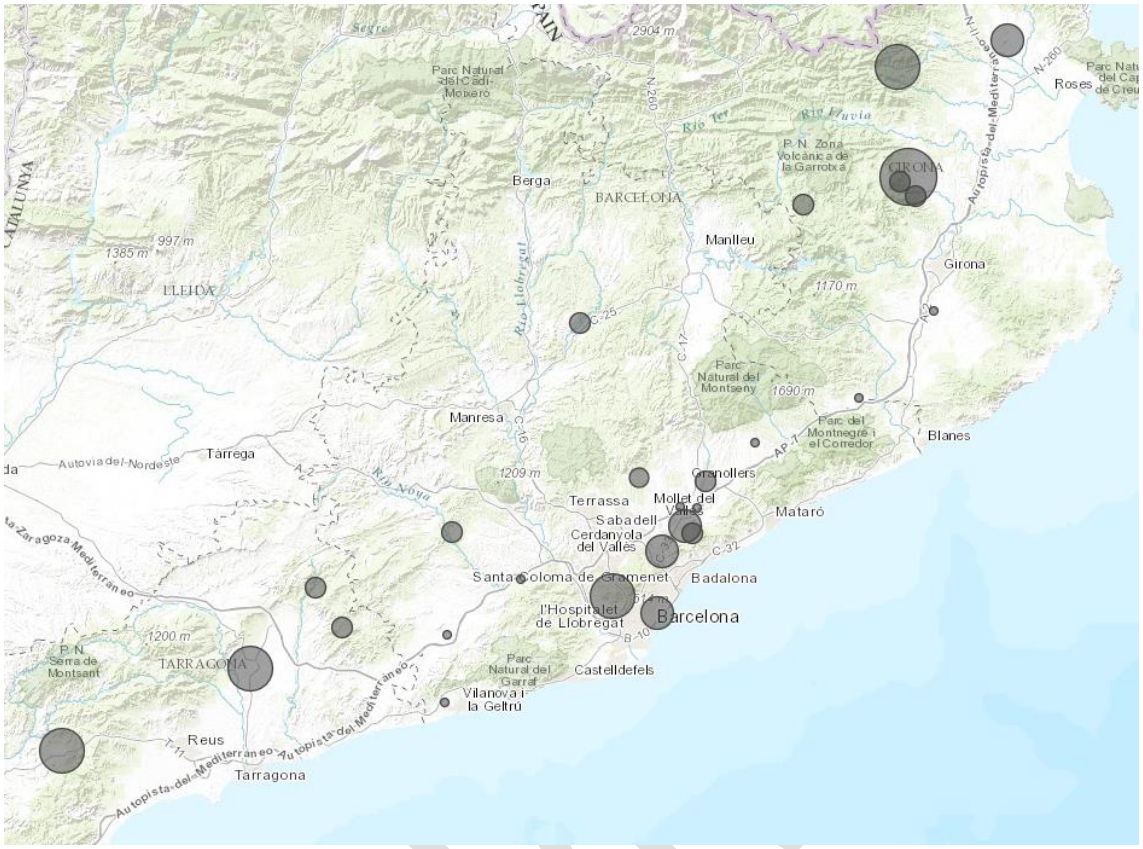
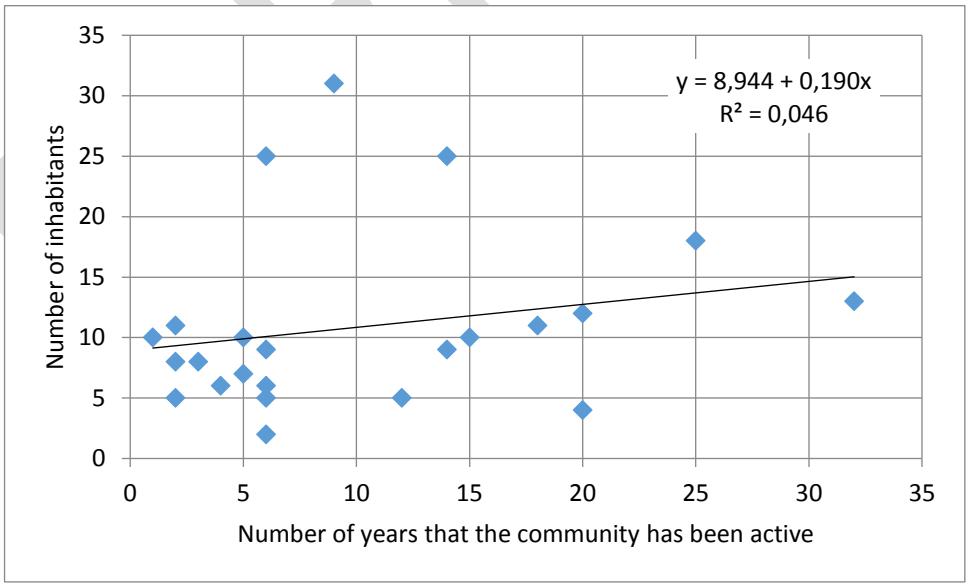


Figure 5. Relationship between the years of activity and the number of inhabitants in EICs in Catalonia.



Fieldwork highlighted the high level of fluctuation in both the population of the communities and the place of residence of individuals. This observation, along with the observation that only a few cases were older than two decades, reflects the dynamic character

of these communities, suggesting that communities are never fixed, but rather discontinuous and in constant change (cf. Meijering et al., 2007b). Metcalf (2012) also observed the high membership turnover in intentional communities (cf. Zablocki, 1980), but argued that many other social organizations were similarly short-lived. This fluctuation affects the success with which communities can create a more sustainable society. Inhabitants implement practices when they move for the first time to an EIC that are difficult to move to another community, such as investments of economic capital from previous life in the city, the construction of material structures, such as a water collection system for environmental management, the design and management of the land associated with the community such as the planting of trees, the recovery of soil fertility and the construction of equipment with the technique of bio-construction among others. Thus, moving between communities or the reiteration of projects in another location generates a loss of capital and the loss of motivation to implement lifestyle changes.

4.2 Factors involved in subsistence and material reproduction

To understand the livelihoods of communities and to explore how they achieve their material reproduction, this section will examine three central factors involved in the production and reproduction of daily life: (i) the legal status of the space that a community possesses or uses; (ii) the form of cohabitation and (iii) the orientation of economic activities either to self-provisioning or to the market. It will argue that these factors are essential to understand the stability of EICs, the shape EICs take, and their interrelation with the economic and political context in which they are involved.

4.2.1 Legal status of space

Legal status refers to property/ usufructuary rights over space, buildings and facilities. Among the communities studied, the following statuses were observed:

a) Squatting: a lack of verbal or written permission to use the space. In some cases, there may be a non-witnessed verbal lease to use the land (n=8)
b) Rental: a written contract that establishes the use of the space in exchange for a monthly amount of money (n=8)
c) Ownership: legal possession of the space (in some cases this status was reached through renting with the right to buy at the end of a period) (n=9)

Legal status is fundamental for the stability of the communities, significantly influencing their continuity over time. Eviction constitutes the ultimate form of instability. As an informant reflected when talking about a former community:

> *The community ceased to exist due to the eviction issue... and why have we not continued? Why hasn't the community continued at another site? Because we wanted to do different things (...) if the community had wanted to continue, if they hadn't evicted us, we would have stayed there, but once they informed us that they would evict us, everyone decided to dedicate themselves to new projects.* (Interview community 16, 2014).

The threat of eviction thus hinders the initiation of projects. Stable and uncontested access to space provides the group with the opportunity to develop its project.

4.2.2 Form of cohabitation

The form of cohabitation refers to the range of spaces that are shared and their uses within the community. A gradation was observed from forms of cohabitation where individuals share most of the spaces (except a private room) to models of interaction where everything is private except the outdoor spaces. The form of cohabitation is related to individual status: Couples with children tend to require space with private use to raise their children, whereas single or younger individuals usually do not mind more intense forms of cohabitation. The following distinction can be made:

a) Collective: the community is oriented towards spaces for collective use and has fewer spaces for individual use (n=11)
b) Individual: the community is oriented toward spaces for individual use and has fewer spaces for collective use (n=4)
c) Mixed: The community has as many collective as individual spaces (n=8)

The form of cohabitation largely determines people's autonomy within the community. The more collective the use of spaces, the less autonomy individuals have and the greater the likelihood of interpersonal conflict. Conflicts usually arise on issues of cleanliness, noise, use of spaces or decision making. Community 1 provides an example of the problems arising from sharing spaces. During fieldwork in this community, several relocations were observed in the search for more private spaces. For example, a married couple, who lived in one of the rooms of the house decided to leave the community for a time after the wife became pregnant, "to experience the pregnancy and first days of the baby's life in a calmer environment". They tried to expose their needs to the community regarding the lifestyle they needed (food, product purchase, cleaning, schedules…), but found it difficult to change certain habits. The couple thought of adapting a part of the house for their own purposes, but due to a lack of money and long-term security (they squatted, and did not know when they would be evicted) they thought they should leave, and moved to the house of a relative. However, over time they did not return to the community, but moved to a house in a town with a collective organization (data are insufficient to classify it as EIC).

In the same fieldwork period, one of the other inhabitants left community 1 as well, due to the "excessive chaos" that existed according to him in the community. He had been living in the community for more than a year, first in a room inside the house and then in a caravan parked outside (this was a common way of obtaining more privacy in communities with collective cohabitation). He had special nutritional needs and health problems that he associated with lifestyle-related anxiety. In his opinion, many things discussed in the assemblies were not transformed into action and much time was spent dealing with the same issues. The organization of the visits, the use of spaces, the cleaning or the accomplishment of subsistence tasks were some of these recurring themes. One day he decided to leave and moved to another province of Spain, where he was born. He rented a plot where he located his caravan. As he explained in an email exchange:

One day I talked with the community and explained why I was leaving, and I left. After taking the dog and other stuff in the motor-home I left. And I am here, on my own…more quietly. I am happy (…) Too much chaos for me in the community". (Former member of Community 1, email exchange, 2015).

The inability to meet material expectations of the individuals often led to conflict or abandonment of the community. Change of residence from one community to another, seeking to satisfy unfulfilled needs, was therefore a common trend. Transition between communities appears to be a distinctive element of the phenomenon, the most common move being from a community with a higher to one with a lower level of collectivization.

4.2.3 Economic activities

The last variable refers to how the communities organize economic activities involving the production, distribution and sales of goods and services. Different models have been identified in the 24 cases for which sufficient data were available:

a) The economic organization of the community is oriented to self-sufficiency. Activities are organized around this goal, resulting in the presence of high levels of self-provisioning and a domestic economy. Surpluses can be marketed, usually through informal means. People of this type of communities barely make money with their economy (n=10). For example, community 4 collects wild fruits and medicinal plants, among other activities. With these products they elaborate food preserves, creams, lotions and other products used in the daily life of the house. To heat the house, they collect and cut firewood from nearby areas. They also make bread above their needs. The surplus is exchanged for other products and services, such as car repair.

b) The economic organization is intended to cover part of the basic needs of the community (nutrition and housing repairs), but it is also market-oriented. Normally this economy takes the form of producing and selling goods, which is intended to be the economic engine of the community. Members of this type of communities combine the monetary income with the coverage of needs through self-produced goods or the exchange of goods (n=8). For example, community 7 has a vegetable garden, and it plans its produce seasonally to make the most of the garden, in order to cover a part of the inhabitants' nutritional needs and to grow vegetables for the market. In particular, the members make organic vegetable baskets to sell on the market.

c) The community is fundamentally market-oriented, that is, it intends to obtain revenues for its products, generally services, through the market. Its commercial activity is therefore performed in the formal economy. The economy of the people of this community is mainly monetized (n=6). An example of this type of economy is community 5. Their income comes mainly from courses and workshops offered to the public, such as about yoga, meditation or detoxification.

Economic activity defines the lifestyle of the community members. Their use of time is affected accordingly, as well as market purchases, revenue, and the effort dedicated to community activities. The following example is an extract from a conversation with a member of community 24, who at the time of the interview dedicated his efforts to the self-provisioning of the community in meat and dairy products. The surplus was sold. The example shows how he perceived the organization of the economic activity to affect his lifestyle.

> *We have to organize ourselves better within the community. Normal people have one or two free days per week, go on vacations, but since the girls were born, between the girls and the goats I have been working for practically two years without vacations. I can't leave the goats alone; the one day that I left them alone it was a big hassle. They enter the neighbors' field, eat their garden…* (Community 24, personal communication, 2015).

His case illustrates how people in some communities had to work too hard to make a decent living, especially if the community was based entirely or partially on self-sufficiency. Eventually, they became tired of it. Not finding a solution for this problem formed an additional reason why over time some people left their communities.

4.2.4. Summary of material means of reproduction

These three factors (legal status, form of cohabitation and economic orientation) are related to one another and, as indicated by the qualitative evidence, they are essential for community stability. Table 1 summarizes the observed communities in terms of legal status (rows), cohabitation (columns) and economic orientation (in colored dots). In the sample, communities that did not have property rights (first three rows) tended to have collective forms of cohabitation and self-provisioning (indicated in red), whereas communities with individual property tended to perform market-oriented activities (in yellow). Section 4.3 analyzes these relationships further.

Table 1. Material factors (legal situation, form of cohabitation and economic orientation) used for grouping the ecological intentional communities in the sample.

Legal status	Form of Cohabitation				Number of cases
	Individual	Collective	Mixed	No Data	
Squatting		1, 4, 14, 17	15, 23	13	7
Squatting & individual property	8				1
Communal rental	24	20,21,27, 6, 7, 12	10,22		9
Communal property	3, 18	16	5		4
Individual property			2 ,9, 25		3
No data				11,19,26	3
Number of cases	4	11	8	3	27

Note: Each node represents one community. The number below it refers to the numerical ID assigned to the community for the study. Colors indicate the economic orientation: red = self-sufficient/ domestic-economy (n = 10), yellow = market-oriented (n = 6), orange = mixed (n = 8), green = no data (n = 3). The nodes with a wider border are ecovillages.

4.3. A typology of EICs based on material reproduction

To encompass the observed diversity, an empirically driven typology has been constructed based on the factors involved in subsistence and social reproduction, namely legal status as regards property/ usufructuary rights over space, the form of cohabitation and the economic orientation of the EIC. These factors have been combined with the main activity of the community, as reflected in the discourse of the inhabitants and in documents produced by the community (websites, promotional materials, etc.). As has been observed so far, the lack of a database or studies into the material means of reproduction of EICs has generated a knowledge gap about the viability and the role of these communities in society. The typology aims to fill this gap, and to capture the diversity of the communities, in this case around the axis of material reproduction. The categories do not represent closed types. The elaboration of the typology, as described in the methodology section, responds to the grouping of characteristics of the observed communities. This means that communities not included in the sample may not always meet all characteristics. Some communities have also changed during the fieldwork period. The value of the typology is then to present the diversity of EICs observed in this paper, and to form a basis for comparison with other academic work in this area.

The proposed typology (see Table 2) distinguishes between two main types of intentional communities: transformative and instrumental. Transformative communities share a common view of life or a project for the future, while instrumental communities do not. Transformative communities can be further divided in action, production and training

communities based on the primary economic activity of the community (see Table 2). In action communities, activity is principally oriented toward political and social activism (creation of political networks, presence in demonstrations, and links with social movements), while a self-sufficient lifestyle is adopted that legitimates their environmental ideology. In production communities, the principal activity is producing ecological goods, which may be agricultural produce or livestock. In training communities, the main activity is developing services, such as courses, workshops or seminars that transmit values and knowledge related to the eco-community sphere.

Table 2. Typology of EICs (n=24).

Typology	Shared life-project	Main activity	Number of cases
1. Transformative			
1.1 Self-provisioning	Yes	Political activism and self-sufficient economy	9
1.2 Production	Yes	Production of ecological goods	6
1.3 Training	Yes	Education/training	4
2. Instrumental	No	Each individual develops his/her own activities	5

The classification of EICs according to their principal activity can be related to subsistence factors (see Table 3). This comparison shows that the types of communities tend to differ with respect to material factors such as property, cohabitation, and economic orientation. The remainder of Section 4.3 will describe each type in detail.

Table 3. Variation in material factors for the various types of EICs.

Type of community	Subsistence factors		
	Economic orientation	Form of cohabitation	Property
1.Transformative			
1.1 Self-provisioning	Self-sufficiency	Collective	No property
1.2 Production	Self-sufficiency /Market	Collective/ Individual	Common property
1.3 Training	Market	Individual	Individual property
2. Instrumental	Mixed	Mixed	Mixed

4.3.1. Transformative communities

Transformative communities seek a social change through their way of life. Three types have been identified:

Self-provisioning communities: The principal goal of these communities is to seek self-sufficiency within society in terms of the production of food, clean water and energy. To be independent from the market, they need to have a strong domestic economy. They adopt a collectivist model of social organization to achieve their goal, which is apparent in their uses of the space and in the activities of the community. Their perceived basic needs tend to be lower than that of other types of communities. They may or may not have access to hot water or basic services, such as sewage or treated drinking water. Squatting is the most common legal status in this sub-type. From the nine types of self-provisioning communities, six did not own property. Of the remaining three, two (communities 3 and 10) initially planned to be without property but they received funding from a social movement to pay the rent. They explained that they would be squatting if they did not have this money. The third, community number 16, squatted and was evicted after 3 years. In its new attempt to build a community project, its inhabitants tried to find more resilient ways of settlement. They rented with the idea to buy the property in the future. In general, these communities are linked to urban social movements. Members tend to be young.

Production communities: Although these communities are formally oriented toward self-management and self-sufficiency, in practice they display various levels of participation in the market economy, either by marketing organic products (e.g., community-supported agriculture) or by various forms of self-employment or employment. Economic activity can be formal (for which taxes are paid) or mixed. Social organization initially tends toward collectivism but as the community evolves, members start to call for more individual spaces. This is evident in the case of couples with children. Renting is the most common form of housing tenure, facilitated by the revenues obtained in the market. These types of communities spend most of their time producing goods within the community. For example, at the time of observation, community 7 sustained itself by selling products from the vegetable garden to individuals and consumer groups. They also sold bread made in a wood oven, jams with the fruits of the community plot and the forest, soaps and other self-produced goods. They declared that this was their goal. These sales were insufficient to meet the economic needs of the EIC. The community diversified its money-making strategies by applying for external jobs such as gardeners, teachers or delivery persons; organizing parties for which they charged a ticket and where they sold food and drinks, or taught workshops. However, this was not the way they wanted to live.

Training communities: The main feature of this type of communities is that they make a living from receiving visitors to the community for educational purposes. Visitors are charged to pay to experience a more sustainable way of life. Occasionally it is not the visitor who pays the service directly, but rather an intermediary association, or in other cases services are paid for by hours of work. This modality is called “voluntary” work or Wwoofing (Federation of Wwoof Organizations, 2019). Courses (e.g., about ecological agriculture, permaculture, or responsible consumption, but also spiritual living, yoga or guided tours) are an important part of the economic revenues of the community, which are usually combined with salaried work of individuals outside the community. The courses are also an important part of the goal to disseminate sustainable practices. Production is usually for self-consumption and occasionally made for sale. In some cases, the cultivation of land can have a

symbolic or pedagogical rather than productive character. The use of spaces is differentiated: spaces for the training community are shared, whereas spaces for stable residents are individual. Property is owned by the longer-term residents of the community.

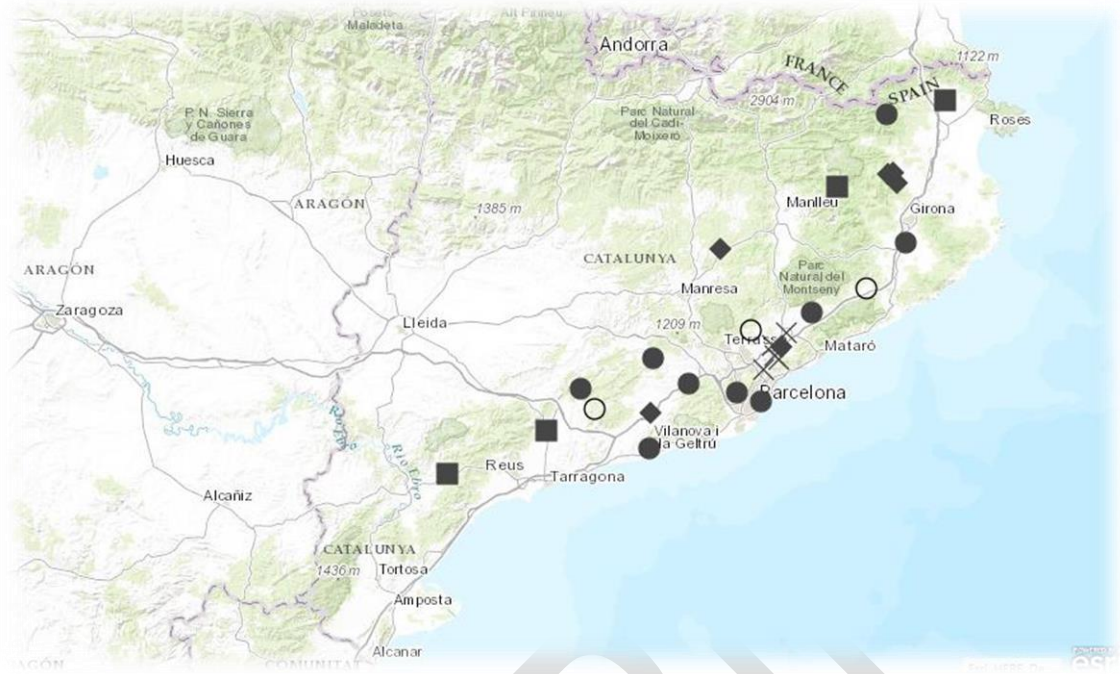
4.3.2. Instrumental communities

As the introduction of Section 4.3 mentioned, the primary characteristic of instrumental communities is the lack of a shared living project. Life plans are individual or couple-based, which is reflected in the temporary and instrumental nature of individuals' association to these communities. These communities do not actively seek to transform society. They may have businesses oriented to self-employment that fit with the values of the EIC, but in most cases management is not collective, and the benefits are not shared among the community members. The social organization exhibits high levels of individualism. Ownership varies from squatting to lease for use to rental. The legal status in this case derives from the opportunities at hand, rather than being a feature which is sought on an ideological basis. These communities tend to be relatively small (<10 members).

4.3.3. Summary of the community types and their viability

The most frequently observed type of EIC was transformative self-provisioning (37,5%), followed by transformative-production (25,0%), instrumental (20,8%) and lastly, transformative-training (16,7%). Transformative self-provisioning communities are typically located on the outskirts of Barcelona. Figure 5 shows that instrumental communities tend to be located close to cities, concurring with the suburban location that Meijering et al. (2007a) proposed for practical communities.

Figure 6. Types of geolocated EICs. Note: The shapes indicate the type of community: ● = transformative-self-provisioning communities; ■ = transformative-training communities; ♦ = transformative-production communities; × = instrumental communities and ○ = cases with insufficient data to define their type.



EICs that present themselves as a transition towards a more environmentally sustainable society can thus develop very different livelihood strategies, even though the discourse is inserted in the same logic of environmental values. However, according to the fieldwork observations, the types of EICs are not equally viable on the long run. The communities that are most involved in the market economy and that own the land are most viable. In contrast, the absence of the ownership of the land, communal life and an economy oriented to self-sufficiency that characterize self-provisioning communities appear to be factors of vulnerability that generate turnover and abandonment of projects. Paradoxically, these factors are traditionally attributed to the peasant lifestyle, archetype of ecological sustainability (Wolf, 1976; Narotzky, 2016). Thus, ecological and economic sustainability seem to be at odds in the current context.

4.4 The ecovillage label

To better understand the place of the "ecovillage" label in the framework of the presented typology, this section examines which communities defines themselves as ecovillages and how this label is perceived by those who chose not to adopt it. In the research sample, only four of the 27 communities (numbers 2, 5, 6 and 9) adopted the label of ecovillage (out of a total of 11 ecovillages in Catalonia currently mentioned on the GEN website). These four communities had ownership or usufructuary rights of the land and a market-oriented economic model (either through production or service provision; see Table 1). They fall in the categories presented above as transformative-training and transformative-production communities, which need the market for their reproduction, and are thus far from the ideal of the isolated, autarchic, and alternative ways of life that the label might suggest. While this observation is based on only four observations, and therefore unlikely representative of all

ecovillages, it supports Andreas's (2013) argument, based on a German ecovillage, that the economic model of such communities bears no relation to that of an isolated island: the community received around 6,000 visitors each year, who contributed significantly to maintaining the community's economic and social "holism". According to the author, ecovillages made a U-turn in 2008 with the GEN-Manifesto II, which portrayed ecovillages as a model to tackle environmental challenges while participating in the mainstream society with its high land prices, restrictive planning regulation and a progressively more individualistic society.

The view that ecovillages are market-driven was also echoed by the other EICs in the sample. Most of them rejected the label, especially those whose economic models were closer to self-sufficiency. They associated ecovillages with profits-driven communities that lived off visitors and were less accessible for economically disinterested collaborations. In this vein, informants mentioned that participating in the annual meetings organized by the Red Ibérica de Ecoaldeas (the Spanish branch of GEN) was expensive and that it was not easy to create ties with the ecovillages in the GEN network. This separation between ecovillages and other EICs was observed during fieldwork. Along a mountain road of about 20km, there were three EICs. Two of them were ecovillages of the transformative-training type, according to the typology developed in the paper. The oldest of the two was a member of GEN, while the younger one was a spinoff of this community, an ecovillage under construction that was also listed on the GEN website . The third EIC along this road, a transformative production community also founded six years ago, was not a member of the GEN network. Extensive fieldwork in the latter community, showed the lack of collaboration with the other two EICs, despite the third community's attempts to establish ties.

A similar lack of access was experienced by the researcher responsible for the fieldwork. The oldest ecovillage accepted an interview, but did not allow the first author to visit the common areas nor observe the activities of the community unless she formally enrolled in the courses the community offered and paid their fees. Reasons for non-participation in the study also differed between ecovillages and other EICs. Ecovillages (some of them members of GEN and others with the idea of becoming part of the network), indicated that unpaid visits would cost too much energy to the group. Other EICs, in contrast, initially rejected to participate in the research because they suspected the authors were hiding their intentions of controlling their activities, but once trust was gained, money was not a requirement. Maybe this was related to their lower orientation toward the market economy. If anything, these latter communities requested that the researcher helped with manual work during her stay in the community.

Together, these observations raise questions about the way in which the label "ecovillage" is used by the communities in the sample. As Table 1 shows, six EICs in the sample have a market-oriented economic model, but not all chose to refer to themselves as ecovillages, yet all the ecovillages in the sample (n=4) relied on the market economy, partially or entirely, for their social reproduction. While the number of ecovillages is low, this finding suggests that the adoption of the ecovillage label helps communities market themselves in the global market, enhancing their visibility and attracting more paying visitors with ecological

interests. Acquiring this label endows communities with a shared identity, a set of values and ideas, which form a legitimate part of the ecological ideology that contributes to its stability. The observation that the label is mostly adopted for marketing concerns, however, casts doubt on its analytical value, since it seems to exclude a part of the phenomenon of EICs, particularly those based on self-sufficiency.

5 Conclusions

Drawing on ethnographic fieldwork in 27 ecological intentional communities in Catalonia, Spain, this paper shows that these grassroots initiatives for creating more sustainable models of human settlement have diverse ways of organizing livelihoods. From communities that are economically oriented toward self-sufficiency to market-oriented settlements, a range of economic models interrelate with varying levels of individualization of the use of space and with the legal status regulating how those spaces are conceived. So far, the literature has paid little attention to these material means of reproduction, yet the paper has argued that exploring them is essential for a better understanding of the long-term viability of such communities. Communities that are not economically sustainable cannot serve as viable models for environmentally sustainable forms of human settlement.

The study found that the long-term viability of most EICs is rather insecure. For communities to be viable, they need to be in consonance with the needs of their members, and therefore they must provide enough space for people in different life stages and have sustainable modes of land and property use and reproduction that allow individuals to overcome initially precarious livelihoods. The extent to which communities were able to fulfil these needs varied greatly among the cases, however. The paper has suggested that EICs can be depicted on a continuum from self-provisioning, squatting communities (least sustainable in terms of material reproduction), to communities with forms of private or communal property that are market-oriented and have individualistic forms of cohabitation (most sustainable).

Individuals therefore often moved between EICs, usually from ones with higher to ones with lower levels of collectivization, or left EICs. The high instability in terms of membership turnover and community dissolution causes a continuous reinitiation of projects with a lack of transmission of agrarian-ecological knowledge over time, and great effort for recreating the community, reconstruction of the buildings, and the acquisition of production.

The observation that the most viable EICs in the sample relied on the market economy (mostly ecotourism) is problematic, because such communities can hardly serve as transition models towards a low-carbon society. Even though their local footprint may be lower, Narotzky (2007) argued that the market economy causes the exhaustion of resources, rather than environmental sustainability. Her reasoning is in line with that of authors such as Polanyi (1944), Harvey (2007) and Gudeman and Hann (2015), who have shown the historically

deleterious effects of the market economy on social organization. The market economy has displaced the self-provisioning economic model and changed personal motivations from guaranteeing subsistence to maximizing profits (Polanyi 1944, p. 81). Montesinos (2013) showed how the traditional forms of production of peasants, which were in close harmony with the environment, were displaced by subsidy-dependent practices in the market economy, embedded in production and distribution modes with longer chains and a larger ecological footprint. Indeed, according to the discourse of members of EICs, moving livelihood strategies and social reproduction away from the market economy would be the way to protect society against environmental degradation, but this is precisely the opposite of what is economically viable under capitalism and neoliberalism. EICs thus intend to challenge the current social order through rural settlement, an ecological ethos and self-provisioning (Ergas, 2010), but in practice, they are more dependent on the world they intend to change than they would like (cf. Andreas and Wagner, 2012; Ergas, 2010).

To talk about economic dependence is to talk about the difficulty to be self-sustainable in a society with a market economy. As the paper noted, this dependence is partly due to the legal framework defined by public policies involving EICs. EICs exist in a state of tension between ecological ideology and the mainstream values of contemporary society, such as individual freedom and dignity (Harvey, 2007) and competition, alienation, hierarchy and separation (Baker, 2013). The lack of institutional support and social pressure to conform with neoliberal practices hinder the achievement of the communities' goals of reducing the degradation of natural resources. Delving into the nature and causes of these obstacles would help us unravel Garden's statement about ecovillages (2006): "My objection to the GEN movement and their eco-villages is that it implies that ecological living is not possible in mainstream society" (p.3). On the basis of the observations in this paper, it seems plausible that the long-term viability of EICs may be enhanced by promoting reforms that include fiscal measures or changes in regulation and legislation (cf. Axon et al., 2018). Examples are allowing EICs to hold animals for self-provisioning or lowering the bureaucratic labyrinths regarding the sale of surplus, which would increase EICs' self-sufficiency (cf. Escribano, Hummel, Molina & Lubbers, 2020). It is equally important to ensure the access to land on a continuous basis to develop social innovation. Available public resources, such as subsidies for technological development could also help create this continuity.

The findings of this study are relevant for policymakers and institutions that aim to support EICs and the social and environmental innovation that they represent. In Catalonia, especially the Department of Agriculture, Livestock, Fisheries and Food, dependent on Spain's Central Government, is responsible for regulating the exploitation of natural resources. Furthermore, the Government of Catalonia is responsible for the regulations of territory and heritage. The findings are also relevant for policy-making of European institutions, such as the Common Agricultural Policy, which influences regional policies.

The typology that this paper has developed to capture the diversity of ecological intentional communities in terms of material production, at least in Catalonia, shows us: a) points of convergence and divergence between communities that work for a common cause;

b) the relationship between economic models and lifestyle in communities, and how this interrelates with environmental sustainability; and c) the main challenges EICs face in leading the change towards a low-carbon society. The results also suggest the importance of creating a legal framework in which the development of a domestic economy is allowed for EICs (cf. Escribano, Hummel, Molina & Lubbers, 2020), as well as resources for the access to land and for technological development. EICs can fulfil a double function: to create a space for social experimentation towards a more sustainable society and to repopulate isolated rural areas.

The types of communities observed in this paper are embedded in the cultural and sociopolitical context of Catalonia and may differ in other contexts. Future research should address EICs' material reproduction and their dependence on the market economy in other geographic areas. Such cross-national comparison may reveal how the context in which EICs are embedded and their legal, cultural, and political frameworks influence the form that communities take and their long-term viability. The study of public policies which constrain or motivate the constitution of EICs is also relevant for the search of forms of habitation with a smaller ecological footprint and a greater coexistence with nature. What actions are subsidized? Which are administratively sanctioned? A longitudinal perspective could further advance knowledge about the dynamic nature of the EICs and the extent to which they adapt over time to the surrounding socio-economic context, similar to research regarding the life path of businesses or organizations.

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Annex. Details of the communities that participated in the research

Community ID	No. of members at time of observation	Mode of contact (face-to-face / phone / e-mail)	No. of interviews conducted and recorded	Time of observation, in days
1	1	Face-to-face	-	20
2	1	Face-to-face	2	4
3	1	Face-to-face	2	5
4	1	Face-to-face	-	3
5	1	Face-to-face	1	1
6	1	Face-to-face	1	5
7	1	Face-to-face	8	35
8	1	Face-to-face	4	5
9	1	Email	-	-
10	1	Face-to-face	-	3
11	1	Email	-	-
12	1	Face-to-face	-	3
13	1	Email	-	-
14	1	Face-to-face	-	2
15	1	Face-to-face	1	2
16	1	Face-to-face	2	10
17	1	Face-to-face	-	15
18	1	Face-to-face	-	5
19	1	Phone	-	-
20	1	Phone	-	-
21	1	Face-to-face	-	8
22	1	Face-to-face	-	15
23	1	Face-to-face	3	30
24	1	Face-to-face	2	30
25	1	Phone	-	-
26	1	Phone	-	-
27	1	Face-to-face	2	3