LANDSCAPE NARRATION AND DIGITIZATION BETWEEN PRESERVATION AND REGENERATION IN FRAGILE AREAS

THE CASE OF THE ITALIAN WESTERN ALPS

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During the last decades, cultural heritage digitization processes have assumed a central role in documenting, communicating, and enhancing the cultural landscape. Beyond the development of catalogues, Cultural Heritage GIS, and web maps, administrations, associations, private companies, and spontaneous groups of citizens created innovative landscape narrations to promote their places. In the same direction, the Italian policy on peripheral areas, Strategia Nazionale per le Aree Interne (SNAI), recognize landscape as a latent common capital that, if properly managed, could play a relevant role in the reactivation and regeneration of marginal municipalities.

With a focus on the nine experimental areas identified by SNAI in the Western Alps, the study analyses the digitization processes and the landscape narrations available online. Moreover, the paper deepens the top-down and bottom-up approaches, the involvement of local stakeholders, the opportunities to attract external resources with the aim to learn the possible links between ICTs, tourism, and the regeneration of fragile landscapes.

THE FRAGILE LANDSCAPE OF THE ALPS

The Alps have been the scene of the history between Northern Europe and the Mediterranean territories. The position, the resources and even the protection they could offer have made the Alps a crossroads in which cultures, economies, and communities approached (Salsa, 2019; Del Planta & Detti, 2019; Mocarelli, 2017; Beattie, 2006). These relations had been shaping for centuries a rich landscape made of the tangible and intangible signs the human action has been fashioning on the natural environment. The Alps have been the providers of agricultural and material resources for low lands and urban areas that drove economic and social relationships. However, during the twentieth century, mountains had progressively lost their central role of providers. Industrialization and infrastructure development focused mainly on urban areas and valley floors which cause the marginalization of highlands and inner valleys (Tarpino, 2016). Once relevant, the economic and social connections between mountain and low lands gradually interrupted and triggered the progressive abandonment of historical activities. The lack of opportunities and the better living standards offered in urban areas pushed mountain populations to move towards the new economic centres with rates that, in many cases, are above 90% in 70 years (Del Planta & Detti, 2019).

Moreover, marginalization seems to impact on landscape physically. The gradual abandonment of the historical agricultural and forestal practices (i.e., forest management, the terraces and mountain pastures maintenance) had increased the hydrogeological hazard (Tarolli et al., 2019).

In this scenario, only a few alpine areas experienced different trends in migration mainly thanks to tourism. The appearance of leisure activities (i.e., ski, thermal and leisure resorts) seems to have mitigated, and in some cases even inverted, the negative population rates. Such activities created new economic and social opportunities for mountain areas and, at the same time, reshaped the local landscape. Howev-

er, the marginalization process is still visible, especially in the access to essential public services such as health, transport, and the education systems.

Moreover, the presence of tourism activities has brought to light new fragility aspects. The development of leisure and sport activities and facilities seems to impact on the local environmental, social, and economic capitals such as, overtourism, the lack of economic diversification —mainly directed to hospitality— and several environmental issues. (Chiodo & Salvatore, 2017).

As seen, the alpine landscapes show several fragility aspects that are beyond the territorial physical risks and vulnerabilities. In this direction, Chiffi and Curci propose the definition of 'fragility' from a holistic and uncertainty-related point of view that comprehends objects, people, and the economic, environmental and social systems (Chiffi & Curci, 2020). Furthermore, Infussi recognizes three possible declinations of fragility as: a 'constitutive feature'; an 'insurgent state', and; the 'interruption of an evolution process' (Infussi, 2020). According to these notions, marginalization and abandonment —and the consequent erosion of the local communities— appear the most recognizable aspects that make alpine landscapes fragile. Abandonment and the gradual deterioration of the local economic, social and cultural capitals have been a slow insurgent state that occurred in decades but seems today a constitutive feature of alpine areas. Concerning touristic destinations, the massive presence of tourists, facilities and resorts can also be recognized as a fragility aspect that impacts the areas physically and the social and cultural values of the landscape.

With the notion of 'landscape', academic literature and policies agree to the cultural and social values landscape can convey. Carl Sauer provided the first notion that combines the term landscape with a cultural meaning: "The cultural landscape is fashioned from a natural landscape by a culture group. Culture is the agent, the natural area is the medium, the cultural landscape is the result" (Sauer, 1925, p. 309). Similarly, Eugenio Turri highlights the central role of citizens

in the experience of landscape, their role of actors and, at the same time, spectators in the theatre of the landscape (Turri, 2006; Turri, 2008). Widgren also deepens the notion by recognizing the citizens' perception. The author suggests landscape as the complex combination of the human relationships among the social capital, the natural environment, and the people's perception (Widgren, 2004). From this perspective, the landscape also obtains a social value, the subjective and the community perception.

Concerning the national and international policies and documents, the definition of cultural landscape seems to assume different points of view which influence the approaches of the application of the enhancement actions. Unesco defines 'cultural landscape' those landscapes that present "a diversity of manifestations of the interaction between humankind and its natural environment" (Unesco, 2012, p. 88) but the preservation and enhancements processes are focused on landscapes that express "outstanding universal value and of their representativity in terms of a clearly defined geo-cultural region and also for their capacity to illustrate the essential and distinct cultural elements of such regions" (Unesco, 2012, p. 89). Similarly, the Italian *Codice dei Beni Culturali e del Paesaggio* –the national regulation for cultural heritage and landscape– defines landscape as a homogenous part of the territory, which features are the results of the nature, the human history, or from the reciprocal interrelationships [my translation from italian][1] (MiBACT, 2004, D.L. 24/2004 art. 131 c. 1); but, it appears to apply on 'outstanding' cultural landscape, beautiful panoramas considered as paintings and those points of views and belvederes, publically accessible, from which admire those beauties [my translation form Italian][2] (MiBACT, 2004, D.L. 24/2004 art. 136 c. 1d). The two approaches seem to discern between 'outstanding' cultural landscapes, which deserve protection as monuments, and 'non-outstanding' cultural landscape which appear in a secondary position (Sodano, 2017; Salerno, 2018).

A different vision is instead provided by the European Landscape Convention (ELC) (Council of Europe, 2000), which highlights the central role of citizens and the experience of landscape, and extend the application over the entire territory. In fact, the Convention states: "Landscape means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors" (Council of Europe, 2000, art. 1); and

> This Convention applies to the entire territory of the Parties and covers natural, rural, urban and peri-urban areas. It includes land, inland water and marine areas. It concerns landscapes that might be considered outstanding as well as everyday or degraded landscapes. (Council of Europe 2000, art. 2)

Hence, the document focuses on the citizens' perception; this principle allows to overcome the difference between the 'outstanding' and 'non-outstanding' landscapes. Moreover, ELC highlights the role citizens play in the management of the landscape. Point c. of article 1 suggests the 'landscape quality objective': "the meaning, for a specific landscape, the formulation by the competent public authorities of the aspirations of the public with regard to the landscape features of their surroundings" (Council of Europe, 2000, art. 1 c.).

According to the ELC principles appears the Italian *Carta Nazionale del Paesaggio* (MiBACT, 2018). The document suggests the same notion of landscape and applies its intents over the entire territory. Moreover, the document highlights landscape and its quality as a 'public asset', a common capital that can drive social empowerment and citizenship if adequately managed and enhanced[3]. From this perspective, landscape plays a protagonist role in the citizens' everyday life. The quality of the landscape becomes a relevant objective for citizens, which includes the preservation and the development of active enhancement processes with the direct involvement of citizens and the attraction of local and external resources (Bonfantini, 2016; Settis, 2013).

In conclusion, the two documents, especially the ELC, seem to avoid the adjective 'cultural' before the term 'landscape'. They recognize and highlight landscape as the indissoluble relation between the place, the tangible and intangible heritage, and the citizens' perception (Priore, 2005, 2009).

ICTS FOR LANDSCAPE, BEYOND DIGITIZATION

In the same direction, the Information and Communication Technologies (ICTs) and the digitization processes should become part of the cultural landscape enhancement and foster participation. Especially at the local level, landscape digitization and communication seem able to push innovation in digital, organizational, and social practices (Borowiecki & Navarrete, 2017; Nogué I Font, 2016). They could actively promote the landscape of marginal areas as a strategic and public asset which can improve the local social, cultural, and economic capitals.

During the last two decades, digitization and ICTs for landscape have been performed mainly in two ways, with top-down and bottom-up approaches depending on the level of the actors involved. Administrations at the international, national, and regional levels have worked mainly in a top-down manner. These stakeholders have developed cultural heritage GIS (CHGIS), web maps, and catalogues to collect and document their heritage.

At the European level, Europeana (www.europeana.org) proposes an interactive, semantic, and linked open database of the union's cultural heritage. Museums, archives, libraries, and universities can digitize their collections according to the Europeana Data Model (EDM) and allows users, especially experts, to reach information and perform a semantic search in the catalogue (Doerr et al., 2010).

At the national and regional level, administrations developed mainly CHGIS and web maps to document the tangible and intangible landscape features. For example, the project His-
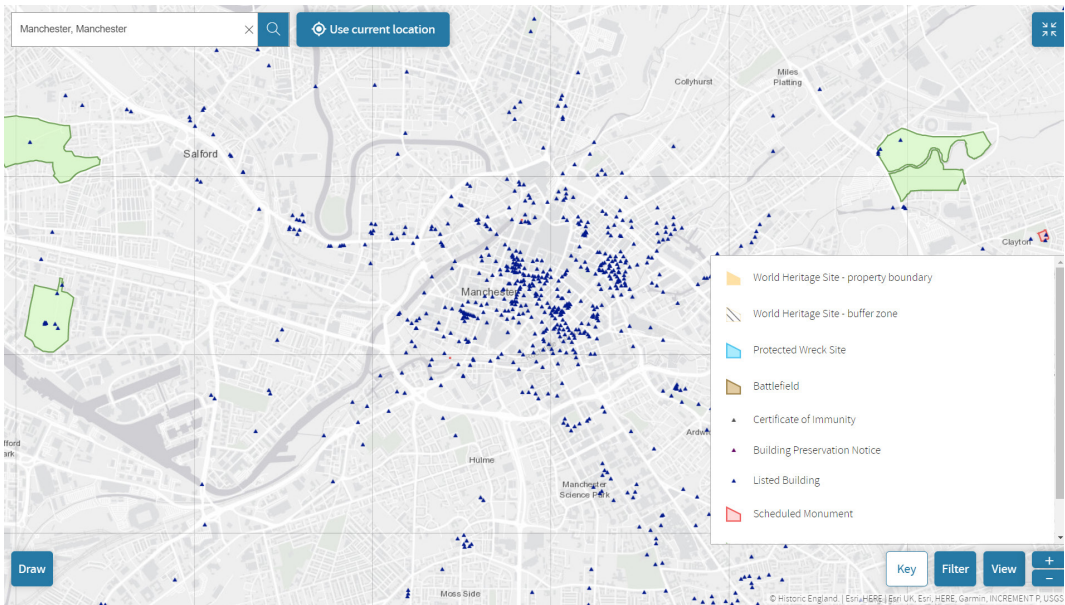
Fig. 1 The Cultural Heritage GIS of Historic England.

toric England (historicengland.org.uk) proposes a CHGIS with which users can explore the tangible and intangible heritage of the English landscape and gather detailed information. The map covers the national territory and involves local administrations and associations to increase the resolution of the census (Figure 1). Involving local entities gave, in fact, the opportunity to catalogue the local heritage that is difficult to discover from a national perspective (Marrison, 2016). In the same direction and with a touristic target, *Patrimoni Cultural de Catalunya* (patrimoni.gencat.cat) —developed by the *Generalitat de Catalunya*, the regional government of Catalonia, Spain— suggests a web map and interactive applications for the documentation of the regional heritage. Additionally, the platform gathers local cultural entities and associations and allows users to plan touristic routes and book events, activities, and museum tickets. The two examples are showing the opportunities to involve local stakeholders in the digitization processes, especially for the documentation. They offer to reach detailed information even on the peripheral cultural heritage, and, in the case of Catalonia, to connect the cultural heritage of marginal areas to wider tourism networks.

At the same time, local administrations, associations, private entities, and spontaneous groups of citizens have proposed different bottom-up approaches. Beyond digitizing local heritage, these stakeholders have organized projects and developed ICTs to enhance the local landscape with the direct involvement of citizens and institutions and attract external resources. Landscape observatories (Nogué I Font & Sala, 2008), Ecomuseums (Riva, 2017), and other entities have created digital and traditional initiatives in which the landscape enhancement assume the role of a strategic action that: on the one hand, preserve and document the local heritage from the citizens' perspective and, on the other, improve the social, cultural and even economic local capitals. These initiatives have developed interactive maps and applications to communicate and promote the local landscape and its features in innovative ways with the attraction of new visitors (Chiodo & Salvatore, 2017). Leisure, especially in its cultural and experiential forms, and digitization seem to be the foremost opportunity to improve the local capitals and cope with the abandonment of mountain areas.

STRATEGIA NAZIONALE PER LE AREE INTERNE,
AN OPPORTUNITY TO INNOVATE LANDSCAPE DIGITIZATION?

According to the notion of landscape as a 'public asset', and the involvement of tourism practices to reactivate marginal areas is *Strategia Nazionale per le Aree Interne*[4] (SNAI) (DPS, 2013), the Italian policy for facing the marginalization and depopulation of the remote areas. The document considers landscape, the natural and cultural heritage, as an active player that, if properly enhanced, can reactivate, or at least mitigate, the abandonment of marginal municipalities.

SNAI defines marginality, and marginal areas, on the accessibility to the public services recognized as 'essential': the entire high school offer; at least one level 1 DEA

AREE PILOTA SNAI
(fonte: ISTAT 2018, OpenStreetMap, Ag. per la coesione territoriale)
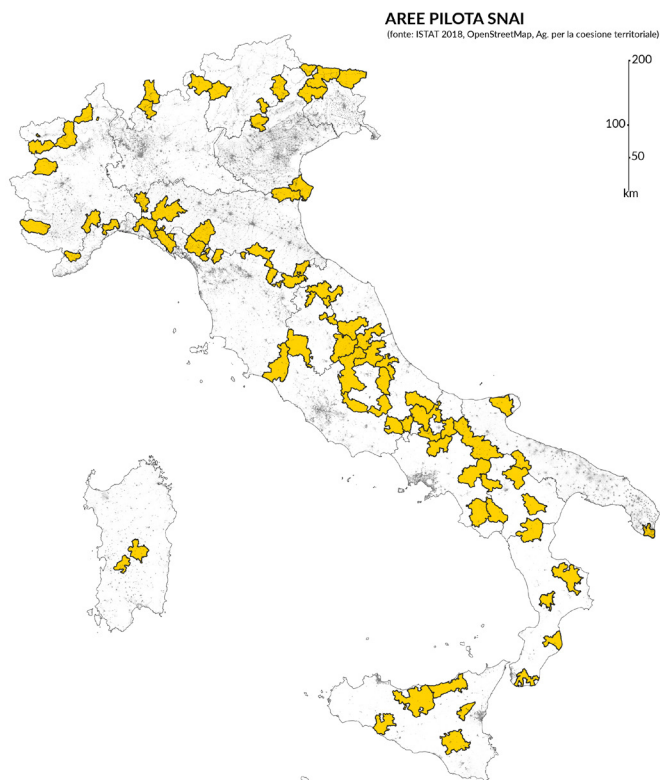
hospital, and; one 'Silver' railway station. Municipalities are then categorized according to the presence of these public services and the travel time citizens must spend to reach such facilities. With this parameter, the Italian municipalities are divided into: 'Service Provision Centers'; 'Belt Areas', with a travel time up to 20 minutes; 'Intermediate Areas', up to 40 minutes; 'Peripheral Areas', up to 75 minutes, and; 'Ultra-Peripheral Areas' with travel time above 75 minutes (Figure 2). For the Inner Areas (Intermediate, Peripheral, and Ultra-Peripheral Areas), the policy suggests two sets of actions. The first aims to create the preconditions for developing the local capitals today latent and even abandoned with the improvement and implementation of new services, especially in education,

digital and physical infrastructures, and health. The second instead focuses on development projects that aim at: the active protection of the territories and local communities; the valorization of the natural, cultural resources with sustainable tourism practices; the agri-food systems; the local renewable energy supply chain, and; the local know-how and handicrafts (DPS, 2013).

Additionally, the recent *Piano Nazionale di Ripresa e Resilienza* (PNRR) –the Italian program for the Next Generation EU funds– considers the landscape digitization and the sustainable tourism activities as a strategic action to regenerate marginal areas. The program funds in fact these practices with 0,5 billion € and 0,6 billion €, respectively, and aims to develop dedicated platforms and methodologies (Presidenza del Consiglio dei Ministri, 2021, p. 106).

In this scenario, ICTs and digitization assume a relevant role in the development processes thanks to innovative landscape storytelling that can promote and convey the value of the local heritage for citizens and potential visitors. Currently, many marginal municipalities, alone or associated, are working in this direction and academic literature is deepening the complexity of such practices (Macchi Janica & Palumbo 2019; Meini et al. 2017; Villa, 2017; Bonfantini, 2016). Local entities are creating web platforms and applications that drive the enhancement of the local tangible and intangible heritage mainly from a touristic perspective and with the direct involvement of local and external stakeholders (administrations, local businesses, agri-food producers, etc.). In the same direction, the pre-tourism experiences –the online tools for discovering the place before visiting, such as online booking services, AR/VR experiences, applications, web maps, and interactive tools– play a central role in the attraction of potential visitors and resources (Louw, 2017; Koo et al., 2016). Hence, the landscape representation seems crucial, especially for building a constructive link between cultural and experiential tourism practices and the reactivation of the marginal areas.

FRAGILE LANDSCAPE DIGITIZATION.
THE CASE OF INNER AREAS IN WESTERN ALPS

In 2018, *Agenzia per la Coesione Territoriale* —the govern-mental agency for the implementation of SNAI— identified 72 experimental areas, groups of municipalities on which started the application of the two sets of actions. Within this framework, the nine pilot areas in the Western Alps offer an interesting case study to understand the current situation of landscape storytelling and digitization, and the possible im-pacts on local communities. In particular, the study analyzes the pilot areas in four regions: Alta Valle Arroscia in Liguria; Valli Maira e Grana, Valli di Lanzo and Val d'Ossola in Pied-mont; Grand Paradis and Bassa Valle in Valle d'Aosta; Alto Lago di Como e Valli del Lario, Valchiavenna, and Alta Valtel-lina in Lombardy (Figure 2). The study analyses the pre-tour-ism experiences, how local citizens are involved, and how these representations of the landscape can link sustainable tourism practices and landscape digitization.

Concerning top-down initiatives, the four regional admin-istrations, *Regione Lombardia*, *Piemonte*, *Liguria*, and *Valle d'Aosta*, developed official web tourism platforms developed by the regional agencies for touristic promotion, *Azienda di Promozi-one Turistica* (APT). Landscape features are digitized and cat-egorized according to thematic routes and experiences. With these platforms, users can discover and gather information on landscape through thematic links, web maps, and docu-mentation pages of the most relevant tangible and intangible features. Moreover, the platforms work as collectors on which local businesses can promote their activities and allow visitors to book events, museums and parks, and reserve the stay.

A further approach that seems a mix of top-down and bottom-up approaches is the one proposed by the Touris-tic Consortiums, *Consorzi Turistici* (CT), which associate local administrations, businesses, and associations to develop tourist activities and to promote landscape actively and commonly. In the nine case studies, there are nine CTs that

Fig. 3 The Percorsi Occitani web platform www.vallemaira.org.
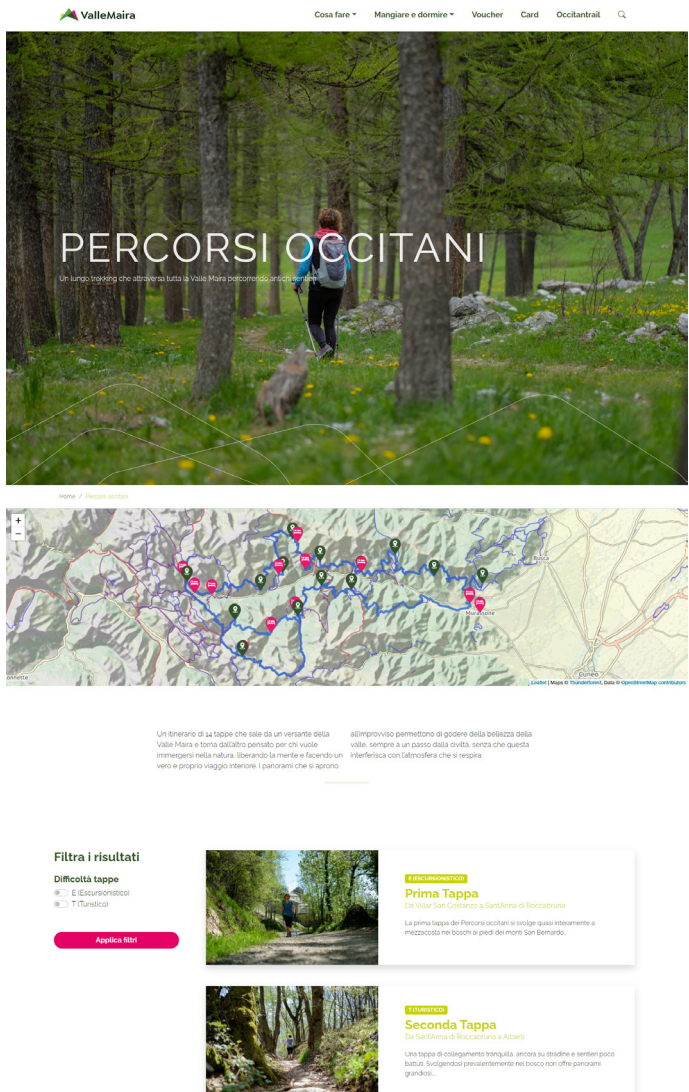
mainly gather small municipalities and local stakeholders. They propose web platforms with interactive applications to discover the local heritage and, in some cases, allows users to book services, visits, restaurants and stays. Another common feature is the development of thematic routes. CTs web platforms recommend thematic hiking and leisure itineraries that combine the natural environment, sports

Fig. 4 Percorsi Occitani available in Google Street View.

activities and the tangible and intangible heritage (i.e., the historical cattle paths, religious and pilgrimage paths, the fortification remains of World War I, the agri-food specialities, gastronomic itineraries, etc.). Moreover, the platforms seem to directly connect local activities and potential visitors by promoting events, local products, innovative services for tourists, and local guides.

Concerning the pre-tourism experiences and digitization, the websites offer innovative landscape storytelling organized in thematic categories allowing users to learn the available experiences and plan the visit. The digitization process includes narrations of the local intangible heritage such as traditions, folklore, historical businesses activities, and even local dishes recipes. The storytelling of the landscape is accompanied by video documentaries, interviews with local citizens, artisans, and farmers. CTs developed interactive maps, applications, and dedicated web pages to show the routes' characteristics, represent the tangible and intangible features of the landscape, and guide tourists during the visit. Furthermore, a common pre-tourism experience is the opportunity to explore live webcams that show the relevant touristic places of the area (i.e., mountain top, villages, ski resorts, and natural panoramas).
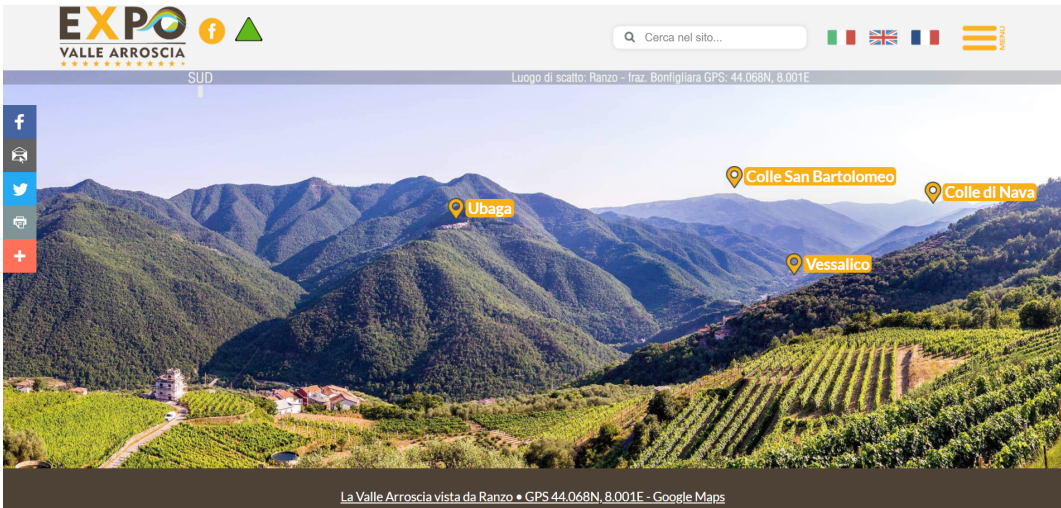
Fig. 5 The panoramic view in the Expo Valle Arroscia website.

An innovative digitization process is proposed by *Consorzio Turistico Valle Maira* (www.vallemaira.org), which involved several local associations and activities in promoting the Occitan culture of the valley. In 2019, one of these associations *Percorsi Occitani*, Occitan Paths, suggests a net of hiking trails to connect the tangible and intangible heritage of the Occitan culture (i.e., traditions, handicrafts, historic trails, and agricultural specialities and recipes). Several volunteers digitized the entire trails net (about 270 km) with 360° cameras in collaboration with Google to offer virtual reality tours (Giordano, 2020). Users can explore the trails and the stops on Google Maps through a virtual walk in StreetView (Figures 3, 4). A similar approach is provided by the CT of Valle Arroscia, *Expo Valle Arroscia* (www.expovallearroscia.it), which suggests 360° views of the area to learn the landscape and the possible locations to visit (Figure 5).

The bottom-up approach is mainly proposed within the study areas by ecomuseums and local associations devoted to cultural promotion. These initiatives developed several digitization projects to build landscape storytelling from the citizens' perspective. In particular, ecomuseums aim to enhance a specific place or a landscape feature with the direct involvement of locals. The main goal is to develop communi-

tarian collections where the landscape –the local natural, and tangible and intangible heritage– is the museum to discover through thematic routes, educational activities, and events. Today, these initiatives are recognized by the regional administrations which promote the digitization of ethnographic and historical features in the regional databases. Moreover, ecomuseums are part of national and international networks for sharing practices and promote the link between heritage, landscape and social promotion (Riva, 2017; Davis, 1999).

In the nine areas, the analysis has found eight ecomuseums that are already working not only to improve the local identity but also in a touristic promotion perspective. The landscape storytelling developed in collaboration with citizens and other local stakeholders (identifying routes, historical places, traditions, and events) is promoted as touristic activities for visitors looking for genuine experiences and a direct contact with the local heritage. In the same direction, landscape digitization is performed in two complementary ways: to preserve memories of the local history today at risk and propose pre-tourism experiences to possible visitors. Ecomuseums developed thematic catalogues and web maps to enhance and communicate the landscape with which users, visitors and citizens, can learn the local heritage.

The *Ecomuseo della Valvarrone* in the Alto Lago di Como e Valli del Lario area (www.ecomuseodellavalvarrone.it) developed a participatory mapping and storytelling of the local heritage, and proposes thematic hiking routes for visitors with which experience the landscape of the valley. In particular, visitors and locals can discover the World War I fortification remains and the historical stone mines through physical and online maps. A further example is *Ecomuseo dell'Alta Valle Maira,* which aims to enhance the historical agricultural specialities and the traditional craft of the anchovy traders. The ecomuseum is part of the network *Ecomusei del Gusto* (www.ecomuseidelgusto.it) that gathers four ecomuseums in southern Piedmont Alps devoted to the enhancement of the traditional agricultural products. The initiative proposes tourist packages to discover the agricultural specialities and connect local producers with visitors and other

Fig. 6 The mobile application of Ecomuseo Walser.
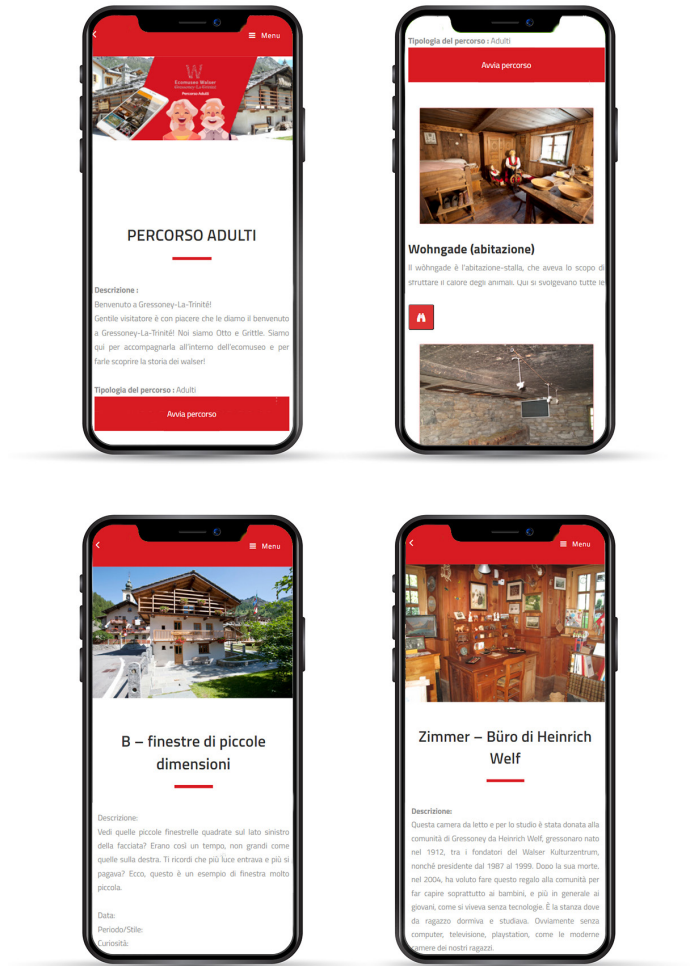
external actors. In the Bassa Valle d'Aosta area, *Ecomuseo Walser* (www.ecomuseowalser.com/) promotes the Walser tangible and intangible heritage of the valley with learning hiking routes and educational activities in collaboration with the local CT and the *Mont Mars* natural reserve. In partnership with the *Università della Valle d'Aosta* and an independent developer, the ecomuseum created a free mobile application to guide visitors during the experience and put them in contact with local businesses (i.e., restaurants, hotels, and producers) (Figure 6).

A further bottom-up approach found during the analysis is the spontaneous initiatives developed in the last years on social networks that gather people in participatory storytelling. Besides the official pages of the APTs, CTs, ecomuseums and associations, these spontaneous initiatives offer to experience landscape from locals' and visitors' the point of view and learn the history and the hidden landmarks of an area. Within the large number of these initiatives, the group *Val d'Ossola il Giardino delle Alpi* (www.facebook.com/groups/OSSOLA.GIARDINO.ALPI) is an interesting example. The Facebook group gathers more than 20.000 users who can post landscape narrations, images, and videos and promote the local traditions and products. In the same direction, the group *Valli del Gran Paradiso* (www.facebook.com/groups/449788035889792) offers users to share their experiences and promote their activities. With these 'Facebook Groups' involved, external users can share their experiences, news, and events, report negative and positive facts and interact with each other. The opportunity to interact and discuss the landscape could represent the starting point for creating active online and 'offline' communities devoted to enhancing the fragile landscape of marginal areas.

DISCUSSION

As seen, landscape digitization and storytelling has been performed with different approaches, bottom-up and top-down, and with the involvement of a large variety of stakeholders. Yet, the cases show some common aspects, mainly in the objectives and in the digitization processes. APTs, CTs, ecomuseums, associations, and spontaneous groups seem to recognize the holistic definition of landscape as the combination of natural, cultural and social capitals. In the same direction, the value of landscape as a 'public asset' that should be enhanced by and for citizens appears clear. The activities, the experiences and the landscape storytelling proposed by these entities mainly combine the natural and the cultural features of the places, and

push the involvement of the local and external stakeholders, including citizens. The aim of such activities appears also headed towards a participatory promotion of sustainable tourism practices and to drive positive impacts and innovations on the local economy, society, and environment.

In the same direction, ICTs and digitization –and the consequent pre-tourism experience– appear directed towards innovative representations of the landscape that is pushing the experimentation with digital tools. Besides defining routes and content production, the initiatives developed complex applications to build storytelling that can connect the locals' perception of landscape with users and convey the values cultural and natural heritage represent for them. The web maps, interactive catalogues, mobile applications, virtual reality experiences, and social groups propose a collective and participatory narration of the place that aims at the documentation and preservation of the local heritage and at the common enhancement through tourism.

The involvement of digital tools shows a further relevant aspect that these initiatives shares, especially in the CTs and the bottom-up approaches. The development of the tourist offers –and similarly the creations of web platforms and applications– requires skills, capitals, and funds that a single stakeholder can difficulty afford. This need seemed to push the creation of the consortiums and other typology of aggregations to gather and attract more resources. Administrations, associations, private companies, and citizens joined to improve the local capitals and enhance their everyday landscape.

Concerning the different approaches, the scale of the initiatives seems to impact landscape digitization. CTs, ecomuseums and other spontaneous bottom-up initiatives suggest landscape storytelling nearer to the citizens' perspective. At the same time, APTs seems to limit their action as collectors and promoters of activities. As seen, the involvement of local stakeholders allows more capillary landscape digitization and narration that communicate the value of the local history, traditions, and places. The pre-tourism experiences appear ad-

dressed in the same direction and to drive cultural and natural tourism practices and to tourists that look for genuine experiences. However, an active collaboration between bottom-up initiatives and administrations appears necessary to gather more resources and facilitate dialogue among stakeholders.

In this scenario, participatory digitization and the development of landscape storytelling play a relevant role in building a constructive link between tourism and local social, economic, and cultural capitals. Especially at the local level, this process seems to drive a reactivation of fragile landscape and push innovation in digitization and governance and social fields (i.e., new economies, businesses, organization form.).

CONCLUSIONS

As seen, the different approaches, from the international and regional catalogues and CHGIS to the spontaneous groups on the social networks, contribute together to preserve and enhance the landscape. CHGIS and other official catalogues suggest advanced tools for experts and scholars which can gather detailed information on the cultural heritage, but, at the same time, the active collaboration of locals seems limited. Similarly, APTs appear limited in the involvement of local actors and then in the representation of the landscape. Bottom-up approaches CTs, ecomuseums and other spontaneous groups) offer a more direct connection between actors and visitors and local stakeholders. In these cases, the landscape storytelling appears more genuine and able to connect with local capitals and promote sustainable tourism practices. The approaches appear complementary and offer different ways to digitize and experience cultural landscape (Salerno, 2019). Moreover, the increase in visitors in marginal areas during the last years, which boosts during the Covid-19 pandemic (Gössling et al. 2020), may offer to experiment with innovative landscape storytelling, pre-tourism experiences and tourism initiatives.

In conclusion, landscape digitization appears able to reactivate latent capitals, attract external economic, skills, and social resources, and preserve fragile areas' tangible and intangible heritage (Borowiecki & Navarrete 2017). However, the digitization processes appear to have two main weaknesses. The first issue concerns the dispersion of data which are today divided into many catalogues and projects. The data production should follow standard guidelines and ontologies to build open and semantic databases (i.e., Europeana and Wikidata). This process may facilitate data collection, allows a more straightforward implementation in third-party applications, and help experts and scholars analyse and study. The second concerns the aim of the landscape storytelling, which seems mainly addressed to tourism practices and towards a rural and traditional image of the mountain. Different narrations focused on innovation may suggest new perspectives for alpine areas, and show new opportunities for the local economic, social and cultural capitals.

NOTES

1 "per paesaggio si intende una parte omogenea di territorio i cui caratteri derivano dalla natura, dalla storia umana o dalle reciproche interrelazioni" (MiBACT, 2004, D.L. 24/2004 art. 131 c. 1).
2 "le bellezze panoramiche considerate come quadri e così pure quei punti di vista o di belvedere, accessibili al pubblico, dai quali si goda lo spettacolo di quelle bellezze" (MiBACT, 2004, D.L. 24/2004 art. 136 c. 1d).
3 "Assumere la qualità del paesaggio come scenario strategico per lo sviluppo del Paese e promuovere la riqualificazione del paesaggio come strumento per il contrasto al degrado sociale e alla illegalità" (MiBACT, 2018, p. 13).
4 *Strategia Nazionale per le Aree Interne*, National Strategy for Internal Areas is the Italian policy for facing depopulation and socio-economic depression in remote areas.

REFERENCES

Beattie, A. (2006). *The Alps. A Cultural History*. London, UK: Oxford University Press.
Bonfantini, B. (ed.) (2016). *Attivare risorse latenti. Metodi sperimentali per l'analisi, la mappatura e la gestione informativa integrata delle trasformazioni di territori e manufatti del patrimonio culturale diffuso*. Milan, IT: Planum Publisher.

Borowiecki, K. J., & Navarrete, T. (2017). *Digitization of heritage collections as indicator of innovation, in Economics of Innovation and New Technology*, 26(3), pp. 227-246. DOI: 10.1080/10438599.2016.1164488

Castiglioni, B., & De Marchi, M. (2009). *Di chi è il Paesaggio? La partecipazione degli attori nell'individuazione, valutazione e pianificazione*. Padua, IT: Coop. Libraria Editrice Università di Padova.

Chiffi, D., & Curci, F. (2020). Fragility: Concept and Related Notions, in *Territorio* 91, pp. 45-59, Milan, IT: Franco Angeli.

Chiodo, E., & Salvatore, R. (2017). *Non più e non ancora: Le aree fragili tra conservazione ambientale, cambiamento sociale e sviluppo turistico*. Milan, IT: Franco Angeli.

Council of Europe, (2000). *European Landscape Convention*. Retrieved August 2021, from https://rm.coe.int/CoERMPublicCommonSearchServices/DisplayDCTMContent?documentId=09000016807b6bc7

Davis, P. (1999). *Ecomuseums: a Sense of Place*. Leichester, UK: Leicester University Press.

Del Planta, L., & Detti, T. (2019). Lo spopolamento nella storia d'Italia, 1871-2011, in Macchi Janica, G., & Palumbo, A. (eds.) *Territori spezzati spopolamento e abbandono nelle aree interne dell'Italia contemporanea*, pp. 15-28. Rome, IT: CISGE – Centro Italiano per gli Studi Storico-Geografici.

Dodds, R., & Butler, R. (2019), The phenomena of overtourism: a review, in *International Journal of Tourism Cities* 5(4), pp. 519-528. DOI: 10.1108/IJTC-06-2019-0090

Doerr, M., Gradmann, S., Hennicke, S., Isaac, A., Meghini, C., & Van de Sompel, H. (2010). The Europeana Data Model (EDM). Object Representations, Context and Semantics, in *World Library and Information Congress: 76th IFLA general conference and assembly, 10-15 August 2010, Gothenburg, Sweden*. Vol. 10, pp. 15-28.

Giordano, C. (2020). Oltre 200 chilometri di sentieri della Valle Maira si possono ora "percorrere" anche con Google Maps, in *La Stampa* 28/05/2020. Retrieved August 2021, from https://www.lastampa.it/cuneo/2020/05/28/news/oltre-200-chilometri-di-sentieri-della-valle-maira-si-possono-ora-percorrere-anche-con-google-maps-1.38901193

Gössling, S., Scott, D., & Hall, C. M. (2020). Pandemics, tourism and global change: a rapid assessment of COVID-19, in *Journal of Sustainable Tourism*, 29(1), 1-20. DOI: 10.1080/09669582.2020.1758708

Infussi, F. (2020). Fragilità Primer, in: *Territorio* (91), pp. 60-64.

Koo, C., Chung, N., Kim, D.J., & Hlee, S. (2016). The impact of destination websites and cultural exposure: a comparison study of experienced and inexperienced travelers, in *International Journal of Tourism Cities*, 2(1), 1-16. DOI: 10.1108/IJTC-04-2015-0009

Louw, C. (2017). Good, Better, Best Practise – A Comparative Analysis of Official Destination Websites, in *African Journal of Hospitality, Tourism and Leisure*, 6(3).

Macchi Janica, G., & Palumbo, A. (eds.) (2019). *Territori spezzati spopolamento e abbandono nelle aree interne dell'Italia contemporanea*. Rome, IT: CISGE – Centro Italiano per gli Studi Storico-Geografici.

Marrison, H. (2016). An insight into Historic England's approach to

community-led conservation, in Chitty, G. (ed.) *Heritage, Conservation and Communities: Engagement, participation and capacity building*, pp. 92-103. London, UK: Routledge. DOI: 10.4324/9781315586663

Meini, M., Di Felice, G. & Nocera, R. (2017). Mappare le risorse delle aree interne: potenzialità e criticità per la fruizione turistica, in *Bollettino della Associazione Italiana di Cartografia* (161), pp. 4-21.

Ministero per i beni e le attività culturali e per il turismo (MiBACT), (2004). *Codice dei beni culturali e del paesaggio. Decreto Legislativo 22 gennaio 2004.* Retrieved August 2021, from https://www.beniculturali.it/mibac/multimedia/MiBAC/documents/1226395624032_Codice2004.pdf

Ministero per i beni e le attività culturali e per il turismo (MiBACT), (2018). *Carta Nazionale del Paesaggio. Elementi per una strategia per il paesaggio italiano.* Rome, IT: Gangemi Editore.

Mocarelli, L. (2017). L'economia della montagna, in *L'uomo al centro della storia. Studi in onore di Luigi Trezzi*, pp. 79-91. Milan, IT: Franco Angeli.

Nogué i Font, J., & Sala P. (2008). El paisaje en la ordenación del territorio: Los catálogos de paisaje de Cataluña, in *Cuadernos geográficos de la Universidad de Granada*, 43(2), 69-98.

Nogué i Font, J. (ed) (2016). *La construcción social del paisaje.* Madrid, ES: Biblioteca Nueva.

Presidenza del Consiglio dei Ministri (2021). *Piano Nazionale di Ripresa e Resilienza (PNRR).* Retrieved August 2021, from https://www.governo.it/sites/governo.it/files/PNRR.pdf

Priore, R. (2005). Verso l'applicazione della Convenzione europea del paesaggio in Italia, in *AEDON*, 3, Bologna, IT: Il Mulino.

Priore, R. (2009). *No People, No Landscape. La Convenzione europea del paesaggio: luci e ombre nel processo di attuazione in Italia.* Milano, IT: Franco Angeli.

Riva, R. (2017). *Ecomuseums and cultural landscapes. State of the art and future prospects.* Santarcangelo di Romagna, IT: Maggioli.

Salerno, R. (2018). Enhancing Not-Outstanding Cultural Landscapes in a European Perspective: A Challenge for Digitization, in Amoruso, G. (ed.), *Putting Tradition into Practice: Heritage, Place and design* , pp. 3-8. Charm, CH: Springer International.

Salerno, R. (2019). Fragile Cultural Landscapes: A Regenerating Case Study in East Veneto, in Amoruso, G. & Salerno, R. (eds.), *Cultural Landscape in Practice, Lecture Notes in Civil Engineering*, 26, Cham, CH: Springer Nature, pp. 3-10. DOI: 10.1007/978-3-030-11422-0_1

Salsa, A. (2019). *I paesaggi delle Alpi. Un viaggio nelle terre alte tra filosofia, natura e storia*. Rome, IT: Donzelli Editore.

Sauer, C. (1925). The morphology of landscape, in *The Cultural Geography Reader*, pp. 296-315. London, UK: Routledge.

Settis, S. (2010). *Paesaggio Costituzione Cemento*. Turin, IT: Einaudi.

Settis, S. (2013). *Il paesaggio come bene comune*. Naples, IT: Quaedam, La Scuola di Pitagora.

Sodano, C. (2017). Cultural Landscapes in International Charters, in *Museum International*, pp. 80-85. London, UK: Taylor & Francis.

Tarolli, P., Rizzo, D., & Brancucci, G. (2019). Terraced Landscapes: Land Abandonment, Soil Degradation, and Suitable Management, in Varotto,

M., Bonardi, L., & Tarolli, P. (eds.) *World Terraced Landscapes: History, Environment, Quality of Life. Environmental History*, 9. Cham, CH: Springer. DOI:10.1007/978-3-319-96815-5_12

Tarpino, A., (2016). *Paesaggi fragili*. Turin, IT: Einaudi.

Turri, E. (2006). *Il paesaggio come teatro. Dal territorio vissuto al territorio rappresentato*. Venice, IT: Marsilio.

Turri, E. (2008). *Antropologia del Paesaggio*. Venice, IT: Marsilio.

UNESCO (2012). *Operational Guidelines for the Implementation of the World Heritage Convention*. Paris, FR: UNESCO World Heritage Centre.

Villa, D. (ed.) (2017). *Open Data for Cultural Heritage. Place Based Digital Humanities between Representation, Design and Innovation*. Milan, IT: Planum Publisher.

Widgren, M. (2004). Can landscapes be read?, in *European rural landscapes: persistence and change in a globalising environment*. Dordrecht, DE: Springer, pp. 455-465. DOI: 0.1007/978-0-306-48512-1_28

ADDITIONAL READINGS

De Rossi, A. (Ed.) (2018). *Riabitare l'Italia. Le aree interne tra abbandoni e riconquiste*. Rome, IT: Donzelli Editore.

European Spatial Planning Observation Network (ESPON), (2013). *GeoSpecs. Inner Peripheries: a Socio-Economic Territorial Specificity*. Geneve, CH: University of Geneve Report.

Evangelista, V. (2018). Il community-based tourism: un paradigma per le aree fragili? In Cavuta, G., & Ferrari, F. (eds.) *Turismo e aree interne*, pp. 49-68. Rome, IT: Aracne Edizioni.

Ferrari, F. (2018). Per una strategia del turismo nelle aree interne, in Cavuta, G., & Ferrari, F. (eds.) *Turismo e aree interne*, pp. 69-90. Rome, IT: Aracne Edizioni.