

TECHNOLOGIES AND SUSTAINABLE DEVELOPMENT: THE CULTURAL LANDSCAPES OF THE MEDITERRANEAN

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Abstract:-

The research aims to highlight how Matera and Pompeii, both UNESCO sites are united by a thousand-year-old history always alive, a heritage made of archaeological remains, paintings, frescoes and intangible goods. Henry Vollam Morton in his book "A traveler in Southern Italy" tells of his visit to Matera in the 60's, when the Sassi had been abandoned and the population moved for the most part to new neighborhoods, and the city appears to his eyes as "an incredible Pompeii" suspended between past and future, once lived and then abandoned.

Today both realities live again thanks to people and institutions who believed in the possibility to restore their life through technology and to resurface enclosed treasures still to be discovered.

Pompeii, an ancient Roman colony, although it seems for its history a crystallized city, is always alive and moving thanks to the continuous discoveries that make it one of the most visited destinations with an exponential growth of tourists.

Matera was in the last century with the agricultural neighborhood, and it is now because like other cities it is into the phase of experimenting with ultra-fast 5g telephony.

The 5G experiment has shown that the use of satellite technologies can be of great help to the management and sustainability of cultural landscapes because of support to the development of culture and creativity to the management of visitors, the organization of the tourist destination and the use of cultural heritage and also it enhance and preserves agricultural landscapes and productions, as an expression of the relationship of the community with the natural space.

INTRODUCTION

Matera and Pompeii, both UNESCO sites, share a millenary history made up of archaeological remains, paintings, frescoes and intangible assets, but also of crops including the millenary cultivation of vines in the archaeological area of Pompeii and wheat in Matera.

As historic cities they have been home of complex social relationships, and the vocation of the predominantly agricultural territory has given rise to a traditional rural society in which the concept of neighborhood, besides a spatial connotation, also had the symbolic connotation of sharing knowledge and practice, of relationship, but above all of inclusivity.

In the last century Matera was constituted by an agricultural neighborhood and this concept is now having a new enhance with a different connotation: virtual neighborhood, thanks to the experimentation of the ultra-fast 5g telephony in its agricultural field.

The new 5G standard for mobile communication goes in the direction of increasing user speed and improving the quality of service to ensure an ever faster and affordable connection. It is a resource for historical landscapes, such as Matera, as it promotes the transition to innovation by preserving the symbolic constituent aspects of cultural identity linked to the exchange of knowledge and the preservation of collective memory.

With the 5G what was the neighborhood community, now becomes virtual community, where sharing knowledge and practice, beliefs and values, including the use and management of cultural heritage can take place through the network with the use of applications that promote its accessibility and sustainability also in also in the direction of a more aware tourism.

2. Material and methods

The sustainable and responsible aspects of “intelligent” tourism cannot be separated from its ability to be solidarity and inclusive tourism. Central in Matera and Pompeii is the possibility also by people with disabilities and with specific needs, to live a place that is both historically and culturally extraordinary but at the same time "uncomfortable" and succeed in approaching, with new technologies, distant people to these historical places, for example with multimedia travel.

3. Result

Many are the projects in the direction of greater accessibility of the historical landscape of Matera including "Matera città narrata", integrated cultural project, multidisciplinary and multidimensional, a network of virtual heritage that ideally connects content, places, times, authors, users, real world and virtual dimensions; a digital platform able to support users both in the planning phase of the visiting experience in Matera, and while the visit is in progress, enabling them to navigate and access cultural content in the vicinity of monuments, sites and itineraries.

Other results of the good employment of technologies are Research programmes and on-line platforms like I-DEA - “Archivio degli Archivi e delle Collezioni”, Co-working Culture Space: innovation spaces of accessibility for culture or “Aroundly -Discovering Together; Projects of identification and mapping of routes really accessible to all, like Social Trekking and Matera Mare – Destinazioni e Itinerari accessibili. Urban Requalification of the quarters and of the Historical Center with the project “Tutti nei Sassi”.

4. Discussion

A community recognizes itself within a landscape and the technologies that are connection mode, give way to connect, in real time, the individual to his community and the whole world, therefore they should be read both as a tool for comparison between peoples and for safeguarding one’s landscape.

In the Charter of the Mediterranean, the landscape is defined as: "the formal manifestation of the physical relationship of individuals and societies in space and time with a territory more or less intensely modified by social, economic and cultural factors. The landscape is thus the result of the combination of natural, cultural, historical, functional and visual aspects. It implies the attribution to landscapes, by individuals or societies, of values of social identification at various levels, local, regional, national or international."

At this historic moment in which globalization has facilitated the removal of all kinds of barriers of both an identity and a commercial nature, the technology and the social sciences are called to question themselves on how avoid that the progressive delocalization of all the fields. In this process the management of delicate cultural patrimony, becomes a core.

The progressive cancellation of the relationship man-territory has led to a progressive disinterest towards the well-being of the communities as a whole and to the connection between their members. Moreover as a result of global weather changes, progress as an indiscriminate action of man on the landscape, linked to the industrial age, is now ineffective and different dialogue with the landscape is required.

Sustainability plays a fundamental role in it, as a tight crux for the survival of the planet. One of the cores of sustainability is innovation in technologies that is increasingly oriented to operate on the territory recalling more and more the traditional patterns of action on landscape that already existed in the universe of knowledge and practices of communities, implementing them by new discoveries in the technological field.

Having available important tools for landscape management is crucial to ensure the sustainability of the landscape itself. Innovation in agriculture, also includes the preservation of that identity not only to future generations but also to those who have been grow in that landscape but that are now far because they live abroad, for exemple, and to help them to recognize colors, contexts in which they have lived and in which their identity has its roots.

The 5G technology, for example, allows a farmer who is far from his field, perhaps at another point in the world, to verify in real time the threshing of the path he is carrying out, and in this way as well as performing a remote-control function, 5G also allows you to maintain and reconnect at every point, your sense of belonging to the community.

Moreover, technology plays a crucial role also in the preservation of the cultural landscape as agrifood productions supporting it with Block chain technology. The Block chain (literally "block chain") is a shared, unchanging data structure a digital register whose entries are grouped in blocks, in chronological order, whose integrity is guaranteed by the use of encryption. It is similar to a distributed database, that is not centralized, managed by a network of nodes, each of which has a private copy. Therefore, due to these characteristics, it is considered an alternative in terms of security, reliability, transparency, and costs to databases.

The blockchain promotes transparency and visibility along the food chain. Cryptographic features on food source, quality, transit temperature and freshness can be used to ensure that data is real, accurate and truthful, instilling confidence and ensuring safety for both consumers and retailers.

Thanks to blockchain it is possible to obtain the traceability of a product in all the phases that characterize it from the raw material to the finished product.

Moreover a community recognizes itself within a landscape and the as IOT and Blockhain are tool for safeguard and enhancement not only of agricultural production, but also of the broader territory through the promotion and knowledge of these productions as a synthesis of culture, traditions, processes, raw materials and biodiversity, a cultural landscape as a set of indigenous elements of a site, components of an identity path that the man has enriched with his contribution without altering the identity profiles.

For example, with regard to the wheat supply chain in Puglia, to demonstrate that the wheat is of cerignola, it is sufficient to activate the block chain that allows to see the supply chain, as well as in Matera through the reconstruction of the bread chain.

Landscape is not only something to build or protect, but before that something to recognize, perceive, listen and describe. The deep link between man, material and intangible landscape lies at the basis of the cultural identity of a particular community, the Mediterranean, and Matera and Pompeii are an interesting example of preservation of Mediterranean cultural landscape in their similar transformative approach.

Henry Vollam Morton in his book "A traveler in Southern Italy" tells of his visit to Matera in the 60's, when the Sassi had been abandoned and the population moved for the most part to new neighborhoods.

The city appears to him as "an incredible "Pompeii", suspended between past and future, once lived and then abandoned. Still both realities live again thanks to people and institutions who believed in the possibility to restore their life also through technologies and to resurface enclosed treasures yet to be discovered.

Pompeii, an ancient Roman colony, although it seems for its history a crystallized city, is always alive and moving thanks to the continuous discoveries that make it one of the most visited destinations with an exponential growth of tourists in which new technologies give an important support to accessibility of the cultural patrimony of the city and its landscape.

5. Conclusion

For future scenarios it can be assumed, according to this historical anthropological forecast, that in technology, with its extreme pervasiveness, will facilitate an even easier access to historic sites and pa cultural heritage, in harmony with the preservation of cultural heritage and to encourage the dissemination of cultural content for one of their own wider fruition give the inhabitants and the tourist too the possibility of sharing beliefs values and actions, included safeguard and awareness on the agricultural landscape thanks to their management through the network and so of promoting innovation and sustainability of production.

REFERENCES

- [1] Brisco, B., Brown, R., Hirose, J., McNairn, H. and Staenz, K. (n.d.). *Precision Agriculture and the Role of Remote Sensing: A Review*. Retrieved on 1st October 2012.
- [2] Cardinale D., D'Antonio P., Moretti N., Scalcione V. N., (2020). *Risk perception in forest utilizations: experimental analysis in the Basilicata forest sites*, Journal of Forestry, wild life and Environment, Vol. 1, Issue 1.
- [3] Casa R., (2017), *L'applicazione dell'agricoltura di precisione per il miglioramento della gestione delle produzioni vegetali* Dipartimento di scienze Agrarie e Forestali, Università degli Studi della Tuscia Viterbo.
- [4] Cecchini A., Plaisant A., Angeli F. (2005), *Analisi e modelli per la pianificazione Teoria e pratica: lo stato dell'arte* Facoltà di Architettura di Alghero.
- [5] Chiodo E., Liberatoscioli E., Salvioni C., (2018) *Le informazioni territoriali e la geomatica per l'agricoltura e lo sviluppo rurale* Agriregionieuropa anno 4 n°14, Set
- [6] D'Antonio P., Romano F. V., (2019), *I Sassi, storie di vicinato e tradizioni agricole nelle evoluzioni del paesaggio in Matera trasformazione urbana tra architettura e fotografia*. By Cirillo V., Grottaminarda, Delta 3 Edizioni, ISBN 978-88-6436-000
- [7] D'Antonio P., Scalcione V. N., (2020). *Digital Humanities: ICT for a Teaching of Inclusion*, Agricultural Research & Technology, Volume 23 Issue 4.
- [8] D'Antonio P., Scalcione V. N., D'Antonio C.. *Sustainable urban green management systems: battery powered machines and equipment*. International Journal for Research in Agricultural and Food Science Volume-6 | Issue-3 | March,2020
- [9] D'Antonio P., V. N. Scalcione (2020), *The teaching of technologies for monitoring the anthropic landscape through the development of the Internet of Things*, Journal of Bioinnovation, n. JBINO204032.
- [10] D'Antonio P., Scalcione V. N., (2020). *Software and satellite technologies for precision agriculture: the potential with the 5 g network*, EPH - International Journal of Agriculture and Environmental Research Volume-6 | Issue-3 | March,2020
- [11] D'Antonio P., Scalcione V. N., Romano F., (2020). *The use of satellite technology for digital citizenship: experimental tests and investigation methods*, International Journal of Food Science and Agriculture, Vol. 4, Issue 1.
- [12] Esri (2008). *GIS for Sustainable Agriculture. GIS Best Practices*. New York: ESRI Publications.
- [13] Kuhn F., Horig B. , (1996) *Environmental remote sensing for military exercise places. Remote Sensing and GIG for Site Characterizations: Applications and Standards*, ASTM STP 1279, American Society for Testing and Materials.
- [14] Onorato M., Fantola F., Schirru P., Urru S., Pili D. (2016), *Il webgis strumento per l'assistenza tecnica nell'agricoltura sostenibile ASITA*.
- [15] *Sistemi di guida in agricoltura; Tecnologia a Rateo Variabile*, (2017), Progetto AGRICARE.
- [16] Sohne W., Heinze O., Groten E. (1994). *Integrated INS/GPS System for High Precision Navigation Applications. Record-IEEE PLANS*, Position Location and Navigation Symposium, 35(2): 310-313.
- [17] Vanore M., (2019), *Meta Matera Sassi Towards Anteferma* Edizioni, Venezia, ISBN: 978-88-32050-32-5
- [18] Xiangjian M., Gang, L. (2007). *Integrating GIS and GPS to Realise Autonomous Navigation of Farm Machinery*. New Zealand Journal of Research, 50(1), 807-812.