Article

Landscape Values as a Driving Force to Increase Nature Conservation. Environmental and Planning Policies as a Possible Integration

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Abstract: Landscape values are addressed by planning tools in several diversified ways. Many European countries have joined the European Landscape Convention which just turned 20 last year. This work aims at investigating its implementations and relationships with general and local planning tools, focusing on two main objectives: the first one concerns the analysis of principles regulating regional strategies, deriving from European dictates and State norms. It has been focused in the Sicily region in Italy, the largest island in the Mediterranean basin. The second objective concerns the in-depth analysis of territories of a fragile nature in which the two terms that characterize the landscape, culture and nature, merge together. This paper consists in gathering information deriving from the various planning levels, proposing a comparison methodology which takes into account physical–environmental and landscape–visual features in some sample cases within protected areas, but in a highly urbanized context. A system and database were created and implemented within the geographic information system, drawing up a comparison between environmental requirements and development strategies.

Keywords: landscape performances; protected areas; geographic information system; planning tools

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1. Introduction

The landscape brings together two terms: nature and culture. Scholars of different fields are interested in landscape in order to highlight its peculiarities and the risks due to the land use changes it faces. The European Landscape Convention (ELC), signed in 2000 and to which member states continue to adhere to today, is just turning 20 years old. As known, it reads: “Landscape means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors” [1,2]. Its major innovation consists in the ability to underline the impact of public landscape issues and it highlights the importance in the participation of both people and local authorities. The main concern is its application in European countries: the ELC expects individual member states to develop their own evaluation methodologies, aimed at managing their different geographical contexts. The problem is, thus, how these policies fit into each country's planning tools, and then how each state favours their implementation through regional strategies, which are also always highly diversified.

Furthermore, the relationship with urbanized centres is one of the crucial issues to be addressed. In principle, urbanization, which began with the industrial revolution of the 18th century, has produced a process in which the city and its suburbs have grown in different ways and times [3]. By virtue of the changes in the shape and size of the city, the relationship between the city and nature has changed, with implications often seen as negative factors, gradually leading to local identity loss. Thus, the concept of cultural landscape has changed over time, as a form that has gradually adapted to changes in land use [4,5]. As the literature argues, there should be a favourable mutual exchange

between cities and natural resources [6–10], even often seen as a great competition [11]. This issue is further compounded by the presence of non-urbanized areas surrounded by highly urbanized contexts [12,13] and by the complex management processes, especially in peri-urban areas of larger cities [14–17].

The focus is on the role of spatial planning systems which must be integrated with landscape issues [18,19]. The complexity of landscape planning issues necessarily combines the aims of spatial planning tools with requests of local communities for their economic development [2,20,21]. The proximity of naturalistically valuable areas with urban centres is, therefore, a central topic for policies relating to sustainability. The thesis, supported in this paper, is not to defend the natural context by considering settlement expansion only as a factor to be stemmed, but rather to highlight the need for greater accuracy in urban policies. Thereby, natural areas could be a driver for the improvement of quality of life, in urban settlements too.

The research, for several years led by the authors, aims at deepening this relationship, in search of a balance between these two requirements. The case study is Sicily Island, and in particular its coastal areas, in which extreme conflict occurs. The coast, in fact, is the environment in which the increasing economic development (also linked to tourist exploitation) needs to be combined with the strong landscape values of these areas. For this purpose, it was decided to investigate the inconsistencies that inevitably derive from conflicting planning tools.

The research focused mainly on a particular landscape context, that is the terraced landscape—often recurring in the European panorama—which is interesting from several points of view. As far as the literature is concerned, different conditions exist in the countries of the Mediterranean Basin. In the Italian context, in particular, the discrepancy between the planning tools' intent and the real situation emerged: planning and management tools often collide with the rapid evolution of the landscape (for example following calamitous events). Terraces are a landscape scenery type deriving from a particular slope morphology. They constitute a sensitive indicator of local transformation, passing from the more traditional role related to agricultural field productions (fruit, oil and wine) to the more recent role related to tourist activities. Several studies and research projects have been analysed, investigating their geographical distribution and their functions. Terraces are recognized as “cultural landscapes”: many of them are included in the UNESCO World Heritage List, as “places which testify to the creative genius, social development and the imaginative and spiritual vitality of humanity” [22]. They are widely represented in many countries: China, Philippines, Switzerland and eight European countries: Cyprus, Croatia, France, Greece, Slovenia, Spain, Switzerland and also Italy [23]. A further peculiarity of these landscapes consists in their building techniques, so much so that UNESCO decreed the inclusion of the “art of dry-stone walling” (by stacking stones upon each other, without any mortar) in the Intangible Cultural Heritage List [24]. Terraces also have an important function for soil conservation: in fact, they play a key role in contrasting slope degradation and are useful to reduce soil erosion phenomena. Moreover, agricultural activities carried out on them increase the effectiveness of soil protection [25]. They also have an important impact on the geological features, related to the substrate origin and to the soil properties [26]. They act directly on hydrogeological processes: transforming the natural slope, improving the water drainage [27,28] and reducing hydrological connectivity [29], runoff times [30,31] and consequently the erosive processes. After comparing similar situations in European countries, the case study refers to Italy, characterised by mainly mountainous and hilly morphology with very extensive coastal areas, being a peninsula of almost 300,000 km², with more than 7000 km of coastline. Therefore, a comparison methodology has been proposed between the planning tools and the management documents of some protected areas, located in Sicily Island. This research has been carried out based on joint experiences developed by the authors during research funded by the European Community (This methodology was carried out by the I.a.co.s.t.a. Laboratory and experimented for the following projects (responsible D. Cialdea): GES.S.TER.—Sustainable Management of

Coastal Areas, acronym funded by the INTERREG IIIA; SEA-EAS—Environmental and Archaeological Sites funded by the NPPA INTERREG/CARDS-PHARE; Model for the Coastal Landscape Units for the National and Cross-Border Adriatic Coasts funded by the Interlink MIUR Programme. Sandro Privitera participated in all above-mentioned projects.).

As regards the subdivision of the work, the introduction is followed by the methods (which deals with the description of the study area, the definition of the investigation methodology used and finally explores the aspects of protection from a naturalistic point of view and the enhancement of the landscape elements). The next section contains the results and discussion and reflects on the possible expansion of the research, followed by Section 4: conclusions, summarizing the main goals of this paper.

2. Materials and Methods

2.1. Study Area

The case study is the eastern Sicilian coast at foot of the Etna Mountain, which is the most active volcano in Europe and the highest peak of the whole Mediterranean Basin. In this area, the beauty of the volcanic coastal scenery is evidenced by various protected areas and numerous urban centres with significant historical–artistic elements. The favourable climate, the pedological features of the volcanic soils and the ability of the farmers to terrace much of the coastal strip over the centuries, have given rise to an important historical phase related to the agricultural activities' development with valuable productions, such as vines and citrus fruits. The vegetable and cultivated landscape is under various headings according to altimetry. In particular, the “Mediterranean maquis” and “lemon groves” cover most of the eastern flank up to about 500 m (Figure 1).

The coastline offers an interesting landscape, characterized by headlands and small creeks, towering cliffs, terraces, and narrow beaches bordered by cliffs. In these areas, human settlement dates back to the period of Greek colonization [32–35]. The combination of these positive elements made these areas particularly attractive starting from the 1960s to 1970s, when the post-war economic development allowed the local population to integrate into rural landscape frameworks in an impactful way: thousands of houses were built without urban norms able to preserve landscape and environmental features.

In the case study area, there are three nature reserves: “La Gurna e Fiumefreddo” (This area includes two SCIs (Riserva Naturale Fiume Fiumefreddo and La Gurna). The whole was established as ONR in 1984. This is the last part of the ancient rear-dune marsh area that until the last century, with the “papyrus” rare species.), “Immacolatelle—Micio Conti” (This reserve consists of a system of nine volcanic caves. Its establishment firstly dated in 1998, was later cancelled and subsequently reinstated in 2013: it was entrusted in management to the Catania University Centre for the Protection and Management of Natural Environments and Agrosystems (C.U.T.G.A.N.A.) to which belongs one of the authors, Sandro Privitera, currently Director of the Palombara Cave Nature Reserve.) and “La Timpa di Acireale”. The most attractive is “La Timpa di Acireale”, classified as an Oriented Nature Reserve. It was established twice, for the first time in 1984; later, the classification was cancelled and in 1999 the reserve was re-established [36,37]. Its territorial extension is of 225,34 hectares: its surface coincides almost exactly with the perimeter of the Natura 2000 Network ITA070004 SCI (site community importance), similarly named “Timpa di Acireale”: it is now classified as a special area of conservation, by virtue of the approval of its management plan. In it, there are numerous landscape and hydrogeological risk constraints. Moreover, there is an important geosite (Palombe' Cave—columnar basalts) of national level volcanological interest. Within the case study, there are also two SCIs to safeguard residual woods (S. Maria La Stella and Linera), increasing the naturalistic value of the whole area. It acquires an exceptional naturalistic importance, being the last remaining forest of the Etna foothills. This forest is also mentioned in numerous ancient texts (see Supplementary Material File S1).

Figure 1. Location of the sample area. (a): Italy, Sicily and the Etna area; (b): the sample area survey vision; (c): identification and location of reserves within that area with orthophotos and technical map; (d): the Gurna lagoon and Fiumefreddo River Reserve; (e): the Timpa of Acireale Reserve; (f): the Immacolatelle—Micio Conti Reserve (source: processing in ArcGis by I.a.co.s.t.a. Laboratory, Cialdea 2020).

2.2. The Methodological Approach

The methodology is based on the choice of indicators deriving from the literature, as subsequently specified for each element category. They have been examined for sample cases carried out both at European and national level, especially suitable for the analysis of nature protected areas.

While the literature is rich in papers dealing with indicators related to natural resources, the innovative component of this methodology consists in introducing and comparing parameters related to the planning tools provisions.

2.2.1. Information Collation: From Resources to Indicators

Regarding “resources systems”, most of the investigation was based on resources systems analysis, and they aim at defining the “condition classes”, oriented to express the good condition level of these elements: from these conditions derive a “trigger for management response”, which necessitates intervention. The general outcome is to evaluate the effectiveness of resource management [38,39]. This information was processed starting from elementary data, classified according to the resources systems assessment [40–42]. For each one, following indicators were defined (Table 1):

Table 1. Resources systems indicators.

1. PHYSICAL–ENVIRONMENTAL SYSTEM	Indicators are related to the presence and the features of SCI/SPAs, nature reserves, parks and additional interests.
2. LANDSCAPE–VISUAL SYSTEM	Indicators are related to the existing landscape restriction, residual areas (as “rasule”, “saje”), forests and additional interests.
3. HISTORICAL–CULTURAL SYSTEM	Indicators are related to archaeological restriction, architectural restriction, urban planning intervention and additional interests.
4. AGRICULTURE–PRODUCTIVE SYSTEM	Indicators are related to land use for agricultural activities, land use for agricultural agri-food, land use for organic activities and additional interests.

The new step evaluates qualitative and quantitative aspects of “landscape values”. Additionally, in this case, literature samples—dealing with the issue of landscape quality assessment—were examined [4,43]. In particular, the data collected relating to resources systems indicators were entered in a database, according to previous experimental application in research for the territory of other regions [44–47], especially for the protocol defined in agreement with the Molise Region for the creation of the new regional landscape plan. Its main perspective was to improve the protection of the territory’s assets, refine the landscape value settings and to enhance the potential of sustainable development. “Values” have always been examined in relation to the presence of “detractors” who in fact change the value itself. These “detractors” are elements—related to infrastructural, industrial, or energy assessments—that invaded the territory over time, creating an uncontrolled development of the territory itself. These elements, therefore, have been named “detractors”, meaning the presence of elements that lower the landscape values previously identified and evaluated (see Table 2). They are:

Table 2. Resources systems detractors.

1. PHYSICAL–ENVIRONMENTAL SYSTEM	Detractors are related to the presence and the features of land restriction such as seismic, hydro-geological and restriction by L. 445/1908 and additional trouble.
2. LANDSCAPE–VISUAL SYSTEM	Detractors are related to the existing wind-power and ground-mounted photovoltaic plants, quarries, suburban sprawl and additional trouble.
3. HISTORICAL–CULTURAL SYSTEM	Detractors are related to investigation about preservation conditions, private property, access conditions and additional trouble.
4. AGRICULTURE–PRODUCTIVE SYSTEM	Detractors are related to the presence of industrial sites, special districts, other and additional trouble.

Subsequently, a comparison with local undertaken efforts has been carried out.

Study areas have been analysed focusing on the planning and management tools in force, aimed at highlighting interventions carried out or to be carried out, oriented to the protection from a naturalistic point of view or to the enhancement for their development (tourism and agriculture activities or new urban settlements). Even in this case, methodologies utilised in the literature have been considered [48,49]. Several comparisons of the outcomes of the actions envisaged by the plans were carried out at various levels in different countries [50–54]; also referring to the analysis of this Italian case study [55–57]. After comparing the literature and previous application cases, an innovative phase was carried out: the in-depth examination of planning and management tools, in order to face troubles or to enhance local issues. Therefore, these documents were examined, after dividing them with respect both to the administrative area and to their own purposes (as shown in Table 3). In fact, they have been divided into:

Table 3. Planning and management tools levels.

1. OML	Over-Municipal Level
2. ML	Municipal Level
3. AO	Agriculture-Oriented
4. TO	Tourism-Oriented

The first category includes scientific texts, illustrated documents and statistical databases, including surveys and photos in situ. An important role in this case has been attributed to the historical component, with an in-depth analysis of cultural landscapes, searching for the identity memory, which in some cases has been lost and which in others can still be preserved. The second category includes the processing of geographic data (Materials used for cartographic bases are: Sicilian Region Technical Map (Regional WMS service) and the Digital Terrain Model (LIDAR flight ATA 20,072,008 in GAUSS Boaga 2 m step data). Moreover, materials used for geographical databases derive from different sources. For Retenatura2000: www.artasicilia.eu/w (accessed on 10 April 2021); for Geological Cartography: www.artasicilia.eu/web/carg/ (accessed on 10 April 2021). Furthermore, for thematic maps: the Sicilian Region GIS Portal (<http://www.sitr.regione.sicilia.it/> (accessed on 10 April 2021)); and the GIS ISPRA Portal: www.sinanet.isprambiente.it/it/sia-ispra/ (accessed on 10 April 2021).) relating to the landscape: for this purpose, prescriptive sources are important—not only because they constitute the legal and planning framework, but also because regulations for activities development define the future assessment. Examining these two aspects in parallel—the “past” one (assumed by historical documents) and the “future” one (through the in-depth examination of urban planning tools at regional, urban and sectoral levels)—is the innovative aspect of this work.

2.2.2. Final Goal

Therefore, to conclude the evaluation process in order to define various landscape conditions, a comparison between different parameters—as identified above—has been made.

As will be seen later in the results section, this methodology leads to the preparation of “analysis schedules” and “interpretation schedules”. In this paper, the protected areas of the sample case were analysed as components of the investigated areas repository. In particular, this paper examines in detail the analyses carried out for the “La Timpa di Acireale” reserve. As described above, based on measurements of landscaped values (protected areas, restricted areas, etc.), indicators were identified and evaluated, giving importance to the “upcoming projects”, as indicators of “effectiveness”.

The methodology includes four cases of interpretation, which are four landscape typology sheets, relating to the conditions of the preserved, disappeared, residual and endangered landscapes.

To sum up:

$$\Sigma_{S1} (V - D) + (UP/100) + \Sigma_{S2} (V - D) + (UP/100) + \Sigma_{S3} (V - D) + (UP/100) + \Sigma_{S4} (V - D) + (UP/100)/4 \quad (1)$$

V = values (by indicators for each system S1 to S4);

D = detractors (by detractors for each system S1 to S4);

UP = upcoming projects (by projects—calculated in percentage as an increment of the value -for each system S1 to S4);

If >1 good condition class = preserved landscape;

If <1 warning condition class = endangered landscape.

Furthermore, two intermediate situations have been identified: residual areas (in which some political decision is needed) and disappeared areas (in which some intervention is necessary to preserve the memory of places).

3. Results and Discussion

The proposed integrated approach is aimed to improve knowledge and awareness about the strategic choices at policy level. The research was divided into different phases, which produced various results, with the primary aim being to identify landscapes to which to devote more attention.

The first step was oriented to define the investigation areas, inside the macro-areas surrounding the three reserves under study, as described in Section 2.1; the first product was the “investigated areas repository”.

The second phase consisted of analysing the numerous planning tools and programming documents: the product related to this phase was the comparison between them and it is particularly innovative, in the writer’s opinion. This product, named “planning tools analysis” (added to the analyses carried out in the initial data sheet) is useful for defining “conflict areas”. To this end, the third product was drawn up, that is the description of the type of conservation of the landscape features, defined as landscape performances (through the “landscape typology schedules”). For the catalogue, the file was prepared taking into consideration the most significant information. The schedule (Table 4) consists of many parts that can be grouped into four different types of data:

Some factors need to be emphasized: the value of the coastal scenery factor (max value, on the scale 1–5) and the presence of landscape restriction, in addition to the values related to hydrogeological instability. In order to highlight any sort of contradictions—in relation to the wishes expressed by local populations—the following table was drawn up which lists the wishes of the main planning tools, with inconsistencies or conflicts (Table 5); references related to this table are located in the Supplementary Material File S2.

Table 4. Landscape schedule framework.

1. Identification and position data	This first part of the record, consisting in the geographical data relating to the position of the examined area, is the main phase of the census. Information includes the province, the municipality and the geographical position (in the WGS84 reference system) with an indication of whether it falls in urban, suburban, mixed or primarily agriculture voted.
2. Lytho-morphology features	Lytho-morphology features with the main dangerousness, and other features related to territorial and environmental systems.
3. Description, map and photos	The central part of the schedule contains data related to the specific analysed element, with the brief description, the indication of the area peculiarities, the referenced cartography and photos.
4. Rules and norms	The last part contains the main current planning tools in the area under study.

Table 5. Planning and Management Tools Analysis.

Category	Plan	Year	Main Aim	Reference
OML	Landscape Regional Plan The Landscape Plan for Areas 8, 11, 12, 13, 14, 16, 17 in Catania Province	2018	The Area No. 13 Landscape Plan identifies 12 Landscape sub -areas (SP), from which the SP8 area of lemon groves of the Ionian coast has been recognized. Acireale has a peculiar, close and specific relationship both with the sea and with the volcano.	[1]
OML	Catania Province Territorial Plan Province Territorial Plan. Cognitive Structural Asset, 2010 Province Territorial Plan. Proposal Strategic Asset, 2010	2010	It promotes strategies and focuses the intervention priorities in the metropolitan area of the eastern side of the province of Catania, which is defined as the most complex territory from the point of view of infrastructure and interactive relationships with the capital, Catania. Furthermore, Acireale is the most important centre, rich in cultural and landscape–environmental heritage.	[2,3]
OML	Nature Reserve Zones “Timpa di Acireale” Oriented Nature Reserve	1999	In the whole territory of the protected area, scientific research activities can be carried out by qualified subjects authorized by the managing body which alone can grant exceptions to the prohibitions and norms.	[4]
OML	ITA070004 SAC Management Plan SCI COD. ITA 070,004 “Timpa di Acireale” Management Plan POR 1999.IT.16.1.PO.011/1.11/11.2.9/0345	2009	The SAC (special area of conservation) ITA070004, named “Timpa di Acireale”, is one of the numerous ReteNatura2000 sites of community importance in Sicily. Its management plan in force was drawn up in 2009 and finally approved in 2010.	[5]
OML	Hydro-geological Management Plan HMP. Territorial area between Simeto and Alcantara Rivers, 2006 Update HMP for the Acireale Municipality, 2017 Update HMP for the Hydraulic Hazard due to flooding phenomena. Territorial area between Simeto and Alcantara Rivers, 2018	2018	It has the value as a sector territorial plan and is the cognitive, regulatory and technical–operational tool through which interventions and actions are planned and rules of use are programmed concerning the defence against the hydrogeological risk of the Sicilian territory. The landslides that periodically occur at Timpa di Acireale are directly correlated with meteorological events of particular intensity occurring in the Mediterranean Basin during the winter.	[6–8]
OML	Province Waste Management Plan Strategic Environmental Assessment. The Città Metropolitana di Catania Waste Province Plan Revision	2016	It has been established by the Metropolitan City of Catania, in compliance with the precautionary principle which is an informative principle of EU and international legislation and which “requires the implementation of actions without delay of contrast in cases where there is a threat of “serious or irreversible” damage to the environment”, (Art. 174 of the Amsterdam Treaty, which incorporates Art. 130 of the Treaty of Maastricht).	[9]
ML	Acireale Municipality Master Plan Approval of the Acireale Municipality Master Plan Decree 18 January 2005 updating the Decree 4 November 2003	2005	It contains the general prescriptions for settlement densities of different territorial areas. The plan pays attention to the territory of the Timpa Reserve, for which it refers to the norms of the reserve itself (any activity must be previously authorized by the management authority)	[10]
ML	Acireale Strategic Plan for the Landscape Landscape Plan of the Acireale Municipality	2006	Adhering to what is defined by the Strategic Cities Network 2014–2020 EU Programme activated this governance process in order to mobilize investors: the main aim was to make Acireale an example for southern Europe, due to its magnificent territorial potential.	[11]

Table 5. Cont.

Category	Plan	Year	Main Aim	Reference
ML	Acireale Municipality Civil Protection Plan (Update 2013)	2013	It plans all coordinated activities and civil protection procedures to face and overcome a calamitous event expected in the area. The method actually involves a real preventive planning of the event, and the same is based on principles of simplicity, flexibility and efficiency.	[12]
ML	Acireale Municipality Drawing up for the Coastal Public Property Areas Management Plan 2020 adopted	not yet approved.	This document is a planning tool which identifies how to use the seacoast and regulates its utilization; therefore it has important economic repercussions on the development of the territory, public health and safeguarding environment.	[13]
AO	“Le Terre di Aci” Local Development Participation Strategy 2014/2020 Rural Development Programme	2016	This document provides an analysis of the development and potential needs of the “Terre di Aci” area and identifies a development strategy. It includes 5 municipalities (Acireale Aci Sant’Antonio Acicatena Aci Bonaccorsi and Valverde). In the municipality of Acireale, citrus growing constitutes around 2500 hectares of cultivated land, followed by viticulture, entering the tourist circuit named “the Wine Roads”.	[14]
AO	Atlas of PDO, PGI and TSG products by Italian Agriculture Ministry Update 2018	2018	List of Italian names, registered in the Register of Protected Designations of Origin (PDO), Protected Geographical Indication (PGI) and Traditional Specialties Guaranteed (TSG), EU Regulation No. 1151/2012 of the European Parliament and of the Council of 21 November 2012 (updated on 12 February 2020).	[15]
AO	Citrus Plan (Piano agrumi) INEA Institute	2008	In regard to citrus crops, in 1907, the Experimental Station of Fruit and Citrus was established in Acireale. In 1967, it was transformed into the Experimental Institute for Citrus, then in 1999 into the Agricultural Research Council and in 2007, finally, it became the Research Centre for Citrus and Mediterranean Crops.	[16]
AO	2014/2020 Sicilian Rural Development Programme ALLEGATO 14 PSR SICILIA (Piano di sviluppo Rurale) 2014/2020 “I paesaggi a terrazze in Sicilia. Metodologie per l’analisi, la tutela e la valorizzazione”	2015	The programme aims at implementing ecological–environmental and historical–cultural landscapes, so numerous in Sicily, for a collective project that measures the need to produce with the available native resources and with the environment features, specially oriented to terraced landscapes.	[17]
TO	“Le Terre di Aci” Local Development Participation Strategy 2014/2020 Rural Development Programme	2016	The human activity of the past has produced a terraced landscape, with stairs, walls and small stone buildings, which has evolved over time, passing from the nineteenth-century vine plant to the subsequent citrus plant, especially in lemons.	[18]
TO	“Tourism Economies” Urban Redevelopment and Sustainable Land Programme Programma di Riqualificazione Urbana e Sviluppo Sostenibile del Territorio,	2007	It seems to disregard principles indicated in the Catania municipality programme: the traditional view of bringing the tourist incentive back to the receptive structures construction prevails, often in conflict with environmental sustainability criteria.	[19]
TO	Territorial Tourist District of the Sicilian Region “Il Mare dell’Etna” ERDF (European Regional Development Fund) OP (Operative Programme)	2007–2013	The district highlights the presence of two important attractors: the sea and Mount Etna, as recently declared Heritage of Humanity by UNESCO.	[20]
TO	ACIGREENWAY Cycle-pedestrian path on the old route of the disused railway in the Acireale Municipality within the Greenways Project (taken from the plan for non-motorized mobility in Sicily)	2017	The main aim is the recovery of the old railway line dating back to the end of the 19th century. It was in 1864 when the council of the municipality of Acireale was gathered in several sessions to deliberate the construction of the railway station. In 1866, the first train arrived.	[21]
TO	Heaven and Earth Ecomuseum initiative of the Acireale Diocese	2017	The open-air ecomuseum aims at promoting the huge artistic heritage, as well as the tourism economy.	[22]
TO	Archaeological and landscape Park of Catania and the “Valle dell’Aci”	2019	The system of archaeological parks in Sicily was provided by regional law No. 20/2000. The Archaeological and Landscape Park is a new institution that only dates back to 2019.	[23]
TO	Regional Tourist Propaganda Plan 2016, 2018 ERDF (European Regional Development Fund) OP (Operative Programme)	2014–2020	The plan describes the strategic and political guidelines for the development of Sicily, and aims at implementing a strategy for promoting the Sicily brand.	[24]
TO	#Turismosicilia2020 Three-year Tourism Development Programme 2015–2017 of the Sicilian Region Strategic Plan	2014–2020	The procedures for the concession for tourism activities involve 5 different figures (Port Authorities, Cultural Heritage Ministry, Municipality, Regional Department, Civil Engineering Department). It is necessary to simplify the authorization regimes.	[25]
TO	FOCUS Tourism Productive District “Agrumi di Sicilia—Le Vie della Zagara” Protection and Enhancement of Italian Geographical Indications Consortium	2018	District citrus fruits of Sicily wants to encourage the growth of a proposed tourist and territorial quality. For a few years, in fact, thanks to the agreement with the Association Taste, organic productions have been involved.	[26]

Table 5. Cont.

Category	Plan	Year	Main Aim	Reference
TO	Catania Province Territorial Plan Province Territorial Plan. Cognitive Structural Asset, 2010 Province Territorial Plan. Strategic Asset Proposal, 2010	2010	It underlines environmental, cultural and historical values.	[2,3]
TO	UNESCO Sites Mount Etna (Italy) Art of dry-stone walls Submitted Application for the historical centre of Acireale	2013 2018 in fieri	Mount Etna was recognized as a World Heritage Site for its fundamental role within the Mediterranean. Moreover, drywall structures are used as shelters, for agriculture or cattle breeding, and testify to the methods used, from prehistory to the present day, to organize life and workspaces by optimizing local human and natural resources.	[27–29]

Subsequently, Tables 6 and 7, as defined in the “methods” section, summarizes the procedure followed for the evaluation of landscape performances in two sub-areas of the Timpa area. As regards the physical–environmental system, conditions of the two cases under study present comparable situations; similarly, for the historical–cultural system (albeit with small differences).

Table 6. Preserved landscape schedule 3/15.

RS	ELEMENTS	RATE	DESCRIPTION
PHYSICAL–ENVIRONMENTAL SYSTEM	VALUES		
	SCI/SPAs	2	The value of each protected area was calculated according to the protection level—that is, from 0 = none; 1 = local I.; 2 = natura2000 network I.; 3 = regional I.; 4 = national I.—and to the percentage of the protected area in relation to the whole area. The added value in this case is related to the proximity to the S. Maria La Scala, Don Masi Timpa and Gazzena geosites.
	Nature Reserve	3	
	Park	0	
	Additional Interest	2	
	DETRACTORS		
	Seismic Restriction	4	Detractors in this system are related to problems expressed by constraints linked to the soil features. Their evaluation was made according to the percentage of surface in relation to the whole area—that is, from 0 = none; 1 = 0–25; 2 = 25–50; 3 = 50–75; 4 = 75–100%. A further problem is given by the data of the R4 and P4 surfaces, as mentioned in the recent updated hydrogeological plans.
	Hydro-Geological Restriction	4	
	L. 445/1908 Restriction	1	
	Additional Trouble	3	
	UPCOMING PROJECTS		
	Consolidation	2	The value of each element was calculated according to the implementation level of the projects, as deduced from the urban planning and planning tools of Table 5—that is, from 0 = none; 1 = 0–25; 2 = 25–50; 3 = 50–75; 4 = 75–100% than expected. The additional value in this case relates to any operations to combat run-off waters due to meteoric events.
	Solution to prevent fire	1	
	Solution to prevent people's danger	1	
	Additional Intervention	0	
LANDSCAPE–VISUAL SYSTEM	VALUES		
	Landscape Restriction	4	The value of each element was calculated according to the constrained surface as a percentage of the whole area—that is, from 0 = none; 1 = 0–25; 2 = 25–50; 3 = 50–75; 4 = 75–100%. The added value in this case is related to the panoramic view of historical paths.
	Residuals (rasule, saje)	3	
	Forests	3	
	Additional Interest	4	
	DETRACTORS		
	Wind-Power and Ground-Mounted Photovoltaic Plants	0	Detractors in this system are referred to the impediments to the landscape perception. Their evaluation was made as a function related to the percentage of surface compared to the whole area—that is, from 0 = none; 1 = 0–25; 2 = 25–50; 3 = 50–75; 4 = 75–100%. A further problem is given by the interventions carried out along the coast with widespread overbuilding.
	Quarries	0	
	Suburban sprawl	2	
	Additional Trouble	4	
	UPCOMING PROJECTS		
	Dry-stone walls restoration	1	The value of each element was calculated according to the implementation level of the projects, as deduced from the urban planning and planning tools of Table 5—that is, from 0 = none; 1 = 0–25; 2 = 25–50; 3 = 50–75; 4 = 75–100% than expected. The additional value in this case relates to territorial services of peri-urban green spaces.
	Solution to prevent settlement expansion	4	
	Solution for people fruition	3	
	Additional Intervention	1	

Table 6. Cont.

RS	ELEMENTS	RATE	DESCRIPTION
HISTORICAL-CULTURAL SYSTEM	VALUES		
	Archaeological Restriction	2	The value of each element was calculated based on the number of the restricted “common goods”—that is, from 0 = none; 1 = 0–5; 2 = 5–10; 3 = 10–20; 4 ≥ 20. The UNESCO proposal for the historic centre is relevant. The added value in this case is related to the enhancement of the Testa dell’Acqua watermill and the Miuccio spring complex.
	Architectural Restriction	4	
	Urban Planning Intervention	1	
	Additional Interest	4	
	DETRACTORS		
	Preservation Condition	4	Detractors of this system are related to the impediments to the use of cultural heritage. A quantitative assessment of the conditions detected in situ was carried out—that is, from 0 = none; 1 = 0–25; 2 = 25–50; 3 = 50–75; 4 = 75–100% of the whole area. A further problem is the possible lack of knowledge even by local citizens.
	Private Property	3	
	Access Condition	0	
	Additional Trouble	0	
	UPCOMING PROJECTS		
	Historical Heritage Restoration	4	The value of each element was calculated according to the implementation level of the projects, as deduced from the urban planning and planning tools of Table 5—that is, from 0 = none; 1 = 0–25; 2 = 25–50; 3 = 50–75; 4 = 75–100% than expected. The additional value is related to the creation of the “Catania Archaeological and Landscape” and the “Valle delle Aci” Parks.
	Solution to prevent settlement abandonment	0	
	Solution for public fruition	4	
	Additional Intervention	3	
AGRICULTURE-PRODUCTIVE SYSTEM	VALUES		
	Land Use for Agricultural Activities	4	The value of each of the elements was calculated based on the percentage of land use surfaces related to the whole area—that is, from 0 = none; 1 = 0–25; 2 = 25–50; 3 = 50–75; 4 = 75–100%. The added value in this case is related to the presence of the Mediterranean maquis.
	Land Use for Agricultural Agri-food	1	
	Land Use for Organic activities	0	
	Additional Interest	1	
	DETRACTORS		
	Industrial Sites	0	Detractors of this system are related to the impediments to the carrying out of agricultural activities. A quantitative assessment of the conditions detected in situ was carried out—that is, from 0 = none; 1 = 0–25; 2 = 25–50; 3 = 50–75; 4 = 75–100 of the whole area. A further problem is given by the observation of the partial abandonment of cultivated terraces.
	Special Districts	2	
	Other	2	
	Additional Trouble	2	
	UPCOMING PROJECTS		
	Terraces Restoration	0	The value of each element was calculated according to the implementation level of the projects, as deduced from the urban planning and planning tools of Table 5—that is, from 0 = none; 1 = 0–25; 2 = 25–50; 3 = 50–75; 4 = 75–100% than expected. The additional value in this case relates to the study for the further agricultural park in the Timpa area.
	Solution to prevent agriculture abandonment	2	
	Solution for public fruition	0	
	Additional Intervention	2	

Table 7. Endangered landscape schedule 8/30.

RS	ELEMENTS	RATE	DESCRIPTION
PHYSICAL-ENVIRONMENTAL SYSTEM	VALUES		
	SCI/SPAs	2	The value of each protected area was calculated according to the protection level—that is, from 0 = none; 1 = local I.; 2 = natura2000 network I.; 3 = regional I.; 4 = national I.—and to the percentage of the protected area in relation to the whole area. The added value in this case is related to the proximity to the geosite in S. Maria La Scala.
	Nature Reserve	3	
	Park	0	
	Additional Interest	1	
	DETRACTORS		
	Seismic Restriction	4	Detractors in this system are related to problems expressed by constraints linked to the soil features. Their evaluation was made according to the percentage of surface in relation to the whole area—that is, from 0 = none; 1 = 0–25; 2 = 25–50; 3 = 50–75; 4 = 75–100%. A further problem is given by the data of the R4 and P4 surfaces, as mentioned in the recent updated hydrogeological plans.
	Hydro-Geological Restriction	3	
	L. 445/1908 Restriction	1	
	Additional Trouble	1	
	UPCOMING PROJECTS		
	Consolidation	3	The value of each element was calculated according to the implementation level of the projects, as deduced from the urban planning and planning tools of Table 5—that is, from 0 = none; 1 = 0–25; 2 = 25–50; 3 = 50–75; 4 = 75–100% than expected. The additional value in this case relates to any operations to combat run-off waters due to meteoric events.
	Solution to prevent fire	1	
	Solution to prevent people’s danger	2	
	Additional Intervention	0	

Table 7. Cont.

RS	ELEMENTS	RATE	DESCRIPTION
LANDSCAPE-VISUAL SYSTEM	VALUES		
	Landscape Restriction	4	The value of each element was calculated according to the constrained surface as a percentage of the whole area—that is, from 0 = none; 1 = 0–25; 2 = 25–50; 3 = 50–75; 4 = 75–100%. The added value in this case is related to the widespread presence of terracing systems.
	Residuals (rasule, saje)	2	
	Forests	2	
	Additional Interest	4	
	DETRACTORS		
	Wind-Power and Ground-Mounted Photovoltaic Plants	0	Detractors in this system are referred to the impediments to the landscape perception. Their evaluation was made as a function related to the percentage of surface compared to the whole area—that is, from 0 = none; 1 = 0–25; 2 = 25–50; 3 = 50–75; 4 = 75–100%. A further problem is given by the untapped scenic routes.
	Quarries	0	
	Suburban sprawl	3	
	Additional Trouble	4	
	UPCOMING PROJECTS		
	Dry-stone walls restoration	1	The value of each element was calculated according to the implementation level of the projects, as deduced from the urban planning and planning tools of Table 5—that is, from 0 = none; 1 = 0–25; 2 = 25–50; 3 = 50–75; 4 = 75–100% than expected. The additional value in this case relates to the recent census of local wells and springs.
	Solution to prevent settlement expansion	0	
	Solution for people fruition	3	
	Additional Intervention	1	
HISTORICAL-CULTURAL SYSTEM	VALUES		
	Archaeological Restriction	0	The value of each element was calculated based on the number of the restricted “common goods”—that is, from 0 = none; 1 = 0–5; 2 = 5–10; 3 = 10–20; 4 ≥ 20. The UNESCO proposal for the historic centre is relevant. The added value in this case relates to the disused railway.
	Architectural Restriction	1	
	Urban Planning Intervention	1	
	Additional Interest	1	
	DETRACTORS		
	Preservation Condition	1	Detractors of this system are related to the impediments to the use of cultural heritage. A quantitative assessment of the conditions detected in situ was carried out—that is, from 0 = none; 1 = 0–25; 2 = 25–50; 3 = 50–75; 4 = 75–100% of the whole area. A further problem is related to the lack of knowledge of local cultural goods by inhabitants.
	Private Property	4	
	Access Condition	3	
	Additional Trouble	1	
	UPCOMING PROJECTS		
	Historical Heritage Restoration	4	The value of each element was calculated according to the implementation level of the projects, as deduced from the urban planning and planning tools of Table 5—that is, from 0 = none; 1 = 0–25; 2 = 25–50; 3 = 50–75; 4 = 75–100% than expected. The additional value in this case relates to the restoring of small seaports.
	Solution to prevent settlement abandonment	0	
	Solution for public fruition	3	
	Additional Intervention	1	
AGRICULTURE-PRODUCTIVE SYSTEM	VALUES		
	Land Use for Agricultural Activities	4	The value of each of the elements was calculated based on the percentage of land use surfaces related to the whole area—that is, from 0 = none; 1 = 0–25; 2 = 25–50; 3 = 50–75; 4 = 75–100%. The added value in this case is related to the presence of the Mediterranean maquis.
	Land Use for Agricultural Agri-food	0	
	Land Use for Organic activities	0	
	Additional Interest	1	
	DETRACTORS		
	Industrial Sites	1	Detractors of this system are related to the impediments to the carrying out of agricultural activities. A quantitative assessment of the conditions detected in situ was carried out—that is, from 0 = none; 1 = 0–25; 2 = 25–50; 3 = 50–75; 4 = 75–100 of the whole area. A further problem depends on the widespread abandonment of cultivated terraces.
	Special Districts	2	
	Other	4	
	Additional Trouble	4	
	UPCOMING PROJECTS		
	Terraces Restoration	0	The value of each element was calculated according to the implementation level of the projects, as deduced from the urban planning and planning tools of Table 5—that is, from 0 = none; 1 = 0–25; 2 = 25–50; 3 = 50–75; 4 = 75–100% than expected. The additional value in this case relates to the possible dissemination of knowledge of the agro-food heritage.
	Solution to prevent agriculture abandonment	2	
	Solution for public fruition	0	
	Additional Intervention	0	

The greatest differences are recorded for the perceptive landscape system, where it is evident that in the case of the Pietramonaca district, the high values are accompanied by

strong detractors, but above all, the upcoming projects are insufficient. A tricky situation occurs for the agricultural-productive system where the value of detractors is very strong and above all increased by the abandonment factor; moreover, there are almost no upcoming projects at all. The set of these considerations leads to including this area in the category of endangered landscapes (following Tables 6 and 7). As far as the Chiazzette landscape is concerned, strongly positive elements emerge, especially with respect to upcoming projects, in all systems and in particular on perception (abandonment of panoramic points, made more usable even with numerous interventions aimed at safety and park proposals). The set of these considerations leads to inclusion of this area in the category of preserved landscapes (following Tables 6 and 7).

To sum up, in the first instance analyses were carried out; subsequently, scores to values, detractors and UP were assigned; finally, the formula was used (in order to classify areas in the different typologies of landscape conservation).

The catalogued landscapes are: endangered: 30; residual: 12; disappeared: 10 and preserved: 15.

In this paper, by way of example, two cases are reported, relating to the conditions of preserved and endangered landscapes in the Timpa sample area, as shown in Figure 2.

As can be deduced from it, many of the landscapes in danger derive from physical conditions, which also in the form of the methodology used weigh heavily, while in the case of preserved landscapes, the weight of upcoming projects is relevant, even if not always in the proportion that was expected.

The work, however, also concerned the other two types of landscape, namely the residuals and the disappeared. As for the former, it is mostly woods, peri-urban vegetable gardens of ancient plants, and ancient paths such as the 'trazzere' for livestock movement. As for the latter, the cases are very different from each other: for example, there is the Grotta delle Colombe which has now completely disappeared, the loss of coastline continuity due to aggressive building interventions, and the areas in which collapsed historic buildings fall into neglect.

Only one example for each typology is illustrated in Figure 3.

Figure 2. Sample area analysis. (Source: processing in ArcGis by I.a.co.s.t.a. Laboratory, Cialdea 2020).

Figure 3. Part 1 (a): Landscape performances: preserved and disappeared (author's own elaboration, 2020). Part 2 (b): landscape performances: residual and endangered (author's own elaboration, 2020).

4. Conclusions

The relationship between the needs of economic development and protected areas is a topic that mainly involves coastal areas. This is a highly conflicting issue, especially in the countries of the Mediterranean Basin and particularly in Italy. The case study examined the largest island in the basin, Sicily, which displays valuable landscapes simultaneously with remarkable transformation, mostly due to residential settlements for tourism purposes and second homes.

The results gained should have a wide potential, expressly open to integrations with the various scientific disciplines dealing with landscape. During the work, one of the

situations that deserves more attention was found to be the condition of many terraced landscapes. The most interesting cases were found on the coast where the mountain falls steeply into the sea. These areas were traditionally dedicated to agriculture, but, especially in the more industrialized countries, the phenomenon of abandoning agricultural activities occurred in the middle of the last century and still occurs nowadays.

In Italy, as in every Mediterranean Basin European country, the fundamental problem, therefore, is abandonment with the consequent landscape degradation. While needs for the agriculture maintenance highlight the shortcomings above all of a typicality of its products, urban planning tools often favour residential destinations, especially related to tourism purposes. This, in fact, appears to be the emerging problem, especially because of the neighbouring nature reserves.

This work aimed to provide a methodology for verifying these contrasting needs, and therefore, a system and a database have been created and implemented within the geographic information system, elaborating a comparison between environmental requirements and development strategies. Great attention has been paid to the in-depth examination of the wishes expressed in the numerous planning and economic programming tools, which have been issued in recent years, in order to point out the inconsistencies that they very often bring.

To expand this research, the quality of the GIS can undoubtedly be improved. As a matter of fact, it was necessary to digitize many of the urban planning tools or to make digital—with territorial reference—some information deriving from the written documents, and certainly this phase of work would require a general data validation. However, the main issue is related to the land use changes, and in particular to the maintenance of the peri-urban agriculture [6,12–14,30,33,58–60].

Therefore, terraced landscapes are interesting from multiple points of view. What is less addressed by the literature is precisely the main interest of this research: the discrepancy between the will of the planning tools and the real situation, which often changes the aspect of the landscape in a sudden way and, more often than not, as a result of calamitous events. The planning and management tools (which do not always have the same aim) therefore clash with the rapid evolution of the landscape.

The effort was to compare two different worlds, that of researchers who mainly address the needs of landscape conservation, with those who deal with the future development tools of those territories. The detected inconsistencies between development needs and conservation needs always have consequences on the territory. The main product of this research phase is the introduction of the landscape conservation typologies; they can be an innovative contribution to investigations. The extension of this classification to the entire regional coastal area will constitute a benchmark for local authorities, who have a duty to safeguard the landscape and at the same time to provide for local economic development.

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