

TeMA

Journal of
Land Use, Mobility and Environment

The fragile/resilience city represents a topic that collects itself all the issues related to the urban risks and referred to the different impacts that an urban system has to face with. Studies useful to improve the urban conditions of resilience are particularly welcome. Main topics to consider could be issues of water, soil, energy, etc..

Tema is the Journal of Land use, Mobility and Environment and offers papers with a unified approach to planning and mobility. TeMA Journal has also received the Sparc Europe Seal of Open Access Journals released by Scholarly Publishing and Academic Resources Coalition (SPARC Europe) and the Directory of Open Access Journals (DOAJ).



THE RESILIENCE CITY / THE FRAGILE CITY.
METHODS, TOOLS AND BEST PRACTICES.

THE RESILIENCE CITY/THE FRAGILE CITY. METHODS, TOOLS AND BEST PRACTICES

3 (2018)

Published by

Laboratory of Land Use Mobility and Environment
DICEA - Department of Civil, Architectural and Environmental Engineering
University of Naples "Federico II"

TeMA is realized by CAB - Center for Libraries at "Federico II" University of Naples using Open Journal System

Editor-in-chief: Rocco Papa
print ISSN 1970-9889 | on line ISSN 1970-9870
Licence: Cancelleria del Tribunale di Napoli, n° 6 of 29/01/2008

Editorial correspondence

Laboratory of Land Use Mobility and Environment
DICEA - Department of Civil, Architectural and Environmental Engineering
University of Naples "Federico II"
Piazzale Tecchio, 80
80125 Naples
web: www.tema.unina.it
e-mail: redazione.tema@unina.it

TeMA. Journal of Land Use, Mobility and Environment offers researches, applications and contributions with a unified approach to planning and mobility and publishes original inter-disciplinary papers on the interaction of transport, land use and environment. Domains include: engineering, planning, modeling, behavior, economics, geography, regional science, sociology, architecture and design, network science and complex systems.

The Italian *National Agency for the Evaluation of Universities and Research Institutes* (ANVUR) classified TeMA as scientific journal in the Area 08. TeMA has also received the *Sparc Europe Seal for Open Access Journals* released by *Scholarly Publishing and Academic Resources Coalition* (SPARC Europe) and the *Directory of Open Access Journals* (DOAJ). TeMA is published under a Creative Commons Attribution 3.0 License and is blind peer reviewed at least by two referees selected among high-profile scientists. TeMA has been published since 2007 and is indexed in the main bibliographical databases and it is present in the catalogues of hundreds of academic and research libraries worldwide.

EDITOR IN-CHIEF

Rocco Papa, University of Naples Federico II, Italy

EDITORIAL ADVISORY BOARD

Mir Ali, University of Illinois, USA
Luca Bertolini, University of Amsterdam, Netherlands
Luuk Boelens, Ghent University, Belgium
Dino Borri, Polytechnic University of Bari, Italy
Enrique Calderon, Polytechnic University of Madrid, Spain
Roberto Camagni, Polytechnic University of Milan, Italy
Derrick De Kerckhove, University of Toronto, Canada
Mark Deakin, Edinburgh Napier University, Scotland
Aharon Kellerman, University of Haifa, Israel
Nicos Komninos, Aristotle University of Thessaloniki, Greece
David Matthew Levinson, University of Minnesota, USA
Paolo Malanima, Magna Græcia University of Catanzaro, Italy
Agostino Nuzzolo, Tor Vergata University of Rome, Italy
Rocco Papa, University of Naples Federico II, Italy
Serge Salat, Urban Morphology and Complex Systems Institute, France
Mattheos Santamouris, National Kapodistrian University of Athens, Greece
Ali Soltani, Shiraz University, Iran

ASSOCIATE EDITORS

Rosaria Battarra, National Research Council Institute of Studies on Mediterranean Societies, Italy
Gerardo Carpentieri, University of Naples Federico II, Italy
Luigi dell'Olio, University of Cantabria, Spain
Isidoro Fasolino, University of Salerno, Italy
Romano Fistola, University of Sannio, Italy
Carmela Gargiulo, University of Naples Federico II, Italy
Thomas Hartmann, Utrecht University, Netherlands
Markus Hesse, University of Luxemburg, Luxemburg
Seda Kundak, Technical University of Istanbul, Turkey
Rosa Anna La Rocca, University of Naples Federico II, Italy
Houshmand Ebrahimpour Masoumi, Technical University of Berlin, Germany
Giuseppe Mazzeo, National Research Council Institute of Studies on Mediterranean Societies, Italy
Nicola Morelli, Aalborg University, Denmark
Enrica Papa, University of Westminster, United Kingdom
Dorina Pojani, University of Queensland, Australia
Floriana Zucaro, University of Naples Federico II, Italy

EDITORIAL STAFF

Gennaro Angiello, Ph.D. at University of Naples Federico II, Italy
Stefano Franco, Ph.D. student at Luiss University Rome, Italy
Rosa Morosini, Ph.D. student at University of Naples Federico II, Italy
Marco Raimondo, Engineer, University of Sannio, Italy
Maria Rosa Tremitera, Ph.D. student at University of Naples Federico II, Italy
Andrea Tulisi, Ph.D. at Second University of Naples, Italy

CALL FOR PAPERS: TeMA VOL. 12 (2019)

The Times They Are a-Changin'

In these last ten years, TeMA Journal has published several international studies and researches supporting the scientific debate on the urban complexity and the future challenges of urban areas. Thus, the three issues of the 12th volume will think again the debate on the definition and implementation of methods, tools and best practices connected to the evolution of the main scientific topics examined in depth in previous TeMA Journal volumes.

In detail, the Journal welcomes papers on topics about the interdisciplinary interaction among Land Use, Mobility and Environment, and also urban studies from the domains of engineering, planning, modelling, behaviour, regional economics, geography, regional science, architecture and design, network science, complex systems, energy efficiency, urban accessibility, resilience and adaptation.

Publishing frequency is quadrimestral. For this reason, authors interested in submitting manuscripts addressing the aforementioned issues may consider the following deadlines:

- first issue: 10th January 2019;
- second issue: 10th April 2019;
- third issue: 10th September 2019.

CALL FOR PAPERS: GENERAL CALL

Papers in Transport, Land Use and Environment

The Journal welcomes papers on topics at the interdisciplinary intersection of transport and land use, including research from the domains of engineering, planning, modelling, behaviour, economics, geography, regional science, sociology, architecture and design, network science, and complex systems



International Conference
on Innovation in Urban and Regional Planning

INPUT aCAdeMy 2019

planning, nature and ecosystem services

24-26 June 2019

Cagliari (Italy)

University of Cagliari
Department of Civil and Environmental Engineering, and Architecture
DICAAR

Call for papers



DICAAR

Società
italiana **SIU**
degli urbanisti

urbIng
ricerca scientifica

La cooperazione al cuore del Mediterraneo

TeMA

Journal of
Land Use, Mobility and Environment

THE RESILIENCE CITY/THE FRAGILE CITY. METHODS, TOOLS AND BEST PRACTICES

3 (2018)

Contents

271 EDITORIAL PREFACE
Rocco Papa

FOCUS

273 Land use conflicts in the energy transition: dutch dilemmas
Mark Koelman, Thomas Hartmann, Tejo Spit

285 A methodology for urban sustainability indicator design
Ricardo Alvira Baeza

LAND USE, MOBILITY AND ENVIRONMENT

305 Limit condition for the intermunicipal emergency
Luana di Lodovico, Donato di Ludovico

323 Cyclability in Lahore, Pakistan. Looking into Potential for Greener Urban Traveling
S. Atif Bilal Aslam, Houshmand E. Masoumi, Muhammad Asim, Izza Anwer Minhas

345 Water footprint indicators for urban planning
Rosanna Varriale

361 REVIEW PAGES

Gennaro Angiello, Gerardo Carpentieri, Rosa Morosini,
Maria Rosa Tremiterra, Andrea Tulisi

EDITORIAL PREFACE: TEMA JOURNAL OF LAND USE MOBILITY AND ENVIRONMENT 3 (2018)

THE RESILIENCE CITY/THE FRAGILE CITY. METHODS, TOOLS AND BEST PRACTICES

ROCCO PAPA

DICEA - Department of Civil, Architectural and Environmental Engineering

University of Naples Federico II

e-mail: rpapa@unina.it

The 11th volume of TeMA Journal consecrates the three issues of 2018 to promote the scientific debate on the fragile/resilience city that represents a topic collecting itself all the issues related to the urban risks and referred to the different impacts that an urban system has to face with. Studies useful to improve the urban conditions of resilience represent the aim of our editorial work of this year. The identification of urban fragilities could represent a new first step in order to develop and to propose methodological and operative innovations for the planning and the management of the urban and territorial transformations.

The section "Focus" contains two articles. The first article, titled "Land Use Conflicts in the Energy Transition: Dutch Dilemmas" by Mark Koelman (Utrecht University, Nederland), Thomas Hartmann (University of Wageningen, Nederland and Universiteit Jan Evangelista Purkyně, Czech Republic) and Tejo Spit (Utrecht University, Nederland). The central question for this contribution is therefore: how can governments cope with the dilemmas underlying the land use conflicts of renewable energy development? By using Dutch examples, these dilemmas will be further examined. The Dutch energy transition is characterized by complex land use change because every inch of land already has a certain function assigned to it through land use plans. Finally, by exploring the underlying dilemmas of land use conflicts, the complexity of governing land use conflicts will be revealed, and a land use management approach will be discussed as promising.

The second article "A Methodology for Urban Sustainability Indicator Design" by Ricardo Alvira Baeza (Universidad de Murcia, Spain), explains a methodology for sustainability indicator design that allows understanding what these indicators should measure and how aiming to set a common framework that will enable to use by the scientific community.

The section "Land Use, Mobility and Environment" collects three articles. The first article, titled "Limit Condition for the Intermunicipal Emergency", by Luana Di Lodovico, Donato Di Ludovico (University of L'Aquila, Italy), deepens the issue of the Emergency Plan (EP). As the result of study about risk for each context, it allows to identify potential emergency scenarios. The paper illustrates model of analysis of Intermunicipal Emergency Plan (I-EP) through Limit Condition for the Intermunicipal Emergency (I-LCE), with the purpose of large-scale assessment and mitigation of the seismic risk. The proposed methodology is applied in the area of Sele, in the district of Salerno (Southern Italy), territory characterized by high levels of seismic and hydrogeological vulnerability.

The second article, titled "Cyclability in Lahore, Pakistan: Looking into Potential for Greener Urban Traveling", by S. Atif Bilal Aslam (University of Engineering and Technology Lahore, Pakistan), Houshmand E. Masoumi (Technische Universität Berlin, Germany), Muhammad Asim (University of Engineering and Technology Lahore, Pakistan), Izza Anwer Minhas (University of Engineering and Technology Lahore, Pakistan), presents the results of a survey about cyclability in Lahore, Pakistan, focusing on human perceptions rather than the built environment. The overall sample included a total of 379 respondents from three socio-economic classes: those from lower socio-economic backgrounds accessing traditional/older bazaars, respondents from the middle socio-economic class accessing uptown bazaars, and respondents of higher socio-economic status accessing pedestrian shopping malls.

The third article, titled "New water footprint indicators for urban water cycle", by Rossana Varriale (University of Naples Federico II, Italy), investigates the possibility of using the water footprint indicators in order to have common values on the uses of water in urban areas, where "value" means a measurement of water used and subtracted from the natural environment for anthropic uses. First of all, a general framework will be made of the studies that have dealt with "value" to water flows in the urban and non-urban context. In paragraphs 3 and 4, footprint indicators have been proposed to assess the variability of water consumption within urban territories. Then, the Blue Water Footprint and the Green Water Footprint were calculated only for the water flows consumed in the Italian cities, like drinking water and domestic water. In paragraph 5, it was argued on the links between UWF values and urban planning instruments and how the UWF indicators can address urban transformations towards sustainable approaches.

The section "Review Pages" defines the general framework of the issue's theme, with an updated focus on websites, publications, laws, urban practices and news and events on the subject of the Resilience City and the Fragile City. In particular, the Web section by Rosa Morosini describes three web resources of: (i) World Atlas Desertification; (ii) Soil Map and (iii) United Nation Environment Programme. The Books section by Gerardo Carpentieri briefly reviews three relevant books related to the Issues' theme: (i) Open Data Infrastructure for City Resilience. A Roadmap, Showcase and Guide; (ii) Transformation towards sustainable and resilient societies in Asia and the Pacific and (iii) Transport and Climate Change Global Status Report 2018. The Law section by Maria Rosa Tremiterra keeps readers up to understand in which way the European Union is addressing the integration between Climate Change Adaptation and Disaster Risk Reduction with a specific reference to the urban planning implications. The Urban Practices section by Gennaro Angiello presents two case studies for planning for resilience in in two South-American capitals, (i) the Quito (Ecuador) Resilient Strategy and (ii) the Santiago (Chile) Resilient Strategy. The News and Event section by Andrea Tulisj, select conferences deliberately deal with different issues not necessarily related to the theme of resilience, but which basically question on the future of cities.