STRATEGIC DESIGN RESEARCH JOURNAL

Enhance local communities through Design: a holistic approach to regenerate rural environments[1]

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ABSTRACT

The advent of the technological revolution and the current aspiration to reconnect with the land define possibilities for thinking new connections between individuals and communities. These relations are geared towards developing regenerative endeavors and methods, ultimately leading to the establishment of collective well-being. Within rural environments, there is a propensity to develop strategies that include substantial lifestyle changes. These strategies operate employing practices and actions that, through co-design, aim to revitalize the local area. Through different approaches, the concepts of value and trust are nurtured, facilitating collaborative design of possible futures and transitional pathways to them. The objective of this study is to introduce a theoretical framework that encompasses the distinctive methodologies and actions inherent to the realm of design. This framework is intended to become a guide for implementing inventive processes, with the goal of revitalizing areas that are struggling with both social neglect and environmental deterioration. The activities conducted until now increased the experiences of relations with communities of place, creating meaningful opportunities, but also highlighting limitations and difficulties in intercommunity relations.

Keywords: Design for the Common Good, Territorial Regeneration, New Local Relationships.

INTRODUCTION

Economic and population growth is associated with increasing concentration in urbanized centers. The management of cities has gained great importance in the historical period in which we find ourselves, as urban densification is expected to grow exponentially, and more and more people will seek work and living opportunities in these spaces.

Large metropolitan areas account for 60% of global GDP, produce 75% of greenhouse gas emissions, and more than 60% of the world's non-renewable resource use. The world is projected to need 230 billion square meters of new construction by 2060 (Faivre et al., 2017), a prediction that threatens biodiversity and has a significant impact on the ecosystem, social dynamics and economic disparities.

[1] This paper was initially published in the proceedings of the ServDes 2023 Conference - Entanglements and Flows. Service Encounters and Meanings, which took place at the Pontifical Catholic University of Rio de Janeiro, from July 11 to 14, 2023. This is a revised and improved version of the paper based on the feedback received at the event.

The IPCC Assessment Report (Change, 2022) shows that the percentage of greenhouse gas emissions from urban agglomerations increased by 6 percent from 2000 to 2015, an increase of 11.8 percent per person. This is mainly caused by the continued growth of cities in the global North, which produce 7 times more GHG emissions per capita than those in the South.

1. THE RURAL CONTEXT AS A SCENARIO FOR SPATIAL REGENERATION

Humans are the primary stakeholders in city systems, not considering the impacts on the planet and the nonhuman species that inhabit it. To challenge traditional models, digital transformation has brought - and brings - impacts on value creation, strategy, and structural mechanisms by challenging traditional models of living (Feroz et al, 2021). It is undeniable that this has played a primary role during the pandemic of COVID-19, in which many have reevaluated their priorities, seeking an elusive work-life balance (Kundu, 2022); many people are quitting their jobs or trying to change careers: this phenomenon has been referred to as "the great resignation" and has been found mostly in youth employment (Allman, 2021).

With this perspective, more and more citizens are seeking relationships with the rural environment and want to play an active role in the local area's life support system.

Nonetheless, the ongoing influx of people to cities has resulted in the depopulation of many rural regions, leading to a decline in their population numbers. This decline can be attributed to their heavy reliance on agriculture or small-scale enterprises (MacDonald et al., 2000). The phenomenon known as rural desertification is primarily driven by the departure of younger generations to urban centers, seeking better employment prospects. This trend is also influenced by factors like education opportunities and the allure of urban experiences (Crow, 2010). Consequently, this initiates a process of rural population aging (Kroll and Haase, 2010), resulting in consequences such as the abandonment of agricultural land (Yang et al., 2018), the shuttering of local businesses, and the discontinuation of public amenities like transportation services (Šťastná and Vaishar, 2017).

Looking at this phenomenon from a different perspective, it can be seen that, due to the urban transformations undergone, villages become permeable ecosystems, porous, inclusive, open, undefined spaces that allow new ways of living to take root in the context, integrating sustainability and caring for the land as prerogatives of a new model. In this sense, can the countryside become a space of freedom, experimentation, self-responsibility? Are small local initiatives an adequate response to the global challenges we collectively face? (Maak, 2020)

Thackara (2019) argues that the relationship between humans and nature has suffered a repairable metabolic fracture starting with a new approach toward living systems. In this sense, he considers the land as a bioregion, which means reconnecting living systems (watersheds, food systems, etc.) with humans through places; a bioregion is shaped by the characteristics of the natural environment:

geology, topography climate, soils, hydrology and watersheds, agriculture, biodiversity, flora and fauna, and vegetation.

Planning from this perspective means having a systems approach in which the interests of agricultural communities, local people, land and biodiversity are considered part of a single system, which sees the individual elements as interconnected and interdependent with each other. A bioregional approach to development is when economic re-localization efforts, which

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measure where resources come from, help identify leakages in the local economy and explore solutions from locally available sources (Thackara, 2019).

Within this framework, the potential that arises through the application of design principles is explored. This approach aligns with adaptable settings that are receptive to groundbreaking strategies, possibly signifying a fundamental change in approach. This exploration takes the form of practical implementations and gradual advancements that eventually coalesce into a juncture at which society as a whole might be prepared to adopt it.

The parameters of the design field are perpetually evolving to discover solutions that are apt for the era, circumstances, and regions they are meant for. As a result, designers must possess a universal mode of communication, while also flexibly conforming to local geography and culture. This duality signifies the design's societal role in enhancing the quality of life for individuals.

Manzini (2014) states that cases of bottom-up innovation seem to be design-led processes because designers are diverse social actors who, consciously or unconsciously, apply skills and ways of thinking that are to be considered as design activities.

Designers can play an important role by operating in two main ways, designing with and designing for communities.

1. Designing with communities means participating as equals with other actors involved in building creative communities and collaborative co-design of services. In this mode, designers must facilitate the convergence of diverse partners toward shared ideas and potential solutions.

2. Designing for communities means looking at specific types of collaborative services and, after observing their strengths and weaknesses, intervening in the context to develop solutions that increase accessibility, effectiveness, and replicability.

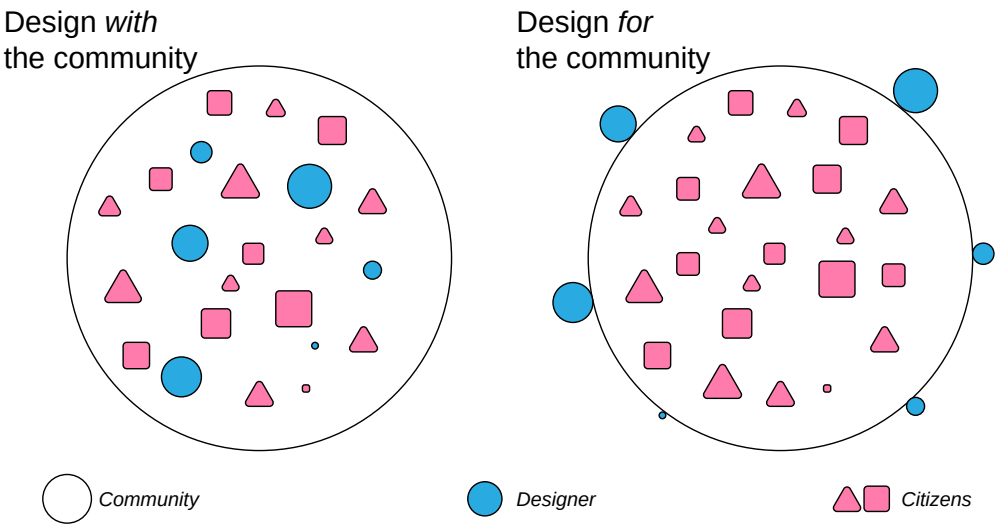

Figure 1. Design with/for the community.

A transdisciplinary approach is, however, required, whereby heterogeneous groups are formed to create unsolicited employment opportunities through cooperative and negotiated processes of catalyzing demands expressed by active citizenship.

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2. DESIGN AND PROJECT METHOD

In order to design system change, it is necessary to create the appropriate enabling conditions. One of these is the ability to think ecologically and to see living patterns as a connected whole (Thackara, 2013). Another decisive condition for change is the reconnection between urban and rural; an increasingly widespread need caused by a Western cultural approach that distances humans from the land and nature.

Alberto Magnaghi (2020) calls these processes as a return to 'place consciousness,' meaning the re-appropriation of the hidden values of the territory; in other words, he highlights the need to focus on the value of territorial commons (material and relational), as essential elements for the reproduction of individual and collective, biological and cultural life. In this meaning, territorial heritage is a system of synergistic relationships between peculiar qualities of the physical environment (climate, flora, fauna, etc.), the built environment (long-lasting permanence and persistence, urban and territorial building types, techniques and materials, etc.) and the anthropic environment (socio-cultural patterns, linguistic peculiarities, milieu characters).

So the transition from an unsustainable system to a sustainable one goes through the rediscovery of the land, positioned in a global context where local issues are directly influenced by global issues, referred to as "wicked problems" (loss of biodiversity, climate change, lack of natural resources) (Crowley, 2017).

According to Irwin et al. (2015), the root causes of complex problems often involve the social dynamics that permeate them; and it is precisely from the different stakeholders connected with the problem that one has the potential to harness the relationships and design interventions to solve it.

The discipline of design has long been proclaimed as a tool for solving wicked problems (Dunne & Raby 2013; Kolko, 2012). However, the design world has continued to show itself to be overly reductionist, as evidenced by the promotion of solutions that frequently fall short of addressing the problem's root causes and instead focus primarily on associated symptoms.

What is needed, therefore, is a transition of Design methodologies to a more holistic, systemic and strategic approach; in other words, there is a need for the discipline to take a Life-centred approach that considers Nature, the land and communities of people as equal stakeholders. So we can speak of a design that centralizes complexity and provides possible solutions to wicked problems, adopting a multidisciplinary design process, with the aim of influencing social behaviors toward more sustainable futures. In this paradigm shift, means must be found to ensure connections and build new relationships for local resilience design. In this sense, it is useful to think of new technologies and digitization as tools capable of having a strongly decisive impact on environmental and social sustainability (Kamble et al., 2018).

In agreement with Manzini (2015a), it can be said that the accelerated development of the technological revolution is reshaping relational practices, new problems are being addressed by recombining existing assets with the aim of achieving socially recognized goals. For example, the digitization of public services, such as e-government and e-health, demonstrates how similar services can be provided in both rural and urban areas (European Commission, 2020).

To guarantee that the digital transformation of rural areas fosters significant societal advancements and diverse collaborative designs that contribute to strengthening local

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communities, various scholars underscore the importance of approaches centered around specific locations or shared resources (Wihlborg & Engström, 2017; Wolski, 2019).

The technological upheaval serves as a means to establish fresh linkages and associations, spanning both regional and non-local realms. In essence, it amplifies the potential for disseminating knowledge, data, and assets within both the confines of a local setting and the broader global context.

In this context, the theory of Cosmopolitan Localism, proposed by W. Sachs (1999) and taken up by E. Manzini (2017), considers an interregional and planetary network between communities linked to their place, creating an exchange of cultures, histories, values and practices of local systems. Cosmopolitan Localism proposes a "practice-based design" to address the social and systemic aspects of wicked problems - particularly the overconsumption of raw materials - from the concept of localism (Kossoff, 2019). This theory then considers a community way of life based on the cultures and economies of places and territories that harnesses extra-community interconnections to address complex global problems for the design of more sustainable futures.

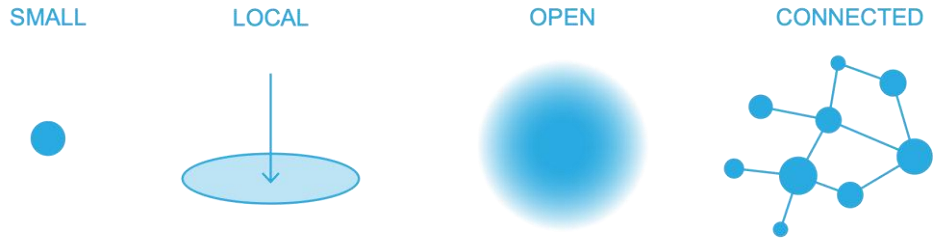

Figure 2. A glimpside into design for Social Innovation (Manzini & Shulz, 2017).

3. THE ROLE OF THE DESIGNER: FROM DOING SOCIAL TO BEING SOCIAL

The focus on creating new meanings for patterns of living that are more sustainable and centered on caring for the land confronts design, which, in agreement with Manzini (2015b), is a sensemaking activity. The main purpose is to define interactions between users and context in order to understand possible needs to initiate design by adapting and experimenting with new approaches in addressing continuous emerging issues. These arise as future trends, which can be defined as general developments or changes in a situation or in the way people behave; they are hypothesized through the identification of signs for change, that is, evidence of the future that can be found in today's world.

Manzini (2015a) suggests that everyone has the ability to design, nevertheless, not everyone is a competent or professional designer and the latter should focus energies on allowing more social actors to take part in the co-design process.

This approach requires a shift in mindset and skills for many designers, who have tended to emphasize the realization of design outcomes rather than building social infrastructure (Iversen & Dindler, 2014).

As a result, there is a need for a shift from the traditional role-based approach to one based on social value. Tjahja & Yee (2022) define this approach as typical of the "Sociable Designer," who is able to reframe the problem in the present by enabling stakeholders to come to a shared understanding, which is essential for coordinating short - and long- term actions.

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So, in order to succeed in enacting meaningful change toward more sustainable futures - both from a social and environmental perspective - it is critical to adopt a life-centered rather than human-centered approach to design, recognizing collaboration as a critical component of transitional design (Rohrbach & Steenson, 2019). The Sociable Designer adopts a shift in responsibility as he or she acquires a role of a more facilitative and/or coordinating nature (Catoir-Brisson et al, 2016), while users assume a role as co-creators by actively participating in creative processes. This alters the power dynamics in the design process, generating a change in the perceived status and role of the designer (Tjahaja & Yee, 2022).

The process of becoming a Sociable Designer occurs, therefore, by establishing relationships based on mutual learning and reciprocity (Northumbria University, 2020) and by strengthening social cohesion in the community before initiating any kind of intervention (Gullstrom & Kort, 2019). There is a need to support initiatives by creating an enabling environment for all stakeholders; socially integrated practice requires that designers simultaneously create and become part of the social fabric, which surrounds the initiative, before attempting to (co)design any kind of solution, product or service.

The paradigm shift is to integrate a more holistic view of the world, in which humans are part of an ecosystem; in other words, the environment is not just an extractive resource, but should be regarded as a stakeholder, equal to humans. The environment, land and places are to be regarded as commons-or 'commons' (Ostrom, 2009) - to be cared for as vital because of their local, cultural and temporal value in a community. The re-discovery of the commons passes through a new territorial ethic of the communities that inhabit them, in this regard Ostrom (2009) summarized the three key points that make them so important:

- They are shared and considered important because they have been at the center of common welfare for several generations.
- Society follows rules for the care of the commons.
- Each individual contributes to the maintenance of the commons.

In order to address the strong cultural disconnect between the anthropogenic world and the biosphere, design must focus attention on the commons and its communal value. In other words, this type of design can be defined as Design for the Common Good (Dorst et al., 2016), in which design is called upon to address the complexities of a system that considers natural, formal, and social structures in an increasingly globalized local context (Fig.3).

This complexity-oriented design approach can be defined as a natural and innate structural feature in every human being and community group, in relationships, social systems, the biological world and objects (Dominici, 2019). It integrates the holistic view of the world at every stage, with the stated goal of designing local resilience over a long period of time for a more sustainable future.

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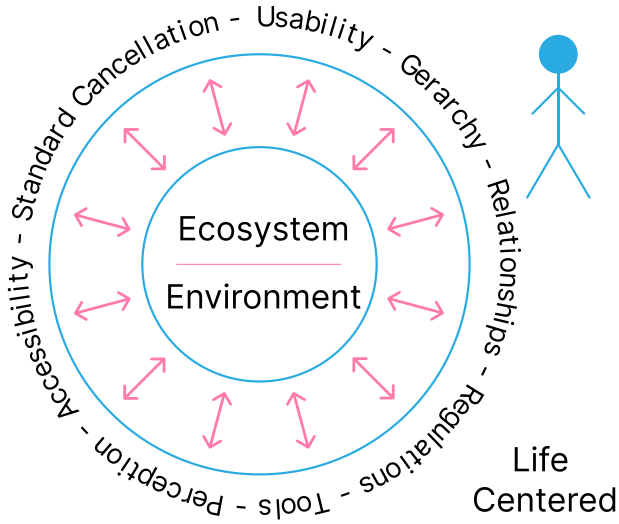

Figure 3. Societal model of the Common Good, embracing a wider catchment area, grounded on a Life-Centered thinking.

4. THE PROJECT: A THEORETICAL FRAMEWORK

Implementing a decisive shift in the approach to design methodology and in view of the design opportunities emerging from rural contexts, here is proposed a theoretical framework that can be useful, as a guideline, for the application of innovative processes that have the intent of regenerating a place that is being abandoned. The model consists of two main groups of actors: the pre-existing local community and a group of planners who enter the area to implement regenerative projects and promote collaborative activities aimed at shared well-being.

The framework is characterized by several stages: initially, state-of-the-art analysis of the place is conducted, then data are reported in order to develop possible futuristic scenarios. These suggested forms of regeneration - social, environmental, and economic - are helpful in reviving the community and achieving a resilient state through initiatives that connect vital flows for the livelihood of the place. The goal is to create a sustainable system that is effective in finding immediate solutions, leaving a flexible structure that can change and adapt to the inevitable unforeseen changes that come with the passage of time.

In analyzing the state of the art, taking into consideration a context that has not been completely abandoned turns out to be a significant factor that presents challenges and opportunities. Indeed, a system that is still active administratively and in terms of primary services presents several facilitations such as still-functioning facilities and infrastructure that enable the existence of forms of self-support, services offered, meeting places, and enable a way of life that identifies the community of the place. However, there are also a number of critical issues to be addressed, including being accepted by the community, which is likely to have a closed character, a little open to "outsiders." The senior citizen component-probably in the majority-may struggle to share the place of their lives with a group of outsiders, especially if these outsiders become the bearers of change. In light of these risks, it is appropriate to behave following the methods and cognitive processes typical of the Sociable Designer, in order to gradually find space in the community, and then move on to designing new lifestyles on the strength of the trust and credibility gained.

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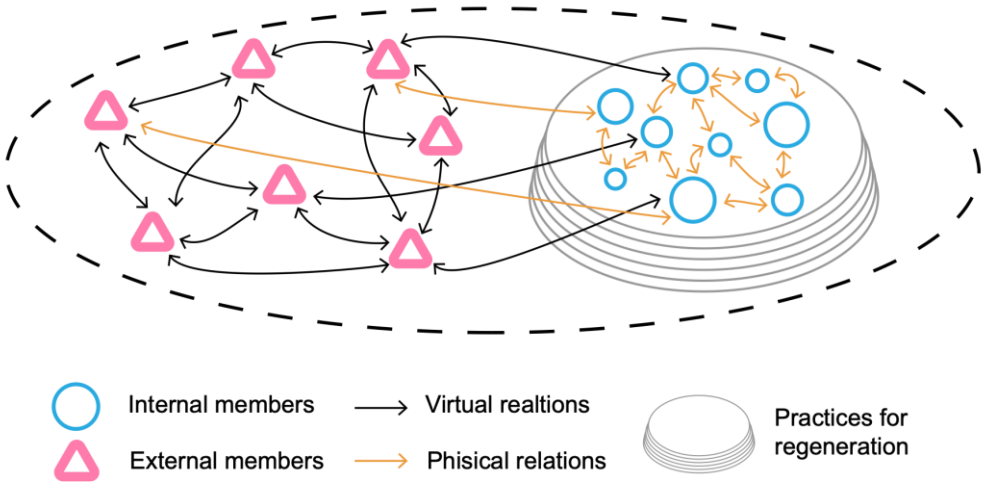

Figure 4. System map of framework relationships.

Initially, efforts are focused on sustainable processes that promote the production of basic necessities to achieve a form as close as possible to self-sustenance. At this stage, questions are asked, from the data collected, about the direction of livelihood to be taken: energy self-production or agrifood production.

As far as energy is concerned, the goal is to achieve sustainable and renewable production, and to promote awareness of energy consumption; for example, by showing the impact of one's consumption in a transparent and direct way, with simplified languages, such that users can interface with values otherwise unknown, or difficult to understand. So a decisive factor in gaining community participation and sharing of values could be in the practice of gamification of services or processes: through a succession of "challenges" shared with others, the user is enticed to pay attention to savings in exchange for rewards or benefits (of a non-fungible nature) that he or she can collect, exchange or use within his or her community. Research conducted by Papaioannou et al. (2017) describes an IoT-enabled gamification approach to changing energy consumption behaviors and reducing energy waste in public buildings through a competition-based peer push. The practices must include educational features and be "engaging", in order to have a long-term effect on energy consumption behavior.

Next, the issue of agrifood production is addressed; once the area has been studied, non-intensive agricultural or livestock farming techniques are proposed to maintain an ecological balance by favoring crops and livestock adapted to the climate and conformation of the place. The goal is to meet the needs of the community by avoiding surplus and waste, and not adopting intensive forms of production that are among the main causes of global pollution-specifically the livestock industry (Pulina et al, 2021).

Aiming to use new models to satisfy a number of people, moving away from classic monoculture, requires a radical redesign of the agricultural system; one example that research is focusing on is Pixel Farming, whereby not only food is produced, but also other goods such as clean water, biodiversity, and pest and disease control (Ditzler, 2020). This is both a planned and anarchic model that Rem Koolhaas (2020) has called "urbanism for vegetation" asserting to the fact that fields are configured as different communities of plants, placed side

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by side, in small spaces, with insects navigating among the various colonies of flora that settle among the plants, promoting coexistence and biodiversity.

It is possible to think of a significant paradigm shift in the government system made possible by technologies, although not easily applicable: a distributed ledger managing administrative data, accessible to those in the system, could prove useful in maintaining a strong horizontality and transparency of the system. Already several public institutions are combining legislative efforts with research activities and projects to figure out how to employ digitization in the public sector. One case in point is Zug, a Swiss municipality of 30,000 inhabitants, which has initiated a project to register citizens' identities to improve communication with the institution in anticipation of more participatory services and to define shared strategies. Using the Ethereum platform, 200 citizens were able to vote remotely on various local issues (Portale, 2019).

Groups called DAO (decentralized autonomous organization) are born and are characterized as "hybrid communities of place" (Manzini, 2020) united by the pursuit of the same values defined in a regulation stipulated through a "Smart Contract" (Attico, 2018). When these conditions are met, a certain amount of non-fungible tokens is disbursed that represents a form of right or decision-making power for the person involved in the community. The total supply of issued governance tokens can be understood as a fragmentation of actions in "everyday life," where it does not matter how much an individual holds, but the mere fact of owning them gives everyone the same rights (Razzaq et al, 2019).

Gradual sensitization would open users to the world of technology in an understandable and incremental way; with this in mind, an initially scaled-down application is envisioned to manage the internal organization of a small group. This system is conceived with the ultimate goal of supporting the application of a radical change in the communal mindset, conceiving community work aimed less at the spasmodic pursuit of financial gain, but more oriented toward the well-being of one's daily life and that of all, without incentivizing a race for monetization.

Despite pursuing a condition of self-sustenance, the economic factor remains among the fundamentals for community resilience. Three models of interest were identified from the research that can foster the emergence of dynamic practices and activities, such as to trigger innovation processes that adapt to changing times. The feasibility of the proposals will have to be co-designed and verified with respect to the local area and community. It is mainly about designing sharing practices that can create innovative experiences and activate new ways of relating to place; the economic aspect should be taken into account, but sociological and ecological aspects are put at the center. Through active participation, close internal relationships are established that prepare communities for a renewed influx of people, leading to the rediscovery of the area and establishing a strong bond with it. The models identified are that of widespread tourism, events and conferences, school and training courses:

Widespread tourism: facilities are organized to accommodate guests, tourist services are offered focused on experiences in contact with the local area, with the simple but value-rich life of the place. The involvement of the local community is primary, special importance could go to childhood by organizing ad hoc activities that are educational and convey ecological and social values through awareness triggered by positive experiences. In addition, children and youth can reactivate the parental sense in local elders, who get involved in various activities to discover the area.

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Events and conferences: with the aim of promoting, through effective communication, the community's way of life, creating a network with professional and academic bodies, artists and creative people of all kinds, who have an interest in participating in activities or telling their experience in dedicated events or workshops. Dissemination conferences can be organized to consolidate the image of the community, creating a place open to dialogue and confrontation with thoughts and ideas from other realities or different sectors. A different kind of events could be in the entertainment sphere, offering exhibitions, displays, creative workshops, or musical, theatrical, and performance events. Calling people who are inspirational to develop creative projects and freedom of expression and who could join the community by bringing added value through direct contributions in daily life.

Schooling and training courses: through placement in different contexts, which have dynamic and proactive characteristics to change, new teaching methods are fostered that mix practice and theory in favor of a more heterogeneous understanding of natural phenomena or social practices. Collective housing, in which students share their experiences, can stimulate a constructive climate of bottom-up dialogue and design (Shatarova, 2015). This would result in an influx of people participating in repopulation activities with a consequent increase in manpower: for example, students who live in the community for a certain period of time become a full part of it, participating in its development and internal activities. The school is not presented as an institutional body, but as a space where planning is encouraged, providing opportunities for young people to realize their ideas, discuss meaningful topics, learn, and participate.

The framework presented suggests, therefore, a lifestyle more focused on social and environmental aspects rather than economic ones, making economy from activities and practices that involve joint and collaborative participation of heterogeneous groups, bringing added value on multiple levels. With this in mind, a slower and more relaxed rural environment encourages the use of non-intensive techniques and practices, supported by the use of readily available and renewable materials.

5. CONCLUSION

The framework is characterized by developing activities that create a condition of community resilience in order to regenerate the territory together with those who inhabit it. Initially, a period of regeneration and settling is faced; once a stable condition is found, it can be said that a degree of internal dynamism within the community has been achieved that allows for self-regenerative and adaptive practices, in order to cope with the changes that arise in the context, as time passes. In this situation-achieved after all the problems, risks, and sacrifices faced to arrive at the resilient condition-the community can be called a Designer Community (Yang & Jiang, 2020), whereby everyone, professional and non-professional designers alike, has a dynamic, problem-solving design approach; through a holistic approach, understanding the issue thoroughly, and then formulating solutions that bring change in the present and future, regenerating as a common good.

In this context, it is plausible to think of forms of dissemination that connect realities, creating a network of small communities that are strongly defined and at the same time totally open for any kind of relationship with the outside world. Through these connections, the regeneration of the territory can take place from a broader perspective, succeeding in achieving a condition of common well-being.

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This social model aims to change the paradigms of relationships between people: free and direct exchanges, mutual trust, and the importance of the common good are fostered by innovations in rural dynamics. People experience their territory differently, attribute meanings and values to their community, giving it a precise identity and feeling part of it. The proposed model fosters open collaboration dynamics in which the common goal is to foster incremental regeneration of place, allowing the community project to exist and be resilient.

This theoretical research has fostered the establishment of an autonomous research group that focuses its activity on the development of tools and methods for the design of socio-environmental regeneration interventions in abandoning rural contexts, involving, on the one hand, a community of designers and, on the other, the local community. The methodology draws from different fields and design practices, such as co-design and design for communities, to encourage processes of sharing ideas; design futures, seeking to build visions of desirable futures for the local community; and transition design, as the transformation processes hypothesized and designed envisage multi-level changes.

From an initial analysis of the activities carried out and from the discussion with scholars and practitioners, some limitations emerged to be overcome through further theoretical and practical research: it is fundamental to establish a preliminary relationship with the local communities, which also envisages the physical presence of the designers on the territory, to ensure the activities and co-designed interventions are accepted and, therefore, potentially implementable; it is necessary to involve heterogeneous figures in such design processes, to build a common and language, thus enabling the correct flow of information between the various actors. Lastly, the preliminary level of expertise of the participants in the co-design activities is strongly relevant, and also of the moderators/guides, whose contribution proved to be fundamental for the achievement of the various objectives.

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