Carmela Gargiulo Corrado Zoppi Editors

Planning, Nature and Ecosystem Services





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Smart City, Urban Planning for a Sustainable Future

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Carmela Gargiulo Corrado Zoppi *Editors*

Planning, Nature and Ecosystem Services

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INPUT a CAdemy 2019

This book collects the papers presented at INPUT aCAdemy 2019, a special edition of the INPUT Conference hosted by the Department of Civil and Environmental Engineering, and Architecture (DICAAR) of the University of Cagliari.

INPUT aCAdemy Conference will focus on contemporary planning issues with particular attention to ecosystem services, green and blue infrastructure and governance and management of Natura 2000 sites and coastal marine areas.

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This book is the most recent scientific contribution of the "Smart City, Urban Planning for a Sustainable Future" Book Series, dedicated to the collection of research e-books, published by FedOAPress - Federico II Open Access University Press. The volume contains the scientific contributions presented at the INPUT aCAdemy 2019 Conference. In detail, this publication, including 92 papers grouped in 11 sessions, for a total of 1056 pages, has been edited by some members of the Editorial Staff of "TeMA Journal", here listed in alphabetical order:

- Rosaria Battarra;
- Gerardo Carpentieri;
- Federica Gaglione;
- Carmen Guida:
- Rosa Morosini;
- Floriana Zucaro.

The most heartfelt thanks go to these young and more experienced colleagues for the hard work done in these months. A final word of thanks goes to Professor Roberto Delle Donne, Director of the CAB - Center for Libraries "Roberto Pettorino" of the University of Naples Federico II, for his active availability and the constant support also shown in this last publication.

Rocco Papa

Editor of the Smart City, Urban Planning for a Sustainable Future" Book Series Published by FedOAPress - Federico II Open Access University Press

Table of contents

Introduction Corrado Zoppi	15
Sessione 1 - Ecosystem services and spatial planning	
The Danube Riverside Development in the Iron Gates Gorge, Serbia, between Socio-economic needs and Protected Ecosystem <i>Branislav Antonić, Aleksandra Djukić, Milica Cvetanović</i>	17
From a species-centred to an ecosystem-based management approach, a case study of the saltmarshes of Hyères (Provence, France) Patrick Astruch, Charles-François, Boudouresque, Thomas Changeux et al.	29
Spatial evolutions between identity values and settlements changes. Territorial analyses oriented to the landscape regeneration <i>Donatella Cialdea</i>	39
Analyzing senior tourism. The role of ecosystem services to improve sustainable tourism destinations <i>Romano Fistola, Rosa Anna La Rocca</i>	52
Carbon sequestration and land-taking processes. A study concerninig Sardinia Maddalena Floris, Corrado Zoppi	66
The impact of urbanization processes in landscape fragmentation. A comparison between coastal zones of Sardinia and Liguria <i>Giampiero Lombardini, Andrea De Montis, Vittorio Serra</i>	80
Areas of considerable public interest, territorial common goods and ecosystem services: an application case for the city of Cagliari <i>Marzia Morittu, Alessandro Plaisant</i>	86
A bottom up initiatives for biodiversity: ecologic representation for the inner areas of Sardinia <i>Giuseppe Roccasalva</i>	98
The soil matter between eco-systemic performance and spatial planning in metropolitan areas <i>Saverio Santangelo, Paolo De Pascali, Annamaria Bagaini, Clara Musacchio, Francesca Perrone</i>	111
Knowledge-building models for environmental planning: the case study of Bari Stefania Santoro, Domenico Camarda, Pasquale Balena	120
From Ecosystems to Ecosystem Services. A spatial methodology applied to a case study in Sardinia Matilde Schirru, Simona Canu, Laura Santona , Sabrina Lai, Andrea Motroni	130

Session: 2 - Integrated management of marine protected areas and Natura 2000 sites

Organize the management of protected areas according to an optimal framework. Experimental case <i>Aicha Bouredji</i>	142
A methodological approach to build a planning environmental assessment framework in the context of marine protected areas <i>Ignazio Cannas, Daniela Ruggeri</i>	152
An experimental methodology for the management of marine protected areas Maddalena Floris, Federica Isola, Cheti Pira	165
Marine Forests (Fucales, Ochrophyta) in a low impacted Mediterranean coastal area: current knowledge and future perspectives. A phycological review in Sinis Peninsula and the Gulf of Oristano (Sardinia Island, Italy) Daniele Grech, Luca Fallati, Simone Farina, David Cabana, Ivan Guala	176
Assessing the potential Marine Natura 2000 sites to produce ecosystem-wide effects in rocky reefs: a case study from Sardinia Island (Italy) <i>Paolo Guidetti; Pierantonio Addis; Fabrizio Atzori et al.</i>	185
Bottlenecks in fully implementing the Natura 2000 network in Italy. An analyisis of processes leading to the designation of Special Areas of Conservation <i>Sabrina Lai</i>	201
Urban pressure scenario on the protected areas systems. The case study of Teatina adriatic coast Alessandro Marucci, Lorena Fiorini, Carmen Ulisse	212
Posidonia banquettes on the Mediterranean beaches: To what extent do local administrators' and users' perceptions correspond? <i>Paolo Mossone, Ivan Guala, Simone Simeone</i>	225
The ecosystem services cascade perspective in practice: a framework for cost- benefits analysis in Marine Protected Areas. The study case of Portofino Marine Protected Areas <i>Chiara Paoli, Paolo Povero, Giorgio Fanciulli et al.</i>	235
The contribution of the assessment of policy consistency and coherence to the definition of the legistative provisions of marine protected areas. The examples of the regulations of "Tavolara-Punta Coda Cavallo" and "Isola dell'Asinara" <i>Salvatore Pinna, Francesca Leccis</i>	251
Passive acoustics to monitor flagship species near boat traffic in the Unesco world heritage natural reserve of Scandola <i>Marion Poupard, Maxence Ferrari, Jan Schlüter et al.</i>	260
Use of ecological indices to assess the health status of Posidonia oceanica meadows in the Eastern Liguria. Influence of ecological status on natural capital <i>Ilaria Rigo, Monica Montefalcone, Carla Morri et al.</i>	271
Coastal governance and planning agreements for integrated management of marine protected areas in UE coasting project Saverio Santangelo, Paolo De Pascali, Maria Teresa Cutrì et al.	281

Innovative management tools to survey boat traffic and anchoring activities within a Marine Protected Area <i>Thomas Schohn, Patrick Astruch, Elodie Rouanet et al.</i>	292
SHADES. Sustainable and holistic approaches to development in European seabords <i>Francesco Vita, Fortunato Cozzupoli</i>	302
Session 3 - Rural development and conservation of nature and natural resources	
New local projects for disadvantged inner areas. From traditional model to bio- regional planning <i>Anna Maria Colavitti, Alessio Floris, Francesco Pes et al.</i>	312
Inclusion of migrants for rural regeneration through cultural and natural heritage valorization <i>Elisa Conticelli, Claudia de Luca, Aitziber Egusquiza et al.</i>	323
Environmental and social sustainability of the bioenergy supply chain Sebastiano Curreli	333
Proposals on the Agricultural Land Use in According to the Features of the landscape: The case study of Sardinia (Italy) Pasquale Mistretta, Giulia Desogus, Chiara Garau	345
Common land(scape): morphologies of a multifunctional rural landscape in the Isalle Valley, Sardinia <i>Roberto Sanna</i>	356

SheepToShip LIFE: Integration of environmental strategies with rural366development policies. Looking for an eco-sustainable sheep supply chain*Enrico Vagnoni, Alberto Atzori, Giovanni Molle et al.*

Session 4 - Geodesign, planning and urban regeneration

The territorial planning of European funds as a tool for the enhancement and sustainable development of natural areas: the experience of the Strategic Relevance Areas of the ERDF OP 2014-2020 <i>Stefania Aru, Sandro Sanna</i>	375
The International Geodesign Collaboration: the Cagliari case study Michele Campagna, Chiara Cocco, Elisabetta Anna Di Cesare	385
A geodesign collaboration for the mission valley project, San Diego, USA Chiara Cocco, Bruce Appleyard, Piotr Jankowski	399
University and urban development: The role of services in the definition of integrated intervention policies <i>Mauro Francini, Sara Gaudio, Annunziata Palermo, Maria Francesca Viapiana</i>	410

Urban environment. An analysis of the Italian metropolitan cities <i>Giuseppe Mazzeo</i>	419
Recycled aggregates. Mechanical properties and environmental sustainability Luisa Pani, Lorena Francesconi, James Rombi et al.	431
Geodesign fast-workshops evidences. On field applications of collaborative design approach for strategic planning and urban renovation <i>Francesco Scorza</i>	443

Session 5 - Green and blue infrastructure

Green infrastructure as a tool of urban regeneration, for an equitable and sustainable planning. An application case at l'Eixample, Barcelona <i>Clara Alvau Morales, Tanja Congiu, Alessandro Plaisant</i>	453
The value of water: ecosystem services trade-offs and synergies of urban lakes in Romania <i>Denisa Lavinia Badiu, Cristian Ioan IojĂ, Alina Constantina Hossu et al.</i>	465
A blue infrastructure: from hydraulic protection to landscape design. The case study of the village of Ballao in the Flumendosa river valley <i>Giovanni Marco Chiri, Pino Frau, Elisabetta Sanna et al.</i>	476
Municipal masterplans and green infrastructure. An assessment related to the Metropolitan Area of Cagliari, Italy Sabrina Lai, Federica Leone, Corrado Zoppi	488
The Ombrone river contract: A regional design practice for empowering river communities and envisioning basin futures <i>Carlo Pisano, Valeria Lingua</i>	502
Green infrastructures in the masterplan of Rome. Strategic components for an integrated urban strategy <i>Laura Ricci, Carmela Mariano, Irene Poli</i>	513

Session 6 - Smart city planning

Smart City Governance for Child-friendly Cities: Impacts of Green and Blue Infrastructures on Children's Independent Activities <i>Alfonso Annunziata, Chiara Garau</i>	524
Resilience, smartness and sustainability. Towards a new paradigm? Sabrina Auci, Luigi Mundula	539
Energy autonomy in symbiosis with aesthetics of forms in architecture <i>Pietro Currò</i>	549
Sharing governance and new technologies in smart city planning Paolo De Pascali, Saverio Santangelo, Annamaria Bagaini et al.	563

Smart Mapping Tools for the Balanced Planning of Open Public Spaces in the Tourist Town of Golubac, Serbia <i>Aleksandra Djukić, Branislav Antonić, Jugoslav Joković, Nikola Dinkić</i>	573
Towards a model for urban planning control of the settlement efficiency Isidoro Fasolino, Francesca Coppola, Michele Grimaldi	587
Somerville: Innovation City <i>Luna Kappler</i>	595
Urban regeneration for smart communities. <i>Caterina Pietra, Elisabetta Maria Venco</i>	605
Energy autonomy as a structural assumption for systemic development and circular economy <i>Manlio Venditelli</i>	619
Session 7 - Water resources, ecosystem services and nature- based solutions in spatial planning	
Landscape and species integration for a nature-based planning of a Mediterranean functional urban area <i>Erika Bazzato, Michela Marignani</i>	630
Tourism and natural disasters: integrating risk prevention methods into the Plan for tourism <i>Selena Candia, Francesca Pirlone</i>	640
Integrated management of water resources. An operative tool to simplify, direct and measure the interventions <i>Vittoria Cugusi, Alessandro Plaisant</i>	649
Application of NbS to the city plan of Segrate Municipality: spatial implications <i>Roberto De Lotto</i>	660
Nature-Based Solutions impact assessment: a methodological framework to assess quality, functions and uses in urban areas <i>Claudia De Luca, Simona Tondelli</i>	671
The recognition of the Aspromonte National Park ecosystem networks in the urban structure project of Metropolitan City of Reggio Calabria <i>Concetta Fallanca, Natalina Carrà, Antonio Taccone</i>	679
Shaping the urban environment for breathable cities. Michela Garau, Maria Grazia Badas, Giorgio Querzoli, Simone Ferrari, Alessandro Seoni, Luca Salvadori	692
Defense, adaptation and relocation: three strategies for urban planning of coastal areas at risk of flooding <i>Carmela Mariano, Marsia Marino</i>	704
Thermal Urban Natural Environment Development Francesca Moraci, Celestina Fazia, Maurizio Francesco Errigo	714

A network approach for studying multilayer planning of urban green areas: a case study from the town of Sassary (Sardegna, Italy) <i>Maria Elena Palumbo, Sonia Palumbo, Salvatore Manca, Emmanuele Farris</i>	723
Urban areas morphometric parameters and their sensitivity on the computation method <i>Luca Salvadori, Maria Grazia Badas, Michela Garau, Giorgio Querzoli, Simone</i> <i>Ferrari</i>	734

Session 8 - Conservation and valorisation of architectural and cultural heritage

Preservation and valorisation of small historic centers at risk Maria Angela Bedini, Fabio Bronzini, Giovanni Marinelli	744
Material and immaterial cultural heritage: identification, documentation, promotion and valorization. The courtyards and hallways of merit in the Murattiano district of Bari Antonia Valeria Dilauro, Remo Pavone, Francesco Severino	757
Planning of historic centers in Sardinia Region: conservation versus valorization of architectural and cultural heritage <i>Federica Isola, Federica Leone, Cheti Pira</i>	767
Approach towards the "self-sustainability" of ancient villages <i>Francesca Pirlone, Ilenia Spadaro</i>	776
Fostering architecture efficiency through urban quality. A project for via Milano site in Brescia <i>Michela Tiboni, Francesco Botticini</i>	787

Session 9 - Accessibility, mobility and spatial planning

The role of community enterprises in spatial planning for low density territories <i>Cristian Cannaos, Giuseppe Onni</i>	800
Measuring multimodal accessibility at urban services for the elderly. An application at primary health services in the city of Naples <i>Gerardo Carpentieri, Carmen Guida, Housmand Masoumi</i>	810
Urban accessibility for connective and inclusive living environments. An operational model at support of urban planning and design practice <i>Tanja Congiu, Elisa Occhini, Alessandro Plaisant</i>	826
Improving accessibility to urban services for over 65: a GIS-supported method <i>Carmela Gargiulo, Floriana Zucaro, Federica Gaglione, Luigi Faga</i>	839
Cycle networks in Natura 2000 sites: the environmental assessment of the Regional Cycling Plan of Sardinia, Italy <i>Italo Meloni, Elisabetta Anna Di Cesare, Cristian Saba</i>	851

Improving regional accessibility through planning a comprehensive cycle network: the case of Sardinia (Italy) Italo Meloni, Cristian Saba, Beatrice Scappini et al.	859
Vehicle routing problem and car-pooling to solve home-to-work transport problem in mountain areas	869
Antonio Pratelli, Massimiliano Petri	

Session 10 - Tourism and sustainability in the Sulcis area

Wave, walk and bike tourism. The case of Sulcis (Sardinia -Italy) Ginevra Balletto, Alessandra Milesi, Luigi Mundula, Giuseppe Borruso	881
Smart Community and landscape in progress. The case of the Santa Barbara walk (Sulcis, Sardinia) Ginevra Balletto, Alessandra Milesi, Stefano Naitza et al.	893
A Blockchain approach for the sustainability in tourism management in the Sulcis area	904
Gavina Baralla, Andrea Pinna, Roberto Tonelli et al.	
People and heritage in low urbanised settings: An ongoing study of accessibility to the Sulcis area (Italy) Nađa Beretić, Tanja Congiu, Alessandro Plaisant	920
Place branding as a tool to improve heritage-led development strategies for a sustainable tourism in the Sulcis-Iglesiente region Anna Maria Colavitti, Alessia Usai	928
Walkability as a tool for place-based regeneration: the case study of Iglesiente region in Sardinia (Italy) <i>Chiara Garau, Gianluca Melis</i>	943
The use of recycled aggregates in the implementation of Municipal Masterplans and Coastal Land-Use Plans. A study concerning Sulcis (Sardinia, Italy) <i>Federica Leone, Anania Mereu</i>	955
Relationships between conservation measures related to Natura 2000 sites and coastal land use plans: a study concerning Sulcis (Sardinia, Italy) <i>Federica Leone, Corrado Zoppi</i>	971
A Smart Planning tools for the valorisation of the Carbonia's building heritage via an energy retrofitting based approach <i>Stefano Pili, Francesca Poggi, Eusebio Loria, Caterina Frau</i>	983

Special session 1 - Ecological networks and landscape planning

Resilient ecological networks. A comparative approach	995
Andrea De Montis, Amedeo Ganciu, Maurizio Mulas et al.	

A complex index of landscape fragmentation: an application to Italian regional planning	1007
Anurea De Monus, Ameueo Gancio, Villono Serra	
Measuring landscape fragmentation in Natura 2000 sites. A quantitative and comparative approach <i>Antonio Ledda, Andrea De Montis, Vittorio Serra</i>	1017
Regional ecological networks: theoretical and practical issues Giuseppe Modica, Salvatore Praticò, Luigi Laudari et al.	1028
Comparative ecological network analysis. Target and vector species and other naturalistic issues Maurizio Mulas, Matteo Cabras, Andrea De Montis	1038
Measuring connectivity in Natura 2000 sites. An application in Sardinia Vittorio Serra, Andrea De Montis, Antonio Ledda	1049



THE OMBRONE RIVER CONTRACT

A REGIONAL DESIGN PRACTICE FOR EMPOWERING RIVER COMMUNITIES AND ENVISIONING BASIN FUTURES

CARLO PISANO, VALERIA LINGUA

Department of Architecture University of Florence e-mail: carlo.pisano@unifi.it valeria.lingua@unifi.it URL: http://www.regionaldesignlab.com

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ABSTRACT

By their very nature physical networks and natural infrastructures and, in particular, rivers have always had the prerogative of connecting peoples, landscapes and cultures, embodying a great historical, economic, social and environmental wealth. At the same time – due to their supra-local character and their geographic configuration – they have often highlighted a great difficulty in applying tools related to their management (Danese, Chicca, 2007).

The paper aims to describe the methodology used for the definition of a River Contract based on the Regional Design operational approach. It traces the path of research-action that led the local community of Buonconvento, a small Tuscan town in the province of Siena, to activate networks of social capital useful to build the coastal community.

In this particular institutional and scientific context, the River Contract represents an opportunity to build a more equitable and sustainable future, encouraging the dialogue and the association of the entire coastal community. Understood, in fact, as a pact for the rebirth of the river basin, the River Contract calls institutions and individuals to a non-sectoral vision to be managed in collective forms.

1 INTRODUCTION

On the 21st of October 2013, the Municipality of Buonconvento was flooded, along with several other municipalities touched by the river Ombrone and its tributaries (in particular the Arbia River). This event caused the flooding of the historical citycentre and the twentieth-century expansion, the destruction of the regional railway line and a bridge that led to the isolation of a whole settlement for more than six months.

Following this event, the "Committee for the enhancement of the landscape and environment of Buonconvento" (Comitato per la valorizzazione del paesaggio e dell'ambiente di Buonconvento), thanks to a previous experience of local mobilization concerning the installation of a biogas plant that would have had a significant impact on the landscape (Lingua, 2010, 2014), has undertaken a long process of confrontation with the institutions responsible for the governance of the territory and the river basin, to understand what could be the most appropriate ways for a quick restoration of the bridges and the road and railway network. A framework of complex competences (Land Reclamation Consortium, Civil Engineering Department, District, Municipalities) was outlined, in which emerged the need to activate integrated policies for soil and water protection and the enhancement of the territory and the environmental resources. This need was further strengthened by a second flood event, which took place on the 24th of August 2015.

The succession of alluvial episodes with a "theoretical" fifty-year return time has contributed to further increase the sense of citizens weakness towards these catastrophic events, as well as the sense of mistrust towards the institutions responsible for the management of the river and, in general, to the government of the territory. These facts made clear the need to know and make the river known to the populations that overlook it and to transform the external perturbations in an opportunity for the community growth, not just locally but at a territorial scale (Floridia, 2016).

To meet these needs, the Committee has identified the River Contract as a proactive path towards an integrated concept of sectoral policies in a multifunctional vision of the river, and the Regional Design Laboratory of the Department of Architecture of the University of Florence as partner in the definition of a research-action pathway aimed at conveying the institutional interest towards the process and, at the same time, improving the perception of the river by citizens residing along its shores. The research was then supported by the operational methodologies of *Regional Design* (Lingua & Balz, 2019; Neuman & Zonneveld, 2018) for building up a collective image of the riparian community and defining a shared vision of its territorial development, in reference to both the local specificities and the river basin as a

whole, in relation to a renewed perception of the river as resource and opportunity rather than a risk.

This paper unravels the path that has led to the definition of the Ombrone River Contract as an empirical pretext to discuss both the social premises and the methodologies within which approaching a River Contract as an occasion to build up and make operational a shared vision of a "larger-than-local" context as the one of a river basin. Born as a bottom-up proposal by the local Committee, when joined by the University of Florence the process has been developed as a research-action practice. The joint action of the Committee and the University, operating at different scales (local vs regional) kicked off by the local community of Buonconvento to activate networks of social capital within the community itself and with the neighbouring cities and associations of the whole river basin. The methodology developed for the definition of the basin visions, based on the *Regional Design* operational approach, has been conceived as an opportunity to involve local communities of the entire coastal area around a non-sectoral vision and to reflect on the ways to make the River Contract operational in collective forms. After a brief description of the territorial context of the Ombrone river basin, with a particular focus on the community of Buonconvento (section 1), section 2 details the methodological framework and section 3 presents the preliminary results of this researchaction process; the last paragraph rounds off the contribution with a set of conclusions underlining the research prospects and operational application of *Regional Design* methods and techniques in processes of activation of River Contracts.

2 METHODOLOGY

The River Contract has the intrinsic objective of integrating and territorialising sectoral policies into a multifunctional vision of the river, through a process that coordinates and supports local participation in constructing a new sense of community linked to the definition of a shared vision. The River Contract as defined in Italy by the National Chart of River Contracts (V National Table of River Contracts, Milan 2010) aims to bring together the different actors of the territory into an integrated, multidimensional, multidisciplinary approach (Ingaramo & Voghera, 2016). The institutions and authorities which are directly involved in the management of the river and the territory, the inhabitants and all the different stakeholders are linked in a pact that foster a non-sectorial vision in which the river is perceived as an environment of life (European Landscape Convention - 2000) and therefore as a common good to be managed in collective forms.

The process leading to the formation of a River Contract has already been undertaken in several river basins both in Italy and in Europe (Voghera & Avidano, 2010). The innovative nature of the Ombrone project lies in the kick off from the bottom, from the riparian citizens.

As a consequence, the local reality becomes the starting point for a process that links different scales of action and operating methods. In managing this link among scales and actors, a *Regional Design* approach has been developed.

From a general perspective, the Regional Design approach uses visioning as an act of explanation of current and future scenarios through the definition of an horizon (Secchi, 2003). Therefore, referring to a large scale design (in this case, the fluvial region), together with the 'analytical' and 'normative' dimensions of planning concepts (Davoudi, 2003), Regional Design represents the process of explication of the third dimension, the 'argumentative' one (discursive), through which the spatial representations assure the analytic process of co-production of knowledge and, at the same time, attribute meaning to the definition of strategies and actions, through their spatial transposition (Balz & Zonneveld, 2014). In the Ombrone project, the research has followed different trajectories and models enriched by the contribution of different experiences and expertise. As summarized in the methodological diagram (Fig. 1) the work is composed of two parallel and strongly linked processes: the participatory process – developed with experts¹ and technicians, with citizens and schools – has in fact integrated the visioning process defined in the scientific research field, binding it to the reality and local ambitions. Furthermore, following a transcalar methodology (Ingaramo & Voghera, 2016), the scale of the work, from the analysis to the project, has followed an oscillating trend from the large scale of the "scenario construction" up to the scale of the detailed projects of "case studies", and then returned to the evaluation of the results for the entire river basin, passing through the definition of the more technical thematic maps, useful to foster the participatory process. It was therefore important to find an instrument able to ground on a shared vision the choices of valorisation of the territory and the landscape, composing conflicts and interests at the local level through negotiating processes, building a dialogue between the socio-economic political and planning instruments with those of local government. One of the methodologies proposed in the research is based on the "scenario construction" (Secchi, 2003), a technique of pre-vision of the future often investigated both in research experiences and in professional practice (Gabellini, 2010; Magnaghi, 2007; Secchi, 2003) The scenarios are intended as hypothetical and opposing stories of the future that answer the question: "what would happen if ..." (Secchi, 2003). The scenario is therefore a collection of hypotheses that question the future, and which allows to deal with and discuss about the future (Cavalieri, 2013; Pisano, 2016; Viganò, 2010). In this sense, the scenario has the capacity to assist the correct reconstruction of problems: a

¹ The partecipatory process, entitled "Osiamo!Verso ilcontratto di fiumeOmbrone", was financed by Toscana Regiona (L.R. 69/2007) and coordinated by Micaela Deriu and Fabio Ferlanda.

problem setting service, able to isolate issues and place them in a reciprocal relationship. Through the construction of scenarios is therefore possible to separately study and discuss different thematic systems – hydraulic, naturalistic, economic and social aspects – in order to ground and specify conflicts and interests.



Fig. 1 The methodological structure of the research

The purpose of the River Contract is however to foster a process in which the different aspects, related to the river management, can coexist and integrate with one another. This quest for integration and convergence between the themes, expressed in scenarios, was approached at the local dimension through the use of the pilot projects methodology. Included in several theoretical framework, such as Landscape Urbanism (Steiner, 2011), DIY Urbanism (Sawney, 2015) and Tactical Urbanism (Lydon, 2015) – pilot projects are meant as community engagement and as instruments to learn about how planning and design decisions actually hit the ground, thereby improving the final implementation (Gehl, 2017). In the down-scaling from macro to micro, the regional-scale strategies have been tested in more detailed projects that, once developed and shared with the community, have been scaled-up in their strategic assumptions to inform again the final river basin vision.

3 RESULTS

For the reasons described above, the scenarios construction has been chosen as a consistent methodology to organize the various points of view and the interests that animate the river and its management. First, an analysis of general and sectoral spatial planning instruments at Regional and Provincial level has let to provide for a scenario integrating different ways to conceive the basin area and its future. These projects, together with the results of the workshops with citizens and school children held in the first participatory phase, provided for defining three main issues (Tab. 1), at least partly divergent: risk and infrastructure; environmental and eco-systemic quality; accessibility and local development.

AUTOHORITY - Planning instrument	VISION 1 Risk and infrastructure	VISION 2 Environmental and eco-systemic quality	VISION 3 Accessibility and local development
TUSCANY REGION - Regional Spatial Framework and Landscape Plan (Piano di indirizzo territoriale con valenza di piano paesaggistico)	L	Μ	Η
TUSCANY REGION - Regional Mobility Plan (Piano Regionale Integrato Infrastrutture e Mobilità (Priim))	Η	М	М
TUSCANY REGION – Regional Plan for Mining Activities (Piano Regionale delle Attività Estrattive (PRAE))	М	М	L
TUSCANY REGION - Rural Development Program (Programma di Sviluppo Rurale)	L	М	Н
DISTRICT BASIN AUTHORITY OF THE NORTHERN APENNINES - Flood Risk Management Plan (Piano di Gestione del Rischio Alluvioni)	Н	Μ	Μ
BASIN AUTHORITY - Basin Plan - Hydrogeological Plan (Piano di Bacino - Piano di Assetto Idrogeologico)	Η	L	L
TUSCANY REGION – Multi-year intervention programs (Programmi di intervento pluriennali)	Η	М	М
LAND RECLAMATION CONSORTIUM- Reclamation activities plan (Piano delle attività di Bonifica)	Η	Н	М
SIENA PROVINCE – Provincial Territorial Coordination Plan (Piano Territoriale di Coordinamento Provinciale)	L	Μ	Η

Tab. 1 Correlation between planning instruments and visions (High-Medium-Low)

These three scenarios call for different ways of understanding the river and its future, conveyed by groups of technical stakeholders, differentiated local interests, often in conflict

with each other and accustomed to different specific languages and terminologies. The three scenario maps elaborated for the Ombrone river favour a representation of information organized in systems, envisioning the result of an interpretive action. This interpretative action is intended to develop different representations of the same river basin, which construct a reading of the territory organized on issues consolidated in planning practices and in the local debate (Carta, 2009): the synthesis directed to highlight the system of large infrastructures and hydrogeological risk and the works aimed at mitigating it; the synthesis focused to underline the interaction between the environmental and ecological dimension of the territory; finally, the one aimed at organizing the anthropic dimension, sustainable mobility and local development (Fig. 2).



Fig. 2 Three scenarios for Ombrone river. From left: risk and infrastructure; environmental and eco-systemic quality; accessibility and local development

The different scenarios informed and were informed by the participatory process which was based on the two case studies of Buonconvento and Cinigiano municipalities, which have been chosen as representative of two very different realities of the river basin. Those two municipalities are, in fact, located in two territorial areas both along the river, but different from an ecological, political and topographical point of view (high and low Ombrone, province of Siena and Grosseto). Through a series of participatory planning workshops, a collective reflection on the impact of different scenarios in the local area and on possible intervention strategies was developed. The participatory design workshops have shown how the pilot project could be intended as a tool able to recompose the divergent large-scale scenarios in an integrated design perspective. Thus, the use of the fluvial territory can, for example, find a point of equilibrium with respect to the safeguard and enhancement of environmental and ecosystem quality; or the hydrogeological risk management and mitigation works can coexist with fruitive and productive activities.

In this way, the local scale becomes the key dimension for the definition of integrated policies able to guarantee the balanced management and development of the fluvial territories and its community.



Fig. 3 Pilot project of Buonconvento (SI): the masterplan resulting from the participatory process

4 CONCLUSION

The innovative character of the research-action path undertaken by the Regional Design Laboratory together with the Buonconvento Committee regards two elements: the structure of the bottom-up approach and the methodology used to define the vision of the riparian community.

Concerning the first point, the project seeks to find an integration between representative and participatory democracy starting from the bottom (bottom-up approach): the shared action of the local and the scientific community, which is also enriched by local researchers involved in the research-action process, outlines a concrete approach, based on a clear civic will that compares itself with the administrations to resolve the division of political competences. With respect to several examples of River Contracts both in Italy and abroad, generally promoted by supra-local institutions, in this case the proposal comes from a community that aims to involve a substantially wider territorial area and, starting from a traumatic event, to develop a collective reflection on the relationship with the river of the entire riparian community. This reflection, addressed with *Regional Design* methods and techniques, can give substance to a "regional project" that is as necessary as challenging, given the context of historical criticalities in which it is inserted.

In particular, the methodology consisted of a mutual contamination between scales (from micro to macro and vice versa) and between policies (from short to long term and vice versa), acting at the same time at the scale of the river basin – through the surveys subsumed in the three territorial scenarios – and at the local scale, through the two pilot projects. The results are then recomposed in a continuous process that binds the different scales of action and operating modes.

This process is therefore an attempt to overcome the hierarchical vision of the urbanistic and architectural design, placing in relation, from the first moment, structural and strategic choices with the design of the single nodes.

The current outcomes of this research-action path, as well as its future developments, through the definition of integrated pilot projects, shows that the use of *Regional Design* methods and techniques in the processes of activation of River Contracts opens wide research prospects and operational application, linked to the definition of indicative frameworks, images and visions of the territory and the interaction between the different institutions and projects, and between these and the stakeholders involved in the project of the future of the coastal territory.

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AUTHOR'S PROFILE

Carlo Pisano is assistant professor in Urbanismat the University of Florence, Department of Architecture, *Regional Design* Lab. He has been researcher, professor under contract and visiting critic in the field of urban design, urbanism and strategic planning. He has worked as designer and consultant in numerous international projects in Belgium, Russia, Austria and Italy.

Valeria Lingua is associate professor in Urban and Regional Planning at the University of Florence, Department of Architecture, *Regional Design* Lab. Her research interests are concerned with spatial planning and regional design, with a focus on cooperative governance in strategic planning practices at regional and local levels. Recent research activities concern the rescaling of planning systems and spatial planning across local boundaries, in the framework of a research project founded by the Italian Ministry of Education, Universities and Research within the prestigious SIR Programme (Scientific Independence of young Researchers) aimed to support young researchers at the start of their independent research activity. Carmela Gargiulo is full professor of Urban Planning Techniques at the University of Naples Federico II. Since 1987 she has been involved in studies on the management of urban and territorial transformations. Since 2004, she has been Member of the Researcher Doctorate in Hydraulic, Transport and Territorial Systems Engineering of the University of Naples "Federico II". She is Member of the Committee of the Civil, Architectural and Environmental Engineering Department of the University of Naples "Federico II". She is "Federico II". Her research interests focus on the processes of urban requalification, on relationships between urban transformations and mobility, and on the estate exploitation produced by urban transformations. On these subjects she has co-ordinated research teams within National Project such as Progetto Finalizzato Edilizia - Sottoprogetto "Processi e procedure" (Targeted Project on Building – Subproject "Processes and procedures), from 1992 to 1994; Progetto Strategico Aree Metropolitane e Ambiente, (Strategic Project Metropolitan Areas and Environment) from 1994 to 1995; PRIN project on the "Impacts of mobility policies on urban transformability, environment and property market" from 2011 to 2013. Principal investigator of the Project Sarat Energy Master for the energy management of territory financed by PON 04A2_00120 R&C Axis II, from 2012 to 2015. Scientific Responsible Unit Dicea Project by Fondazione Cariplo "MOBILAGE. Mobility and aging: daily life and welfare supportive networks at the neighborhood level" 2018-2020. Scientific Responsible Unit TeMALab Dicea ERASMUS+ Key Action2: Project "Development of a Master Programme in the Management of Industrial Entrepreneurship for Transition Countries" (MIETC), partners: University of Santiago de Compostela (leading organization), University of Ljubljana, Academy of Science of Turkmenistan, Karaganda Economic University of Kazpotrebsouz (2020-2022). Author of more than 130 publications. Since 2008 Associate Editor of TeMA Journal of Land Use, M

Corrado Zoppi, Civil engineer, is Doctor of Philosophy in Economics (Northeastern University, Boston, Massachusetts, United States, 1997), Doctor of Research in Territorial Planning (University of Reggio Calabria, 1992), and Master of Science in Economic Policy and Planning (Northeastern University, 1990). Since October I 2015 he is Professor (Full Professor, Scientific Disciplinary Sector ICAR/20 Urban and Regional Technique and Planning)) at the Department of Civil, Environmental Engineering and Architecture. In the past, he taught at the Faculty of Engineering of the University of Cagliari, and at the Faculties of Architecture of the Universities of Rome "La Sapienza" and Sassari-Alghero. He is presently the Official Professor of the Module of Strategic Planning of the Integrated Course of Strategic Environmental Planning and of the Course of Regional and Urban Planning at the Faculty of Engineering of the University of Engineering of the University of Cagliari, and the Coordinator of the Undergraduate and Magisterial Degree Programs at the Faculty of Engineering and Architecture of the University of Cagliari, He was the Coordinator of the Panel for the Assessment the Graduate Committee of Environmental and Territorial Engineering of the University of Cagliari in the period 2007-2013. He was the Coordinator of the Panel for the Assessment of the Graduate Committee of Environmental and Territorial Engineering of the University of Cagliari in the period 2012-2015. He is the President of the Faculty Committee of Engineering and Architecture of the University of Cagliari.

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