

When home and work are not enough. The challenge of international migrants' agency in the Italian Alps¹

Andrea Membretti, University of Turin, DCPS

Fabio Lucchini, eCampus University

Monica Gilli, University of Turin, DCPS

Mia Scotti, CREA - Council for Agricultural Research and Economics

Abstract

Even when they have access to housing and employment, international migrants struggle to develop their own agency, i.e. the capacity to act in their own life contexts, exercising citizenship rights within substantive inclusion processes in the wider communities. The territorial context in fact, especially in rural and mountainous areas such as the Alpine ones analysed here, seems in many ways to represent a limit to the development of capacities and exercise of rights. Difficulties in accessing public space and public sphere, scarce social recognition, low status, housing isolation (as is the case of those who live in small mountain villages), professional ghettoisation: these are factors that, even in presence of an acceptable working and housing inclusion, make it difficult for international migrants to exercise their rights, to have their skills recognised, and, ultimately, to develop an agency genuinely linked to their capabilities.

In this article, with reference to the action-research activities carried out in 2020-22 by the Horizon2020 MATILDE project in the Italian Alpine areas of South Tyrol and the Metropolitan City of Turin, attention is focused on the policies that could favour the effective migrants' agency in mountain territories.

Keywords

Agency, action-research, migrants, Alps, housing, employment

¹ Although this article is the result of a common reflection among the authors, paragraph 1 (*International immigration in the places left behind: from resentment to socially inclusive local development*) is attributable to Andrea Membretti, paragraph 2 (*Migrants' agency in the inclusion process: the role of structural factors*) to Fabio Lucchini, paragraph 3 (*Migrants' inclusion in mountain regions: two cases in the Eastern and Western Alps*) to Mia Scotti, Andrea Membretti and Monica Gilli, paragraph 4 (*Migrants' inclusion as a multi-level strategy: the action-research*) to Monica Gilli and paragraph 5 (*Discussion and concluding remarks*) to Fabio Lucchini and Andrea Membretti.

Corresponding author: Andrea Membretti, University of Turin, DCPS, andrea.membretti@unipv.it

Authors:

Fabio Lucchini, eCampus University, fabio.lucchini@unicampus.it

Monica Gilli, University of Torino, DCPS, monica.gilli@unito.it

Mia Scotti, CREA - Council for Agricultural Research and Economics, scottimia1@gmail.com

1. International migration in the *places left behind*: from resentment to socially inclusive local development

Despite half of European land is classified as predominantly rural (and about 30% of it as mountainous) and the contribution of these territories to the EU wellbeing is relevant (in terms of agricultural production, forests, water reserves, cultural heritage, bio and social diversity, etc.), the last decades witnessed to many respects a reduction of their socio-political relevance at different scales. Therefore, these regions have long felt as being '*places left behind* or *places that don't matter*' (Rodriguez-Pose 2018), at the margins of economic and social policies, characterised by a strong focus on urban and metropolitan areas and often led by centralistic approaches: it is no coincidence that in these territories disaffection towards European institutions has been spreading, together with the rise of anti-elite populism and xenophobic movements (Deppisch, 2021; Kaya 2021; Scoones et al. 2022).

Nevertheless, recently, a new attention to the rural dimension and to the mountainous and remote places of Europe seems growing both at institutional level (e.g., with the launching of the *Long-term vision for the EU's rural areas* in 2021: https://ec.europa.eu/info/strategy/priorities-2019-2024/new-push-european-democracy/long-term-vision-rural-areas_en) and with respect to a new awareness shown by public opinion, especially the urban one, about the role and the potential of these relevant portion of the continent (e.g., considering their eco-systemic resources, local life-styles, post pandemic opportunities, climate change, etc.) (Dax & Copus 2022).

Migration and mobility studies seem to finally devote a new consideration to these neglected regions, as destination of migration flows, in particular of international migrants. Notwithstanding the prominence of urbanization as a global trend a growing attention is shown in literature to the migration and local development nexus outside urban areas (Membretti et al. 2017). In fact, recent studies about features and implications of migration to rural Europe highlight the development potential for rural and mountain areas (Galera et al. 2018; Membretti et al. 2018; Kordel & Membretti 2020) related to the movements of 'economic migrants' and the effects of dispersal policies targeting asylum seekers and refugees (Perlik & Membretti 2018).

Evidence from field research developed in the framework of the project MATILDE (*Migration impAct assessment To enhance Integration and Local Development in European rural and mountain regions*) further contributes to this literature by demonstrating that international migration plays a key role in demographic processes in rural and mountain regions experiencing demographic decline². For example, migrants' employment in these

² MATILDE is a 3-years Horizon2020 research project (2020-23), funded by the European Union, aiming at assessing the impact of international immigration on socio-economic wellbeing and territorial cohesion in European rural and mountainous regions. On the basis of previous investigations - carried out since 2015 by the international ForAlps network (www.foralps.eu) (Membretti et al. 2018; Perlik et al. 2019) - a new consortium of 25 academic partners and local actors (NGOs, associations, territorial administrations, etc.) has been

areas opens new opportunities for territorial revitalization and resilience: among them, answering to the increasing demand for services related to an ageing local population, filling the labour shortage in touristic and construction sectors, and the need of labour force expressed by food industry (Bianchi et al., 2021; Caputo et al. 2021)³. To do so MATILDE adopted a participatory action-research approach (Lewin 1946; Lucchini & Membretti 2016): this has translated into conducting research *with* rather than *on* the subjects of study, enabling a process of place-based co-production of knowledge between researchers and participants to change perceptions and practices and to empower the individuals involved⁴.

In this article we will focus on the Italian case, where quali-quantitative analysis of migration dynamics at territorial level and participatory activities with local communities were carried out in South Tyrol (Eastern Alps, at the border with Austria) and in the Metropolitan City of Turin⁵ (Western Alps, at the border with France).

On the quantitative side, the research activities provided first-hand socio-demographic and economic data relating to the contexts considered, useful for framing strengths and weaknesses of these rural/mountain areas as well as outlining their territorial performance, also in relation to other regions with similar characteristics. On the qualitative side, on the other hand, the research involved the direct collection of data in the territories considered, through individual interviews, focus groups, and with the use of various techniques typical of participatory action-research (e.g., social mapping, participatory workshops, etc.).

With reference to an innovative conceptual and methodological framework developed within the project, action-research conducted in the two case studies has promoted a change in perception about international migration, identifying spatially located and path-dependent factors, and examining how the peculiar traits of rural and mountain contexts interact with migrants' integration paths challenging their potential in terms of agency.

constituted to conduct research and participatory activities in 10 European countries, involving case studies at regional and local level.

³ MATILDE, with the aim of assessing the impacts of foreign newcomers on the development of marginalized regions, analyses their role in contributing to revitalise social and economic local milieu, in strict interaction with local actors and communities. At the same time, the project tackles the wide misperception in the public opinion of EU countries, and in particular in rural and remote regions, about the (over-estimated) figures and the (often biased) spatial distribution of international migrants in Europe and their actual contribution to the hosting societies and regional economies. MATILDE's basic assumption is that immigrants in these areas risk to be considered as an additional burden, or even a threat for local inhabitants, and so treated as a scapegoat. In absence of adequate governance and correct information - and when the needs of these regions are not reflected in the governance of migration and inclusive territorial development - the revenge of the places that don't matter (Rodriguez-Pose 2017) can take here the form of an authoritarian dynamic, rejecting diversity and offering electoral support for anti-elite and xenophobic parties (Schneider 2012; Barca 2019; Tenza-Peral et al. 2022).

⁴ Case studies in all 10 countries involved in the project (including rural and remote regions, from Scandinavia to Anatolia: www.matilde-migration.eu) were selected in order to guarantee representativity of spatial and historic characteristics in terms of migration patterns and governance, welfare regimes, socio-cultural and economic systems. Moreover, the selection represents the heterogeneity of rural and mountain areas of Europe in terms of urbanisation, remoteness, population density, geographical characteristics and specific migration-related structures (Kordel & Membretti 2020).

⁵ The Metropolitan City of Turin is the actual denomination of the former province of Turin, re-comprising the urban core and a wide rural and mountainous territory.

From the data and reflections presented, two crucial elements emerge in the Italian context:

- rural, mountainous and remote regions are a fundamental but often neglected resource for the whole country;
- if reconsidered by EU/national governance and political powers in innovative ways, and coupled with a different and more positive narrative not only focused on their status of “peripheries”, these territories may gain a novel role, as already witnessed during the Covid-19 pandemic;
- international migration and new peopling movements (including internal migration as the one of ‘new highlanders’ and ‘neo rural’ people) are among the main drivers for the resilience and future recovery of the ‘places left behind’; immigrants, if adequately empowered, can become crucial agents of local development, together with local inhabitants; their impact at socio-economic level needs to be assessed, together with the new challenges posed by this phenomenon, in order to advance concrete policies for their valorisation and effective inclusion.

If, therefore, the data collected through MATILDE at local level invite to rethink both the role of rural and mountain areas for the whole Europe and that of international migrants as a factor of socio-economic development, the question of these new inhabitants' agency remains open. Therefore, specific research on that seems necessary, also considering that it could contribute to informed regional policies able to valorise these vital resources, recognising citizenship rights and equal opportunities for all the inhabitants of the ‘places left behind’.

2. Migrants’ agency in the inclusion process: the role of structural factors

Projects adopting an action-research approach, such as MATILDE, are relevant both for the identification, recognition and exchange of good practices at local level and because they are based on a participative, collaborative and cyclical method (Bryman & Bell 2011): this facilitates empowering processes, supporting a good stakeholder involvement that enables projects' recipients to be part of the decision-making process, shaping in turn results and objectives⁶. Related to that, agency is regarded as the individual’s capacity to make effective choices, i.e. to transform those choices into desired actions and outcome (Bertelsen & Holland 2006: 10); thus, to make this possible, people need to be put in the condition to participate, to be agent in the decision-making process as their agency is instrumental to their empowerment (Alkire 2005).

On a theoretical level, many migration approaches reflect on the possibilities of choice and action of people who decide to move: if some approaches lean towards a more determinist

⁶ MATILDE project promotes a new narrative of the Third Country Nationals (TCNs) role in hosting society, economy and territories, focusing at the same time on the relevance of rural, mountainous and remote regions for the future of Europe (<https://matilde-migration.eu/blog/europe-has-a-regional-heart/>).

position and play scant regard to the decisions and behaviours of individual actors, many go in the other direction and focus on the agency of individuals, taking account of the role of broader social and territorial structures in shaping migration patterns, recognising the importance of a balance between structure and agency (Bakewell, 2010; Carling & Francis 2018; De Haas 2021). In this regard, the relationship between micro and macro levels of analysis, voluntarism and determinism, individuals and society (Giddens 1984; Archer 1995), is particularly important for the study of migration because the agency of migrants seems to continue playing a central role both in the development of social theory on migration and in shaping policy responses to people's movement.

Migrants interact with places of arrival in multiple ways (Kordel & Weidinger 2019). The configurations of local structures, places and people strongly influence the extent and quality of these interactions and can result in processes of inclusion or exclusion in terms of access to housing, education, work, health, social security or political participation (Ager & Strang 2008). Migrants experience inclusion and exclusion simultaneously and use experiences gained over time to acquire knowledge about places and their accessibility (Ivekovic 2022). Positive representations and practices associated with places foster the development of place-based belonging (Radford, 2017).

Moreover, previous migration experience and the settlement of migrants in particular places of destination may facilitate or even predict the arrival of new migrants (Bakewell et al. 2012): social capital embedded within networks of relatives, friends, or even merely co-nationals in the place of destination are likely to reduce the costs and risks of migration, and thereby increase the likelihood of setting in motion migration dynamics independent of their initial conditions (Garip 2008; Andrikopoulos & Duyvendak 2020). Research on the role of migrants' networks also highlighted the varied forms of migration assistance that can be requested and received, resulting in cumulative causation mechanisms (Bashi 2007). So, it is clear that, especially in rural and mountainous areas and in small communities – characterised, respectively, by the presence of 'empty spaces' of social rarefaction and increased opportunities for face-to-face contacts (Membretti & Lucchini, 2018) - successful integration depends on the ability/availability of migrants and local population to establish social bridges that facilitate the formers' access to work, housing, education and health system; in other words, allowing for fruitful interaction with local social structures (Ager & Strang 2008; Schech & Rainbird 2013).

The concept of agency defines also the relationship between individuals and the socio-spatial and structural contexts in which they act. Migrants' agency therefore has an important spatial dimension, which can be better understood by referring to the concept of enactment (Weick, 1969), i.e. the 'activation' by individuals of the context (and its opportunities) in which they find themselves. By integrating structural theory with theories of action, agency describes the individual's capacity or power to act in relation to the structures likely to influence her/him, considering action as embedded in contexts (Halfacree & Rivera 2012). In this sense,

development of migrants' agency can find valuable support from civil society actors, especially at local level, i.e. volunteers, religious institutions and organisations, welfare organisations and associations in general (Garkisch et al. 2017). However, if local populations have not experienced the 'other' in the past or if they see migrants as a threat to their jobs, 'rural idyll' and cultural traditions, or to their identity, it becomes complex to build social bridges (Connor 2007).

In the daily lives of migrants, agency then develops in various areas: for example, when they act to improve their housing conditions, when they engage in leisure activities in free time, when they participate in associations, in cultural and political life, or when they cultivate their education. From this point of view, direct and interpersonal social relations can be crucial for the development of agency, as migrants learn to interact with the structures present on the territory starting from concrete interactions with significant others. The feedback effects of migrants' agency are associated to processes of socio-cultural negotiation, social construction of everyday places (Woods 2018) and horizontal transfer of knowledge to other migrants. A process that, in certain circumstances, can be institutionalised by migrants' own organisations.

The analysis of migrants' multiple interactions with local social structures is therefore a valuable starting point for assessing the impacts of their settlement (Baglioni et al. 2021). An important reference here is Ager and Strang's mid-level theory (2008), where they discuss and operationalise the structure of integration and inclusion/exclusion, showing interdependencies between the spheres of employment, housing, education and health, as well as between social interactions and facilitators of spatial mobility, linguistic/cultural knowledge and security/protection. What Ager and Strang defined as key dimensions of integration are fundamental areas of interaction between migrants and social structures, institutions and territory, as in the case studies here considered.

3. Migrants' inclusion in mountain regions: two cases in the Eastern and Western Alps

MATILDE's action-research activities in Italy focused on two mountain areas: the Burgraviat District in South Tyrol (ST), in the Eastern Alps at the border with Austria, considering in particular the municipalities of Merano and Tesimo and the Susa Valley, within the Metropolitan City of Turin (MCT), in the Western Alps at the border with France, focusing on the municipality of Bussoleno (Gilli & Membretti 2022a).

In Merano and Tesimo, Caritas Bolzano⁷ – MATILDE's local partner - since 2015 runs two reception centres for asylum seekers - *Arnica* in Merano and *Noah* in Tesimo - hosting around

⁷ Founded in Italy after the Second Vatican Council, Caritas is a confessional body of the CEI (Italian Episcopal Conference, the permanent union of Catholic bishops in Italy) for charity promotion. Its aim is to promote human development, social justice and peace, with a prevailing pedagogical function, in order to increase Christian

90 people in total, including families with minors, single persons and young single mothers, and one counselling centre for immigrants - *Moca* in Merano - that gives advice to around 1,200 persons a year. The town of Merano was chosen to be investigated as an urban pole, situated at the core of a productive and touristic mountain territory, offering many job positions (from service to tourism, agriculture, and manufactory) and access to mobility services: all features that attract many immigrants, both temporary (seasonal workers) and long-term residents. The village of Tesimo, on the other side, was selected as representing the rural dimension of many small municipalities of ST: the ‘countryside world’, more traditional, with a strong local and linguistic identity (German speaking majority) and a reduced presence of multi-ethnic population with respect to Merano. As in most of the small rural contexts, there are fewer services of public interest, in any case accessible only by car, and there are also fewer professional opportunities than in the city of Merano. Hence, a lower percentage of international migrants is resident in this territory. The choice of Merano and Tesimo within the ST case study was therefore linked to the following criteria: 1) a (proportionally) relevant share of international migrants; 2) the presence of reception centres and/or housing facilities for migrants run by local NGOs and, generally, local actors available to collaborate in the project; 3) the possibility of a comparison between macro and micro levels, between a town and a mountain village (Gilli & Membretti 2022a).

	Tesimo	Merano	Burgraviat district
Tot. Population	1,989	41,381	105,431
Foreign residents	134	7,005	11,287
TCNs	83	5,102	7,217
% of TCNs on tot. population	4.2%	12.3%	6.8%
% of TCNs on tot. foreign residents	61.9%	72.9%	64%

Table 1 - *ST case study – Foreign residents and TCNs in Merano and Tesimo. Source: Gilli & Membretti 2022a*

Considering the presence of international migrants, the town of Merano shows a higher percentage of both foreign residents (partially represented by EU internal migrants, e.g. from Eastern European countries) and of TCNs (Third Country Nationals, that is non-EU citizens)

sense of solidarity in individuals, families and communities. For Caritas Bolzano programs see: <https://caritas.bz.it/it/index.html>.

compared to the mean value of Italy (8,7% of foreign residents in 2019, of which 71% TCNs: ISTAT 2019). On the other side, for the above-mentioned reasons, the percentages of foreign residents and TCNs in the small and mountain municipality of Tesimo are considerably lower (ISTAT 2020; Gilli & Membretti 2022a).

In MCT, the small-size municipality of Bussoleno (5,806 inhabitants) - located in Susa Valley and close to the city of Turin - was selected as case study.

Here - due to the local history of welcoming migrants dating back to the early 1990s - the opportunities to engage local actors and residents in action-research activities appeared even higher than in ST; the area is characterised by the presence of several migrant associations (promoted, at first, by the Albanian and Moroccan communities), an important reception centre for asylum seekers and refugees in Bussoleno, and, above all, in recent decades, a growing activism of local society with regard to the issue of migrants trying to cross French border without papers. Bussoleno was therefore selected because of: 1) a relevant and long-lasting share of foreign residents (TCNs and also Eastern European EU citizens), often commuting to Turin; 2) public spaces, often under-used or not recognised, that could be targeted by participatory activities; 3) diversified and strong interconnection between the small municipality and the regional capital of Turin (metro-montane dimension); 4) local actors particularly active in the field of migrants' inclusion (e.g. Italian Red Cross, catholic church, NGOs, etc) and local services of reception (Gilli & Membretti 2022a).

Considering the presence of TCNs, in the whole Susa Valley there are 4,348 foreign residents (6% of the total population in 2019), with a percentage quite similar to that of the Bugraviat district (6.8%) in ST. Foreign residents in Bussoleno represent 6.8% of population (2020), while TCNs (mainly Moroccans and Albanians) count 4,3% of total population (in Merano is 12.3%) and around 64% of all international migrants (ISTAT 2019).

	Bussoleno	Susa Valley
Tot. Population	5,806	71,288
Foreign residents	395 (6,8%)	4,348
TCNs	253 (4,3%)	m.d.
% TCNs on tot. population	4.3%	m.d.
% TCNs on tot. foreign residents	64%	m.d.

Table 2 - MCT case study – Foreign residents and TCNs in Susa Valley and Bussoleno. Source: Gilli & Membretti 2022a

The choice of such case studies was therefore based on the intention of investigating and comparing different contexts within the Italian Alps: mountainous areas of ST and MCT represent, in fact, two very different socio-economic models, showing diverse attractiveness

towards migrants and opportunities of inclusion (Gilli 2022). In ST there is a very thriving rural and pastoral economy alongside an equally flourishing tourist economy. The essential services and road infrastructure linking valleys to the urban centres are good (as is public transport), and this has allowed territorial rootedness alongside the growth of commuting. In the mountain valleys of MCT, on the other hand, the area's industrial past (Turin was for decades the most important centre in Italy for motor vehicles production) influences again its relationship with the metropolitan pole: the depopulation of the valleys following the industrialisation in XX century was not curbed through rooting policies, providing social and economic shock absorbers to those who remained. The development strategy paid little attention to the mountains, investing mainly on major road and motorway links but much less on infrastructures, local transport and essential services (Gilli 2022).

Such variability in economic and infrastructural endowments leads to a different attractiveness of the two territories for immigrants. In fact, international migrants who arrives in ST have the opportunity to permanently settle down thanks to the wide job offer (in agriculture and tourism, but also in personal services and craft industries), while they often suffer high cost of renting in housing market, event in small villages (among the highest in Italy), the seasonality of many jobs and the difficulties of learning in a tri-lingual territory (Medda & Membretti 2020; Gilli & Membretti 2022b). The attractiveness of mountain territories in MCT is lower. The majority of migrants consider their stay in the area as a transitory phase, also in view of trying to reach France: in these valleys there is a lack of adequate public transport services, despite its relatively closeness to the city of Turin and the need of commuting for many people; nevertheless, a housing problem similar to that in ST does not exist, as there is an abundance of vacant houses and empty second homes waiting to be re-used and often very accessible in terms of rental costs (Gilli 2022). However, the main problem remains here a limited labour demand: in fact, the depopulation of mountains led to a structural loss of agricultural and trade enterprises in the valleys and remaining entrepreneurial activities have a decidedly lower absorption capacity.

4. Migrants' inclusion as a multi-level strategy: the action-research

The diverse attractiveness towards migrants of the two territories - with respect to job offer in ST, and housing facilities in MCT, see previous § 3 - allowed to conduct action-research activities focused on two relevant factors of migrants' inclusion: labour and public spaces (Ager & Strand 2008).

Therefore, in ST (municipalities of Merano and Tesimo) the case study focused on migrants' labour integration. The main aim of the action-research was to engage local stakeholders (migrants associations, NGOs, local municipalities, local firms, etc.) in the identification of tools able to improve the current situation of migrants in relation to the labour market, both with regard to those seeking a first job and those who are already employed but want to improve their professional status. In MCT (municipality of Bussoleno) the focus was

on the impact of migrants on socio-spatial transformation of mountain villages, with a specific focus on public space. Therefore, the action-research was devoted to the recognition of local community's ways of living and perceiving itself within the considered territory, regarding the access to and the use of public spaces, and to the connections between mountain areas and the wider metropolitan region (Gilli & Membretti 2022b). The starting questions were as follows: what is the role of labor and public space in facilitating migrants' inclusion in rural/mountain territories? What is the link between spatial/economic inclusion and migrants' agency, if any? How participatory action-research can foster migrants' agency through their recognition as social agents by local people?

In relation to the ST case study and to issue of labour inclusion, research stressed out some territory' features that favour or constrain inclusion processes and agency of new inhabitants with particular reference to the labour market access. Among these, it is possible to include the presence of a dynamic economic system where job is available. ST overall unemployment rate was less than 3% in 2020 (the lowest in Italy) and job access opportunities are good, even for workers characterised by low language skills and qualification. According to the Labour Market Observatory Office of Merano (Province of Bolzano, South Tyrol), main employment sectors for newcomers in the area are tourism, agriculture and food industry, and almost 99% of the non-EU workers present in the area are low qualified ones (Medda-Windischer & Membretti 2020; Gilli & Membretti 2022b). By certain respects, this turns out to be a positive element as it allows migrants, including refugees, to easily access the labour market. At the same time, certainly it has negative implications as well. If local conditions encourage very rapid entry into the labour market, jobs are just as predominantly seasonal or under-qualified, and very rarely the local context offers to migrants the basis for starting more profitable entrepreneurial activities with a long-term perspective. Seasonal work is a relevant part of migrants' labour market: in agriculture, tourism and construction, labour demand is particularly characterised by high seasonality and medium-term contracts. This is one of the factors that can lead to an in-work poverty phenomenon, creating occupational segregation – the so-called 'ethnic specialisation'– in low-skilled jobs (Alba & Nee 1997; Membretti & Lucchini 2018; Diaz & Lee 2022; Tesfai 2020;).

In this context, the main aim of the action-research was to identify innovative approaches and test concrete tools to improve the current situation of migrants in relation to their integration in local labour market, considering at the same time their potential agency at territorial level.

An important and preliminary work of preparation of the field was conducted in order also to recruit participants for the activities in an atmosphere of trust and mutual cooperation. This was made possible by mediation and gatekeeping activities of a local partner - Caritas Bolzano - which acted as a link between researchers and migrants involved, thus allowing the identification of a group of people available to carry out the action-research activities. Migrants involved were all people with whom Caritas started an assistance program for a long

time to accompany them in search for work and housing. From this point of view, therefore, trust was already very high. Migrants directly involved were 15 (eleven women and four men), first-generation migrants coming from Africa (Mali, Nigeria, Morocco, Burkina Faso), Latin America (Colombia, Brazil), Asia (Iran, India) and Eastern Europe (Albania, Ukraine, Georgia). Some of them were employees in a local company in Bolzano and were involved through their internal recruitment and personnel department (Gilli & Membretti, 2022a).

By building a network of local actors (Caritas, local firms, trade unions, the Autonomous Province of Bolzano, other associations), the main tool adopted and tested during the action-research was the *Check of the Competences* (see Photo 1) (Addamo & Membretti 2019).).



Photo 1 - Check of Competences in Merano (ST). Source: Gilli & Membretti Archive

The *Check of competences* is a tool to foster migrants' employability and empowerment by detecting their soft skills. Its principal aim is to offer a complete picture of personal skills and abilities to increase opportunities to enter job market, or, if already employed, to improve professional status. Indeed, a better understanding of people abilities and aspirations can enhance their employability. The process can also detect training needs and fill knowledge gaps. In the end, the tool fosters people empowerment, increasing a person consciousness about her/his skills, strengths, weakness and opportunities.

The *Check of competences* consists of two steps: the first one aims at filling a document ('portfolio') through face-to-face dialogical sessions involving a migrant and an operator. The second session consists in verifying – together with the migrant - the correspondence of collected information, assuring the correspondence of detected profile with her/his feeling and thoughts. The portfolio includes information concerning personal data, integration project (if relevant), autonomy of choices, career expectations, perception of reality, understanding of the check of competences tool, education and work, hobbies and leisure, other relevant experiences, and all the skills detected. The tool works through testing cards with illustrations and examples that support migrants and operators to overcome challenges related to language misunderstanding.

The *Check of the Competences* represents an occasion of awareness and empowerment for migrants involved, as they can recognize their own potential, and re-construct their informal career, favouring self-confidence. The final output is therefore an enriched CV to be spent by migrants in seeking job, as a basis for proceeding in further training and education paths. This tool was tested with different categories of migrants, thanks to the involvement of several structures for migrants run by Caritas, while other testing was done in a local firm located in Bolzano (Markas), thanks to the direct engagement of its manager.

Two are the main action-research results: 1) a better understanding of the *Check of the Competences* potential, both in terms of its usefulness for supply (enterprises and employment agencies) and demand sides. The work also allowed the identification of two different targets of migrant workers who could benefit from the skills profile; another result was the refinement of the tool, highlighting some criticalities that can be overcome; 2) a greater diffusion of the *Check of the Competences*, not only in quantitative (more individuals using it) but also in qualitative terms (new fields of application), allowing a 'job placement chain' that communicates better, obtaining more results in less time (Gilli & Membretti 2022b).

The second case study, in Bussoleno (MCT), was devoted to the impact of migrants' settlement on socio-spatial transformation of mountain villages, with a focus on public space. As in ST, research activities in MCT evidenced some territorial features that favour or constrain inclusion processes and agency of new inhabitants, with particular reference to the access to public space: among these, it is possible to include good practices and positive welcoming experiences towards refugees and asylum seekers, as a vehicle for bringing newcomers closer to the community, fostering their active role. Interesting examples - as the ones collected in Membretti et al. 2017 and in Perlik et al. 2019, with regard mainly to the Alps - include: reception projects where local stakeholders - who know the area and specific problems/opportunities - are involved; projects involving newcomers and local populations in order to recognise an active role in defining activities and objectives; exchange and active learning experiences concerning key needs such as language proficiency; less formalized learning approach based on peer relationships and exchange of knowledge/skills; institutional initiatives aimed at supporting local processes of inclusion, by recognising the role of newcomers in sustaining population levels in sparsely populated areas. Such an approach obviously implies public policies that address immigration at local level as a structural phenomenon and not an emergency.

Within this framework, the main aim of the research developed in Bussoleno was to focus on the use of public spaces as a way of mutual recognition and shared sense of belonging with respect to migrants and local communities. A crucial role in facilitating the access to different local population groups was played by the Municipality of Bussoleno. For instance, members of the municipal administration contributed to the involvement of other local actors related to migrants: Third Sector stakeholders (associations, NGOs, groups of citizens) and actors of the

local education system (school for adults, language courses for foreigners, etc.). Therefore, action-research reached several groups of migrants (first and second generation) who were accompanied in reflecting on the use of the public spaces in their mountain village. International migrants directly involved were 30 (of whom one third female) and mainly Albanians and Moroccans, both first and second generation migrants. Concerning the 14 Albanians, half of them were first generation migrants and half second generation, living in Bussoleno or having maintained close links with the village; other migrants were either first and second generation Moroccans, or people coming from other African countries (Guinea, Somalia) or Bangladesh - most of them resident in Bussoleno, the others gravitating to Bussoleno as attending an adult school (Gilli & Membretti 2022b). It was also possible to include in the activities some transit migrants, who were temporarily in Bussoleno but with the intention of crossing the nearby border with France⁸.

The first step was to run different participatory activities with these groups of migrants together with members of the above-mentioned local associations and institutions. Among these activities (mobility mapping, social mapping, non-participant observations, public assemblies) a special role played the construction of social maps (see Photo 2 below).



Photo 2 – Social Mapping in Bussoleno (MCT). Source: Gilli & Membretti Archive

Social mapping⁹ proved to be useful, effective and appropriate for the scale of investigation where it was applied: a small community. The tool allowed to highlight territorial and spatial experiences creating a collective perspective on possible space enhancement

⁸ These ones (four males) were Central African youngsters, hosted by the Red Cross Centre in the village; some of them were involved in a professionalisation process within the Red Cross project LISA (acronym for work, inclusion, develop, independence), which targets fragile, homeless or asylum seekers.

⁹ Social mapping, in the case of Bussoleno action-research, consisted in adopting a participatory visual method - based on social walks and collective drawing of maps - with the aim of identifying collectively and showing the location of public places, relevant urban spaces/services, individual paths and trajectories related to the everyday life of immigrants, focusing on their spatial distribution, use and access to the village and its resources.

actions. Its results gave way to the architectural/self - construction workshop held in the area in 2021.

Social mapping gave the opportunity to respond to migrants' emerging needs: that of creating a new meeting ground close to the centre of the village, nearby the public market area, where different populations use to go. It was therefore decided to opt for the self-construction of a wooden structure (the so called 'MATILDE Big Bench'), adopting a participatory architecture method, with the collaboration of the experts of a cultural association (Camposaz) and the participation of students and migrants (see Photo 3 below)¹⁰.



Photo 3 – MATILDE Big Bench in Bussoleno (MCT). Source: Gilli & Membretti Archive

The main result of this activity was the physical construction of a new public space, led by the needs of migrants in relationship with locals. This experience allowed the development of some more general considerations on migrants' inclusion processes (Gilli & Membretti 2022b). First, engagement and even empowerment of migrants can take place through a conscious use and co-creation of public spaces. This can be interpreted as the habit of frequenting, in addition to one's private home, a set of spaces for collective and social use, without access constraints, both indoors (such as a public library) and outdoors (such as a garden, or a street). In public spaces, individuals carry out activities, establish ties, exchange information, while they are visible and recognised within the social fabric, thus posing the basis for exercising concrete rights of citizenship. Secondly, public spaces play an important role for social cohesion, especially in mountain and rural communities where there are fewer places for organised socialisation, both public, such as museums, and private, such as associations, places of cult, shopping centres. Migrants often do not realise that they live in a mountain village and do not frequent paths and outdoor spaces very much: the action-research conducted, with the realisation of a public outdoor space offering also a view on mountain panorama, therefore aimed to facilitate such awareness.

¹⁰ The self-construction workshop is an applied action-research tool used to reach several goals. It is a participative and interactive experience developed to let communities and groups work together on common issues for producing tangible change/results in local setting. The workshop itself consists in realising small wood installations in groups where participants live and work together in a peer relationship of exchange among participants that have architectural skills and participants who have not. Building activities follow a research step that involves local community stakeholders to discuss collectively the objectives to achieve. This collective decision process is a relevant part of the tool implementation. The tool is site-specific: why, where and what to build derives from local community needs and local territorial characteristics.

At the same time, some of the activities carried out created the conditions to empower migrants involved in local participatory processes, both in terms of socially and workable skills and in terms of a greater awareness of the mountain and rural areas in which they live and work.

Public spaces play an even more important role for mountain and rural migrants that have fewer economic resources and relational networks: those who do not have a sufficiently large and comfortable house need public spaces more than others. Finally, engagement of migrants translates into their rootedness and sense of belonging to the place. As shown by relevant studies conducted in different urban contexts (Amin & Thrift 2002; Blokland 2017) mere frequentation of public spaces is not enough for developing rootedness: what is needed are engagement activities as the design and transformation of places, which can be stimulated by an inclusive public debate, participatory planning and choral implementation. This visibility of migrants in a public place designed and shared by them together with locals can foster mutual recognition, thus laying the foundations for pathways to forms of negotiated citizenship. In this way, public space is not given as a top-down intervention but is self-produced by the community within a bottom-up approach: each migrant who participated in this process will be able to say to her/his children with pride "we made this and you will have to take care of it in the future", laying the foundations for the establishment of a common intergenerational heritage (Gilli & Membretti, 2022b).

5. Discussion and concluding remarks

Through the analysis of the above presented case studies, this article tried to reflect on the conditions and structural basis for the development of migrants' agency with respect to their socio-economic inclusion in rural and mountainous regions. As we discussed, besides and even before the implementation of targeted policies, agency may be enhanced through the creation of an enabling local environment: this is made possible by participatory processes and building of connections, bridges and social bonds, in strict interaction with local social structures.

Overall, in the two Alpine case studies here analysed, despite substantially good labour inclusion and acceptable access to the housing market, migrants' agency seems not particularly developed or stimulated by local context and actors. First of all, the analysis shows that, when there is labour inclusion - as in South Tyrol - housing can be problematic; in the Metropolitan City of Turin the situation is opposite: this produces a flaw in the integration process where migrants find themselves – through great efforts - with access to only one of the two essential resources – housing and work (Ager & Strang 2008) - in the absence or extreme precariousness of the other. So, they not only find themselves in stressful and difficult situations on a personal level, but also remain without some of the most important requirements for inclusion. Moreover, in both cases, migrants have limited public visibility,

restricted access to public space, low recognition by local communities, and their opportunities of acting as citizens is limited by a kind of labour and social ghettoisation.

In South Tyrol data show better job placement - even if unskilled – for migrants. However, at the same time, they live in suburbs or in small mountain villages and it further cause their marginalisation, in absence of concrete opportunities to create ties with other migrants' communities or with main urban areas. Similar dynamics are seen in the Metropolitan City of Turin, where labour integration appears definitely lower than in South Tyrol and precarious living conditions of people - that do not feel rooted in the territory - do not facilitate their agency.

From what MATILDE investigation shows, it is clear that, in addition to labour integration and access to the housing market - that should come together - other aspects are essential to foster the concrete unfolding of migrant agency in rural and mountainous areas. A key component is represented by being entitled of citizenship rights and by the opportunity to enact one's environment through the use of these rights in everyday life (Alsop et al. 2006).

Another relevant aspect of agency relates to the relationship between migrants and local institutions: it refers to the capacity of public administration to meet the special needs of the former and to promote their access to services on an equal and non-discriminatory basis. However - as shown in the Italian and other European MATILDE case studies - local administrations in rural and mountainous areas often lack adequate knowledge of migrants' needs and rights. Not to mention the lack of human and financial resources, in particular affecting small municipalities. Moreover, at a general level, it is confirmed from the collected empirical data that different kind of barriers (knowledge about legislation, language, etc.) can obstacle effective relations with institutions (Rottmann & Kaya 2020).

An additional and relevant aspect of migrants' inclusion and agency activation is related to their access to education and training, and the interaction with educational facilities and infrastructures which can offer them the opportunity to acquire skills useful for social interaction and future job search. As mentioned, migrants' skills are often not recognized by local labour market and education system: therefore, it would be important to support this aspect, as it emerged by the action-research on the *Check of Competences* conducted in South Tyrol, in order to enhance migrants' capabilities and exercise of rights. Linked to this aspect is the issue of spatial mobility, particularly felt in rural and mountainous areas and small villages. Assuming that local spaces can be experienced, at the same time, as places of conviviality and conflict or exclusion (Radford, 2017), mobility here refers to the ability to move from one's residential space to access employment, education and health, as well as to create and maintain social contacts and networks. Case studies above analysed show relevant lack of connection and difficult mobility for migrants in rural areas, that tend to favour their ghettoisation at spatial level and closure in small ethnic communities, or even individual isolation.

Trying to cope with some of the above-mentioned aspects of migrants' inclusion, the action-research activities conducted in ST and MCT have first and foremost helped to focus public attention - at regional and, to some extent, national level - on rural, remote and mountainous regions: these have emerged as territories to be enhanced, in terms of the socio-cultural and economic-environmental resources they can offer to the broader country systems in which they are located. This has fostered an awareness, at the level of local communities, of the potential of marginalised regions, contributing to a reversal of perspective with respect to the urban-centric development ideology that driven the marginalisation of these territories over time. The activities carried out in the field have thus contributed - by involving local actors - to the joint construction of a different public narrative on the development of marginalised regions: local specificities, the very condition of remoteness and 'social rarefaction' (Membretti, 2023) of these areas (seen as an attractive factor with respect to metropolitan overcrowding), and the presence of new inhabitants (international migrants first and foremost, but not only) are valued as factors capable of triggering territorial resilience.

In conclusion - recognising that the dimensions related to international migrants' inclusion are subject to change as a result of their impact on local social structures - findings related to the Italian case studies of MATILDE show that rural and mountain areas present ambivalent and critical conditions with respect to the possible development of migrants' agency: in fact, access to labour and housing, if not accompanied by concrete opportunities to interact in the public sphere, does not immediately translate into the enactment of newcomers as citizens.

The action-research conducted in South Tyrol and in the Metropolitan City of Turin highlights that - besides, and sometimes even before accessing to house and labor market or language and culture courses - there is a need for public recognition of migrants by local societies: in fact, an actor capable of social and political action is such if her/his agency is recognised by the community in which operates and with which interacts. Public visibility in meeting places (eventually, self-built with the contribution of the migrants themselves), the opportunity of living a territory (as the rural and mountain one) outside the domestic or commuting dimension, and the validation of individual skills that the formal evaluation systems do not consider nor the labour market valorises, appear as fundamental elements of the integration process: an integration not limited to 'finding a place' or a job in a given context, but rather aimed at supporting migrants' growth as persons and active citizens, fostering the development of their capabilities and life project within the hosting community.

References

- Addamo, R. C., Membretti A. (2019). *L'integrazione lavorativa dei migranti in Alto Adige/Sudtirolo e Friuli-Venezia Giulia. Buone pratiche e strumenti operativi*, EURAC Research, Bolzano: https://webassets.eurac.edu/31538/1669025017-2020_report-interreg-eumint-wp5.pdf
- Ager A., Strang A. (2008). Understanding Integration: A Conceptual Framework. *Journal of Refugee Studies*, 21(2): 166-191.
- Alba, R. and Nee V. (1997). "Rethinking Assimilation Theory for a New Era of Immigration." *International Migration Review* 31(4): 826-874.
- Alsop, R., Bertelsen, M. and Holland J. (2006). *Empowerment in Practice From Analysis to Implementation*. Washington, DC: World Bank.
- Andrikopoulos, A., & Duyvendak, J. W. (2020). Migration, mobility and the dynamics of kinship: New barriers, new assemblages. *Ethnography*, 21(3), 299-318.
- Alkire, S. (2005). Subjective quantitative studies of human agency, *Social Indicators Research*
- Alsop, R., Bertelsen, M. & Holland, J. (2006). *Empowerment in Practice From Analysis to Implementation* (Washington, DC: World Bank).
- Archer, M.S. (1995). *Realist Social Theory: The Morphogenetic Approach*. Cambridge: Cambridge University Press.
- Baglioni, S., Caputo, M. L., Laine, J., Membretti, A. (eds.) (2021). *The impact of social and economic policies on migrants in Europe*, MATILDE Deliverable 3.1 and 4.1, January 2021. DOI: 10.5281/zenodo.4483950
- Bakewell, O. (2010). Some reflections on structure and agency in migration theory. *Journal of ethnic and migration studies*, 36(10): 1689-1708.
- Bakewell, O., De Haas, H., Kubal, A. (2012). Migration systems, pioneer migrants and the role of agency. *Journal of critical realism*, 11(4), 413-437.
- Barca, F. (2019). "Place-based policy and politics", in *Renewal: a Journal of Social Democracy*; London Vol. 27, Iss. 1, (2019): 84-95.
- Bashi, V. F. (2007). *Survival of the Knitted: Immigrant Social Networks in a Stratified World*. Stanford: Stanford University Press.
- Bianchi, M., Caputo, M. L., Lo Cascio, M., Baglioni, S., (2021). 'A Comparative Analysis of the Migration Phenomenon: A Cross-country Qualitative Analysis of the 10 Country Reports on Migrants' Economic Impact in the MATILDE Regions. DOI: 10.5281/zenodo.5017818 (<https://matilde-migration.eu/wp-content/uploads/2021/08/d44-comparative-report-on-tcns-economic-impact-and-entrepreneurship.pdf>)
- Blokland T. (2017). *Community as Urban Practice*, Wiley. ISBN: 978-1-509-50482-4
- Bryman, A. & Bell, E. (2011). "Business Research Methods" 3rd edition, Oxford University Press.
- Caputo, M. L., Bianchi, M., Membretti A. and Baglioni, S. (eds.) (2021). *10 country reports on economic impacts*, MATILDE H2020 Project (<https://matilde-migration.eu/wp-content/uploads/2021/07/d43-10-country-reports-on-economic-impacts.pdf>)
- Carling, J., & Collins, F. (2018). Aspiration, desire and drivers of migration. *Journal of Ethnic and Migration Studies*, 44(6), 909-926.
- Connor I. (2007). *Refugees and expellees in post-war Germany*. Manchester University Press: Manchester.
- Dax, T., Copus, A. (2022). *European Rural Demographic Strategies: Foreshadowing Post-Lisbon Rural Development Policy?* *World* 2022, 3, 938-956. <https://doi.org/10.3390/world3040053>
- De Haas, H. (2021). A theory of migration: the aspirations-capabilities framework. *Comparative Migration Studies*, 9(1), 1-35.
- Deppisch, L. (2021). "Where people in the countryside feel left behind populism has a clear path" - an analysis of the popular media discourse on how infrastructure decay, fear of

- social decline, and right-wing ," Thuenen Working Papers 310729, Johann Heinrich von Thuenen-Institut (vTI), Federal Research Institute for Rural Areas, Forestry and Fisheries.
- Diaz C. and Lee J. (2022). "Segmented assimilation and mobility among men in the early 20th century", *Demographic Research*, Volume 48 - Article 5, 107–152.
- Galera, G., Giannetto, L., Noya, A. & Membretti, A. (2018). *Integration of Migrants, Refugees and Asylum Seekers in Remote Areas with Declining Populations*, OECD Local Economic and Employment Development (LEED) Working Papers, 2018/0, OECD Publishing, Paris.
- Garip, F. (2008). Social capital and migration: How do similar resources lead to divergent outcomes?. *Demography*, 45(3), 591-617.
- Garkisch, M., Heidingsfelder, J., & Beckmann, M. (2017). Third sector organizations and migration: A systematic literature review on the contribution of third sector organizations in view of flight, migration and refugee crises. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, 28, 1839-1880.
- Giddens A. (1984). *The Constitution of Society*. Cambridge: Polity Press.
- Gilli, M., Membretti, A. (2022a). MATILDE, 2021, 13 quantitative briefing on the case studies - Italy, Deliverable 5.2, (<https://matilde-migration.eu/wp-content/uploads/2022/01/D52-13-10-Briefings-on-Case-Studies.pdf>). DOI: 10.5281/zenodo.5526040.
- Gilli, M., Membretti, A. (2022b). *MATILDE project - Report on Action Research Results – Italy* (<https://matilde-migration.eu/reports/>) DOI: 10.5281/zenodo.6372113.
- Gilli, M. (2022). New mountain populations. Migrants and the attractiveness of Alpine territories. *Fuori Luogo. Rivista di Sociologia del Territorio, Turismo, Tecnologia*, 12(2), 97-113. <https://doi.org/10.6093/2723-9608/8929>
- Halfacree, K., Rivera, M. (2012). Moving to the Countryside...and Staying: Lives beyond Representations. *Sociologia Ruralis*, 52(1): 92-114.
- Ivekovic, R. (2022). *Migration, New Nationalisms and Populism: An Epistemological Perspective on the Closure of Rich Countries*. Taylor & Francis.
- Kaya, A. (2021), *Populism and Heritage in Europe. Lost in Diversity and Unity*, Taylor & Francis.
- Kordel, S., Weidinger, T. (2019). Onward (im)mobilities: conceptual reflections and empirical findings from lifestyle migration research and refugee studies. *Die Erde – Journal of the Geographical Society of Berlin*, 150(1): 1-16.
- Kordel, S., Membretti, A. (eds.) (2020). *Classification of MATILDE regions. Spatial specificities ant third country national distribution*, MATILDE H2020 Project (<https://matilde-migration.eu/reports/>)
- Lewin, K., (1946). "Action research and minority problems", in *Journal of Social Issues*, 2, 4, 34–46. <https://doi.org/10.1111/j.1540-4560.1946.tb02295.x>
- Lucchini, F., Membretti A. (2016). *Land of Fires. Evaluating a State Law to Restore the Narrative Power of Local Communities*, in *PARtecipazione e CONflitto*, n.9 (2), July 2016.
- Medda-Windischer, R., Membretti, A. (eds.) (2020). *Rapporto sulle migrazioni – Alto Adige; Migrationsbericht - Südtirol*, Eurac Research, Bolzano, Italia.
- Membretti A. (2023). Il richiamo della "remoteness". Ambivalenze e potenzialità dell'estrema lontananza nelle aree interne e montane. *Dialoghi Mediterranei*, 60 (3). <http://www.istitutoeuroarabo.it/DM/sommario-n-60/>.
- Membretti, A., Kofler, I. and Viazzo, P.P. (eds.) (2017). *Per forza o per scelta: L'immigrazione straniera nelle Alpi e negli Appennini*, Roma: Aracne.
- Perlik M., Galera G., Machold I. and Membretti A. (eds.) 2019, *Alpine Refugees. Immigration at the core of Europe*, Cambridge Scholar Publishing.
- Membretti, A., Lucchini, F. (2018). *Foreign immigration and housing issues in small alpine villages. Housing as a Pull Factor for New Highlanders*, in *Processes of Immigration in Rural Europe*, Kordel S. (ed.), Cambridge Scholar Publishing.

- Perlik, M., Membretti, A. (2018). "Migration by Necessity and by Force to Mountain Areas: An Opportunity for Social Innovation", in *Mountain Research and Development* 38(3):250-264.
- Radford, D. (2017). Space, Place and Identity: Intercultural Encounters, Affect and Belonging in Rural Australian Spaces. *Journal of Intercultural Studies*, 38(5): 495-513.
- Regional Observatory on Immigration and Asylum (2023). [Monitoraggio immigrazione straniera \(regione.lombardia.it\)](https://www.regione.lombardia.it/monitoraggio-immigrazione-straniera), last time visited on 12/01/2023
- Rodríguez-Pose, A. (2017). 'The revenge of the places that don't matter (and what to do about it)', *Cambridge Journal of Regions, Economy and Society*, 11 (1), pp. 189-209, Oxford: Oxford University Press.
- Rottmann, S. B. & Kaya, A. (2020). 'We can't integrate in Europe. We will pay a high price if we go there': culture, time and migration aspirations for Syrian refugees in Istanbul. *Journal of Refugee Studies*, April [Online] <https://doi.org/10.1093/jrs/feaa018>
- Schech, S. e Rainbird, S. (2013). Negotiating integration. Refugees and asylum seekers in Australia and the UK. In: Steiner N., Mason, R. e Hayes, A., eds., *Migration and Insecurity. Citizenship and Social Inclusion in a Transnational Era*. Routledge: London.
- Schneider, B. (2012). *Participatory action research, mental health service user research, and the hearing (our) voices projects*. *International Journal of Qualitative Methods*, 11, 152–165.
- Scoones I., Edelman M., Saturnino M. Borrás Jr., Forero L. D., Hall R., Wolford W., Ben White B. (Eds.) (2022). *Authoritarian Populism and the Rural World*, Routledge: London.
- Tenza-Peral, A., Pérez-Ibarra, I., Breceda, A., Martínez-Fernández, J., & Giménez, J. A. (2022). *Can local policy options reverse the decline process of small and marginalized rural areas influenced by global change?* *Environmental Science & Policy*, 127, 57–65.
- Tesfai R. (2020). Immigrants' occupational segregation in France: "brown-collar" jobs or a Sub-Saharan African disadvantage?, *Ethnic and Racial Studies*, 43:15, 2724-2745, DOI: 10.1080/01419870.2019.1686162.
- Woods, M. (2018). International Migration, Agency and Regional Development in Rural Europe. *Documents d'Anàlisi Geogràfica*, 62(3): 569-593.

Acknowledgements

MATILDE project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 870831.