

# WATERFRONT DIALECTICS

ROME AND ITS  
REGION FACING  
CLIMATE CHANGE  
IMPACTS

Edited by:  
Pedro Ressano Garcia  
Claudia Mattogno  
Bruno Monardo  
Antonio Cappuccitti



## Colophon

tab edizioni  
© 2023 Gruppo editoriale  
Tab s.r.l.  
viale Manzoni 24/c  
00185 Roma  
www.tabedizioni.it  
First edition April 2023

**SOS CLIMATE  
WATERFRONT  
GRANT AGREEMENT  
NUMBER: 823901 –  
SOSCLIMATEWATERFRONT  
– H2020-MSCA-RISE-2018**

**MAIN COORDINATOR**  
Pedro Ressano Garcia

**EDITORIAL BOARD**  
Justyna Borucka  
Tullia Valeria Di Giacomo  
Claudia Mattogno  
Lucyna Nyka  
Rita Pais  
Alkmini Paka  
Pedro Ressano Garcia  
Anastasia Tzaka

**EDITOR**  
Pedro Ressano Garcia  
Claudia Mattogno  
Bruno Monardo  
Antonio Cappuccitti

**EDITORIAL TEAM**  
Antonio Cappuccitti  
Tullia Valeria Di Giacomo  
Claudia Mattogno  
Bruno Monardo  
Pedro Ressano Garcia

**ISBN**  
print edition 978-88-9295-666-7  
digital edition 978-88-9295-685-8

**LEGAL DEPOSIT**  
Copyrights belong to the authors

Authorship responsibility:  
the authors of the chapters  
are responsible for the  
content of the manuscript

Unless specified, images are  
owned by the contributors



**Funded by  
the European Union**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 823901.



**MARIE CURIE ACTIONS**





# WATERFRONT DIALECTICS

ROME AND ITS  
REGION FACING  
CLIMATE CHANGE  
IMPACTS

Edited by:  
Pedro Ressano Garcia  
Claudia Mattogno  
Bruno Monardo  
Antonio Cappuccitti

## **H2020 MSCA RISE #823901 participating institutions:**

### **Academic partners**

FOCUS CENTER SAPIENZA UNIVERSITY OF ROME  
LUSÓFONA UNIVERSITY OF HUMANITIES AND TECHNOLOGIES  
GDAŃSK UNIVERSITY OF TECHNOLOGY  
KTH ROYAL INSTITUTE OF TECHNOLOGY  
ARISTOTLE UNIVERSITY OF THESSALONIKI  
TOBB UNIVERSITY OF ECONOMICS AND TECHNOLOGY

### **Non Academic partners**

ALPHA CONSULT SRL  
PORTUGUESE CHAMBER OF COMMERCE AND INDUSTRY (ACL/CCIP)  
THE CITY OF GDAŃSK  
RIVER//CITIES PLATFORM  
INTERCULT PRODUCTIONS EK  
MAJOR DEVELOPMENT AGENCY THESSALONIKI S.A. (MDAT)  
STICHTING CPO NOORD-HOLLAND

More info:

<http://sosclimatewaterfront.eu/>

### **Guest institutions and consultants in Rome:**

Agenda Tevere Onlus Association  
Icomos - Unesco  
Insieme per l'Aniene Onlus Association  
Istituto Comprensivo Scolastico G. Borsi - A. Saffi  
ISPRA - Higher Institute for Protection and Environmental Research  
ISPRA/MIUR, Joint Programming Initiative  
Italian Geographical Society  
Lazio Region  
La Torre, self-managed social center  
Legambiente, Coastal Observatory  
Ostia Antica Archaeological Park  
Roma Tre University  
Sapienza, Department for History, Drawing and Restoration of Architecture  
Sapienza, Department of Planning, Design, and Technology of the Architecture  
Sapienza, Department of Civil Engineering, Building and Environment  
Stefano Cioffi, photographer  
Tevereterno Association

# Introduction

- 12 **Vulnerability and opportunity on waterfront facing climate change**  
Pedro Ressano Garcia
- 17 **Do three different waterfronts make Rome a city of water?**  
Claudia Mattogno

## Part 1. Rome Coastal System

- 23 **Rediscovering Layers and Links Between Water Landscapes and Cultural Heritage**  
Claudia Mattogno
- 27 **The 'Various Landscapes' of the Ostiense Coast Cultural and Environmental Heritage**  
Maria Grazia Turco
- 39 **The Coastal Territory of Rome Environment, Architecture, Archaeology**  
Sonia Gallico, Barbara Tetti
- 51 **The Navona Lake and the Eels of the Pantheon Architecture and Landscape for Flooding**  
Annalisa Metta

- 61 **A Trip Along the Lazio Coast**  
Giulia Luciani
- 71 **Land Consumption and Coastal Erosions in Italy.  
A Focus about the Lazio Region**  
Michele Manigrasso
- 87 **Land Consumption Along Coasts is Increasing Local  
Vulnerability. The Case of Rome and Other Six Cities**  
Francesca Assennato, Daniela Smiraglia, Chiara Giuliani,  
Alice Cavalli

## Projects results

- 99 **Roman Riviera Rome Open to the Sea**

## Part 2. Rome and the Tiber

- 109 **Interpreting the River through Kaleidoscopic Glances**  
Bruno Monardo
- 115 **Rome and the (Lost) Landscape of the Tiber**  
Maria Margarita Segarra Lagunes
- 121 **The River Between Space Symbolisation and Place  
Affordances**  
Elena Battaglini

- 127 **The Great Floods of the Tiber River in History**  
Guido Calenda, Corrado Paolo Mancini
- 133 **The Strategic Approach in Planning Water Cities. National and International Best Practices**  
Carmen Mariano
- 139 **Regenerating Cities with Blue and Green Networks. Inspirational Models and Rome Potential**  
Irene Poli
- 145 **The General Masterplan for Rome and the Key Role of the Tiber Strategic Planning Zone**  
Chiara Ravagnan
- 151 **Rethinking the Human-Water Interface for the Tiber and the City of Rome: the PS5 Flood Risk Management Plan**  
Fernando Nardi, Antonio Annis
- 161 **The Tiber River Contract: the Roman Path**  
Luna Kappler
- 169 **The Public Space Around the Tiber Realm**  
Federica Dal Falco
- 173 **The Flaminio District. Historical Plans and Urban Fabric Evolution**  
Bruno Monardo
- 181 **Landscape and Perception Values in the Urban Context of Flaminio**  
Francesca Rossi

# Projects results

187 **Through water**

193 **Let it Tiber**

## Part 3. Rome Aniene River

197 **The Aniene River and the City of Rome**  
Antonio Cappuccitti

203 **The Relationship between the Aniene River and the City of Rome. Current Status and Regeneration Scenarios**  
Antonio Cappuccitti

213 **White and Blue Water and Travertine Landscapes Along the Aniene**  
Elena Paudice

225 **Spaces and Initiatives Along the River Aniene**  
Tullia Valeria Di Giacomo

237 **The Role of Local Association in Improving the Quality of River Spaces**  
Marta Polizzi

245 **Water – and Heat – Resilient Built Environment**  
Simona Mannucci, Federica Rosso



253 **The Quality of Urban Rivers with Respect to the Contaminants of Emerging Concern**  
Camilla Di Marcantonio, Agostina Chiavola, Maria Rosaria Boni

259 **The Problem of Forgotten Peripheral Rivers and Streams in Big Cities**  
Paulina Bone

## Projects results

269 **Discovering Aniene**

277 **Permeable Widen Aniene**

## Part 4. Water as a Lifeline for Rome

289 **Urban Watering by Nature: the Romans way.  
A graphic story**  
Germaine Sanders

**Part 3.**  
**Rome Aniene River**

---



# **Spaces and Initiatives Along the River Aniene**

## The river Aniene and the surrounding inhabitants

The relationship between the surrounding inhabitants and the Aniene river has always been very rich in interactions since ancient times. It is no coincidence that in the upper Tiber valley, from the springs to the waterfalls of the city of Tivoli, there were several republican and imperial villas that established a dialogue with the watercourse, sometimes even diverting its flow. Moreover, in the middle valley, the interaction with the river has allowed the development of the flourishing paper industry and has allowed Tivoli to produce electricity in alternating current for the first time in the world on an industrial scale (1892). In the lower valley, in addition, the wealth of marble materials and the possibility of moving them along the river allowed imperial Rome to create monumental works of art as well as urban infrastructures (such as the Colosseum or Saint Peter for example).

In the years of intense building construction following the Second World War, then, this link was interrupted towards a mere exploitation of open spaces for building purposes. In the late 60s of the 20<sup>th</sup> century, finally, a renewed approach to planning made it possible to limit the damage to this fundamental environmental resource. As Annalisa Metta (Progetto per la Val Polcevera) would say, echoing the “time of wetness... [which] aligns us with a design imagination that embraces fluidity, openness and complexity” by Anuradha Mathur and Dilip da Cunha (Mathur, da Cunha 2014) in reality it is the city that lay on the hydrographic basin, of the impluvium.

In what is called the “3rd generation of plans” (Campos Venuti 1987), in fact, the need was found to intervene to minimize the soil consumption of new building interventions in order to better preserve the green open space.

In recent years, then, attention was given with the advent of some specific European directives, see the Water Directive with the Habitat and Flood Directives as well as with various policy initiatives by the European Union such as the one towards the fight against soil consumption, for the promotion of green infrastructure and towards ecological transition by public governance.

An evolution in the sensitivity of citizens has also led to passionate interventions by the population to defend the river corridor.

Also worthy of note in the early 2000s is the change of approach to sector planning instruments. In the years 2001-2003, in fact, at the time of drafting the Piano Stralcio of the

Tiber basin for the metropolitan area of Rome – PS5 and the Project of the Tiber River corridor from Castel Giubileo to the mouth (according to Law 183/1989 on the Defense of soil and river basin plans) in which Professor Vittoria Calzolari also participated, the territory included in the basin area was divided into sub-areas of study. This articulation was meant in order to consider the strategic places, for the concentration of physical, historical, urban, functional as well as the highlighting of the environmental corridors of fundamental importance for the ecological network. In this way, a landscape vision of the watercourse capable of recovering the idea of the river as a resource and not a critical element was underlined.

### **The Objective**

Water is today increasingly central to scientific discussions about global sustainability and urban design, as we seek innovative solutions to the challenges of rising seas, flooding cities, atmospheric pollution, extended drought and aquifer depletion (Mathur 2022). Is it time, then, to focus on best practices to re-articulate the past, to experience the present, and to envision the future rethinking attitudes and interventions in the urban environment facing waterfronts (Mathur, da Cunha 2014).

The Aniene river in its urban path inside the great ring road is undergoing massive rehabilitation from a neglected open space to a precious urban connector and attraction place.

The text intends to illustrate the initiatives involving the Aniene river corridor and to highlight how thanks to the integration of initiatives from below (citizens and associations) and from above (Lazio Region and Rome Municipality) it is possible to enhance a natural resource within the city.

Similarly to how Calzolari wrote in 2007 referring to the Tiber river corridor, in fact,

***“the central theme is the reconsideration and recomposition of the relationship – and often conflict – between hydraulic, environmental, landscape and anthropic uses related to water” (Calzolari 2007).***

The purpose of the study is therefore to understand the relationship between the river Aniene and the city of Rome and how a holistic approach can lead to a better urban environment.

The critical issue is to highlight how the river contract tool thus helps in integrating strength, funds in a common vision.

## **The Context**

The Aniene river is the main tributary of the river Tiber in the Lazio Region and together with the Tiber River it is a natural element strongly bonded with the history of the Eternal City. Since 1997 (LR 29 6/10/1997) due to environmental protection the Aniene river, as the Almone River for the Appia Antica Park due to archaeological protection, within the urban territory is embraced by a protected area (650 he) that creates the so-called river corridor.

As an extraordinary potential area, the Aniene's mouth is located in northern Rome and in the final part the river runs through the outskirts of the city entering from east in the urban part of the city and providing a green and blue infrastructure.

The river corridor passes through different administrative units such as the Municipio II, III and IV.

The management of the Protected area (Id EUAP1045) is entrusted to the Regional Authority RomaNatura (Ente Regionale per la Gestione del Sistema delle Aree Naturali Protette nel Comune di Roma Regional Institution for the management of the protected natural areas system in the municipality of Rome) which gave the management concession to the association "Insieme per l'Aniene".

The Statute of the Social Promotion Association Insieme per l'Aniene, which has been dealing with the management of the Reserve since 1999, underlines the commitment to interventions and services aimed at safeguarding and improving the conditions of the environment, as well as protecting, promoting and enhancing the historical-archaeological heritage of the territory within the perimeter of the protected area. Among the activities carried out by the Third Sector Entity there are also those related to education, instruction and training as well as social, cultural, artistic, recreational and tourist activities.

As reported by the European Commission there are many benefits provided by Green Infrastructures that can be articulated in environmental benefits, social benefits, climate change adaptation and mitigation benefits and biodiversity benefits (EU 2013).

As clearly explained by the Guidelines of the Soil4LIFE Project (ISPRA 2021) the sealing of surfaces reduces or cancels the ability of the soil to provide ecosystem services, causing impacts on biodiversity, on the water cycle, on the filtering and purification capacity of the water, on climate regulation and on food production. All these effects are those that increase the risk of the Urban Heat Island phenomenon and of floods and landslides and, therefore, contribute to weakening the resilience of the territories, increasing their fragility in facing the impacts deriving from extreme climatic events.

The Aniene river corridor represents a precious opportunity for improving the quality of the high-density neighborhoods that surround it acting as a blue and green infrastructure.

### **The Existing Initiatives**

The past or ongoing activities for the Aniene River rediscovery were explored through two types of approaches: top-down and bottom-up. The first is focused on the ongoing public strategies while the second part is focused on the local interventions promoted by inhabitants or associations and on the participatory tool of the river contract.

#### **Top-Down Initiatives**

##### *Public Initiatives*

A virtuous initiative undertaken by the Municipality III in Rome which, in the context of the Regional Tender for cleaning and footpaths (Lazio Region – Regional Council Resolution No. 791 of 20/12/2016 Annex A Public notice for the granting of loans for the construction of video surveillance systems, acquisition and management of information, redevelopment of degraded areas, Regional Law of 5 July 2001 No. 15 article 2, paragraph 1, letter b) was the “Aniene Sicuro” (Secure Aniene) Project. In the Project, the III Municipality was able to direct the funding towards a local intervention thus managing at the same time to resolve a security critical issue and to promote the Aniene river.

Two new docks on the river, strongly desired by the inhabitants and associations, were created thanks to this Project. The main objective that was addressed was in fact to make it a living space, frequented and therefore safe. The Capitolina Superintendency was involved in the drafting of this project with the associations *Insieme per l’Aniene*, A.S.D. Aniene Equestrian Club “Il Ranch”, “National Environmental Guard” and A.S.D. Canoe Kayak Rome-Assex.

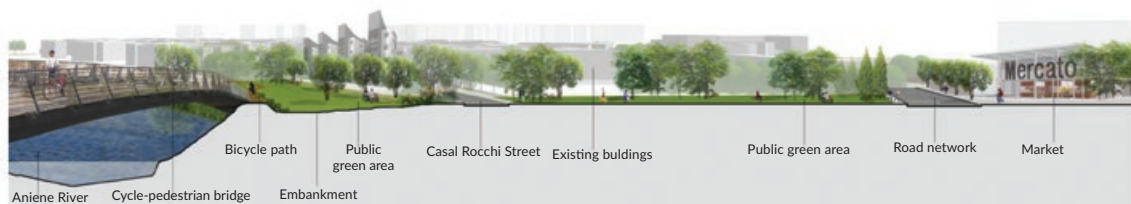




On June 22nd 2020 a floating anti-waste barrier was inaugurated on the Aniene river within the Aniene Valley Natural Reserve to improve the quality of water resources. The barriers were anchored by poles to the river bank and allowed plastics and other floating waste to be stopped, conveying them to a storage area close to the river bank. A company has been entrusted with the collection of collected waste, the selection of plastic material, the evaluation of recyclable packaging and the production of objects in recycled plastic.

The territory close to the river corridor is also undergoing a PRINT Plan Programma Integrato (Integrated Program) which aims to increase the availability of public services and basic infrastructure in the Pietralata district. The plan involves the realization of new streets and pedestrian paths as well as the improvement of the existing public space. The construction of a cycle-pedestrian bridge that will cross the Aniene river between Ponte Mammolo and Ponte Nomentano, more precisely between Pietralata district and Casal de' Pazzi district will start in 2023.

Another initiative that concerns the river corridor is the project to complete the Rome railway ring towards the north



thanks to the use of funds from the National Recovery and Resilience Plan (888 million euro). The Project will imply the realization of two new railway bridges crossing the Aniene river to link the two stations of Vigna Clara and Tor di Quinto.

## **Bottom-Up Initiatives**

### *The Citizens Involvement*

The local associations provide many efforts in organizing sensibilization events on environmental issues: examples are reforestation projects, environmental data collection campaigns, Citizen science Projects, learning laboratories to learn the basic techniques for water quality analysis, and artistic installations. Since November 2011, the association *Insieme per l'Aniene* has undertaken a project of urban vegetable gardens in 4.000 sqm inside the Natural Reserve with 106 lots assigned to citizens. The GRAB Bikes Big Ring Road Project, the cycle path of a total length of 43 km that embraces the Eternal City was also born thanks to the initiative developed by citizens and associations and passes through the reserve.

### *The Aniene River Contract*

The activation of the Aniene River Contract took place in 2018 following the signing of a Document of Intent. The Aniene River Contract, through the implementation of the actions envisaged in the respective Action Programme, contributes at various scales – European, national, regional and local – to the protection of water and nature with the sustainable use of resources, the hydrogeological risks mitigation and adaptation and a tourist-recreational enhancement of the territory. The applied method in the preparation of the Aniene river contract follows the guidelines “Definitions and basic qualitative requirements of the river contracts”, drawn up by a multidisciplinary working group coordinated by the Ministry of the Environment and the Protection of the Territory and the Sea (now Ministry of Ecological Transition) and ISPRA in the context of the activities of the National Table of River Contracts (March 12, 2015).

The River Contract “RC” has involved, in particular, the activation of a bottom-up participatory process for an exhaustive identification of the problems and for the definition of the actions. The verification of the coherence of the RC with the territorial, social and administrative context in which it is inserted

Figure 1. One of the new river docks along the Aniene.

Figure 2. The cycle-pedestrian bridge that will cross the Aniene river according to the PRINT Plan.

and with the objectives of the urban planning instruments in force in the area was also guaranteed. This approach makes it possible to achieve concrete and lasting results.

The RC is a participatory process to build a program of actions centered around the river ecosystem: Good status environmental system; Hydrogeological risk control; Local development.

The various activities therefore led to the sharing of a Document of Intent, the implementation of open and inclusive participatory processes and adequate information to the public; development of a Knowledge Framework on the hydrographic basin of the Aniene; development of a strategic document on management objectives for the Aniene river basin; development of an Action Programme; preparation of a formal Commitment Deed. To guarantee effectiveness over time of the interventions a Monitoring Plan was also developed.

The participatory process for the preparation of the Aniene River Contract was divided into three phases: animation phase; preparatory phase; active phase.

The animation phase was preparatory to focus on the opportunity to define the Aniene River Contract consisted of 16 meetings (5 public forums, 3 meetings between members of the Aniene Committee, 8 public meetings). This phase to start off the process towards the Aniene River Contract was divided into 5 events including meetings and site inspections.

The active phase, preparatory instead to defining the Aniene River Contract, was carried out in 19 meetings differentiated between specific territorial assemblies and plenary assemblies.

The various meetings were held in order to guarantee a variation of venue between the upper, middle and lower valley of the watercourse except for the last meetings starting from December 2020 which were held online due to the pandemic emergency from Covid-19.

The participatory process led the 25th February 2022 to the signature of the Action Plan describing the various activities to be accomplished by the year 2026.

About 70 stakeholders involved with the process relate to public entities such as the Regional Authority, Several Municipalities, the Regional Authority RomaNatura and private entities going from the water utility Company, to small business enterprises, several associations and citizens.

In the framework of the RC the different stakeholders committed to accomplish several activities geared to improving the quality of the River Corridor. Some of the main proposed activities are:

- hydrogeological rebalancing of the upper course of the Aniene river;
- integrated hydraulic-environmental redevelopment and fruition enhancement for all stretches of the river and its tributaries with the idea of creating an Aniene Park;
- waste removal and ditch redevelopment;
- creation of inter-municipal cycle-pedestrian paths;
- organization of tourist and sports navigation activities (kayak, canoe, rafting);
- extension of the Valle dell'Aniene Nature Reserve for Municipalities beyond the G.R.A.;
- creation of Embarkation/Disembarkation points on the river;
- urban reforestation;
- environmental monitoring system;
- creation of a cycle/pedestrian connection from Cervelletta to Lunghezza in the IV Municipality.

### **Final Remarks**

The common challenges that many cities in the world are facing in managing water resources and people's quality of life concern a rapidly growing population with evolving lifestyles. Population growth increases the pressure on water resources, with scarcity of water and pollution: risk factors for well-being.

The COVID-19 pandemic has meant that the attendance of citizens towards the reserve has increased tenfold according to the association Insieme per l'Aniene Onlus. This has as a consequence, on the one hand, an improvement in the safety garrison but, on the other, a greater propensity to deterioration phenomena, above all in conjunction with the holidays in which the citizens of Rome love to gather in open spaces for picnics.

These challenges face a changing climate and a difficult economic situation. In these difficult conditions it is necessary to provide solutions towards the creation of more water sensitive cities integrating some virtuous approaches capable of designing multifunctional and flexible urban water systems thus offering a wider range of services and benefits for communities.

European cities are complex and constantly evolving places where the various components must find integration within landscape projects thus offering, together, a series of social, ecological and economic benefits.

Recently, together with the need to guarantee ecosystem services and a healthy natural environment, the involvement of the stakeholders "custodians" of the territory in the decisions

of the institutions has become important. Public participation is one of the best tools to contrast land degradation that has had a pronounced impact on 20 ecosystem functions worldwide (IPCC 2022) and parks and protected areas represent a structural and strategic value in governance processes (Sargolini, 2018) and interact with social systems by weaving relationships and interdependencies with neighbouring territories and communities (Giacomelli and Benetti 2020; Cumming and Allen 2017).

Climate change and human neglect of the territory cause environmental disasters stimulate action towards a change in planning approaches, using negotiated and participatory tools. The fragmentation of knowledge in environmental matters and the consequent multiplicity of sectoral plans highlight the need to apply principles of multidisciplinary and multilevel governance. River contracts are part of the phase of change trying to recover the sense of collective responsibility of the commons (Di Giovanni 2015).

The difficulties of territorial policies are still represented by the different political times from those of the dynamics of territorial management, by the priority of sectoral, economic and social logics compared to transversal environmental ones and by the lack of awareness of citizens towards territorial democracy.

The River Contract represents a particularly useful tool in the management of a complex system, such as river basins, because, in addition to allowing the participation of the population, it stimulates intra - and inter-institutional collaboration (Di Giovanni 2015) expressing and producing, in fact, the convergence of political expectations and the participation of the communities. Institutional sustainability is indeed a key factor to achieve durable results.

Spaces and initiatives along the river Aniene are so driven for

- preventing natural and man-made risks;
- strengthening the resilience capacity of communities and territories;
- guaranteeing the recovery and defragmentation of ecosystems;
- promoting ecological connections between urban territories and natural territories.

Thanks to the river corridor, therefore, bottom up and top-down approaches shall work together through crucial place-based policies towards a common goal: well-being in a climate change context which is guaranteed by what Michele Manigrasso (2019) calls adaptive urban design.

## References

- Arcidiacono A., Canedoli C., di Martino V., Ronchi S., Assennato F., Munafò M., Di Simine D., Brenna S. (a cura di) (2021). *Linee guida volontarie per l'uso sostenibile del suolo per i professionisti dell'area tecnica. Indirizzi per la tutela del suolo dai processi di impermeabilizzazione e dalla perdita di materia organica*, INU Edizioni, Roma (eBook).
- Calzolari V. (2007). *Cultura dell'acqua e pianificazione paesistica alla scala di bacino: idee ed esperienze*, in *Fiume, paesaggio, difesa del suolo: superare le emergenze, cogliere le opportunità: atti del convegno internazionale*, Firenze, 10-11 maggio 2006. Luoghi e paesaggi, Firenze University Press.
- Campos Venuti G. (1987). *La terza generazione dell'urbanistica*, FrancoAngeli, Milano.
- Cumming G. S., Allen C. R. (2017). *Protected areas as social-ecological systems: perspectives from resilience and social-ecological systems theory*, in «Ecological Applications», 27: 1709-1717. [<https://doi.org/10.1002/eap.1584>].
- Di Giovanni C. F. (2015). *Il contratto di fiume per l'emergenza idrogeologica. Il Tevere nell'area romana: un'esperienza in itinere*, in XVIII Conferenza Nazionale SIU. 702-708, Planum, Venezia.
- European Commission (2013). *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Green Infrastructure (GI) – Enhancing Europe's Natural Capital* {SWD (2013 IT) 155 final} Bruxelles, 6.5.2013 COM(2013) 249 final.
- Giacomelli M., Benetti S. (2020). *Le aree protette come sistemi socio-ecologici: l'approccio dei servizi ecosistemici nell'analisi dei rapporti natura-società*, in «Urbanistica Informazioni», 289 s.i., 11-14.,
- IPCC, 2022; *Climate Change (2022). Mitigation of Climate Change, Full Report. AR6 WG III.*
- Mathur A. (2011). *Visualizing Landscapes: In the Terrain of Water*, in «Places Journal». [<https://doi.org/10.22269/110331>].
- Mathur A., da Cunha D. (2014). *Design in the Terrain of Water*, in «Applied Research & Design».
- Manigrasso M. (2019). *La città adattiva. Il grado zero dell'urban design*, Quodlibet Editore.
- Sargolini M., et al. (2018). *Linking Networks of Protected Areas to Territorial Development*, ESPON EGTC, Luxembourg [<https://www.cdfaniene.it>] (last accessed in September 2022).
- [<https://romamobilita.it/it/progetti/pumsroma/grab-ciclovvia-romana>] (last accessed in September 2022).

## Authors

### **Antonio Annis**

Civil hydraulic engineer with a PhD on hydrology, is a researcher at the WARREDOC center of University for Foreigners of Perugia. Co-founder and CEO of GRIDDIT, a start-up focused on large-scale flood risk assessment.

### **Francesca Assennato**

Engineer, PhD in Energy and environment, Head of Integrated land monitoring and analysis, land use changes and desertification processes, Geological Survey of Italy Department, ISPRA (Istituto Superiore per la Protezione e Ricerca Ambientale), research topics land degradation and desertification, sustainable planning, ecosystem services.

### **Elena Battaglini**

PhD in Environmental and spatial sociology, Senior Scientist of Giuseppe Di Vittorio Foundation, Head of the Research Unit of Regional and Urban Economics. Teaching member of PhD 'Landscapes of contemporary city', Department of Architecture, University of Roma Tre. International speaker and lecturer, since 1997 she has been leading or cooperating on numerous European research projects in the field of regional innovation processes and social systems design.

### **Paulina Bone**

Graduated from the Faculty of Architecture at the Gdańsk University of Technology. In research, she deals with topics related to climate change, and as a resident of the port city, she pays special attention to the creation of urban structures in waterside and post-industrial areas.

### **Maria Rosaria Boni**

Full Professor at the Department of Civil, Building and Environmental Engineering of Sapienza University of Rome. Her expertise encompasses from remediation of contaminated sites and wastes valorisation to emerging micropollutants in the water cycle.

### **Guido Calenda**

Once full professor of Hydraulic Engineering at the University of Roma Tre. He coordinated several national and international scientific research projects and is author of numerous volumes, essays and papers on Hydrologic Systems and extreme flood event assessment models.

### **Antonio Cappuccitti**

Civil engineer and Ph.D., associate professor at the Sapienza University of Rome, Faculty of Civil and Industrial Engineering. His favourite research fields: urban morphology, rules and regulations for a good city form, innovative plans and programs for urban regeneration.

### **Alice Cavalli**

PhD student in Forest Ecology, research fellow in ISPRA in GEOINT4ENV project working on land monitoring using GIS tools and remotely sensed data.

### **Agostina Chiavola**

Associate Professor at the Department of Civil, Building and Environmental Engineering of Sapienza University of Rome. She is an expert on water and wastewater treatments from contaminants of traditional and emerging concern (e.g. pharmaceuticals, microplastics).

### **Federica Dal Falco**

Associate Professor of Design, Internationalization Unit Coordinator, Department of Planning, Design, Technology of Architecture, Sapienza University of Rome.

### **Tullia Valeria Di Giacomo**

Engineer Ph.D., Lecturer, Postdoctoral Research Fellow in Urban and Regional Planning, Department of Civil, Building and Environmental Engineering, Sapienza University of Rome. She collaborates with the Interdepartmental Research Center Fo.Cu.S. in the field of territorial strategic planning.

*Waterfront Dialectics.*  
*Rome and its Region Facing Climate Change Impacts*  
Edited by: Pedro Ressano Garcia, Claudia Mattogno,  
Bruno Monardo, Antonio Cappuccitti

direttore editoriale: Mario Scagnetti  
editor: Marcella Manelfi  
redazione: Giuliano Ferrara



One of the most complex discussions concerning climate emergency is the sustainable water management. How to deal with the risks generated by climate change where the presence of cultural and environmental assets is highly stratified over time?

How to manage large densely populated areas rich in environmental and human resources, ensuring their protection and development? It's now time to integrate the connections between the different territorial scales and to ensure the balance between public and private interests in a framework of sustainable strategies.

SOS Climate Waterfront is an interdisciplinary project that aims to explore waterfronts in Europe that are facing climate change. The volume presents the results of the workshop held in Rome in spring 2022.

