Bottom-Up Processes for Culture-Led Urban Regeneration Scenarios

Lucia Della Spina(✉), Claudia Giorno, and Ruggiero Galati Casmiro

Mediterranea University, Salita Melissari, 89124 Reggio Calabria, Italy
lucia.dellaspina@unirc.it, claudgiorno@gmail.com, ruggiero.galatic@gmail.com

Abstract. The research explored the potentialities of an integrated approach to identify the preferable culture-led urban regeneration scenarios for Catanzaro (Italy). Through a process of knowledge of the urban contest it was possible to identify and analyse transformation also through shared values, as constitutive elements of the vision of the place; through these, it was possible to interact and understand the transformations in progress by developing an intervention strategy that can guide and support a process of culture-led regeneration. The Multi-Criteria and multi-group assessment was carried out through the Analytic Network Process (ANP) method, which allow to support the design of shared and transparent planning and design choices, according to a bottom-up approach. The decision-making process, in its different phases and results, allows making explicit the components that significantly influence the local transformations and that could guide the interaction between the different involved stakeholders towards a shared common vision.

Keywords: Urban regeneration · Culture-led regeneration scenarios · Multi-Criteria Decision Aid (MCDA) · Multi-Stakeholder Decision Analysis (MSDA) · Analytic Network Process (ANP) · Scenario analysis · Multidimensional indicators

1 Introduction

The themes of urban regeneration, social innovation, the redefinition of the role of the public, and local administrations in particular, are connected to each other and to the great challenge that cities around the world are facing in these years: how to give responses to the needs of its citizens with increasingly scarce resources in the face of ever greater challenges. The activation and success of these paths require a combination of conditions, including the cultural endowment and productive vocations of the territories, the development of shared projects and the implementation of enlightened visions/actions, public or private.

The most widespread practices of incorporating culture into the urban regeneration processes are relatively recent, and that activities are seen as catalysts of regeneration and change. The projects are often intended as a symbol of urban regeneration, more

© Springer Nature Switzerland AG 2019
S. Misra et al. (Eds.): ICCSA 2019, LNCS 11622, pp. 93–107, 2019.
https://doi.org/10.1007/978-3-030-24305-0_8

specifically there is the need for different factors to make these projects work, among which the support of the community is a key factor [1–3]. The culture-led regeneration represents the most current and innovative reference model, where the culture becomes the instrument to link the different social, economic and urban components into a single synergistic process, involving the communities in the representation of their own identity.

The culture-led regeneration practices focus on revaluating those cultural resources that represent uniqueness, social vitality and the identity of places as tools for local sustainability and cohesion [2, 4].

The recovery of urban spaces, through the change of their original intended use, represents today one of the (few) levers available to cities to reinvigorate the social fabric and stimulate the emergence of new interactions, in order to generate possible innovative solutions to the multiple challenges in front of which they are found. In this logic, even iconic but disused places, become an active part of an urban ecosystem, aimed at stimulating contamination between different sectors of the economy and the urban social sphere and generating new connections between organized groups of citizens. These places acquire new value for the cities as they intercept networks of active relationships and become containers for projects that civil society is able to express through organized and stable actions. From this point of view, the communities have built their "living space" within these spaces and make them centres of innovation from the bottom-up, often with an open and inclusive approach. Without these communities, any redevelopment project of this type is bound to fail. Without a clear vocation or a long-term design, but above all without the energies that different actors can 'inject' into these spaces, the possibility of making them out of the attractors and generators (of what is new and potentially useful for cities) is missed.

The theme of urban regeneration through the restructuring and re-use of public spaces is a broad and debated topic and therefore it is not surprising that researchers from different disciplines (economics, urban geography, sociology, etc.) have shown, in studying these phenomena and the resources, that local administrators have invested in pursuing policies focused precisely on creativity and culture.

These policies, commonly known as creative or culture-led (or "driven by creativity/culture"), include all those actions undertaken by public subjects (or participated by the public) and aimed at creating the contextual conditions in support of culture and creativity such as lever for the economic and social development of a territory [5–9].

In this sense, there are several cities which, starting from the 1980s, as a response to the crisis, have begun a process of urban regeneration and the re-launching of the economy of a city with a purely industrial past through culture and creativity [7–9].

Recently, culture and creativity, intended as levers for urban regeneration, have been connected to the theme of social innovation, as a creative process, largely of a collective nature, aimed at the realization of goods and services that improve the level of well-being of a community in terms, for example, of education, welfare and social inclusion [9, 10].

From the point of view of social aspects, in fact, the redevelopment of abandoned areas can bring new life to districts or even entire cities, through either a re-appropriation or a rethinking of one's own identity through culture, or an improvement in living conditions thanks to activities of micro-enterprises or social innovation

organizations, such as the birth of social and/or cultural enterprises hosted within incubators or creative hubs.

The theme of urban regeneration, therefore, represents a very current phenomenon and of great interest for local administrations, but also very complex.

Under these circumstances, the evaluation of urban transformation scenarios is therefore a complex decision problem where different aspects need to be considered simultaneously. So it is of particular importance to provide the decision makers with integrated evaluation tools able to consider the multiplicity of objectives and values when dealing with urban regeneration processes and to include the opinions and the needs of the different stakeholders involved [11].

Evaluation can be defined as a set of activities oriented to the appropriate organisation of the information necessary to make a choice, so that each actor involved in the decision-making process is able to take a balanced decision [12].

In this perspective, a Multi-Criteria Decision Aid (MCDA) approach represents a useful and effective instrument to understand the structure of the decision-making problem and the multiple and different dimensions that characterise it. Thus, it is possible to face conflicts that do not have unique solutions, but are characterised by variety and uncertainty [13], activating a process of dialogue and communication, not only between technicians, but between all those involved directly or indirectly by the plan choices. Therefore, MCDA can facilitate the decision-making process because it is frequently necessary to face situations in which several solutions are available, but different conflicting criteria must be considered.

The evaluative approach was built using the evaluation deliberative methods and a Multi-Stakeholder Decision Analysis (MSDA) to guide the interaction between the different stakeholders involved towards a shared common vision. This allow for identify the preferable culture-led urban regeneration scenario and to elaborate a strategic potential actions for the scenario implementation.

2 The Case Study

The proposed application concerns the urban area of historic centre of Catanzaro (Italy), capital city of the Calabria Region, known as the “City between the two seas” playing a significant connective and strategic function (Fig. 1), as it is located between the Ionian and Tyrrhenian coasts of the peninsula. It is an important administrative, commercial and cultural centre, with considerable administrative functions at the regional level.

The goal is to create a useful approach to policy makers for the elaboration of a strategy of culture-led regeneration structured through a multidimensional decision-making process and to build future alternative scenarios and actions through both bottom-up processes and top-down processes [14, 15].

Given the limited availability of economic resources, it is crucial to select a set of actions able to promote urban regeneration and development over time.

The knowledge framework has been set to understand the transformation processes in the context of study, in order to identify the significant components, which should



Fig. 1. The study area: Catanzaro (Italy)

characterise the regeneration process and select the actions to be included in the alternative scenarios.

3 Methodological Approach

In the early phases of the methodology used, some preliminary preparatory analysis were conducted, with the aim of analysing the transformations that occurred over time in the urban area of study.

The process of knowledge, through a bottom-up approach, has centred around the study of social, cultural, economic, and urban dynamics in the urban area over the last three decades (Table 1), with the aim of identifying those corrective or improvement actions for the development of future transformations, useful for developing the scenarios alternative of culture-led regeneration.

In Urban Agenda study for the city of Catanzaro, local actors and the authorities operating in the area have identified, through an Institutional Analysis [15, 16] some visions during a process of participation, integrating common knowledge and expert knowledge. The map of the stakeholders was elaborated and articulated considering the following categories: Promoters (institutions of the Municipality of Catanzaro); Operators (associations, economic activities); and Users (inhabitants, tourists, visitors, both actual and potential). This group of people was subjected to a series of questions related to the future vision of the city and the urban changes desired. The different

Table 1. Indicator categories for social, cultural, urban and economic criteria

Criteria	Indicators	Unit of measure
Social criteria	Total residents	n.
	Residents by age groups	n.
	Residents by age groups	n.
	Residents by educational qualification	n.
	Single person households	n.
	2–5 person households	n.
	>5 person households	n.
	% or number of residents in low-income households	% or n.
	% or number of resident foreign residents	% or n.
Cultural criteria	N. of associations	n./10000 inhab.
	N. of social centres/community centre	n.
	% or number of non-profit organization	% or n.
	N. of events or projects supported by volunteers	n./year
	N. of people employed in creative sector/tourism sector	n.
	N. of people employed in the third sector	n.
	N. of employees in supporting institutions for culture	n.
	N. Historical buildings	
	N. Religious buildings	n.
Urban criteria	N. School buildings	n.
	N. or % of well-preserved buildings	n. or %
	N. or % of buildings in poor condition	n. or %
	N. or % of historic building with minor problems	
	N. or % of buildings in ruin	n. or %
	N. or % of improper housing	n. or %
	% of used/partially used historic building	%
	% of unused historic building	%
	N. of historic properties designated as cultural heritage	n.
	N. of restoration and adaptation works undertaken on historic buildings/sites	n.
	% of re-functionalized historic buildings	n./year
	Area of facades of historic buildings rehabilitated	sqm
	% of citizens satisfied with historic buildings quality	%
	% or number of visitors available to make a contribution to heritage restoration	% or n.
Economic criteria	Average price of properties	€/sqm
	Average rent value for residential properties	€/sqm
	Average rent value for commercial-use properties/offices	€/sqm
	N. or % of new residences	n. or %
	N. or % of social housing units	n. or %

(*continued*)

Table 1. (*continued*)

Criteria	Indicators	Unit of measure
	N. or % of office spaces	n. or %
	N. or % of commercial units	n. or %
	N. of new constructions/rehabilitations	n./year
	% of ownership houses/commercial units	%
	% of rented houses/commercial units	%
	Housing/properties vacancy rate	%
	% of real estate owned by public bodies	%
	% of real estate owned by private properties	%
	Increase in taxes related from the tourist tax	€/year %
	N. of artisans registered	n.
	N. of new cooperative enterprises	n./10000 inhab.
	Youth employment rate/Employment rate	%
	N. of people daily working in the historic centre	n./day
	N. or % of jobs in hotels, restaurants, shops, cultural projects, etc. (temporary or permanent, direct and indirect)	n. or %
	N. of creativity jobs supported by digital sectors	n.
	N. of new businesses	n.
	N. or % of new jobs related to typical local production/distribution	n. or %
	N. of businesses in historic centre	n./year
	Average income	€/year
	Average monthly salary	€/month

information gathered and processed allowed us to identify the significant components, select the actions to be included in the alternative scenarios [15, 16].

In a first phase, some keywords emerged from the analysis of the data of the cognitive framework, the needs identified on the site, the situation (in terms of the strengths and weaknesses), and of the potentiality in the context of study. Then, these keywords have been translated into potential actions able to trigger and promote, if supported, real urban regeneration processes guided by culture. Finally, these actions have been elaborated and aggregated (according to four categories of environmental, social, economic and urban criteria) in a strategic map:

- Building Network: Building a network of citizens and visitors.
- Creating Projects: Promotion of creative activities for the territory and facilitate the exchange of ideas and projects.
- Multicultural Integration: Encourage multicultural integration to increase sociality and build meaningful relationships.
- Cultural Promotion: Promote cultural growth and make it accessible to all.
- Sharing: Promote the sharing of knowledge and skills.

– Promotion and Communication: Improve the promotion and hospitality strategy.
– Creating Job: Increase job opportunities and new jobs for economic and social growth; Promoting local agricultural and craft activities.
– Reusing Spaces and Place: Recover and refurbish abandoned and disused spaces and places to give new value and restore the sense of belonging to the unused urban heritage.
– Differentiating the tourist offer throughout the year.
– Improve accessibility.

From the strategic map of the actions it was possible to implement four different urban regeneration alternative scenarios:

1. **Catanzaro as a Smart City**. The goal of this scenario consists in providing a new identity to the area based on the concept of smart city.
2. **Catanzaro as a Cultural, Creative Community Hub**. This scenario is based on the creation of new cultural services for the area, including enhancement of the small economic activities in the area and on the creation of a new urban park.
3. **Catanzaro as Startup**. This project focuses on the creation of innovative business activities in the area.
4. **Catanzaro as Sharing City**. The objective of this project is mainly related to the enhancement of the public spaces in the area, with special attention to innovative shared solution for living and working.

Through the process of knowledge have been identified three suitable central areas for the development of the regeneration program culture-led urban (Fig. 2). These areas characterized by a series of criticalities but also owning considerable transformative potentials. In particular, these areas have all potential triggering of virtuous processes of value building and active co-involvement of the community [16–18]. These areas are to be found in Catanzaro's disused pubblic heritage, they represent areas run-down areas, abandoned industrial buildings and historic disused buildings:

- **Catanzaro Sala**: station hall and surrounding urban area degraded.
- **Gasometro**: degraded urban park with presence unused industrial archaeology goods.
- **Mattonificio**: abandoned industrial park.

In this research have been explored the potentialities of an integrated approach to identify the preferable culture-led urban regeneration scenarios for Catanzaro city (Italy). Through a process of knowledge of the urban contest it was possible to identify and analyse transformation also through shared values, as constitutive elements of the vision of the place. That makes it possible to interact and interpret the transformations in progress by developing an intervention alternative strategies that can guide and support a process of culture-led regeneration.

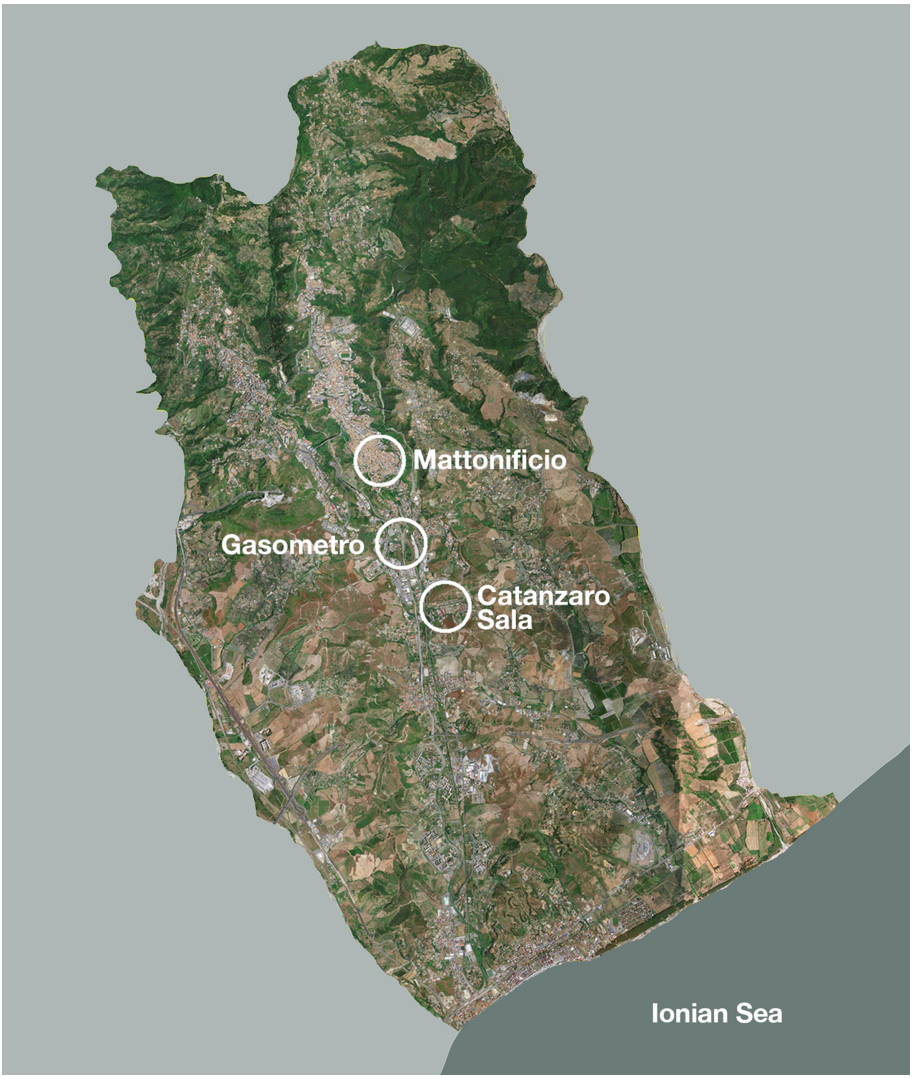


Fig. 2. The three urban areas, aim of culture-led urban regeneration

The Multi-Criteria and multi-group assessment was carried out through the Analytic Network Process (ANP) method, which allows to support the design of shared and transparent planning and design choices, according to a bottom-up approach. The decision-making process, in its different phases and results, allows making explicit the components that significantly influence the local transformations and that could guide the interaction between the different involved stakeholders towards a shared common vision.

Moreover in a preliminary phase, we have subject the future alternatives to:

- Verification of conformity and the best grade of coherence with the prescriptions Municipal Urban Plan [10].
- Verification of the economic and financial feasibility, in order to find the alternative that best preserves the balance between "public benefit" and "private benefit" [19].

However, in this paper, we will illustrate only the Analytic Network Process (ANP) method, which allow to support and assist Decision Makers, Urban planners and Designers in the planning of a strategy of culture-led regeneration structured through a multidimensional decision-making process, in order to build future alternative scenarios and actions through both bottom-up processes and top-down processes [14, 16].

4 Analytic Network Process

For the evaluation of the alternative scenarios for Catanzaro, has been applied the Analytic Network Process (ANP), a Multi-Criteria evaluation method created by T. L. Saaty [20–22] in order to overcome the linear structure of the traditional evaluation methods and to articulate a more dynamic framework, able to consider the complex interactions that characterize the reality. The ANP is a method of supporting decisions that, in addition to the possibility of considering different types of data (quantitative and qualitative), offers the opportunity to assign various weights to the identified criteria, to manage the conflicts between objectives and to deduce the priorities between alternative options. In the ANP method, each decision problem is structured as a network of the elements organized in groups according to multiple reports of the influences. This configuration enables us to find a structure able to incorporate interdependence relationships and feedback. Considering the existence of feedback, in fact, not only alternatives may depend on the criteria, as in a usual hierarchy, but also the criteria may depend on the alternatives and by other elements significant for the decision-making problem [16, 23]. In addition, the method also enables the stakeholders and their points of view to be included in the network.

The information elaborated in the previous knowledge framework was organised into an evaluation matrix consisting of the following categories: objective, criteria, indicators and alternative scenarios. The Multi-Criteria and multi-group evaluation was elaborated by implementing the ANP method [24, 25], with the support of the Super Decision software: the scenarios are compared in pairs in respect to the clusters (criteria) containing the nodes (indicators), which were selected in the previous knowledge framework (Figs. 3 and 4).

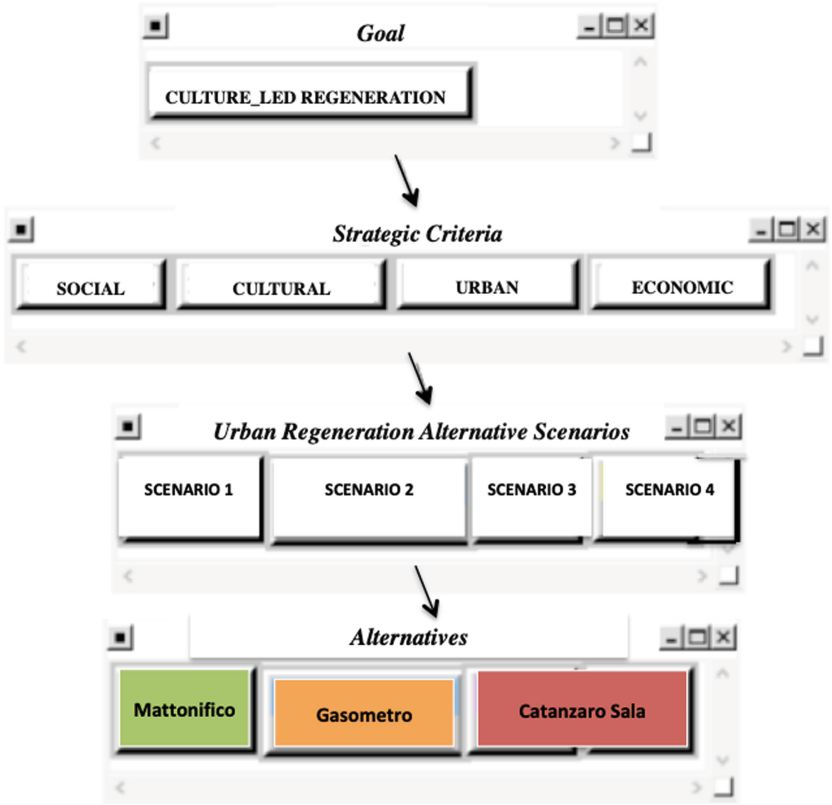


Fig. 3. The structure of ANP model provided by Super Decisions software.

The evaluation process, starting from the map of shared values, identifies the potential actions for the implementation of the preferable scenario for each area and finally return the ranking of the scenarios. Therefore, the most sustainable scenario able to realize the culture-led regeneration strategy is the Scenario 1: **Gasometro-Cultural, Creative Community Hub** with the result of the 39.4%, followed by Scenario 2: **Mattonificio-Smart City** with 31.1% and Scenario 3: **Catanzaro Sala-Sharing City** with 29.5%.



Fig. 4. The ANP supported by the Super Decision software

In order to verify the robustness of the ranking with respect to the selected criteria, a sensitivity analysis was performed (Table 2). It is possible to see how the **Gasometro-Cultural, Creative Community Hub** scenario represents the alternative able to reach the highest scores compared to most of the criteria. Moreover, that scenario satisfies some criteria such as restoration, recovery and re-functioning of the ancient industrial buildings, enhancement, agricultural activity and cultural handcraft, the improvement of the conditions of the reception of the territory, promote recreational activities, increase employment opportunities, enhance the elements characterizing the landscape.

Table 2. Sensitivity analysis

CRITERIA	ALTERNATIVE	Score
Social Criteria	2° Catanzaro Sala-Sharing City	0.234
	1° Gasometro-Cultural, Creative Community Hub	0.323
	3° Mattonificio-Smart City	0.132
Cultural Criteria	2° Catanzaro Sala-Sharing City	0.220
	1° Gasometro-Cultural, Creative Community Hub	0.315
	3° Mattonificio-Smart City	0.209
Urban Criteria	2° Catanzaro Sala-Sharing City	0.320
	1° Gasometro-Cultural, Creative Community Hub	0.328
	3° Mattonificio-Smart City	0.245
Economic Criteria	3° Catanzaro Sala-Sharing City	0.254
	1° Gasometro-Cultural, Creative Community Hub	0.332
	2° Mattonificio-Smart City	0.286

5 Conclusions

The research explored the potentialities of an integrated approach to identify the preferable culture-led urban regeneration scenarios.

The experience thus structured has allowed us to verify how: integrated assessment approaches can be translated into complex evaluation systems, which are able to support the design of shared and transparent planning and design choices, according to a bottom-up approach [26, 27]. The combined application of various methods and techniques, also coming from disciplines not necessarily within the evaluation, enable us to tackle complex decision making, which is characterized by multiple variables and a high level of uncertainty.

In such decision-making contexts, it is necessary to configure an incremental and cyclical process of evaluation, characterized by continuous feedback and constant interactions, useful for delineating a conscious and shared project of transformation and enhancement. In the course of experimentation, the application of an integrated and multi-methodological approach has allowed to take into account the features of the Urban Area under study, the various multidimensional components, the tangible and intangible relations system, and the relative perception of the stakeholders, identifying the weights and identifying the various priorities, selecting actions attentive to context, able to reflect the evolutions of an interactive and dynamic dialogue between the communities, local know-how and experts [28]. At the same time, it is possible to identify some critical issues that are due in some cases to specificities of the context, and in others to the application of the evaluation techniques. The collection of the data

requires a careful selection of reliable and updated sources, as well as the availability of the stakeholders identified to collaborate in decision making and to become protagonists in building decisions. A positive issue regards the evaluation with the ANP method, which has allowed an effective interaction between various fields of knowledge and points of view. The use of the ANP approach in an assembly of stakeholders allowed making explicit the preferences and activate an incremental evaluation that enables us increasingly to address the conflicts and to build converging coalitions towards shared visions.

Through a flexible and adaptive methodology path, combining complex evaluation techniques and stakeholder involvement techniques, it is possible to build urban regeneration strategies and promote good governance processes, capable of enhancing the local deliberative democracy by activating effective collaboration between promoters, operators and users [29].

The choices' effectiveness is related to the ability to integrate various sector policies, but also from the consensus that will be devised for intervention alternatives [30]. The success of the path will also depend on the degree of integration that can be achieved through concertation/participation/coordination processes that are in line with sustainable development strategies. This factor implies a large capacity for the coordination of public institutions and the promotion of "good" initiatives with the involvement of private and private-social stakeholders. With the support of integrated assessment approaches, it is possible to start a systemic and active form of preparation for change; they enable building shared actions in a long-term vision in order to develop and build public decision-making effectively.

Acknowledgements. The authors are gratefully to all stakeholder who kindly participated at network.

Author Contributions. Conceptualization, methodological approach and software: Lucia Della Spina; collection, elaboration of the data, cognitive framework: Claudia Giorno, Ruggiero Galati Casmiro; writing-review, editing and supervision: Lucia Della Spina.

References

1. Evans, G., Shaw, P.: The Contribution of Culture to Regeneration in the UK: A Review of Evidence, vol. 4. DCMS, London (2004)
2. Evans, G.: Measure for measure: evaluating the evidence of culture's contribution to regeneration. Urban Stud. **42**, 959–983 (2005)
3. Evans, G.: Cultural Planning: An Urban Renaissance?. Routledge, London (2001)
4. Mangialardo, A., Micelli, E.: Social capital and public policies for commons: bottom up processes in public real estate property valorisation. Procedia - Soc. Behav. Sci. **223**, 175–180 (2016)
5. Garcia, B.: Cultural policy and urban regeneration in Western European cities: lessons from experience, prospects for the future. Local Econ. **19**, 312–326 (2004)
6. Mommaas, H.: Cultural clusters and post-industrial city: towards the remapping of urban cultural policy. Urban Stud. **41**(3), 507–532 (2004)
7. Grandi, R.: Le città creative. Il Mulino **6**, 1037–1044 (2010)

8. Bianchini, F., Parkinson, M. (eds.): Cultural Policy and Urban Regeneration: The West European experience. Manchester University Press, Manchester (1993)
9. Sgaragli, F. (ed.): Enabling social innovation ecosystems for community-led territorial development. Fondazione G. Brodolini, Roma (2014)
10. Mallamace, S., Calabrò, F., Meduri, T., Tramontana, C.: Unused real estate and enhancement of historic centers: legislative instruments and procedural ideas. In: Calabrò, F., Della Spina, L., Bevilacqua, C. (eds.) ISHT 2018. SIST, vol. 101, pp. 464–474. Springer, Cham (2019). https://doi.org/10.1007/978-3-319-92102-0_49
11. Cassalia, G., Tramontana, C., Calabrò, F.: Evaluation approach to the integrated valorization of territorial resources: the case study of the Tyrrhenian area of the metropolitan city of Reggio Calabria. In: Calabrò, F., Della Spina, L., Bevilacqua, C. (eds.) ISHT 2018. SIST, vol. 101, pp. 3–12. Springer, Cham (2019). https://doi.org/10.1007/978-3-319-92102-0_1
12. Nijkamp, P., Rietveld, P., Voogd, H.: Multicriteria Evaluation in Physical Planning. Elsevier, Amsterdam (1990)
13. Fusco Girard, L., Cerreta, M., De Toro, P.: Integrated assessment for sustainable choices. Scienze Regionali **13**, 111–142 (2014)
14. Nesticò, A., Sica, F.: The sustainability of urban renewal projects: a model for economic multi-criteria analysis. J. Prop. Invest. Finance **35**(4), 397–409 (2017). https://doi.org/10.1108/JPIF-01-2017-0003
15. Della Spina, L.: A multi-level integrated approach to designing complex urban scenarios in support of strategic planning and urban regeneration. In: Calabrò, F., Della Spina, L., Bevilacqua, C. (eds.) ISHT 2018. SIST, vol. 100, pp. 226–237. Springer, Cham (2019). https://doi.org/10.1007/978-3-319-92099-3_27
16. Della Spina, L.: The integrated evaluation as a driving tool for cultural-heritage enhancement strategies. In: Bisello, A., Vettorato, D., Laconte, P., Costa, S. (eds.) SSPCR 2017. GET, pp. 589–600. Springer, Cham (2018). https://doi.org/10.1007/978-3-319-75774-2_40
17. Giuffrida, S., Trovato, M.R.: A semiotic approach to the landscape accounting and assessment. An application to the urban-coastal areas. In: Salampasis, M., Theodoridis, A., Bournaris, T. (eds.) 8th International Conference on Information and Communication Technologies in Agriculture, Food and Environment, HAICTA 2017, Chania, Crete Island, Greece, 21–24 September 2017, vol. 2030, pp. 696–708, CEUR Workshop Proceedings (2017). ISSN 16130073
18. Della Spina, L.: Scenarios for a sustainable valorisation of cultural landscape as driver of local development. In: Calabrò, F., Della Spina, L., Bevilacqua, C. (eds.) ISHT 2018. SIST, vol. 100, pp. 113–122. Springer, Cham (2019). https://doi.org/10.1007/978-3-319-92099-3_14
19. Tajani, F., Morano, P., Di Liddo, F., Locurcio, M.: Un'interpretazione innovativa dei criteri di valutazione della DCFA nel partenariato pubblico-privato per la valorizzazione del patrimonio immobiliare pubblico. LaborEst n. 17 (2018)
20. Saaty, T.L.: The Analytic Hierarchy Process, Planning, Priority Setting, Resource Allocation. McGraw-Hill, New York (1980)
21. Saaty, T.L.: Fundamentals of the Analytic Hierarchy Process. RWS Publications, Pittsburgh (2000)
22. Saaty, T.A., Vargas, L.G.: Decision Making with the Analytic Process. Springer, New York (2006). https://doi.org/10.1007/0-387-33987-6
23. Della Spina, L., Ventura, C., Viglianisi, A.: A multicriteria assessment model for selecting strategic projects in urban areas. In: Gervasi, O., et al. (eds.) ICCSA 2016. LNCS, vol. 9788, pp. 414–427. Springer, Cham (2016). https://doi.org/10.1007/978-3-319-42111-7_32
24. Saaty, T.L.: Decision Making with Dependence and Feedback: The Analytic Network Process. RWS Publications, Pittsburgh (1996)

25. Saaty, T.L.: Theory and Applications of the Analytic Network Process. RWS Publications, Pittsburgh (2005)
26. Concilio, G.: Bricolaging knowledge and practices in spatial strategy-making. In: Cerreta, M., Concilio, G., Monno, V. (eds.) Making Strategies in Spatial Planning. Urban and Landscape Perspectives, vol. 9, pp. 281–303. Springer, Dordrecht (2010). https://doi.org/10.1007/978-90-481-3106-8_16
27. Della Spina, L., Scrivo, R., Ventura, C., Viglianisi, A.: Urban renewal: negotiation procedures and evaluation models. In: Gervasi, O., et al. (eds.) ICCSA 2015. LNCS, vol. 9157, pp. 88–103. Springer, Cham (2015). https://doi.org/10.1007/978-3-319-21470-2_7
28. Calabrò, F., Della Spina, L.: Innovative tools for the effectiveness and efficiency of administrative action of the metropolitan cities: the strategic operational programme. In: Advanced Engineering Forum, vol. 11, pp. 3–10. Trans Tech Publications, Switzerland (2014). https://doi.org/10.4028/www.scientific.net/AEF.11.3
29. Calabrò, F., Della Spina, L., Sturiale, L.: Cultural planning: a model of governance of the landscape and cultural resources in development strategies in rural contexts. In: Proceedings of the XVII—IPSAPA Interdisciplinary Scientific Conference, vol. 5, pp. 177–188. Rezekne Higher Educ Inst-Rezeknes Augstskola, Lettonia (2013)
30. Nijkamp, P., Fusco Girard, L.: Le valutazioni per lo sviluppo sostenibile della città e del territorio. Franco Angeli, Milano (1997)