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The Belìce Valley as a Territorial Laboratory: from Public Policy Experimentation to a Large-area Administration Strategy

Gianni Petino[*], *Maria Donata Napoli*[**], *Mario Mattia*[***]

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1. *Introduction*

The emerging field of research concerning the geography of dissatisfaction focuses on explaining the formation of political inclinations and behaviors through a geographic location perspective (Iammarino *et alii*, 2019; Stroppe, 2023). Such dynamics are the subject of public debate, particularly with regard to rural and disadvantaged areas that seem to fuel, more than others, attitudes of political resentment, as in the case of abstentionism or protest voting (Rodríguez-Pose, 2017). Central to the research on these «less fortunate» or more marginal areas is the model that argues how citizens residing in areas relatively distant from service-providing hubs perceive inequality in access to economic and social resources (Petino, Scrofani, 2020). This perception contributes to the feeling of being ignored in the broader context of global «long networks» (Dematteis, 2021), where original local socio-cultural specificities tend to disappear, of national economic development or on the part of political elites in general (Cramer, 2016; Stroppe, 2023). Conversely, since every geographic system is marked by a vastness

* Catania, University of, Italy.
** Palermo, Accademia di Belle Arti, Italy.
*** Catania, INGV, Italy.

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of tangible and intangible resources, normally affected by a dynamic process of local accumulation, it has the potential to generate territorial heritage. Such heritage, if made available to the local community and investors, could succeed in influencing the entire set of connections, both formal and informal, that participants have developed over time to manage it. The goal of asset creation and management will be the compensatory measure to reduce spatial disparities and should normally be supported by appropriate policy interventions. Activating these dynamics represents a strategic challenge and is both complex and the subject of European cohesion policies. While we may believe that (territorial) cohesion policies are a well-established objective on the part of the European Union (CEC, 2008), it is equally clear that is obviously a mistake to continue to pursue this objective in the simple application of the same models and practices of development for all, both for regions and for EU countries, with the risk of homologation of intervention and its lack of effectiveness. Therefore, it is necessary that (territorial) cohesion should be achieved by protecting and, even more, promoting the diversity of territories in order to ensure real and lasting well-being for local populations (Prezioso, 2020; Petino, Scrofani, 2020). See in this sense the report by Barca (2009) entitled «An Agenda for a reformed Cohesion Policy. A place-based approach to meeting European Union challenges and expectations» to observe how development models that incentivize processes of valorization of territorialized resources according to place-based or place evidence-based approaches, can be considered paradigmatic in the approach to «places» to their understanding and to the possible implementation of cohesion policies aimed at local specificities and for this reason, at least on paper, more effective. It is in this scenario that our observation finds its ease, in a phase that moreover sees the issue of energy transition becoming a central element of European policy, to facilitate which transition support tools, such as energy communities, have been introduced for local communities. The area of observation is the Belìce Valley in Sicily, which will be discussed in the second section. In particular, our focus is on that part that was affected by the 1968 earthquake, already the subject of reconstruction intervention in the past decades and more recently of the community policy that, in the 2014-2020 seven-year period, allowed for the establishment of a new governance entity called the Local Action Group (LAG) Valle del Belìce. New opportunities could arise from the constituting energy communities and from the hypothesis of a candidature as a project area in the National Strategy for Inner Areas, which we will discuss in more detail in the third paragraph. The aim of this work is to reconstruct the territorial mosaic in order to identify some characteristics and possible development trajectories by offering an interpretation, a guiding thread and a possible way out of typical dynamics of stagnation that have been keeping an area of great interest on the margins for just over fifty years (Messina, 2019; Mattia *et alii*, 2021).

2. *The case study of Bèlice Valley in Sicily*

The Belìce Valley is located in the western part of Sicily, shared between the territories of the three former provinces of Palermo, Trapani and Agrigento.

It is a predominantly hilly area and largely coincides with the hydrographic basin of the Belìce River, which covers an area of almost a thousand square kilometers; the river's course, 94 km long, originates in the municipality of Poggioreale at the confluence of the Belìce Sinistro and Belìce Destro (fig. 1). There are 23 municipalities whose territory can be partially or totally attributed to the river basin, almost all of which are characterized by a small area and low population density. Figure 2 shows the demographic evolution of the municipalities most severely damaged by the earthquake, according to the Mercalli scale (between VIII and X) (Petino *et alii*, 2022).

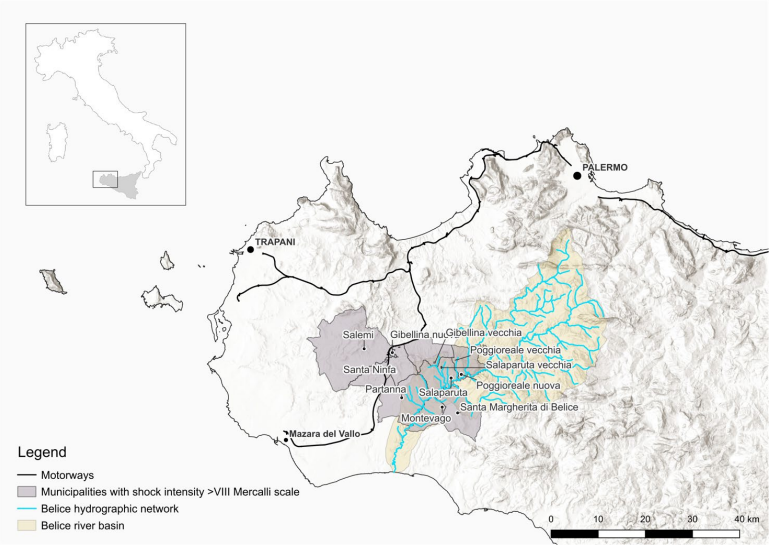

Fig. 1 – Framing of the area.
Source: our processing of ISTAT data.

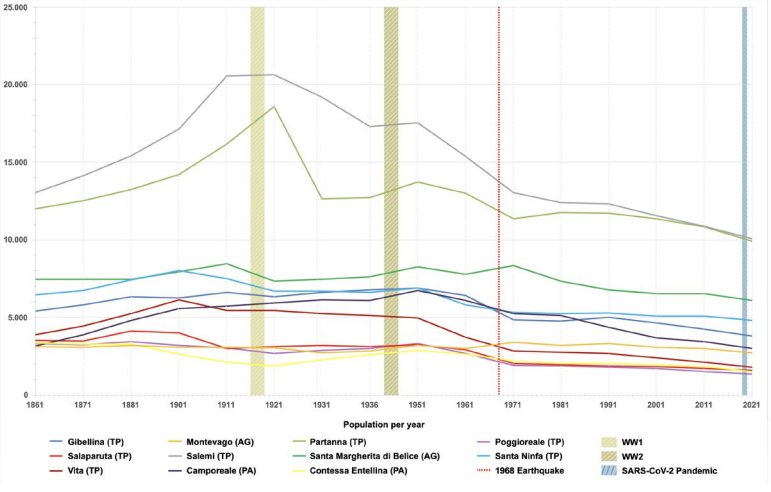

Fig. 2 – Population trends and relationships with major historical events (1861-2021).
Source: our processing of ISTAT data.

The area is characterized by a varied landscape that includes fertile plains and hills, and benefits from the Mediterranean climate, with mild winters and hot, dry summers. Agriculture is a vital economic activity in the Belìce Valley. The fertile soil and favorable climate make it suitable for growing various crops, including wheat, grapes, olives, citrus, almonds and vegetables. Viticulture is particularly important, and the region produces some notable Sicilian wines. These characteristics, however, could not prevent the valley from being affected by depopulation that has been occurring for a hundred years.

2.1 - *The reconstruction process following the 1968 earthquake* – At 2:01:09 a.m. (GMT) on January 15, 1968, a large area of western Sicily was struck by a 6.41 Mw earthquake (De Panfilis, Marcelli, 1968; Anderson, Jackson, 1987; Rovida *et alii*, 2021-2022), the main shock in a sequence of earthquake swarms that shook the region until June 1969. The major event, the strongest recorded in western Sicily in historical times, was preceded by a series of minor events (January 14 with 4.84< Mw< 5.1) and followed by several aftershocks. Of these, the events of January 16 and 25 reached magnitudes of 5.45 and 5.37, respectively (De Panfilis, Marcelli, 1968; Anderson, Jackson, 1987; Rovida *et alii*, 2021-2022; Bottari, 1973). The earthquake event caused about 370 deaths and severe damage to fourteen villages. Four of these (Gibellina, Poggioreale, Salaparuta and Montevago) were completely destroyed (fig. 3). The main quake on January 15, 1968 was preceded by a seismic swarm that convinced many people to abandon their homes for the night and, thanks to this, and as a result, many were saved. This is the reason for the limited number of deaths and injuries if compared to the number of people who lost their homes (about 70,000 people).

After the dramatic seismic swarm (the last earthquakes occurred in June 1969), a very slow reconstruction process began. In Italy, the laws that regulated the responsibilities for first aid and reconstruction processes in earthquake areas were very outdated (RDL n.2389/1926; L n.1010/1948). The Italian government was directly in charge of organizing refugee support and planning reconstruction processes. Soon after the earthquake, a conflict of competence arose between the national government and the Regione Siciliana. Sicily, since 1946, had a Statute in which its autonomy from the Italian central government was recognized in many aspects, and the reconstruction process was one of them. The central government opposed its competence because of the law regulating the management of emergencies. From 1968 to 1976 (when an organized process of reconstruction began) as many as 23 laws regulated a complex process of urban planning in which the Minister of Public Works had jurisdiction over the main choices and the Regione Siciliana, together with a general inspectorate for earthquake areas, had to provide for «comprensorial plans» for the reconstruction of a group of villages with common interest in territorial terms. For this purpose, the ISES (Istituto per lo Sviluppo dell'Edilizia Sociale, Institute for Social Housing Development) was created, which was responsible for the actual planning of the reconstruction process (Senato della Repubblica, Camera dei Deputati, VIII Legislatura, 1981). This institutional structure of

intervention, with unclear responsibilities and subject to political influences with conflicting interests and potentially subject to criminal infiltration, was a total failure (Aprile, 2009).

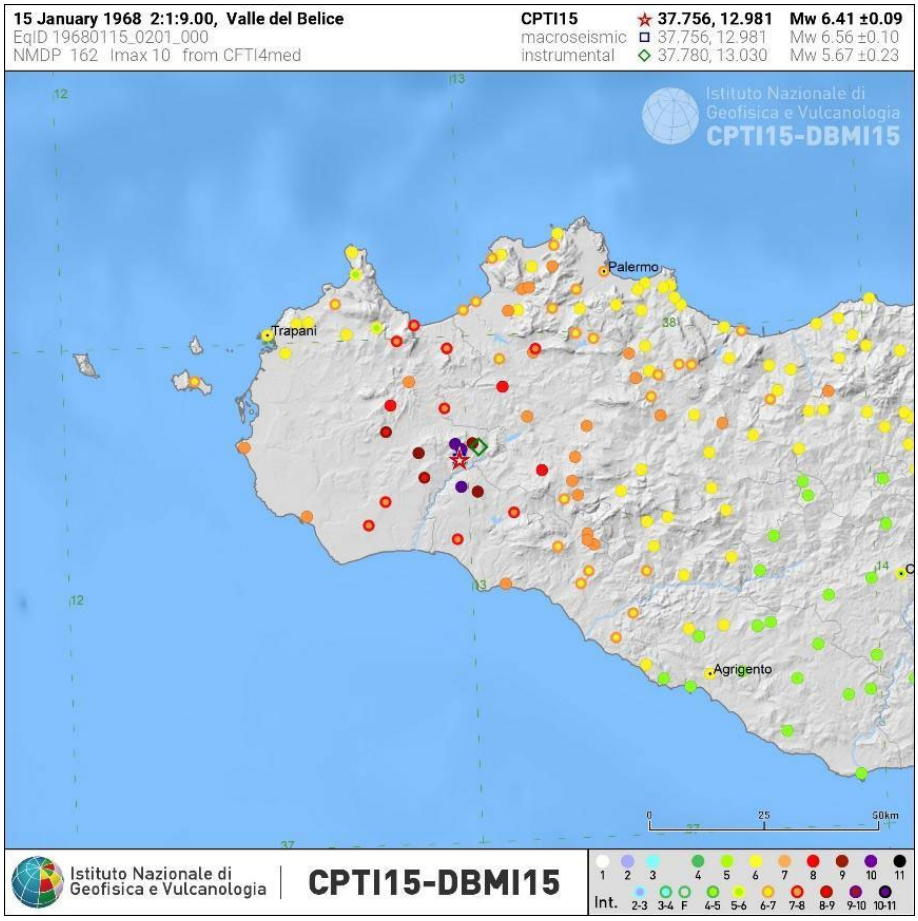

Fig. 3 – Seismic intensity map of the Belìce earthquake of January 15, 1968.

Source: INGV CPTI (Parametric Catalog of Italian Earthquakes) ver. 4.0 (Rovida et alii, 2020; Rovida et alii, 2021; Rovida *et alii*, 2022).

In the long period between the earthquake and the delivery of new houses (20-25 years), the inhabitants of the Belìce Valley lived in the 21,050 barracks built in areas near the destroyed towns (7,853 in the province of Agrigento, 1,950 in the province of Palermo and 11,268 in the province of Trapani). About 4,000 barracks were dedicated to social and labor activities, for a total number of 25,697 barracks. The average size of the barracks was 27 m^2. At least one family of four lived in each barrack. The total expenditure for the barracks and urbanization infrastructure (power, water, waste management, etc.) of the camps was enormous. In addition, some of the areas chosen to install the barracks were vulnerable to flooding and surface instability. The

area covered by the barrack camps amounted to 3,690,774 m² (1,283,616 m² in the province of Agrigento, 225,200 m² in the province of Palermo, and 2,181,958 m² in the province of Trapani) (Senato della Repubblica, Camera dei Deputati, VIII Legislatura, 1981).

It was only after the failure of the «centralist» method was evident that a real reconstruction process began, and a new law (n. 178/1976) was necessary to proceed with the construction of the new villages, in which the local authorities were entrusted with this process (and given sufficient resources to actually start it). The difficult process of reconstruction began, but other problems had to be faced by the people.

2.2 - *The transformations affecting the Bèlice Valley* – The highly fertile area of the Belìce Valley, divided between the three provinces of Trapani, Agrigento and Palermo, still has a preponderant agricultural vocation, with olive trees and vines predominantly cultivated. More recently there is an alarming trend related to extractivism processes (Harvey, 2004), including energy extraction, which are occurring in some parts of the hinterland and producing significant impacts. By occupying land to the detriment of other uses (Blas, England, 2008; Franco *et alii*, 2013; Henriques, 2008) or producing environmental problems, wind power and, above all, photovoltaics risk showing the other side of the so-called energy transition. Namely, that of the possible risk of local development that does not generate wealth, resulting in the commodification of land (Lipari, 2020).

As previously noted, in addition to the damage caused by the earthquake, the territory was also marked by excavations and the installation of extensive barracks, extensive transformations that have persisted even over time. That is, the Belìce Valley earthquake produced a series of upheavals that, in different ways, are still present today as traces of a highly criticized modus operandi.

There are the ruins of destroyed villages, only minimally «museified» to preserve the memory of the places and the inhabitants (Mattia *et alii*, 2021). There are the new urban settlements that, compared to the real needs of the populations that have chosen to move elsewhere, are oversized and made of «absurd objects» (Cantarella, 2013). There are still the areas that for decades housed barrack camps, which became permanent places of precarious residence for many valley residents as slow reconstruction proceeded.

These areas can still be spotted not far from the completely destroyed municipalities (the old urban centers of Gibellina, Salaparuta, and Poggioreale), as in the case, for example, of the former barrack camp areas of Rampinzeri (located between Santa Ninfa and the historic center of Gibellina; fig. 5), the barrack camp of Madonna delle Grazie (northwest of the old Gibellina or present-day Cretto; fig. 4) or the barrack camp of Salaparuta and Poggioreale (between the two former settlements; fig. 4). It is also possible to observe these disused areas immediately adjacent to the municipalities that were only damaged (Partanna, Montevago, Santa Margherita di Belìce, Salemi).

For two out of three cases, the areas are already used, in whole or in part, for the installation of photovoltaic systems, confirming the solar vocation of

the area (Global Solar Atlas 2.0). The two plants currently installed south of the former Rampinzeri barrack camp have a total area of about 58,000 m² and 20,000 m², while the plant built exactly at the former Salaparuta barrack camp has an area of about 29,000 m².

Fig. 4 – From top to bottom: the area of the former barrack camp Santa Lucia, Partanna, in the images of 1968 and 2020; the area of the former barrack camp of Salaparuta-Poggioreale, in the images of 1968 and 2020; the area of the former barrack camp Madonna delle Grazie, located northeast of the old town of Gibellina, and Burri's Cretto, in the images of 1969 and 2020.

Source: historical images from the Archives of the newspaper L'Ora, Biblioteca Centrale della Regione Siciliana; contemporary photos by M. Cantarero and M.D. Napoli.

With regard to barrack camps built close to those municipalities that were affected but less severely damaged by the earthquake, despite the fact that the land value is considerable due to the proximity to urban centers, these areas are almost or completely abandoned. This is the case with the areas of the former barrack camp of Santa Lucia in Partanna (fig. 4) or the former barrack camp of Via Po, in Santa Margherita di Belìce, both of which are completely abandoned; on the other hand, the areas called Villaggio Bergamo, Villaggio Tempo and Villaggio Trieste, the Giammuzzello and Cuba neighborhoods in Salemi (fig. 5) and the Vallesecco and Papa Giovanni XXIII areas in Partanna are used as peripheral artisanal/industrial areas. In fact, once the reconstruction was over, all these areas remained available to the municipalities for uses that included the construction of social housing (Cuba neighborhood), the development of artisan/industrial activities (Giammuzzello neighborhood, Papa Giovanni XXIII area) or to create public green spaces (the Vallesecco area was briefly turned into an urban park, but soon abandoned) (Leone, 2012).

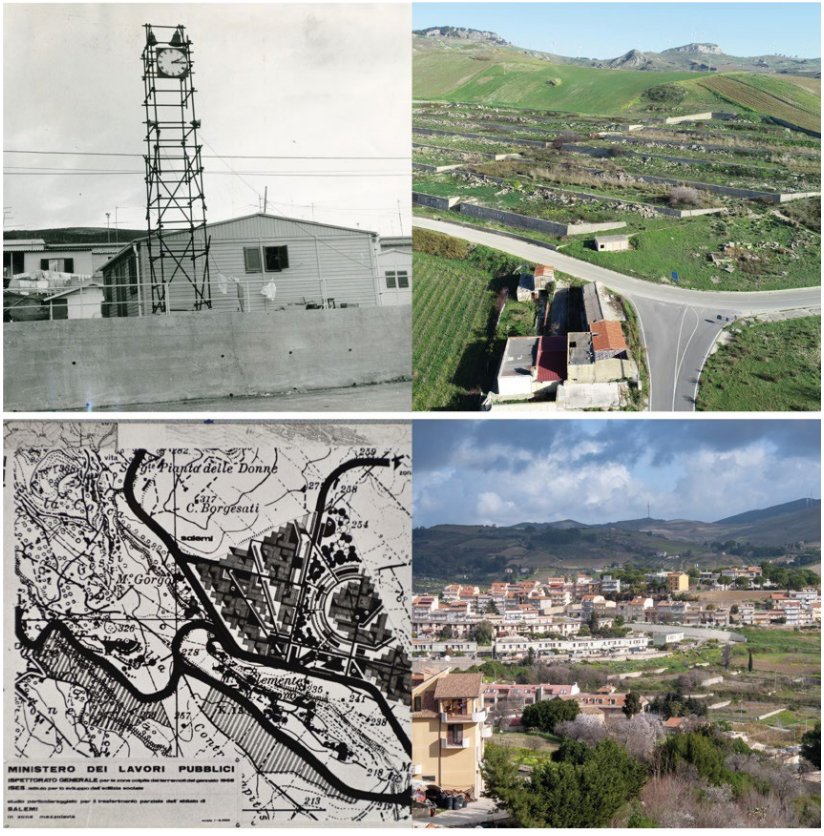

Fig. 5 – From top to bottom: the area of the former barrack camp of Rampinzeri, Santa Ninfa, in the images of 1968 and 2020; the original map (1968) of the Giammuzzello district construction project, Salemi and a panoramic view of the district in 2020.

Source: historical images from the Archives of the newspaper L'Ora, Biblioteca Centrale della Regione Siciliana; contemporary photos by M. Cantarero and M.D. Napoli.

Thus, the legacy of the earthquake and post-earthquake emergency interventions was also that many lands were used as barrack settlements. Once the long reconstruction phase was over, those lands remained in the availability of municipalities and continued to be used for public purposes (allocation of public housing and standard services, creation of craft areas and territorial utility services; Leone, 2012). However, many of these abandoned areas have remained unused due to inefficient administration or environmental and structural problems. Consider, for example, the need to decontaminate these spaces due to the presence of pollutants and harmful substances, such as the presence of asbestos in concrete foundations or in some plumbing systems (Opencoesione.gov.it). Environmental remediation is in fact strictly necessary a priori for any type of use, although it is difficult to understand why these areas so close to residential and civil uses have not been reclaimed and exploited until more recent times. While these problems have pushed away areas of potential urban expansion, they have also slowed the expansion of built-up areas; due to their location in peri-urban belts, it would have been easy to imagine residential use and, consequently, a high value per square meter for potential building.

The area of the former Santa Lucia barrack camp in Partanna, for example, has an area of more than 140,000 m^2 and a perimeter of one and a half kilometers (fig. 4). Once environmental reclamation is completed, a photovoltaic plant installed here could produce excellent results due to the characteristics of the area. In fact, in 2021, not far from this area, by a partnership between Enea as technical supervisor, Sol.In.Par. Srl as developer and Fata Spa as builder, a 4MW power plant was inaugurated that «is capable of producing electricity for more than 1,400 households (about 30 percent of the population of the municipal area, with 3 kW domestic users)» (Lanchi, Gaggioli, 2020; Graditi, 2022) and has an area of almost 200,000 m^2. The area will also be expanded, as shown in the map of projects published on the environmental assessments portal of the Regione Siciliana (Portale Valutazioni Ambientali, Regione Siciliana), with an additional 500,000 m^2. In addition, the online portal of the Regione Siciliana reports an active procedure for the construction of the agrovoltaic plant «Santa Ninfa Gibellina» in an area northeast of Gibellina, next to Viale Segesta and the SP37. The identified site has a perimeter of about three kilometers and an area of more than 550,000 m^2.

3. *Strategies and public policies in the Belìce Valley*

The interaction between man and nature reveals the often dramatic role of unexpected and destructive events. In fact, while a tragic event, such as the 1968 earthquake, represented a time of pain and suffering for local communities and their territories, more than 50 years after the event, we are able to reason about the communities' attempts to restart. The method used for our analysis consisted of researching public policies already in place or being implemented, useful for comparing different phases in the long history of reconstruction. Among the many initiatives, we chose to focus on the EU LEADER policy through the presence of a Local Action Group, which

has been active for several years, and the proposed creation of energy communities through a special regional call for proposals in 2022. The choice to observe these two intervention paradigms is motivated by the fact that proto-strategies of action are present in them, in one case the presence of the Local Action Plan and, in the second, the use of a bottom-up participation tool, «to give the territories the key to their future and that they can develop in a sustainable and effective way» (Murciano Sánchez, 2023). These strategies involving the local community were considered important because, after decades of reconstruction and «scattergun» economic interventions, it was felt that an overall co-designed and participated reasoning could no longer be postponed. For this reason, in the last sub-section, we intend to propose a possible candidacy as a Project Area within the National Strategy for Inner Areas (Strategia Nazionale per le Aree Interne - SNAI), in the wake of other similar case studies such as the Alto Aterno Gran Sasso Laga Project Area, also affected by seismic phenomena and identified as a prototype, both for the adjustment of timeframes on the Framework Program Agreements (Accordi di Programma Quadro - APQ), as well as in the simplification of procedures for the identification of emergencies and support in post-earthquake reconstruction. All this is aimed at reducing the incipient sense of marginality of the Valley communities and compensating for some socio-economic gaps.

3.1 - *The Local Action Group «Valle del Belìce»* - In the process of cultural and structural revolution that has involved the entire nation, thanks to Next Generation EU funds, we have chosen to observe this hinterland of the Sicilian territory apparently «far» from the urban poles, which are richer in opportunities and services (Barca, 2012). The choice is due to the assumption that no territory should be left behind in terms of opportunities (Rodríguez-Pose, 2017), but also that it should be enabled to resist, react and restart in the face of unfavorable circumstances. The analysis was carried out with reference to the territorial cohesion of the Belìce Valley, in order to understand the state of those territories that are a little less central, if not even peripheral.

The territorial analysis of the municipalities of our interest, as well as many other areas in the national and European territory, certainly highlights short-, medium- and long-term problems. The issues related to long-term depopulation, decreasing birth rates, emigration, increasing aging of inhabitants, the business fabric and related employment in distress, the rarefaction of commercial activities, the low accessibility of the territory, the overall deterioration of some services in terms of quality and capillarity of the same in the territory, seem to suggest appropriate policy instruments that can work best according to the specificities of the location.

In this sense, the fundamental role of the European program «Liaison entre Actions de Développement de l'Économique Rurale» LEADER (1991-1993), now enhanced with the instrument of «Participatory Local Development» CLLD (2014-2020), significantly proposes itself for the advancement of rural regions, in line with the long-term perspective outlined in the European Union's *vision*, according to which it is crucial to focus on the development of the place-specific competencies and to promote closer cooperation between

local institutions. The instruments of action/regulation in the territories are the Local Action Groups (LAGs).

The Belìce Valley, since the past programming (2014-2020), finds in the LAG «Valle del Belìce» (2016) the operational entity that, through a special Local Action Plan (LAP), plans to trigger local development, stimulate new rurality and support territorial capital (fig. 6). Among the key elements of the intervention strategy is the environmental component, which, in line with the European vision, requires a close relationship/cooperation with the various objectives of the LAG; these include the enhancement of sustainable tourism, wine and food production, and the valorisation of cultural and artistic heritage linked to the territory, in collaboration with the sub-measures of the Rural Development Plan (Piano di Sviluppo Rurale - PSR), with the actions of the European Rural Development Fund (Fondo Europeo di Sviluppo Rurale - FESR) of the Regione Siciliana, from which the appropriate funding will be received. In the current programming phase (2023-2027), the drafting of the new Local Development Strategy is underway. This phase, the importance of which is obvious, is also delicate for a broad call to the participation of local communities, the success of which is far from certain, with the aim of defining operational guidelines for intervention in a collaborative and shared manner. In particular, the strategy of the LAG, in conformity with the European objectives of pursuing smart, sustainable and inclusive growth (European Parliament, 2013), intends to act by supporting economic development based on integration between economic sectors, on knowledge and innovation, and on the promotion of a more resource-efficient and green economy that is more cooperative and competitive, with a high employment rate that fosters social and territorial cohesion and reduces depopulation. Goals to be considered in line with the establishment of energy communities and the core principles of the National Strategy for Inner Areas, which we will mention below.

3.2 - *Energy Transition and the Energy Communities Instrument as an Opportunity* – The Paris Climate Agreement, the UN 2030 Agenda, and the EU Green Deal together constitute an integrated vision and action plan to guide EU public policies in the current phase of globalization. The goal is to achieve a green, equitable and inclusive Europe in which economic prosperity and environmental protection are to be pursued through unified policy choices for sustainable development (Sikora, 2021). However, there are many territories strongly tied to the fossil economy. The transformation evoked by the Green New Deal is sure to raise some opposition, and its success will be directly proportional to Europe's ability to mobilize huge resources to ensure an equitable transition whose goals will be to ensure the reconversion of obsolete production sites, guarantee access to energy, create job opportunities, and provide vocational training. However, this will not be enough. The interventions to be implemented by Europe will therefore have to be aimed not only at convincing, but also at listening and soliciting a bottom-up proactive attitude. That is, communities and territories must be involved in a broad program of public interventions that support the actions that will inevitably and significantly change lives and forms of social organization.

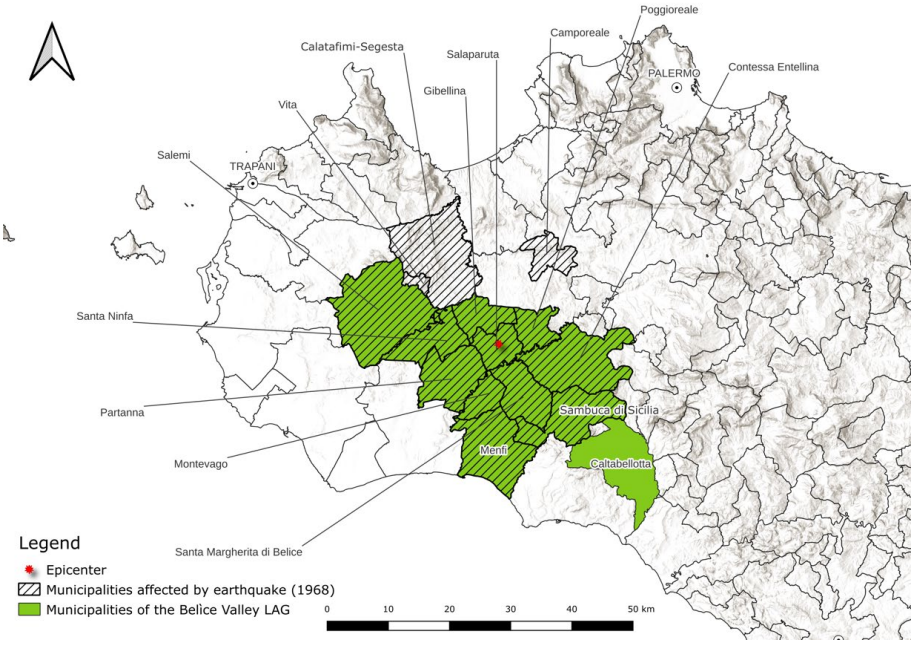

Fig. 6 – Municipalities affected by the earthquake and municipalities belonging to Local Action Groups - GAL of the Belìce Valley.

Source: National Rural Network, 2020.

In Italy, the European Union's program called «Europe 2020 Strategy» has been in operation for a number of years with the aim of supporting growth and employment, paying particular attention to ensuring that this growth is smart, sustainable and inclusive. The intent is to implement interventions that can overcome structural deficiencies in the European economy, improving its competitiveness and productivity and fostering the emergence of a sustainable social market economy (Prezioso, 2020). In addition, the pandemic has shown us that everything that is not urban or, at least, that does not experience the rhythms of medium and large cities, is back in the limelight. These are places, such as the «inner areas» (Barca *et alii*, 2014), in which to experiment with new forms of social and productive organisation and in which the model of sustainable development envisaged by policy and spending instruments can be concretely pursued. In this way, they could become the center of gravity for Next Generation EU projects and the programming of cohesion fund for the period 2023-2027 (Costanzo *et alii*, 2021).

As mentioned, energy supply is one of the priorities for Europe, and most efforts should be focused on renewables as the main energy source option to support, regardless of the current debates on gas and nuclear power. A low-carbon transition of global economies will require significant changes in the way we use and manage our land resources. This will result from both the transition of energy systems from fossil fuels to renewable or low-carbon sources that require significant land area (Scheidel, Sorman, 2012), and

from the transition of economic systems, such as food and forestry, to sustainable land management practices that reduce agricultural emissions (Wu, 2020). In this context, the creation/proliferation of energy communities can lead, through bottom-up processes, to responsible consumption patterns. An energy community is a form of bottom-up energy production and self-consumption by a coalition of users who, voluntarily associating themselves in a legal entity, produce, consume and manage energy through small-scale energy plants (Margheri, 2017).

These high expectations make it important to understand how these new forms of energy communities develop and operate (van der Grijp *et alii*, 2019). European energy community practices have gradually grown since the 1980s, since the significant players in the energy transition have improved social acceptance and enabled citizen participation (Bierens, Skapoula, 2021). The establishment, rooting and functioning of an energy community varies from country to country and is influenced by socio-economic conditions.

According to the Strategic Plan of the Common Agricultural Policy (CAP) (MiPAAF, 2021), it is important to encourage the production and use of energy from renewable sources and from products and by-products of agricultural, livestock and forestry origin, while also favoring the development of energy communities. The multiple goals to be achieved are, on the one hand, the contribution to climate change mitigation and adaptation, and on the other hand, the potential ability of a local system to withstand and overcome economic downturns related also to geopolitical factors. The model still has a large potential for growth, particularly in rural areas in the northwest of the European Union and in the southern part of Europe, such as in Italy (Moroni *et alii*, 2019) and also in Spain (Romero-Rubio and Ramón de Andrés, 2015). The most significant effects are expected in areas with higher population density, while it will be rather more difficult to achieve the same results in rural areas, especially those suffering from depopulation. In particular, in Italy, the dissemination of knowledge and methodologies on energy communities in the agricultural system (AgriVoltaico) is being enhanced, with the aim of boosting local economies and stimulating new market opportunities (Abouaiana, Battisti, 2022). Importantly, agrovoltaic plants (DL 77/2021) partially address and solve land and landscape grabbing problems (Ciervo, Cerreti, 2020) arising from the agrisolar system, as solar panels must be mounted on agricultural sheds or other similar structures.

A first (2022) and a second (2023) public notice have recently been published to access funds from the National Recovery and Resilience Plan (Piano Nazionale di Ripresa e Resilienza - PNNR) measure called «Parco Agrisolare» (MiPAAF, 2022; Masaf, 2023), with a total budget of 2.5 billion euros. The investments are included in Mission 2 «Green Revolution and Ecological Transition», Component 1 «Circular Economy and Sustainable Agriculture», Investment 2.2, and are aimed at supporting «investments for the construction of solar photovoltaic electricity generation plants in the agricultural and agro-industrial sector, excluding land consumption» (Gestore Servizi Energetici - GSE, 2023). That of «energy community» is an elastic concept that guarantees an assortment of initiatives with numerous practices. It has many

forms, such as the clean energy community and local energy initiatives, and one of its goals is the decentralization of energy (Abouaiana, Battisti, 2022). This definition is consistent with that defined by the European Commission, for which energy communities are «collective actions of citizens coming together to participate in the energy system, taking ownership of their energy consumption» (European Commission, 2022). Energy communities could also facilitate awareness and at the same time promote actions that help increase public acceptance of renewable energy projects and make it easier to attract private investment in the clean energy transition. At the same time, such actions could bring direct benefits to citizens by increasing energy efficiency, reducing electricity costs and creating local job opportunities (European Commission, 2018).

Regarding the constituted regional energy communities, from the legislative and economic support point of view, local regional authorities have already taken action. The call of the Regional Department of Energy of the Regione Siciliana (D.D.G. n.707 of 10/06/2022) gave a more than positive result, receiving 312 applications out of 391 municipalities. This call for applications provides for the funding of a grant sufficient to cover the expenses necessary for the establishment of energy communities and, on average, each applicant municipality intends to create two, thus assuming that the number of «communities» could be around 600. Almost all municipalities in the Valley, with the exception of Santa Ninfa, have applied for funding to create one or two energy communities. This dynamic can be seen as a high indicator of not only administrative but also community vitality. Moreover, the Valley is strongly characterized by high value-added agricultural and rural activities, and the presence of the LAG with its longstanding regulation of the area creates fertile ground for dialogue.

3.3 - *The National Strategy for Inner Areas as a political synthesis of intervention* – The 1968 earthquake represented a real founding moment of the «modern» Belìce Valley, both from a media and geo-spatial point of view. It had a dual role: that of making new things happen, such as the displacement and founding of new towns, and that of reinvigorating phenomena already present in the area, such as depopulation and the abandonment of economic activities (Petino *et alii*, 2022). Observing the territory and the landscape of the Belìce Valley leads to the observation of many facts and, among them, the slow process of de-territorialization as an effect of depopulation that has never completely stopped. However, even before the earthquake of 1968, «crisis» dynamics were already underway, increasingly originating in the absence of specific services and attractiveness in the employment sector and in the use and «spending» of recreational time. Moreover, the involvement in the two world wars caused a significant loss of population for the defence of national borders. The subsequent economic boom, or Italian economic miracle (1958-1963), continued the drain of population and investment towards the north of the country. The 1968 earthquake did not occur until later, but the depopulation trend was already well underway and most likely accelerated processes that almost no one had noticed (see fig. 2 and tab. 1) and that not even the

«return» or south-working processes (Di Matteo *et alii*, 2021) following the Covid-19 pandemic slowed down.

Tab. 1 – Socio-economic and structural dynamics of some municipalities affected by the earthquake.

Municipalities	NUTS 3*	E-1968 Int.	NSIA 2014	NSIA 2020	Pop. 2011	Pop. 2019	Var. Pop. %	Old-age index	Sup. sq. km.	Energy Comm.
Montevago	Agrigento	10	E - Peripheral	E - Peripheral	3.015	2.734	-9,32	217,3	32,9096	Yes
Santa Margherita di Belice	Agrigento	9	E - Peripheral	E - Peripheral	6.544	6.104	-6,72	179,6	67,2762	Yes
Camporeale	Palermo	8	E - Peripheral	E - Peripheral	3.448	3.029	-12,15	151,3	38,7212	Yes
Contessa Entellina	Palermo	8	E - Peripheral	E - Peripheral	1.865	1.536	-17,64	269,8	136,478	Yes
Gibellina	Trapani	10	D - Intermediate	D - Intermediate	4.264	3.836	-10,04	224,4	46,5745	Yes
Partanna	Trapani	8_9	C - Belt	D - Intermediate	10.854	10.021	-7,67	214,3	82,73	Yes
Poggioreale	Trapani	9	E - Peripheral	E - Peripheral	1.534	1.394	-9,13	242,3	37,4576	Yes
Salaparuta	Trapani	10	E - Peripheral	E - Peripheral	1.721	1.596	-7,26	181,4	41,416	Yes
Salemi	Trapani	8_9	D - Intermediate	D - Intermediate	10.871	10.114	-6,96	225,7	182,4237	Yes
Santa Ninfa	Trapani	9	C - Belt	D - Intermediate	5.095	4.842	-4,97	209,1	60,9445	No
Life	Trapani	8	D - Intermediate	D - Intermediate	2.139	1.819	-14,96	297,2	9,103	Yes

* *NUTS 3: Nomenclature of Territorial Units for Statistics; includes small regions with populations between 150,000 and 800,000, corresponding to former provinces in Sicily.*

Source: our processing of ISTAT and SNAI data.

In Italy, the phenomenon of depopulation creates critical issues in land management. To address this phenomenon, the National Strategy for Inner Areas (Barca, 2012) addresses the problems of rural areas, historically characterized by a poor supply of services, subject to a long and progressive abandonment in favor of urban areas, with high costs to society such as hydrogeological disruption, degradation and land consumption (Barca *et alii*, 2014).

The identification of inner areas starts with the concept of a «service supply hub» (Barca *et alii*, 2014), which is a municipality or an aggregate of neighboring municipalities with a larger supply of higher education, health services and a transportation network. This classification was followed by the mapping of about 8,000 Italian municipalities, returning a complex picture of the national territory in which 52 percent of the municipalities, 22 percent of the population and 60 percent of the country's surface area, fall in areas far from services. As a result, through a specific intervention strategy, 72 project areas

were identified in which local development interventions would be financed by all available EU funds from the negotiated programming of infrastructure interventions (FESR, FSE, FEASR, FEAMP). More than six years later and at the end of programming for the 2014-2020 period, the NSIA has been revised and the Italian territory has been remapped, while additional project areas have been identified.

In addition, Italy is one of the European countries with the highest level of seismic risk. The combination of hazard, level of vulnerability and exposure is a major issue for many municipalities, especially for those hinterlands that have already experienced adverse shocks in the past years, both in terms of the damage suffered and the uncertainty that the lived experience has left in terms of response and recovery capacity (Di Salvo *et alii*, 2019). For these reasons, the NSIA 2014-2020 was also applied in the context of the earthquake events in Central Italy, related to the earthquakes that occurred in 2016 and in 2017, and the Interministerial Committee for Economic Planning (Comitato Interministeriale per la Programmazione Economica - CIPE) resolved to recognise the «Alto Aterno - Gran Sasso - Laga» area as a new project area of the SNAI. The entire area had in fact been considered part of the seismic area crater as it was subject to significant infrastructural and social damage, which also justified its inclusion in the Strategy. The «Alto Aterno - Gran Sasso - Laga» thus joins the other four Abruzzo project areas selected through «ordinary» procedure. The seismic events that have shaken the central Apennines since August 24, 2016, affecting four regions and causing the destruction of numerous communities and resulting in the displacement of tens of thousands of people, represent one of the most significant socio-natural disasters in the recent history of Italy that very much remind us of the events of the numerous earthquakes of the Republican era, including Belìce. An emergency chaos, characterized by ambiguous institutional responses and urban landscapes reduced to ruins, developed from the series of earthquakes, leaving lasting marks on the affected areas. The «exit» trajectories of the displaced people from the area were influenced by their respective resources of social connections, economic capacities and cultural backgrounds, quickly turning into real depopulation. Meanwhile, the affected areas became scenes of conflict, where a battle was fought through ordinances, temporary structures, rentals and containers. It was a struggle for the survival of inner areas, fighting speculation, abandonment, and externally imposed economic revitalization strategies. The reconstruction strategy, thanks to the considerable leverage provided by public investment and to an integrated vision between physical reconstruction and sustainable economic development, objectively takes the form of «a policy among policies». However, it does not aim to replace other approaches with a «mega-programming» model, as the institutional and political preconditions for such a replacement are lacking (Rotondo *et alii*, 2021). On the contrary, it aims to practice all forms of dialogue and coordination to achieve common goals. Reconstruction implies a coherent and convergent reinterpretation of the development and socioeconomic revitalization policies already initiated before the earthquake in these areas.

The goal is to orient implementation processes toward a strategy aimed at the regeneration and enhancement of the entire earthquake-affected area, starting from critical issues and strengths already known before the 2016 earthquake. Therefore, reconstruction is most effective and synergistic with the objectives of SNAI when it plans interventions on infrastructure essential for repopulation, broadband, accessibility, and housing conditions necessary to make these spaces attractive to new generations. This includes preserving a privileged relationship with the landscape, avoiding additional land consumption. A key element will be an extensive replacement and reuse of buildings, including SAEs (Strutture Abitative Emergenziali, Emergency Housing Facilities), with a focus on features such as energy self-sufficiency, hence the hypothesis of integration with policies on energy communities, and the connection with a new generation agriculture, and with the LAG.

As mentioned above, inner areas, distant from the poles providing essential services and characterized by prolonged demographic and economic decline, represent a significant prototype of marginalized areas, just as the mountainous territories of the Apennines represent fragile areas repeatedly affected by natural disasters and exposed to earthquake phenomena. In the areas affected by the 2016 earthquake, there was a partial overlap between the two phenomena and the need to make the promoted policies to deal with them coherent and synergic became evident (Rotondo *et alii*, 2021). For these reasons, it would be interesting to verify a future application, starting from the 2021-2027 program agreement, also in other areas characterized by past seismic events, with the aim of realizing a possible socio-economic restart for those territories that have not been able, even after a long time, to return at least to the pre-earthquake phase (Arzeni, Storti, 2017).

4. *Concluding remarks*

The research is mainly based on the possible integration of different policies and strategies: environmental, energetic, economic and those of post-earthquake reconstruction. The method of investigation used, namely that of documental analysis in a geo-historical sense, was useful in highlighting the state and potential of the area under investigation in order to achieve the research objectives. In particular, in addition to the narration of the history and the effects of the earthquake, intervention tools were selected for the revitalisation of the Belìce Valley. These tools, such as the Local Action Group and energy communities, were chosen because, within their operating mechanisms, they include strategic and synergetic actions that would potentially interact well with the National Strategy for Inner Areas. The advantage that would derive from the coordination of these public policies could be in the super-additivity with regard to individual interventions but, above all, in the political capacity of the NSIA to access funding through a multi-sectoral and organic strategy in addressing the different problems of the area. While remaining, in some cases, in the realm of hypotheses, inaugurating a phase of self-listening and co-planning among the different souls of the area is still an indispensable

phase for any effective public policy. Indeed, in support of this, it is worth mentioning the survey promoted and conducted by Spi-Cgil (Sindacato dei Pensionati Italiani, Italian Union of Pensioners; Confederazione Generale Italiana del Lavoro, Italian General Confederation of Labour), in collaboration with the Giuseppe Di Vittorio Foundation, on some national peripheral and ultra-peripheral municipalities, as identified by the NSIA, with the aim, among others, of providing interpretative tools to define, measure and fight the phenomenon of energy poverty, investigate vulnerability and strengthen the role of social and territorial negotiation in the construction of a fairer ecological transition (Scotti, 2023; Rugiero *et alii*, 2022).

From these considerations emerges the need for a partnership table to write a broader area strategy that, on the one hand, goes beyond the economic exploitation of the area and, on the other hand, not only reduces household energy costs, but also stimulates the emergence of new socio-economic models characterised by circularity. The aim would be to ensure an overall view of the area and help transform territorial capital into collective assets. Indeed, the management of the best use of resources has always been an important issue that has seen big investments exert a perverse fascination towards local policies and beyond, leaving local communities with the problem of the inability to fight the usual practices of «expropriation by accumulation» (Harvey, 2004) with the production of energy and wealth that go beyond the place where they were generated, even when it comes to common goods. This is in accord with Ostrom's (1990) argument that communities, and not others, are best able to manage what is of the community or within its reach. In order for the local community of the Belìce Valley to best manage a new opportunity for reconstruction, the nascent energy communities, in coordination with European rural development policy, could better utilize the strong characterization derived from the primary sector, converging the different approaches of land management with the main objective that of retaining young people of working age and attracting others.

As more than fifty years have passed since the earthquake set in the Belìce Valley a zero point from which to restart (Mattia *et alii*, 2021), with unclear development directions and with much of the area characterized by the problems of marginal or marginalized territories, it is conceivable that the NSIA project area hypothesis could be a step forward in a strategic sense and help compensate for certain disadvantages. The continuation of the research will consist of the necessary insights into policy instruments, the monitoring of impacts, and the facilitation of a partnership table so that our proposal can be considered by local stakeholders.

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The Belìce Valley as a Territorial Laboratory: From Public Policy Experimentation to a Large-area Administration Strategy

The issue of the creation and management of territorial assets is relevant and increasingly considered as a means of compensation to territorial disparities and for this reason supported by appropriate policy intervention actions. Italy has already been the recipient of interventions aimed at territorial cohesion for a number of years, and in Sicily, too, numerous intervention tools can be found, such as local action groups or the more recent experimentation with energy communities; both of these tools are considered strategic because, in addition to representing a step forward in fighting marginality, they could help the most marginal territories overcome current geopolitical contingencies, such as the slow post-pandemic recovery and recent war conflicts affecting the energy and agricultural production sectors. Our research focused on examining a Sicilian hinterland that, shaped over time by natural events and human actions, could benefit from the experimentation of energy communities in rural areas. Here, the approach proposed is that of a systematisation of intervention policies in a broader and multi-sectoral framework, e.g. in accordance with existing and future rural development policies. In fact, the result of our analysis offers a new perspective in which it is possible to frame the Belìce Valley through the Strategy for Inner Areas to address choices related to the socio-economic survival of its communities and for which we suggest that it could apply as a Project Area, as happened in other parts of Italy, recovering a place-based and equally strategic field of intervention, namely that of post-earthquake reconstruction in Sicily despite the half-century that has passed since the earthquake.

La Valle del Belìce come laboratorio territoriale: dalla sperimentazione delle politiche pubbliche a una strategia di area vasta

Il tema della creazione e gestione del patrimonio territoriale è rilevante e sempre più considerato come un tramite di compensazione alle disparità e per questo motivo sostenuto da apposite azioni di intervento politico. L'Italia è già da alcuni anni destinataria di interventi finalizzati alla coesione territoriale e anche in Sicilia si possono riscontrare numerosi strumenti di intervento, come ad esempio i gruppi di azione locale o la più recente sperimentazione delle comunità energetiche; entrambi questi strumenti sono considerati strategici perché, oltre a rappresentare un passo in avanti nel contrasto alla marginalità, potrebbero aiutare i territori più marginali a superare le attuali contingenze geopolitiche, come la lenta ripartenza post-pandemica e i recenti conflitti bellici che influenzano i settori dell'energia e delle produzioni agricole. La nostra ricerca si è posta l'obiettivo di osservare un entroterra siciliano che, plasmato nel tempo da eventi naturali e azioni umane, potrebbe beneficiare della sperimentazione delle comunità energetiche nelle aree rurali. L'approccio qui proposto è quello di una sistematizzazione delle politiche di intervento in un quadro più ampio e multisettoriale, per esempio in accordo

con le già esistenti e le future politiche di sviluppo rurale. Infatti, il risultato della nostra analisi offre una nuova prospettiva in cui è possibile inquadrare la Valle del Belìce tramite la Strategia per le Aree Interne per affrontare scelte legate alla sopravvivenza socio-economica delle sue comunità e per la quale ipotizziamo che possa candidarsi come Area Progetto, come accaduto in altre parti d'Italia, recuperando un campo di intervento di tipo place-based e altrettanto strategico, cioè quello della ricostruzione post-terremoto in Sicilia nonostante il mezzo secolo trascorso dal terremoto.

La Vallée du Belìce comme laboratoire territorial : de l'expérimentation des politiques publiques à une stratégie administrative de vaste zone

La question de la création et de la gestion des patrimoines territoriaux est pertinente et de plus en plus considérée comme un moyen de compenser les disparités et, pour cette raison, soutenue par des actions politiques appropriées. L'Italie a déjà bénéficié d'interventions visant à la cohésion territoriale pendant un certain nombre d'années, et en Sicile aussi on peut trouver de nombreux instruments d'intervention, tels que les groupes d'action locale ou l'expérimentation plus récente des communautés énergétiques ; ces deux instruments sont considérés comme stratégiques parce que, en plus de représenter un pas en avant dans la lutte contre la marginalité, ils pourraient aider les territoires les plus marginaux à surmonter les contingences géopolitiques actuelles, telles que la lenteur de la reprise post-pandémique et les récents conflits de guerre affectant les secteurs de l'énergie et de la production agricole. Notre recherche s'est concentrée sur l'examen d'un arrière-pays sicilien qui, façonné au fil du temps par des événements naturels et des actions humaines, pourrait bénéficier de l'expérimentation de communautés énergétiques dans les zones rurales. L'approche proposée ici est celle d'une systématisation des politiques d'intervention dans un contexte plus large et multisectoriel, par exemple en accord avec les politiques de développement rural existantes et futures. En fait, le résultat de notre analyse offre une nouvelle perspective dans laquelle il est possible d'encadrer la vallée de Belìce par le biais de la stratégie pour les zones internes afin d'aborder les choix liés à la survie socio-économique de ses communautés et pour laquelle nous émettons l'hypothèse qu'elle pourrait postuler en tant que zone de projet, comme cela s'est produit dans d'autres parties de l'Italie, en récupérant un champ d'intervention basé sur le lieu et tout aussi stratégique, c'est-à-dire celui de la reconstruction post-séisme en Sicile malgré le demi-siècle qui s'est écoulé depuis le tremblement de terre.

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