

Article

Smart Planning: From City to Territorial System

Paola Panuccio

DIIES - Dipartimento di Ingegneria dell'Informazione, delle Infrastrutture e dell'Energia Sostenibile, Università degli Studi Mediterranea di Reggio Calabria, 89124 Reggio Calabria RC, Italy; paola.panuccio@unirc.it

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Abstract: Actual cities have become smart cities divided by zones. In the past, various innovative actions have been carried out to facilitate smart cities. The projects that were carried out, in response to the needs expressed by inhabitants and driven by individualistic growth, have gone beyond the regulations defined by the urban plan. In fact, territorial contexts reflect the needs of inhabitants, which always shift faster and are more reactive than traditional urban planning tools. The territory is a complex system and it works well if the design choices for its sustainable development are structured and coordinated by a strategic planning tool. The objective of this research is to propose a smart planning process in order to pursue the sustainable development of complex territorial systems. The paper has a particular interest in observing the integrated coastal-marine system as a possible example of real smart development. Smart planning applied to this type of landscape has a positive influence on the development of the environment, landscapes, infrastructure, mobility, services, energy, research, and innovation.

Keywords: smart planning; strategic planning; coastal-marine system

1. Introduction

Land planning is based on the use of planning tools, which, at different levels and administrative scales, refer to theories and use models to define and analyze study areas. According to Italian legislation, planning is based on a system of national and regional laws, and therefore it often does not satisfy the needs of the territories, as legislation is generalized and rigid, while territorial characteristics tend to vary in line with geography and politics. Territorial evolution is also subject to transformation, which is independent from the planning legislation. As a result, it adapts to the requests generated by social, economic, and historical-cultural processes. The city was initially a historic city, in the sense of an organic expression of the rational measures decided by a master plan that provided the lines of development and assigned the destination of use by applying urban planning techniques. After being a modern city [1], today the city has become a smart city by taking advantage of various innovations, independently from master plans. The smart city is therefore not determined by the urban plan, but by a territory's ability to adapt its spaces to the needs established by economic, technological, and cultural development [2]. 'Through the notion of assemblage, cities are not seen as 'organic wholes', but rather as spatial formations composed of different elements which are drawn together at particular temporal conjunctions' [3].

History shows us that cities could innovate and stay in line with the times, or fall back and become old and malfunctioning ones, with services not in line with the emerging needs the population. This could cause the city's growth to slow down and eventually drop on the long run.

If a community does not adapt to progress through innovation, it does not benefit from the advantages deriving from the use of new technologies and/or facilities [4]. Moreover, it gradually becomes isolated from the national and international context, thereby undermining commercial and/or tourist demand. Inside this dynamic and interconnected development, urban planning follows the

transformations that have already been implemented on territories in order to regulate their effects, *ex post*. Two different processes designed the smart city. The first one is a historical one that produced stratification in the city; the second one is a technological process that provides smart services to its inhabitants. Currently, the city's evolution does not respect norms and regulations and instead shifts its trajectory in line with social, economic, and technological demands.

The crisis that Italian urban planning has been suffering for several years is partly caused by an inability to transform the urban plan from a constraining tool based on techniques and norms to a planning tool with an open vision of territorial scenarios for the medium/long-term period [5].

In urban planning, interest in smart planning is high in order to holistically integrate choices and decisions that are suitable for complex territorial systems. Smart planning assumes this role of a connection process where 'there is a scientific approach to urbanization, based on a holistic and rigorous plan of action which shapes the entire city, homogeneously, making it sustainable' [3]. Moreover, smart planning has the important role of connecting the city's technological network with territorial resources, in order to let them become part of the heritage of the city [6].

The objective of this research is to pursue the sustainable development of complex territorial systems. Recent studies have defined the role of intelligent urban planning as the latest evolution of concepts associated with re-interpretations of sustainable urban development [7–10].

The paper has a particular interest in the coastal-marine system as a possible example of real smart and integrated development. Smart planning, applied to this type of landscape, has a positive influence on the development of the environment, the landscape, infrastructure, mobility, services, energy, research, and innovation [11,12]. This hypothesis is based on the concept that the territories must be planned by the urban planning instruments drawn up in observance with the legal norms, but must be administered with smart planning process.

Territories should be governed by strategic plans, which define objectives and implement actions based on priorities and compatibility through a decision-making process, especially for environmental protection and prevention from natural risks.

According to the thesis of the paper, the territories should be:

- Planned by legal planning tools [13];
- Administered with smart planning processes [14];
- Governed by strategic plans that choose priority decisions for sustainable development, environmental protection, and the prevention of natural risks [15];
- Managed by operational tools that carry out the designed actions [16].

After this introduction, the paper is organized as follows. Section 2 reports the evolution of the city into the smart city and, then, into the smart territory. Section 3 presents smart planning as a holistic connection process for the urban plan. Section 4 illustrates a functional demonstration of the smart planning process for an integrated coastal-marine system of the case study involving Roccella Jonica (Italy). The last section reports the preliminary conclusions and research perspectives.

2. From Smart City to Smart Territory

The city is the physical place that persons have built to improve their quality of life. It is the place of houses, street, services, but specially, it is the location of life for its citizens.

In the past there was a clear border between the city and a territory, which was external. The city was built within the walls, and outside the walls there was the country for agricultural use. Today the city is not delimited by physical boundaries, as it has merged with the territory. The territory has assumed more different and important functions, becoming the place where the identities and lifestyles are shaped. It became the area where the welfare of the city is located.

It is therefore fundamental to focus on the territory for the valorization of the city's welfare and heritage, identified by means of environmental, assertive, landscape, and sociocultural constituent systems [17].

The smart city is the current evolution of the urban system. The modern way of life of citizens has created the components that structure the territory, which from an agricultural space have become a form of communication infrastructure, a network for material and immaterial connections. The current research on smart cities is driven by the exploration of the principles that determine urban development and actions for its management [4,8,18].

The territory influenced by these conditions is in continuous transformation, it evolves dynamically and it always changes. It specializes progressively, becoming smart, and increasing its competitiveness and attractiveness. The smart territory is the place where resources are managed accordingly, to be economically sustainable and to produce profit from its meaningful heritage.

The environment and the landscape have become central to defining the instruments, conditions, and resources for self-sustainable development. The territory can become part of the heritage of the city, if its inhabitants exploit resources with appropriate policies [17].

The territory needs to be guided towards sustainable development using an integrated plan, policies, choices, and actions, shared by an active population, as defined in the “Smart Cities and Communities Operational Implementation Plan – 2014 European Commission” [8,19]. For the reorganization of the territory, it would be essential to use smart planning, to think of a strong identity image that can face globalization through the creation of a brand [6], and to be entrusted the city to specific strategic policies of territorial marketing, for the development of a cultural heritage [20].

2.1. Smart City

In recent years, new urban projects have built alternative city models, to spread sustainable built environments. Among these models, the smart city stands out as emblem of an innovative urbanism, based on a scientific approach to urban development [2,3,8].

New forms of cities have been defined, from New Towns, to Smart Cities, to Eco-cities, as innovative spaces and places for urban activities. The smart city is an extremely modern impulse to imagine and shape the future of the city and urban society [4,7].

In 2007 Giffinger coined the term smart city. The main purpose of the city is to produce sustainable economic development and a better quality of life. The smart city is characterized by the interconnection between human capital, social capital, and infrastructure for information and communication technologies (ICT) [2,21]. Later it became important to specify that the Smart City must use network infrastructure to improve economic and political efficiency, and above all, to enable social, cultural, and urban development. The city cannot contain exclusively innovative technology, but must be a network for the development of social and cultural relations [2,22]. The smart city must invest in human and social capital to guarantee sustainable economic growth and improve the quality of life, using both traditional methods and modern communication infrastructure, adopting participatory governance and wise management of natural resources [2,18]. The European Commission, in 2012, equated the smart city with an interactive holistic system, making a significant transition. The smart city is the intersection of energy, transport and mobility, and ICT systems [23]. Mitchell from the research group MIT in Cambridge expressed the most indicative definition in 2013, defining the Smart City as a system of systems. It is a city in which digital nervous systems are triggered, that is characterized by intelligent responsiveness, and is capable of optimizing results at every level of system integration. The smart city as a system overcomes the concept of the network and introduces the idea of integrating different networks; yet the presence of users is not considered to be decisive [2,24]. The European Commission adopts the official definition of the smart city as the city in which the systems determined by the people interacting with each other must be envisaged using energy flows, materials, services, and financing to promote sustainable economic development [25]. Flows and interactions become intelligent by making strategic use of information and communication infrastructure, in a process of urban planning and transparent management that responds to the social and economic needs of society [26]. Finally, the European Parliament in 2014 defined the smart city as a city in which not only components but also people interact [27], and this clarification was very important for human

capital. The smart city model contributes to convergence among theories, rules, and practice, in order to improve the urban quality of life [2].

2.2. Smart Territory

The smart city, defined as the system of systems, has dissolved into territory.

The smart territory is a place in which the characterizing systems coexist in an interconnected way; in which territorial resources are managed in an innovative and intelligent way, ensuring sustainable development, and providing greater control and defenses against hydrogeological risks and natural disasters [4,8].

The smart territory aims to become economically sustainable, energetically self-sufficient, and technologically innovative; tends to meet the needs and the well-being of its inhabitants; orientates actions to guarantee global quality, searches for forms of balance and harmony; and promotes the basic principles for sustainable development. This is set out in the 2030 Agenda and identified in the 17 Sustainable Development Goals [28]. The various projects relating to the thematic categories approved by the European Union to identify the level of smartness are realized in territory, applying the smartness logic. The characteristics and factors of the smartness logic are: Smart Environment, Smart Mobility, Smart People, Smart Living, Smart Governance, and Smart Economy [21]. The smart territory structuring systems belong to technology, to knowledge and people creativity, and to institutional bodies of governance and politics [8].

Among the various perspectives that open up for smart urban planning, some issues are of considerable importance. Referring to the areas of analysis and evaluation defined by the European Union, some configurations are central to urban planning. The smart territory, if guided by an integrated strategic plan, calibrated on an advantageous strategic vision, perfectly created for its peculiarities and potential, will reach important levels of optimization. By exploiting the advantages of the smartness logic, it will be possible to develop projects with a significant image that are immediately recognizable [6]. Subsequently, by activating the mechanisms of territorial marketing, it will be possible to enhance and make the existing cultural heritage productive [20].

In order to develop the projects, in an integrated way, the planner has to take a coordinated action within the three fields of territorial urban planning, namely:

- Transport and Mobility infrastructure;
- Environment and Energy;
- ICT [19,29,30].

3. Smart Planning Process

3.1. Urbanism and Smart Planning

Smart urbanism is a currently popular and widespread way of conceptualizing the future city [7]. Smart planning is a set of planning strategies, based on the principles of sustainable development, and aimed at optimization and innovation of services and utilities [31]. It changes the traditional urban planning approach and, taking advantage of the smartness logic, relates the infrastructure of cities to the human, intellectual, and social capital of the citizens, and with the environment.

The environment in which we live is a complex system and actions occurring on a part of it affect other areas, meaning sustainable development has to follow a plan according to a logic where actions are structured and coordinated in a strategic and integrated process [32].

To adapt urban planning to the evolutionary dynamics, which take place in the environment, the processes have to occur in a holistic strategic plan. It is a fact that the lack of connection between the elements, which define the environment, limits their progress. Smart planning takes on this role as a connection process, and 'the assumption is that there is a scientific approach to urbanization, based on a holistic and rigorous plan of action which shapes the entire city, homogeneously, making it sustainable' [3].

In this vision, urban planning therefore has to be supported by an innovative logic process, promoted by the institutional bodies, which govern the territory, and by the population who actively participates in the decision-making process with choices, which have to be taken responsibly, and are involved in the consecutive project actions [8]. Therefore, the tool and the aim are a process that works through urban planning and actions to generate greener, smarter, more accessible, and connected cities. The purpose of smart planning is to define, through a strategic process, the sustainable development of the integrated territorial system [19].

Spatial plans will be implemented through the use of technological innovation tools adapted to the systemic evolution of the territory. The conceptual and practical turning point of the urban plan consists of the ability to govern the new complexity of urban phenomena, rather than chasing them [4]. The strategic plan integrates the historic city and the smart city, within the constraints of planning laws declined in the city plan. It is a change of paradigm: the “Use” and “Destination” of urban planning give way to strategic choices based on the development of key sectors linked to ICT dynamics, Smart governance, Smart mobility, and Smart environment [33].

We refer to the cases of Vienna and Milan expressed in the literature. Vienna approaches smart urbanism ‘systematically’ and ‘through comprehensive innovation’ to provide ‘the best quality of life for all inhabitants’ [3,4,34]. Milan is considered smart as its regeneration scheme ‘leads to a better quality of life through effective, accessible and intelligent tools aimed at the optimization of resources for all citizens’ [3,4,35].

Smart planning has the further role of connecting the technological development network with the resources that characterize and specialize the territories, giving it value and defining a brand. To define a brand for the city, urban planning has to pay a special attention to activities that boost the image of competitiveness in terms of wellbeing, quality of life, job opportunities, public spaces, and environmental innovations [6].

3.2. Organization of the Process

Smart planning is essentially a process of knowledge, research, decision, choice, and organizational assignment of project actions. On the basis of these assumptions, the fundamental activities for the process could be:

- Resource evaluations;
- Legitimization of choices and decisions;
- Definition of the strategic objectives;
- Proposals and formulation of operational strategies for management [36].

The strategic plan is a decision-making plan for project actions aimed at an integrated development of territorial systems with respect to environmental, technological, mobility, economic, social, and cultural issues [19]. The strategic plan is a product of the smart planning process.

In this paper, smart planning process is organized in two steps (Figure 1):

- The First step, named the cognitive process, includes the following activities: identification of the different systems inside the territory; an evaluation process for the categorization/qualification of resources in risks and values; identification of opportunities and problems in relation to defined targets (e.g., agenda 2030); definition of the strategic objectives.
- The Second step, named the smartness process, includes the relevance analysis process, in line with the smart categories used to define the proposals.

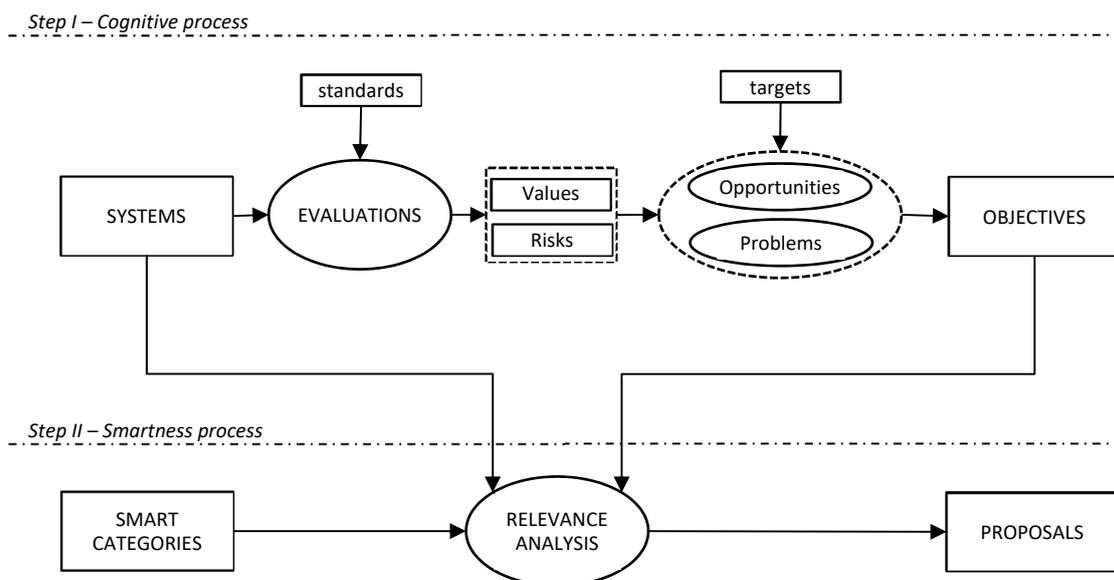


Figure 1. The Smart Planning Process.

4. Functional Demonstration: The Smart Planning Process for an Integrated Coastal-Marine System

The application of the smart planning process, proposed in Section 3.2, is described in the following Sections 4.1 and 4.2 for the coastal-marine system, and then is applied to the specific case study of Rocella Jonica (Section 4.3).

The integrated management of coastal areas is linked to a deep understanding of specific areas. It is essential to assess the pressures and forces that influence events and dynamics, with particular attention on the prevention of natural risks of erosion of costs and natural calamities as floods and landslides [37,38]. The solutions to problems of the coastal areas require specific answers and have a strategic importance for national territory with respect to environmental sustainability and prevention from natural risk policies, and with respect to sustainable economic and cultural development.

4.1. The Integrated Coastal-Marine System

The coastal areas are considered as particularly significant territorial systems, because they are composed by the land system and by the sea system. These are landscapes characterized by productive and anthropic systems, in addition to natural and environmental systems of significant strategic relevance. The combination between these two systems, so rich in complexity, refers to the definition of the smart city as a system of interactive systems. A conceptual extension of this definition may be drawn to the coastal-marine integrated complex system and use smart planning as a design instrument.

According to the definition of Ketchum, the coast is the adjacent land to the sea in which the processes of using the soil and those of the sea interact with their influences by each other [39].

Therefore, the coastal-marine system is the area in which land and sea, due to the continuous interactions between processes and land use and between processes and marine uses, creates an aggregated system known as “coast + sea”.

This type of territorial context is a complex entity, characterized by different systems, dynamic, with a strong landscape value, and continuously subjected to mutually correlated and interconnected events [40].

The interest of the European Community in the integrated planning of the coastal areas of the sea Mediterranean is considerable, as they constitute a relevant cultural and natural heritage opportunity. The addresses contained in the Recommendation of the Council and of the European Parliament 413/2002 were implemented in the 2013 Integrated Coastal Zone Management [11,12].

The integrated planning of coastal areas aims at achieving sustainable development through the choice of activities that harmonize economic, social, and cultural development with landscape protection. This is intended to guarantee the sustainable use of natural resources and to prevent and reduce the effects of natural risks. Then the coastal-marine complex system will have to be planned by a single territorial, integrated, and innovative urban planning process. In fact, if the choices are decided by a single plan, they will transform the natural historical landscape into a territorial heritage location.

The smart integrated plan for the management and sustainable development of the coastal-marine area is based on a strategic process of choosing objectives and development policies for the protection and enhancement of different landscapes, and consequent and adequate planning actions. The term “integrated” refers both to the integration of the objectives and to the various planning instruments necessary to implement them. It involves the integration of all the policies related to the different sectors of interest, and of all the administrative and institution involved, with a forward-looking holistic perspective, both thematic and geographical. There are no simple legislative solutions to problems of this complexity. Integrated coastal zone management is a strategic process that uses a new plan methodology and implies a new management style. The heterogeneity of physical, economic, cultural, and institutional conditions requires contextual responses to guide development strategies and problem solving [41].

The strategic plan for integrated coastal zone management is structured on a dynamic, interdisciplinary and iterative process. It is based on a planning process built on knowledge of integrated systems; on the evaluation of resources and risks; on mitigation and prevention for the control of risks caused by climatic phenomena and natural disasters; on the formulation of strategic objectives and project actions. Furthermore, it makes use of the collaboration and informed participation of all the interested parties that live and benefit from that specific context, so as to be able to guarantee sustainable management both at an environmental and an economic level.

4.2. The Blue Growth Strategy: an Opportunity for the Integrated System “coast + sea”

The coastal system and the sea are two high-value landscape typologies, characterized by excellent resources. The Italian urban legislation has protected the use of these properties with specific constraints in order to preserve their peculiarities. In last decades, laws have been enacted that transform the absolute protection of assets into norms for the protection and enhancement of resource use. Valorization actions allow the use of resources in a sustainable way and to transform them into territorial heritage resources. The value add that an urban plan can assign to resources transforms goods into heritage resources and allows for producing profits. Integrated management of coastal areas aims to balance environmental, economic, social, cultural, and recreational objectives over the long term within the limits imposed by natural dynamics.

The Blue Growth Strategy report, drawn up by the European Commission in March 2017, designs the determining sectors able to develop the economy of the coastal integrated system according to the Blue Growth Opportunities – 2012, for marine and maritime sustainable growth.

The sectors are: energy, aquaculture, tourism, biotechnology, and marine mineral resources [42,43]. The individual sectors of the Blue Economy are interdependent. Their importance is due to their ability to use the sea in a sustainable way. These sectors were selected because of their innovation capacity. The objective of the Blue Growth Strategy is to promote smart, sustainable, and inclusive growth and employment opportunities in Europe’s maritime economy.

The Blue Growth has been mentioned to remove the importance of smart integrated planning for the coastal-marine complex system.

In the next paragraphs, smart planning was tested in the case study of Roccella Jonica (Italy), to try to integrate the valorization of resources with strategic choices for sustainable development into a single plan. Roccella is interesting because it is characterized by environmental, landscape, and historical resources and a tourist port, which is involved in projects to produce clean energy from sea waves and to provide green transport services. Roccella Jonica has many of the characteristics that

define the five sectors of the Blue Growth Strategy, but the two of the 'blue energy', and of 'maritime, coastal and cruising tourism' are highlighted, both of which are valid for defining the strategic vision.

4.3. Case Study: the Coastal Town of Roccella Jonica (Italy)

Roccella is a town in the metropolitan city of Reggio Calabria, with about 6500 inhabitants, located on the Jonian coast called Costa dei Gelsomini.

It has a strategic role for neighboring municipalities, because it is characterized by meaningful territorial systems; it is equipped with an appreciated urban framework and it has a relevant landscape and environmental system. It has interesting development opportunities, with resonance at national and international level, especially for the presence of a relevant tourist port. Tourism has a major role in the whole of the Jonian territory. The tourism sector, even if it is a relevant demand, is developing itself in an elementary and spontaneous way. The territory is looking for development, but has not found a unique direction model that is able to promote its potential. A smart integrated plan, built on a holistic model, could favor the creation of a significant, recognizable, and qualifying territorial brand; could be the optimal result of the actions of a single integrated smart plan [6,44]. The plan could be a real opportunity for remarkable growth and smart development, beyond the starting strategies for a territorial marketing policy. The territorial marketing strategy considers all development opportunities, enhancing them on appropriate markets. 'For instance, natural resources could be exploited industrially, commercially, or in a leisure context, as well as socio-culturally. Local traditions could be valued both in a tourism setting and/or in a socio-cultural one. Heritage properties could be considered as investment attractions both for businesses and for nonprofits, considering not only commercial but also socio-cultural usage.' [20].

The strategic plan for smart sustainable development of the coastal area of Roccella Jonica, adopts the smart planning process (Figure 1). This has developed according to the following activities:

- Organization of the knowledge process and structuring by systems.
- System evaluation process and construction of relational matrices.
- Process of determining the vision and decision of the strategic target.
- Proposals and strategic project actions.
- Construction of sustainable design scenarios and the choice of project actions based on priorities.

A strategic smart plan could support the enhancement and sustainable development of the coastal-marine complex system of Roccella Jonica, in line with the Sustainable Development Goals set in the 2030 Agenda [28].

The strategic vision guide has been obtained by the Blue Growth Strategy for the two sectors of 'blue energy' and 'maritime, coastal, and cruise tourism' [42].

The smart planning process is structured in the following way:

First: organization of the cognitive process and structuring of the territory into systems.

Second: the system evaluation process, qualification of significant territorial resources. The information obtained during the knowledge process has made it possible to assess the degree of value, relevance, and integrity of resources; the level of risk, criticality, vulnerability, and conflict between systems; the pressures between the systems and destinations of urban use, between systems and functions, and between systems and activities. The attention to the naturalistic problems derived from the erosion, slip of the ground, landslides and floods, is of considerable importance. The integrated coastal-marine system, supported by hydrogeological plans, integrated with urban choices, allows us to implement environmental engineering planning to mitigate the risks, resolve threats of danger, and qualify landscapes [45].

Third: The results of the assessments, involving the needs and wishes declared in the decision-making process of active participation by the inhabitants and stakeholders, define strategic objectives for the development of the territory.

Fourth: Proposals. The definition of the objectives will allow for determining the sustainable actions for the protection and enhancement of the territory, and the elaboration of the projects to be implemented on the basis of the decided priorities. Rules and legal direction will complete and authorize the realization of the strategic project actions.

In the next paragraphs, the two matrices built to support the work are illustrated.

The first matrix is relative to the cognitive process – Step I. It has been organized by crossing the systems identified by the interpretative reading of the territory, with the qualification of resources (Table 1).

The second matrix is relative to the smartness process – Step II. It has been organized by crossing the categories and factors of smartness logic [21], compared to the identified and qualified territorial systems in the cognitive process (Table 2). These matrices aim to the definition of the strategic objectives and project proposals for the coastal marine integrated system of Roccella Jonica.

4.4. Step I: Cognitive Process and Evaluation of Territorial Resources

The interpretative reading of the state allowed us to derive the prevailing systems that characterize the territory of Roccella Jonica:

Environmental landscape system: identification of characterizing landscape units; strategic environmental assessment of resources and risks. The most significant landscape units were assessed, which are the coast and the sea [46].

Historical cultural system: census of historical and cultural assets. In addition to the historical buildings, such as the Norman castle, the cathedral, and the museum, the elements connected with religious traditions, festivals, markets, fairs, and gastronomic products were evaluated [47].

Transport infrastructure system: identification of the connection network of the main communication routes, railways and roads, and location of accessibility points. Analysis of the infrastructure and quality standards for integrated and sustainable mobility of people and goods [48].

Green mobility system: identification and analysis of pedestrian and cycling ways; connection networks for the use of territorial resources; green modes of vehicle use [49].

Urban facilities system: analysis of the main urban planning analysis, services, and commercial structures [4].

Receptive tourism system: analysis of the main offers and facilities of the territory for tourist attractions. Census and cataloging of accommodation and hotel facilities belonging to any class: from resorts and historic residences to traditional inns.

Sports and leisure time system: identification and analysis of sports facilities, for an increase in the endowment aimed at the diffusion of sports. Sport is an opportunity for progress due to its educational, aggregative, and competitive functions, but above all for providing a vision of development of sports tourism. A census is conducted of territorial facilities, followed by evaluation of public open spaces destined to leisure time for the increase in social well-being and quality of life [4].

Port system: the Port of Santa Maria delle Grazie is a functional and sustainable international infrastructure node, a strong attraction for the territory. It is the demonstrative synthesis of the integrated coast-sea smart system. Excellent resources relating to coastal landscape units and marine landscape units characterize it. For many years, the port has been awarded with environmental quality awards called: Blue flag; 5 sails, and Green flag.

The sustainable management of the port, with the use of REWEC3 technology for the production of clean energy from the waves of the sea and the use of clean energy to power electric vehicles for the transport of the users of the port, in addition to utilizing the directory expressed by the European Union in the Blue Growth Strategy, is a factor of considerable importance and is extremely innovative for smart sustainable development [50–53].

Table 1. The cognitive process – Step I.

Systems	Value	Risk	Problems	Opportunity	Objectives
1. Environmental Landscape	***	***	Vulnerability Coastal Erosion Landslides Floods	Coast Sea Beaches Tourist Fruition	Risk Mitigation Prevention Protection Redevelopment Enhancement
2. Historical Cultural	***	**	Urban Decay Disused Buildings	Historical and Rural Buildings Local Traditions Festivals - Markets Local Food - Typical products	Urban Regeneration Development - Enhancement Heritage Communication ICT
3. Transport Infrastructure	*	***	Insufficient Road Insecurity Road network Parking area	Panoramic	Adjustment Road Network Expansion Safety of Roads – Intermodality – ICT Parking Areas Equipped Sports Tourism
4. Green Mobility	**		Economy	Innovative Experimentation Landscape Way- Cycling Pedestrian	Increase Communication – ICT Livable Roads
5. Urban Facilities	**	*	Obsolete	Service Equipment Commercial Places Social Value Places	Requalification - Development Communication – ICT Improve Open Spaces - Leisure Contexts
6. Tourism	***		No Strategy	Landscape - Seabed - Beaches Fishing - Pleasure Boating	Development - Offer Integration Communication – ICT
7. Sport	*	***	Lacking Facilities Little Equipment	Marine Sports Quality Open Space	Sports Culture Dissemination Increase Sports Activities - Sports Tourism
8. Port	***	*	Storm Surges	Blue Growth Strategy Environmental Awards Seabed	Extension area Sponsorship Communication - ICT

*** The smartness presence is relevant. ** The smartness presence is average. * The smartness presence is minimal.

Table 2. Smart Planning for Integrated Coastal Marine System of Roccella - Step II.

	Systems 1	2	3	4	5	6	7	8	
Smart Categories	Environmental Landscape	Historical Cultural	Transport Infrastructure	Green Mobility	Facilities	Tourism	Sport	Port	Proposals
Environment (Natural Resources) Attractivity Pollution Protection Sustainable Resource Management	***	**	*	***	**	***	***	***	Environmental Engineering Protection Habitat Energy Requalification Communication Brand Marketing Strategy
Mobility (Transport) Local accessibility Availability ICT Safe transports	**	*		***	*	*	*	***	Accessibility Airport Network / ICT Connection Public Safe Limited Traffic Cycling Pedestrian Way
People (Human Capital) Qualification-Creativity- Participation in Public Life Open Mindedness	***	**	*	**	**	***	**	***	Increase Awareness Spread Knowledge Professionalism Work Ethic
Living (Quality of Life) Cultural Education Facilities Individual Safety- Housing Quality-	***	*		***	***	***	*	***	Structural Functional Building Renovation Global Connections ICT Social Security
Governance (Participation) Decision Making-Public and Social Services-Political Strategies Perspectives	***	**	*	**	**	*	*	**	Divulge awareness Professionalism Common Good Social well-being
Economy (Competitiveness) Innovative Spirit Entrepreneurship Economic Image- Trademarks-Productivity	*	*	*	***	**	**		***	Territorial Marketing Strategies Marketing Local Products Communication /ICT Advertising /Tourism

*** The smartness presence is relevant. ** The smartness presence is average. * The smartness presence is minimal.

A matrix of the cognitive process was built to support the interpretative reading of the state. It has been built indicating, the eight systems resulting from the interpretative reading for each line, and also indicating in the columns the value, the risks, the problems, and the opportunities. The cells allowed for qualifying the conditions of the systems and evaluating the resources. The last column, after having processed the results, summarized the proposals and indicates the objectives, as seen in Table 1.

The evaluation was carried out according to synthetic comparative parameters that allowed us to assign four value levels. The territorial systems can reach a maximum of three if values, risks, or problems identified are highly relevant to the state of the resources available, two if they are somewhat relevant; of one if they are minimally relevant, and zero, if they are non-existent.

4.5. Step II: Smart Planning for Integrated Coastal Marine System of Roccella

The current situation, involving the process of obtaining knowledge and qualification of the resources, was determined according to the smart thematic categories. A matrix was built based on characteristics and factors of the smartness logic [21] to make significant territorial systems interact with the six smart categories classified by the European Union: Environment, Mobility, Economy, People, Governance, and Living.

The six lines identify the smart planning categories and cross the territorial systems in the corresponding boxes, as seen in Table 2.

The evaluation was carried out according to synthetic comparative parameters that allowed us to assign four value levels. The territorial systems will be able to reach a maximum of three if the smartness presence is relevant, two if the presence is average, one in the event that the presence is minimal, or zero in the event that it does not exist in that location.

The result addresses the definition of strategic objectives and design proposals for the Roccella smart coastal marine integrated system.

5. Conclusions and Further Developments

Smart planning is a possible tool that can be used to pursue sustainability in complex territorial systems.

This paper proposes a smart planning process organized in two steps.

This process, as applied for an integrated coastal-maritime system, is a functional demonstration. In particular, Roccella Jonica, which is a coastal town in the south of Italy, represents the case study. The paper investigated the Blue Growth Opportunities and the Blue Growth Strategy, and how the case study adapts to them. The case study analyzed allowed us to execute an analysis of the smart planning process. From the analysis of the data ordered in two matrices, it turned out that the territory of Roccella has excellent resources and a high potential in the tourism sector. The smart planning process could support converting resources into opportunities and preventing them from becoming risks. In particular, it is necessary to develop the two sectors of 'blue energy' and of 'maritime, coastal and cruising tourism', within a strategic vision. The proposed smart planning process could have positive effects on the environment, landscape, infrastructure, mobility, services, energy, research, and innovation.

The process could be replicable in other complex territorial systems with different characterizations (from the urban center to the landscape).

Future research could involve the development of the obtained results.

As for the cognitive process, further qualitative and quantitative assessments are needed. For the smartness process, it is necessary to develop other sectors of the Blue Growth Strategy to promote smart, sustainable, and inclusive growth, and employment opportunities in the maritime economy.

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