

print ISSN 1970-9889 e-ISSN 1970-9870 FedOA press - University of Naples Federico II Journal of Land Use, Mobility and Environment

DOAJ

Rivista scientifica di classe A - 08/F1 SCOPUS WEB OF SCIENCE

NEW CHALLENGES FOR XXI CENTURY CITIES

Global warming, ageing of population, reduction of energy consumption, immigration flows, optimization of land use, technological innovation

Vol.17 n.1 April 2024

TeMA Journal was established with the primary objective of fostering and strengthening the integration between urban transformation studies and those focused on mobility governance, in all their aspects, with a view to environmental sustainability. The three issues of the 2024 volume of TeMA Journal propose articles that deal the effects of global warming, the ageing of population, the reduction of energy consumption from fossil fuels, the immigration flows from disadvantaged regions, the technological innovation and the optimization of land use.

TeMA is the Journal of Land Use, Mobility and Environment and offers papers with a unified approach to planning, mobility and environmental sustainability. With ANVUR resolution of April 2020, TeMA journal and the articles published from 2016 are included in the A category of scientific journals. The articles are included in main scientific database as Scopus (from 2023), Web of Science (from 2015) and the Directory of Open Access Journals (DOAJ). It is included in Sparc Europe Seal of Open Access Journals, and the Directory of Open Access Journals, and the Directory of Open Access Journals.

TEMA Journal of Land Use, Mobility and Environment

NEW CHALLENGES FOR XXI CENTURY CITIES:

Global warming, ageing of population, reduction of energy consumption, immigration flows, optimization of land use, technological innovation

1 (2024)

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 | online ISSN 1970-9870 Licence: Cancelleria del Tribunale di Napoli, nº 6 of 29/01/2008

Editorial correspondence

Laboratory of Land Use, Mobility and Environment DICEA - Department of Civil, Building and Environmental Engineering University of Naples "Federico II" Piazzale Tecchio, 80 80125 Naples

web: www.serena.unina.it/index.php/tema e-mail: redazione.tema@unina.it

The cover image shows older people climbing Via Raffaele Morghen's stairs in Naples (Source: TeMA Journal Editorial Staff).

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.

With ANVUR resolution of April 2020, TeMA Journal and the articles published from 2016 are included in A category of scientific journals. The articles published on TeMA are included in main international scientific database as Scopus (form 2023), Web of Science (form 2015) and the *Directory of Open Access Journals* (DOAJ). TeMA Journal has also received the *Sparc Europe Seal* for Open Access Journals released by *Scholarly Publishing and Academic Resources Coalition* (SPARC Europe). TeMA is published under a Creative Commons Attribution 4.0 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, Politecnico di Bari, Italy Enrique Calderon, Technical University of Madrid, Spain Pierluigi Coppola, Politecnico di Milano, Italy Derrick De Kerckhove, University of Toronto, Canada Mark Deakin, Edinburgh Napier University, Scotland Carmela Gargiulo, University of Naples Federico II, Italy 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, UMCS Institute, France Mattheos Santamouris, NK University of Athens, Greece Ali Soltani, Shiraz University, Iran

Associate Editors

Rosaria Battarra, CNR, Italy Matteo Caglioni, Université Cote D'azur, France Alessia Calafiore, University of Edinburgh, UK 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 Naples Federico II, Italy Stefano Franco, Politecnico di Bari, Italy Federica Gaglione, University of Sannio, Italy Carmen Guida, University of Naples Federico II, Italy Thomas Hartmann, Utrecht University, Netherlands Markus Hesse, University of Luxemburg, Luxemburg Zhanat Idrisheva, D. Serikbayev EKTU, Kazakhstan Zhadyra Konurbayeva, D. Serikbayev EKTU, Kazakhstan Seda Kundak, Technical University of Istanbul, Turkey Rosa Anna La Rocca, University of Naples Federico II, Italy Houshmand Ebrahimpour Masoumi, TU of Berlin, Germany Giuseppe Mazzeo, Pegaso Telematic University, Italy Nicola Morelli, Aalborg University, Denmark Enrica Papa, University of Westminster, United Kingdom Yolanda Pena Boquete, AYeconomics Research Centre, Spain Dorina Pojani, University of Queensland, Australia Nailya Saifulina, University of Santiago de Compostela, Spain Athena Yiannakou, Aristotle University of Thessaloniki, Greece John Zacharias, Peking University, China Cecilia Zecca, Royal College of Art, UK Floriana Zucaro, University of Naples Federico II, Italy

EDITORIAL STAFF

Gennaro Angiello, Ph.D. at University of Naples Federico II, Systemica, Bruxelles, Belgium Annunziata D'Amico, Ph.D. student at University of Naples Federico II, Italy Valerio Martinelli, Ph.D. student at University of Naples Federico II, Italy Stella Pennino, Ph.D. student at University of Naples Federico II, Italy Tonia Stiuso, Research fellowship at University of Naples Federico II, Italy

TeMA Journal of Land Use, Mobility and Environment

NEW CHALLENGES FOR XXI CENTURY CITIES:

Global warming, ageing of population, reduction of energy consumption, immigration flows, optimization of land use, technological innovation

1 (2024)

Contents

EDITORIAL PREFACE 3 Rocco Papa

FOCUS

- Land use changes of coastal wetlands using remote sensing. 7 Study of Muthurajawela & Anawilundawa wetlands, Sri Lanka Harsha Dias Dahanayake, DDGL Dahanayaka, Paul Hudson, Deepthi Wickramasinghe
- Gender analysis of urban mobility behaviours in the Tunisian Sahel region 23 Mehdi El kébir, Aymen Ghédira

LUME (Land Use, Mobility and Environment)

- 51 Towards the Spanish local urban agenda. The evolution of urban regeneration in Spain (2014-2022) Federico Camerin, Lucas Álvarez-Del-Valle, Ana Díez-Bermejo, Ivan Rodríguez-Suárez
- Sustainable development and proximity city. The environmental 71 role of new public spaces Antonio Bocca
- Spatial attractiveness towards industrial placement: a parametric index 89 based on spatial-economic territorial exposure metrics Diego Altafini, Valerio Cutini

- **109** Planning the transition of cities. Innovative research approaches and trajectories Francesca Moraci, Carmelina Bevilacqua, Pasquale Pizzimenti
- **129** The cost of shopping: measuring virtual and physical access for obtaining goods Jing Chen, Mengying Cui, David Levinson

REVIEW NOTES

- 147 New trends in energy transition policies: citizens' involvement in the European energy market Valerio Martinelli
- **155** Strategies and instruments for active mobility: comparison of international experiences Annunziata D'Amico
- **169** Global warming or global warning? A review of urban practices for climate change adaptation in Europe Stella Pennino
- **179** Exploring approaches and solutions for urban safety: a focus on women Tonia Stiuso

TeMA Journal of Land Use Mobility and Environment

NEW CHALLENGES FOR XXI CENTURY CITIES:

Global warming, ageing of population, reduction of energy consumption, immigration flows, optimization of land use, technological innovation 1

ROCCO PAPA DICEA - Department of Civil, Building and Environmental Engineering University of Naples Federico II, Italy ORCID: https://orcid.org/0000-0003-3355-1418 e-mail: rpapa@unina.it

TeMA Journal was established with the primary objective of fostering and strengthening the integration between urban transformation studies and those focused on mobility governance, in all their aspects, with a view to environmental sustainability. In other terms, its mission is to contribute to the development of a novel theoretical and methodological framework that, transcending the boundaries separating these research domains, develops innovative solutions for issues now being tackled with methods and techniques rooted in the scientific culture of the last century.

The three issues of the 2024 volume of TeMA Journal propose articles that deal the effects of global warming, the ageing of population, the reduction of energy consumption from fossil fuels, the immigration flows from disadvantaged regions, the technological innovation and the optimization of land use.

In this issue, the section "Focus" contains two contributions. The first article, "Land use changes of coastal wetlands using remote sensing. Study of Muthurajawela & Anawilundawa wetlands, Sri Lanka" by Harsha Dias Dahanayake, DDGL Dahanayaka, Paul Hudson and Deepthi Wickramasinghe (University of Colombo in Sri Lanka and University of York in United Kingdom), delves into the spatiotemporal examination employing Geographical Information System and Remote Sensing techniques to contrast alterations in land usage between an urban locale (Muthurajawela) and a peri-urban area (Anawilundawa) encompassing wetlands and adjacent buffer zones in Sri Lanka. Notably, the configuration of water bodies, dense vegetation, other greenery, human settlements, and open spaces has undergone significant shifts from 2000 to 2021. However, the transformations are notably more pronounced within the urban wetland setting.

The second article of the section, "Gender analysis of urban mobility behaviours in the Tunisian Sahel region" by Mehdi El kébir and Aymen Ghédira (University of Sousse in Tunisia), proposes a focus on gender mobility behaviour in a poorly investigated region of the world. The authors surveyed over 2,000 people in the Tunisian Sahel to understand everyday travel habits. Unlike traditional studies that treat women as a homogenous group, this research focuses on income levels when analyzing women's travel patterns, highlighting significant differences based on gender, exacerbated by financial status. Moreover, this contribution sheds light on an interesting topic for a region of the global south, which is not usually investigated as other parts of the world. The section "LUME" (Land Use, Mobility and Environment) contains five articles. The first, "Towards the Spanish Local Urban Agenda. The evolution of urban regeneration in Spain (2014-2022)" by Federico Camerin, Lucas Álvarez-Del-Valle, Ana Díez-Bermejo and Ivan Rodríguez-Suárez (Universidad Politécnica de Madrid in Spain), aims to examine the difference in the tools adopted in the Spanish urban policies between the two last EU programming cycles (2014–2020 and 2021–2027). The paper aims to examine the relationship between Integrated European Sustainable Urban Development Strategies and the Spanish Urban Agenda. The second contribution is "Sustainable development and proximity city. The environmental role of new

public spaces", by Antonio Bocca (University Gabriele D'Annunzio in Italy). The article addresses the

potential synergy of the 15-minute city approach to the environmental role of new public spaces. In particular, the paper employs the qualitative review method to examine the literature and obtain extensive information on how the ecological transition is interpreted in the design of public spaces and regenerative processes in the built environment highlight the priority role of public space in the sustainable development of the city. There are two main sections in the article: the first focuses on global challenges and the planning of resilient cities; the second deals with theoretical and application aspects of the concept of proximity about ecological transition (Portland and Barcelona).

The third article, "Spatial attractiveness towards industrial placement: a parametric index based on spatialeconomic territorial exposure metrics" di Diego Altafini and Valerio Cutini (University of Pisa in Italy and Cardiff University in United Kingdom), showcases spatial models tailored to address the differences in Spatial Attractiveness based on spatial and economic territorial exposure indexes to unveil the territorial imbalances' spatial logics. The paper describes the steps for the construction and application at Tuscany Region of the Spatial Attractiveness Index (SAi), a parametric, unweighted general linear model that comprises the partial indices of Spatial and Economic Territorial Exposure Indexes.

The fourth article of section, "Planning the transition of cities. Innovative research approaches and trajectories" by Francesca Moraci, Carmelina Bevilacqua, and Pasquale Pizzimenti (Università degli Studi Mediterranea in Italy and University of Roma La Sapienza in Italy), focused on the nexus between Ecosystem Services and Key Enabling Technologies as a potential and significant element for the future development of promising research trajectories in urban planning. In light of the ecological, digital, and jus transition envisaged by the EU for reaching the ambitious Green Deal objective by 2050 and its inherent complexity, the transition of cities has become a top priority in academic and policy debates, attracting increasing attention from scholars and policymakers.

The last article of the section, "The cost of shopping: measuring virtual and physical access for obtaining goods" by Jing Chen, Mengying Cui and David Levinson (Nanjing Audit University in China; Chang'an University in China and University of Sydney in Australia), aims to distinguish between physical and virtual shopping accesses and delineate their real-world implications. The authors propose a comprehensive understanding analysis of the disparities in accessibility between digital and brick-and-mortar shopping experiences. Physical and virtual access are studied for the case study of Wuhan City to understand their spatial distribution patterns and to differentiate them for these two commerce forms.

The Review Notes section proposes four insights on the themes of the TeMA Journal. The Urban planning practice section of Review Notes, "New trends in energy transition policies: citizens' involvement in the European energy market", by Valerio Martinelli, examines the role of the European Union in promoting energy transition through citizens' participation. With the Clean European Packages the European Union aims to achieve leadership in renewable energy sources, guaranteeing fair conditions of accessibility to the energy market for citizens and integrating energy and climate policy objectives. The introduction of energy communities makes it possible to realize the objectives defined by the European Directives towards not only environmental but also economic and social sustainability. The second section, "Strategies and instruments for active mobility: comparison of international experiences", by Annunziata D'Amico, aims to present an overview of strategies and tools that promote active mobility, identifying best practices in cities around the world. It highlights that in order to achieve sustainable and low-emission urban mobility, which also encourages active mobility choices, a multi-level approach is needed that involves the collaboration and long-term commitment of governments, local authorities, organisations and citizens. The third contribution, "Global warming or global warning? A review of urban practices for climate change adaptation in Europe", by Stella Pennino, provides an overwiew of the challenges that global warming poses and the risks in terms of climate change that it generates for territories and cities. This note provides an overwiew of the challenges that global warming poses and the risks in terms of climate change that it generates for territories and cities. The challenges that adaptation to climate change commonly faces are outlined, and a brief review of European case studies is carried out. The results of the review are discussed highlighting some key 4 - TeMA Journal of Land Use Mobility and Environment 1 (2024)

threads of climate adaptation practices and three significant examples of climate change adaptation in urban areas are reported, within a perspective of integration and sharing of know-how on the topic. Finally, the fourth section, "Exploring approaches and solutions for urban safety: a focus on women", by Tonia Stiuso, reviews agreements and strategies developed internationally to address this issue, including CEDAW, the Istanbul Convention, the European Urban Charter, the Sustainable Development Goals (SDGs), the Urban Agenda and the European Forum for Urban Safety. Various good practices and resources are then presented, including apps, reports, projects, books and studies. Overall, the article provides a comprehensive overview of the challenges and solutions related to women's safety in urban areas.

References

Altafini, D. & Cutini, V. (2024). Spatial attractiveness towards industrial placement: a parametric index based on spatialeconomic territorial exposure metrics. *TeMA - Journal of Land Use, Mobility and Environment, 17* (1), 89-108. http://dx.doi.org/10.6092/1970-9870/10458

Bocca, A. (2024). Sustainable development and proximity city: the environmental role of new public space. *TeMA - Journal of Land Use, Mobility and Environment, 17*(1), 71-87. http://dx.doi.org/10.6092/1970-9870/10414

Camerin, F., Álvarez Del Valle, L., Díez Bermejo, A. & Rodríguez Suárez, I. (2023). Towards the Spanish local urban Agenda. The evolution of urban regeneration in Spain (2014-2022). *TeMA - Journal of Land Use, Mobility and Environment, 17*(1), 51-70. http://dx.doi.org/10.6092/1970-9870/10338

Chen, J., Cui, M., Levinson, D. (2024). The Cost of Shopping: Measuring Virtual and Physical Access for Obtaining Goods. *TeMA - Journal of Land Use, Mobility and Environment, 17*(1), 129-145. http://dx.doi.org/10.6092/1970-9870/10688

D'Amico, A. (2024). Strategies and instruments for active mobility: comparison of international experiences. *TeMA - Journal of Land Use, Mobility and Environment, 17*(1), 155-167. https://doi.org/10.6093/1970-9870/10771

Dahanayake, H., Dahanayaka, D.D.G.L., Hudson, P. & Wickramasinghed, D. (2024). Land use changes of coastal wetlands using remote sensing. A case study of Muthurajawela & Anawilundawa wetlands, Sri Lanka. *TeMA - Journal of Land Use, Mobility and Environment*, *17*(1), 7-21. http://dx.doi.org/10.6093/1970-9870/10281

El Kébir, M. & Ghédira, A. (2024). Gender analysis of urban mobility behaviors in the Tunisian Sahel region. *TeMA - Journal of Land Use, Mobility and Environment, 17*(1), 23-49. http://dx.doi.org/10.6092/1970-9870/10415

Martinelli, V. (2024). New trends in energy transition policies: citizens' involvement in the European energy market. *TeMA* - *Journal of Land Use, Mobility and Environment, 17*(1), 147-153. https://doi.org/10.6093/1970-9870/10772

Moraci, F., Bevilacqua, C. & Pizzimenti, P. (2024). Planning the Transition of Cities. Innovative research approaches and trajectories. *TeMA - Journal of Land Use, Mobility and Environment, 17* (1), 109-127. http://dx.doi.org/10.6092/1970-9870/10430

Papa, R. (2023). The city challenges and external agents. Methods, tools and best practices 3 (2023). *TeMA - Journal of Land Use, Mobility and Environment, 16* (3), 475-477. https://doi.org/10.6093/1970-9870/10566

Pennino, S. (2024). Global warming or global warning? A review of urban practices for climate change adaptation in Europe. *TeMA - Journal of Land Use, Mobility and Environment, 17*(1), 169-177. https://doi.org/10.6093/1970-9870/10784

Stiuso, T. (2024). Exploring approaches and solutions for urban safety: a focus on women. *TeMA - Journal of Land Use, Mobility and Environment*, *17*(1), 179-186. https://doi.org/10.6093/1970-9870/10778