

The impact of COVID-19 on Piedmont Circular Economy policy roadmap

Original

The impact of COVID-19 on Piedmont Circular Economy policy roadmap / Padula, Cecilia; Barbero, Silvia. - STAMPA. - 1:(2022), pp. 350-354. (Intervento presentato al convegno Beyond All Limits. International Conference on Sustainability in Architecture, Planning and Design tenutosi a Caserta (IT) nel 11,12,13 Maggio 2022).

Availability:

This version is available at: 11583/2974858 since: 2023-01-21T15:08:58Z

Publisher:

DADI PRESS

Published

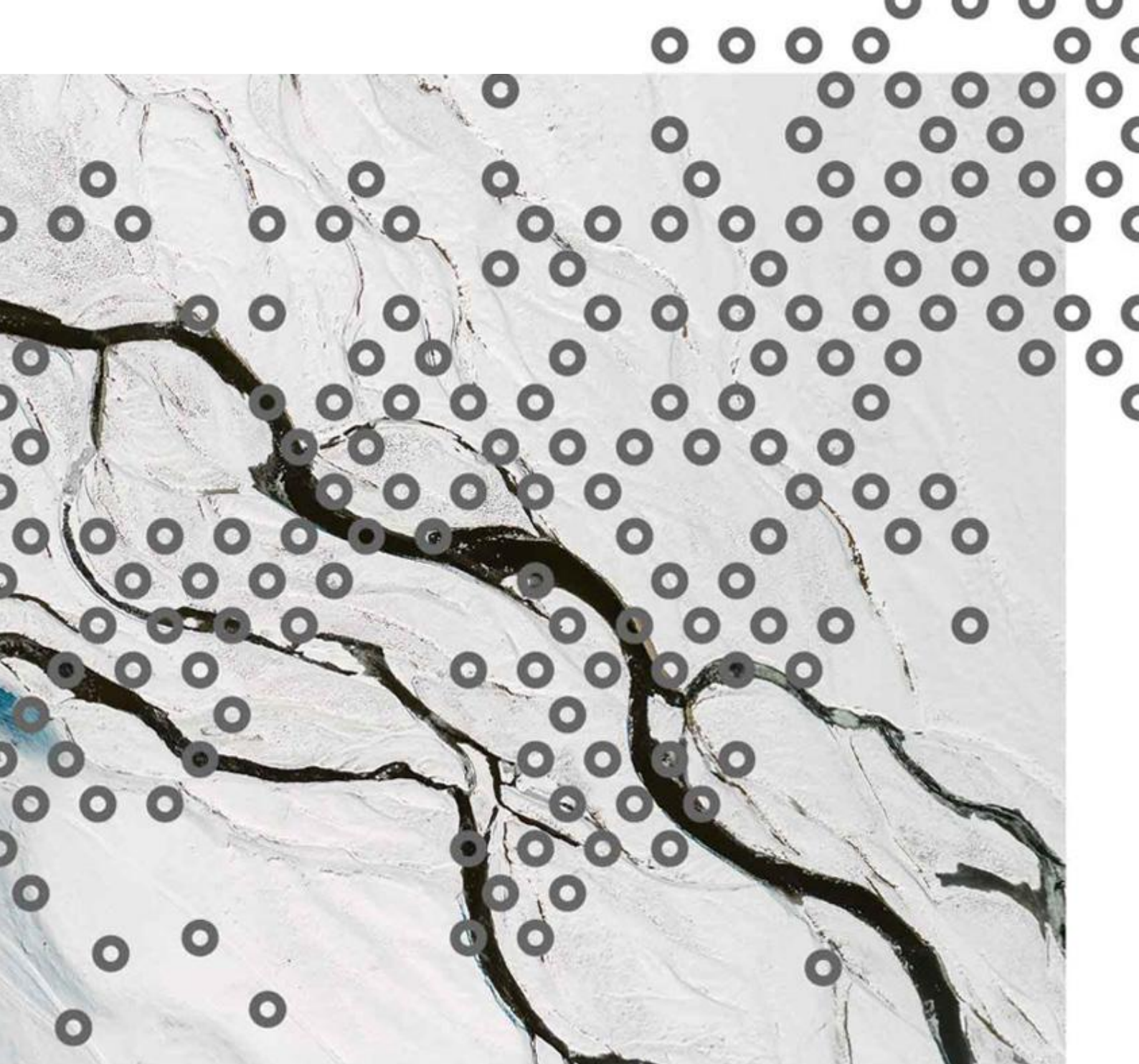
DOI:

Terms of use:

This article is made available under terms and conditions as specified in the corresponding bibliographic description in the repository

Publisher copyright

(Article begins on next page)



RR

*Report delle attività
di ricerca*

BEYOND
ALL LIMITS

INTERNATIONAL CONFERENCE
ON SUSTAINABILITY IN ARCHITECTURE,
PLANNING, AND DESIGN
11-12, 13 May_2022

*edited by
Claudio Gambardella*

V: Università
degli Studi
della Campania
Luigi Vanvitelli

*Dipartimento di Architettura e
Disegno Industriale*
DADI _ PRESS

Proceedings Book of Extended Abstracts

BEYOND ALL LIMITS

International Conference
on Sustainability in Architecture,
Planning, and Design

edited by Claudio Gambardella

DADI_PRESS

Università degli Studi della Campania "Luigi Vanvitelli"
Department of Architecture and Industrial Design (DADI)

11-12, 13 May 2022

Monumental Complex of the Real Belvedere of San Leucio, Caserta – Italy

<https://beyondallimits22.com>



Università
degli Studi
della Campania
Luigi Vanvitelli

*Dipartimento di Architettura e
Disegno Industriale*

RR

Research activity report

BEYOND ALL LIMITS

Proceedings on International Conference on Sustainability in Architecture, Planning, and Design

11-12, 13 May_2022

edited by Claudio Gambardella

Double-blind peer review is used in the conference (Authors' identity is concealed from the reviewers and vice-versa throughout the review process).

The authors are responsible for the contents of the submitted contributions (texts, images, tables, etc.) and for compliance with the BAL 2022 format.

Dean of DADI_Ornella Zerlenga

Responsible of DADI_PRESS_Marino Borrelli

Scientific coordination of DADI_PRESS

Marina D'Aprile (Didactics)

Antonio Rosato (Research)

Danila Jacazzi (Third Mission)

Graphic coordination of DADI_PRESS

Vincenzo Cirillo

Editorial Team of Beyond All Limits_2022 proceedings

Maria D'Uonno - Enrico Mirra (coordination)

Domenico Crispino

Rosina Iaderosa

Michela Musto

Anton Giulio Pietrosanti

Adriana Trematerra

Vincenzo Cirillo (cover graphic design)

Daniela Piscitelli with Rosanna Cianniello (cover image and Beyond All Limits_2022 logo)



© copyright DADI_PRESS 2022

Editorial line of the Department of Architecture and Industrial Design

ISBN 978-88-85556-23-2 (electronic version of the PDF format)

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in some form or by some means (electronic, mechanical, photocopying, recording or otherwise) except for permission by DADI_PRESS. By regarding the extended abstract/manuscript, the publisher/DADI_PRESS will not be responsible, in any case, for handling any claims relating to authorship. The author(s) will have full responsibility for the contents and graphic editing of their extended abstract.

This volume is present in electronic version at

www.architettura.unicampania.it

CONTENTS

BAL 22 INTRODUCTIONS

- 17 *Foreword. Presentation of NEB - BEYOND ALL LIMITS*
Massimiliano Smeriglio_ Member of the European Parliament
- 19 *Introduction*
Ornella Zerlenga_ Italian President of the conference
- 21 *Preface*
Claudio Gambardella_ Italian Chair of the conference
- 23 *Design in/for complexity. Engendering a care-oriented society*
Ezio Manzini_ Keynote Speaker
- 27 *Perpetuum mobile. Identity and value landscapes of contemporary design*
Patrizia Ranzo_ Keynote Speaker

BAL 22 CONTRIBUTIONS

01 Survey and Representation as system of monitoring and action on the risk factors and conditions of the context

- 35 *Digital images for the knowledge of bell towers and their ornamental signs*
Ornella Zerlenga, Rosina Iaderosa, Margherita Cicala
- 40 *Naples, Leopardi, and the Artist/Inhabitant Project. Practices of aesthetic resistance*
Alessandra Cirafici, Caterina Cristina Fiorentino
- 46 *Representation of territorial identities of Panagia Paraportiani in Mykonos*
Gennaro Pio Lento, Rosa De Caro, Fabiana Guerriero
- 51 *Digital narratives for cultural heritage: new perspectives for accessibility and inclusion*
Alice Palmieri
- 56 *The identity drawing of places. Bell towers in sixteenth-century Naples by Antoine Lafréry*
Vincenzo Cirillo, Riccardo Miele
- 61 *New technologies for the city and the landscape. A versatile application example*
Valeria Marzocchella
- 66 *Knowledge and representation of the civic tower of Tora and Piccilli*
Rosa De Caro, Fabiana Guerriero, Gennaro Pio Lento

- 71 *The photogrammetric survey of the Tvrdalj Fortress in Hvar*
Luigi Corniello, Angelo De Cicco

02 History, resilience, and green transition

- 79 *The enhancement of Biocultural landscapes: history, heritage, and environment driving sustainable mobility in internal areas*
Elena Manzo, Marina D'Aprile, Antonella Violano
- 84 *Conceptual framework for adaptive reuse of cisterns to cope with climate change and global warming: case of Safranbolu*
Irem Kahyaoğlu, Timuçin Harputlugil
- 89 *Patrick Geddes in Naples. The beginning of his ecological thinking*
Chiara Ingrosso
- 93 *Klampenborg: between local identity and territorial development. An example for Campania's spas*
Monica Esposito
- 98 *Vlorë, the ancient city of Albania and its history in Giuseppe Rosaccio's travel diary*
Felicia Di Girolamo
- 103 *New culture of mobility between flow of people and flow of ideas. Two examples of Metro's transformation: Naples and Copenhagen*
Federica Fiorillo

03 Restoration: a sustainable answer to uncontrolled urbanization

- 111 *Restoration of the architectural heritage. The cemetery hill of Poggioreale in Naples*
Paolo Giordano
- 116 *Restoration as a sustainable resource for urban regeneration. The case of the Forte di Vigliena*
Corrado Castagnaro
- 121 *Recovery of the abandoned heritage towards new fruitive horizons: the case of S. Maria della Pace*
Domenico Crispino
- 126 *Harbour heritage protection: sustainable practices for the enhancement of the Balkan Coast*
Enrico Mirra, Adriana Trematerra
- 132 *Abandoned heritage between restoration and valorisation: Mirine Early Christian Basilica in Croatia*
Adriana Trematerra, Florian Nepravishta, Enrico Mirra

04 Urban transformations: projects, strategies, actions

- 141 *Learning from Covid 19. Sustainable strategies for the regeneration of peripheral areas*
Paolo Belardi, Valeria Menchetelli, Giovanna Ramaccini, Monica Battistoni, Camilla Sorignani

- 146 *Historical city and urban voids as elements of cultural heritage: theory and projects for Aversa discontinuous city*
Francesco Costanzo, Gaspare Oliva, Michele Pellino
- 152 *Architecture from rubble. To "rebuild the imaginary"*
Raffaele Marone
- 158 *Sustainable Recovery and Urban Public Transformation of a Former Military Park*
Luisa Collina, Laura Galluzzo, Claudia Mastrantoni, Elisa Cinelli
- 164 *The man who designed his city. The Matteotti village in Terni by Giancarlo De Carlo as a socially sustainable method.*
Barbara Bonanno
- 169 *Rereading of the Process of an Idea Competition for Obtaining a Sustainable Urban Environment*
Rabia Çiğdem Çavdar
- 173 *Urban environments regeneration. Technological issues for adaptive re-use*
Caterina Frettoloso, Rossella Franchino, Paola Gallo
- 178 *A Scattered Courtyard: rediscovering the Historical Palimpsest of Xi'an for regenerating the urban texture along the City Wall*
Maria Giulia Atzeni
- 184 *Second-hand Architecture. For a new theory of reuse. The case of the EX IDAC FOOD*
Concetta Tavoletta
- 188 *Resonant void. Play and interaction in architecture*
Marco Russo

05 Circular Technological Design for a carbon neutral approach

- 197 *How to pursue the Whole Life Carbon vision: a method to assess buildings' Embodied Carbon*
Jacopo Andreotti, Roberto Giordano
- 203 *C2C as a reference framework for circular buildings. Implementation on an existing settlement in Rome*
Serena Baiani, Paola Altamura
- 211 *Digital-green transition of knowledge buildings*
Antonella Violano, Nicola Barbato, Monica Cannaviello, Souha Ferchichi, Imad Ibrik, Ines Khalifa, Jose Luis Molina, Antonella Trombadore
- 216 *University communities for the green/digital renovation of buildings*
Antonella Trombadore, Gisella Calcagno, Giacomo Pierucci, Lucia Montoni, Juan Camilo Olano
- 222 *Metamorphosis_{vs} Transformation: innovating the process in the regeneration technological design of heritage-built environment*
Antonella Violano, Antonio Maio
- 228 *Slow tourism and sustainable mobility: infrastructures for a smart use*
Marica Merola, Chiara Tosato

06 Structural engineering

- 235 *Seismic vulnerability assessment of ten bell towers in Naples*
Corrado Chisari, Mattia Zizi, Daniela Cacace, Gianfranco De Matteis
- 241 *The role of the epistyle on the dynamic behavior of multi-drum columns*
Androniki Christodoulou, Olympia Panagouli, Athanasios Kozanitis
- 246 *Seismic Retrofit of Masonry Structures: the Lancellotti Palace in Casalnuovo di Napoli*
Claudia Cennamo, Concetta Cusano, Luigi Guerriero
- 250 *The CLT panels: a sustainable response for existing buildings*
Giorgio Frunzio, Mariateresa Guadagnuolo, Luigi Massaro, Luciana Di Gennaro
- 255 *Conservation state and structural issues of existing infrastructures: the case of stataal road bridges in Campania*
Gianfranco De Matteis, Pasquale Bencivenga, Angelo Lavino, Francesco Rosselli, Mattia Zizi
- 260 *Use of structural steel in cultural heritage and for the strengthening of existing structures*
Euripidis Mistakidis, Olympia Panagouli

07 Occupants and their interaction with the built environment related to Multisensorial and Indoor Environmental Quality

- 267 *Inclusive design and the multisensory interactions in public spaces for well-being of visually impaired people*
Samiha Boucherit, Luigi Maffei, Massimiliano Masullo
- 271 *Natural Ventilation Strategies in Buildings as Part of Indoor Air Quality and Healthy Environment*
Merve Coşar Güzel, Gülsu Ulukavak Harputlugil
- 276 *Compared spatial interpretations in the Edoardo Chiossone Museum of Oriental Art*
Alessandro Meloni
- 282 *Head Mounted Displays for lighting in Virtual Reality: Review on Measurements, Advances, and Limitations*
Ainoor Teimoorzadeh, Michelangelo Scorpio, Giovanni Ciampi, Sergio Sibilio
- 286 *The role of the subjective assessment in lighting research using virtual reality*
Michelangelo Scorpio, Davide Carleo, Martina Gargiulo, Pilar Chias Navarro, Yorgos Spanodimitriou, Parinaz Sabet, Giovanni Ciampi
- 292 *On the use of low-cost thermohygrometers for wearable application in the built environment*
Francesco Salamone, Giorgia Chinazzo, Ludovico Danza, Clayton Miller, Sergio Sibilio, Massimiliano Masullo

08 High Performance Components & Buildings

- 301 *Prefabricated movable modular building solutions exploiting renewable sources: energy systems review*
Luigi Maffei, Antonio Ciervo, Dorian Diodato, Antonio Rosato

- 307 *Second-skin façades and usage of textile materials in the building envelope: literature review, limitations, and future opportunities*
Niloufar Mokhtari, Giovanni Ciampi, Yorgos Spanodimitriou, Sergio Sibilio
- 314 *A research on thermal defects in building envelopes for mid-rise houses to develop retrofit strategies: a case study in Sivas/Turkey*
Ahmet Ethem Çulcuoğlu, Timuçin Harputlugil
- 320 *Review of 3D Printing in Architecture: applications, limitations, and future developments*
Giovanni Ciampi, Yorgos Spanodimitriou, Michelangelo Scorpio
- 329 *From climate change to the development of adaptive building envelope*
Evelyn Grillo
- 335 *Advanced manufacturing processes for emergent architectural systems*
Michela Musto

09 Public policies for inclusive and sustainable cities

- 343 *The environment: from limit to economic opportunity*
Scilla Vernile
- 346 *The role of sustainable disclosure and reporting in the public administration: the AdSP case of the western Ligurian sea*
Floriana Pollio

- 350 *The impact of COVID-19 on Piedmont Circular Economy policy roadmap*
Cecilia Padula, Silvia Barbero

- 355 *Urban regeneration through an integrated urban planning approach: towards a new paradigm. The Italian experience*
Laura Pergolizzi
- 359 *Brand urbanism and future scenario to promote sustainable buses public transport. A case study*
Benedetta Terenzi
- 366 *Common goods: an instrument for citizen inclusion and urban regeneration*
Marco Francesco Errico

10 Re-shaping planning approaches, tools and processes for a sustainable, inclusive, and resilient future

- 373 *Museum and the Community: a case of Participatory Intervention of an Old Community in Shanghai*
Penghan Wu, Yedian Cheng
- 378 *Improving learning capacity to enhance resilience: the community engagement process in the RI.P.RO.VA.RE. Project*
Adriana Galderisi, Giuseppe Guida, Giovanni Bello, Giada Limongi, Valentina Vittiglio
- 382 *To a sustainable redevelopment of illegal settlements*
Claudia de Biase, Salvatore Losco

- 387 *Spatial Planning and Energy Transition: The role of public participation*
Elisavet Thoidou, Miltiadis Toskas-Tasios
- 392 *Risk-connect: a secure and ecological path in the east side of the Vesuvius National Park*
Claudia Sorbo
- 397 *Cultural Heritage in Resilience Planning: Evidence from 100 Resilient Cities Database*
Deniz Altay-Kaya, Damla Yeşilbağ
- 401 *A framework for socio-ecological urban co-design: Lessons from two urban parks in the Atacama Desert*
Macarena Gaete Cruz, Aksel Ersoy, Darinka Czischke, Ellen Van Bueren
- 409 *Spas, new possible scenarios for human and city's well-being*
Adriana Figurato

11 Beautiful, sustainable, and inclusive places: the role of appraisal and evaluation

- 415 *Nomad Management of Urban Development: the complex value of temporary communities*
Maria Cerreta, Chiara Mazzarella, Hilde Remoy
- 419 *The value of change: towards social impact assessment in Scampia*
Luciano Lauda, Fabiana Forte
- 424 *Pays Aimables: visual storytelling and landscape values*
Adriana Ghersi, Silvia Pericu, Federica Delprino, Stefano Melli
- 429 *Evaluation issues of cultural heritage impact-led regeneration processes. The case of Italian inner areas*
Federica Cadamuro Morgante, Alessandra Oppio, Chiara Sumiraschi
- 433 *Con(temporary) urban regeneration processes and real estate market: evidence from the case of Milan*
Leopoldo Sdino, Francesca Torrieri, Marta Dell'Ovo, Marco Rossitti
- 438 *Turkey is the Leading Housing Producer in Europe with Dominating Equity Finance in Housing Transactions*
Ali Turel
- 442 *A Decision Aid and Social Impact Co-Assessment Approach for Urban Regeneration Processes*
Maria Cerreta, Ludovica La Rocca, Ezio Micelli
- 448 *Beauty as value: evaluation issues in the NEB perspective*
Fabiana Forte, Alessandra Oppio
- 451 *Creation of a Pseudo-Vernacular Architecture and the Unintentional Attainment of Sustainability: The Case of Akyaka Town Development*
Zeynep Çiğdem Uysal Ürey
- 457 *Using evaluation tools in urban regeneration processes*
Fabrizio Battisti, Giovanna Acampa, Mariolina Grasso

- 462 *Unesco heritage and spatial analysis in a GIS environment*
Fabiana Guerriero, Rosa De Caro, Gennaro Pio Lento

12 Design for Sustainable & Safe Communities

- 469 *Slowork, room with view. Behaviors, Heritage, Design for new lifestyles*
Francesca Castanò, Luigi Maffei, Raffaella Marzocchi, Maria Dolores Morelli
- 475 *Living Hub: setting up a living lab for Simulation based Design activities*
Niccolò Casiddu, Claudia Porfirione, Anna Paola Vacanti, Francesco Burlando, Isabella Nevoso
- 481 *S.I.A.R.C. Sustainable Improvement for Aerial Rescue and Control*
Patrizia Ranzo, Nicola Corsetto, Francesco Fittipaldi
- 486 *Sustainable design in urban renewal: a case study of waterfront landscape shared infrastructure of Shanghai, China*
Xiaowen Wu, Claudio Gambardella
- 491 *Beyond current limits: building occupants and climate change*
Timuçin Harputlugil, Pieter De Wilde
- 496 *Design for sustainable behavior: strategies for understanding behavior change*
Wellington Minoru Kihara, Aguinaldo dos Santos, Ana Lucia Zandomeneghi, Alexandre de Oliveira
- 500 *Analyzing sustainability of green product certification systems using indicators of sustainable product*
Gülser Çelebi, Meron Belay
- 504 *Building Trust to Level 4 Autonomous Trucks for Environmental Sustainability and Road Safety*
Ayça Odabaşı Uyanık

13 For Nature / With Nature: new sustainable design scenarios

- 511 *Game Experience: A Fun Form of Cultural Sustainability*
Güniz Sağocak, Gülru Mutlu Tunca
- 518 *ADHEREND - Research and teaching design on the integration of old and new urban spaces*
Feifei Song
- 524 *Sustainability in the 3D printing of housing and settlements codesign processes*
Fabio Naselli, Anna Yunitsyna, Claudio Gambardella, Valentina Sapio
- 531 *A renewed poetic practice. Rethinking the role of packaging design to boost New Normality*
Chiara Lorenza Remondino
- 536 *Collaborative services as trigger for a sustainable culture: two case studies*
Claudia Morea, Sofia Collacchioni, Francesca Falli, Chiara Rutigliano
- 543 *Revived Vintage objects: Designing and Recycling as a bridge connecting Period Products to contemporary functions*
Giulio Giordano

- 548 *Nature-based design methods and practices for bathing activities sustainability*
Ivo Caruso, Vincenzo Cristallo
- 554 *Design for social innovation: a proposal for an holistic design approach*
Mario Bisson, Stefania Palmieri, Alessandro Ianniello, Luca Botta, Riccardo Palomba
- 558 *Beyond the XX century's object: 12 keywords from the international design scenery*
Francesca La Rocca
- 564 *Design for and with visual impairments through 3D printing: a case study from the covid-19 pandemic*
Alessia Romani, Federica Mattiuzzo, Marinella Levi
- 571 *Design and craftsmanship for urban regeneration*
Simona Ottieri

14 Next Consciousness. Fashion innovative scenarios, processes, and products

- 579 *Metamorphosis with(in) fashion: futuring through a new fashion design framework*
Elisabetta Cianfanelli, Margherita Tufarelli, Maria Claudia Coppola
- 584 *DENIM_DECONSTRUCTION. Industrial garments/random garments. Up-cycling processes*
Carlos Campos, Alessandra Cirafici
- 590 *New bio-based textiles productions increasing new circular economy models*
Maria Antonietta Sbordone, Carmela Ilenia Amato, Alessandra De Luca, Venere Merola
- 598 *Alginate Materials for Circular Fashion: from Consumptive to Regenerative Systems*
Sabrina Lucibello, Lorena Trebbi
- 603 *Smart jewels for inclusive fashion*
Patrizia Marti, Annamaria Recupero
- 609 *Platforms, algorithms, and new media in the prosumer era. The evolution of tailored production in Fashion and Cosmetic field*
Rosanna Veneziano, Michela Carlomagno
- 614 *Seven Bodies. Parametric design dialogues around the body*
Chiara Scarpitti, Flavio Galdi
- 621 *Linen Storylines in Procida. From memory to con“temporary” project, between diffusion of knowledge and sharing of practices*
Ornella Cirillo, Andrea Chiara Bonanno, Caterina Cristina Fiorentino, Roberto Liberti, Giulia Scalera
- 626 *New scenarios of conscious fashion system*
Valentina Alfieri
- 632 *Designing a Conscious Fashion Experiences: strategies for Generation Z*
Cristina Marino, Sara Bellini
- 638 *Futurable fashion state of mind. Sustainable projects and theories for new fashion system scenarios*
Maria D'Uonno

- 642 *Responsible Italian Fashion. An open brand for sustainability in fashion*
Giulia Scalera
- 648 *Collaborative sustainable innovation improving inclusiveness and value adding capabilities*
Dalia Gallico



BAL 22
ROUNDTABLE

- 659 *Introduction. The Future of Sustainable Fashion*
Aguinaldo dos Santos
- 660 *Positive impact of fashion: value system beyond consumption and improving design processes*
Anikò Gàl
- 662 *The future of Sustainable Fashion. Interview with Anna Pellizzari, Materially*
Emma Gambardella
- 664 *The future of work in fashion from the perspective of technologies: a prospective study*
Janice Accioly Ramos Rodrigues
- 666 *Fast to Slow. New visions for the future of conscious fashion system*
Valentina Alfieri, Silvestro Di Sarno



BAL 22
CONFERENCE

- 671 Universities
- 672 Patronages
- 673 Presidents, Conference Chairs
- 674 Sessions Chairs
- 675 Honorary Committee
- 676 Scientific Committee
- 680 DADI Organizing Committee
- 681 Venue
- 684 Services Companies
- 685 Program

The impact of COVID-19 on Piedmont Circular Economy policy roadmap

PADULA* Cecilia¹, BARBERO Silvia¹

¹Politecnico di Torino, (Italy) – *cecilia.padula@polito.it

Abstract

The outbreak of COVID-19 in the Italian and international scenario has produced diversified responses to an unknown and unexpected event, rooted in the governance characteristics of each Country. Governments need to overcome established legislative practices and procedures, proposing new legislative and financial frameworks to address endemic or unexpected crises while pursuing sustainable development goals (Capano, 2020). The following contribution explores the emerging results from the new activities implemented by the RETRACE project to investigate how the pandemic has influenced the processes of Circular Economy (CE) that it had stimulated in four different regions considered: Piedmont (Italy), New Aquitaine (France), Biscay (Spain), North-East (Romania). Therefore, this paper delves into the situation in the Piedmont Region.

Keywords

Polymaking, COVID-19, Systemic Design, Circular Economy, Good Practices

1. Introduction

In Italy, regional authorities are key players in shaping the central government's response to COVID-19, due to the way Italian regionalism was conceived (Capano, 2020). Regional governments should therefore be able to set up laboratories to re-launch our economy, providing collaborative scenarios for recovery policies, laying the framework for the construction of the *New European Bauhaus* as a pool of innovation but, above all, demonstrating they can guarantee its functioning (Rosado-García et al., 2021). COVID-19 highlighted the shortcomings of current production and management systems, thus accelerating the pressing need for more sustainable models recalibrated to the CE framework. The paradigm shift towards a CE requires that policies can manage and solve complex problems with new approaches. However, *polymaking* presents complex wicked problems caused by the fragmentation of the *policy cycle* process (Hermus et al. 2020): there are issues at the time level; related to the *knowledge gap* given by the variety of actors involved; in data analysis and processing caused by a large amount of information and difficulties in the evaluation phase of the impacts of policies (Maffei et al. 2016). Hence, in recent years we have begun to discuss and experiment which ways to integrate tools belonging to design in *polymaking* processes, exploiting the ability of design to facilitate multidisciplinary paths and to support participatory processes (Barbero & Bicocca, 2017). RETRACE is a project funded by Interreg Europe Programme 2016-2020 that promotes Systemic Design (SD) as a method to enable local and regional policies to move towards a CE. To innovate governance addressing CE barriers with a systemic approach (Giraldo Nohra et al., 2020), it was necessary to identify education-oriented, and even more, critical policy-oriented Policy Gaps to shift to a CE model.

This allowed all regions involved to better address the nature and scope of useful Good Practices (GPs) to be specifically evaluated for the Action Plan (Barbero, 2017). In a post-pandemic scenario, the results proposed by RETRACE become more relevant than ever to explore further to address the upcoming regions' recovery strategies, proposing innovative circular strategies to build back more resilient EU regions.

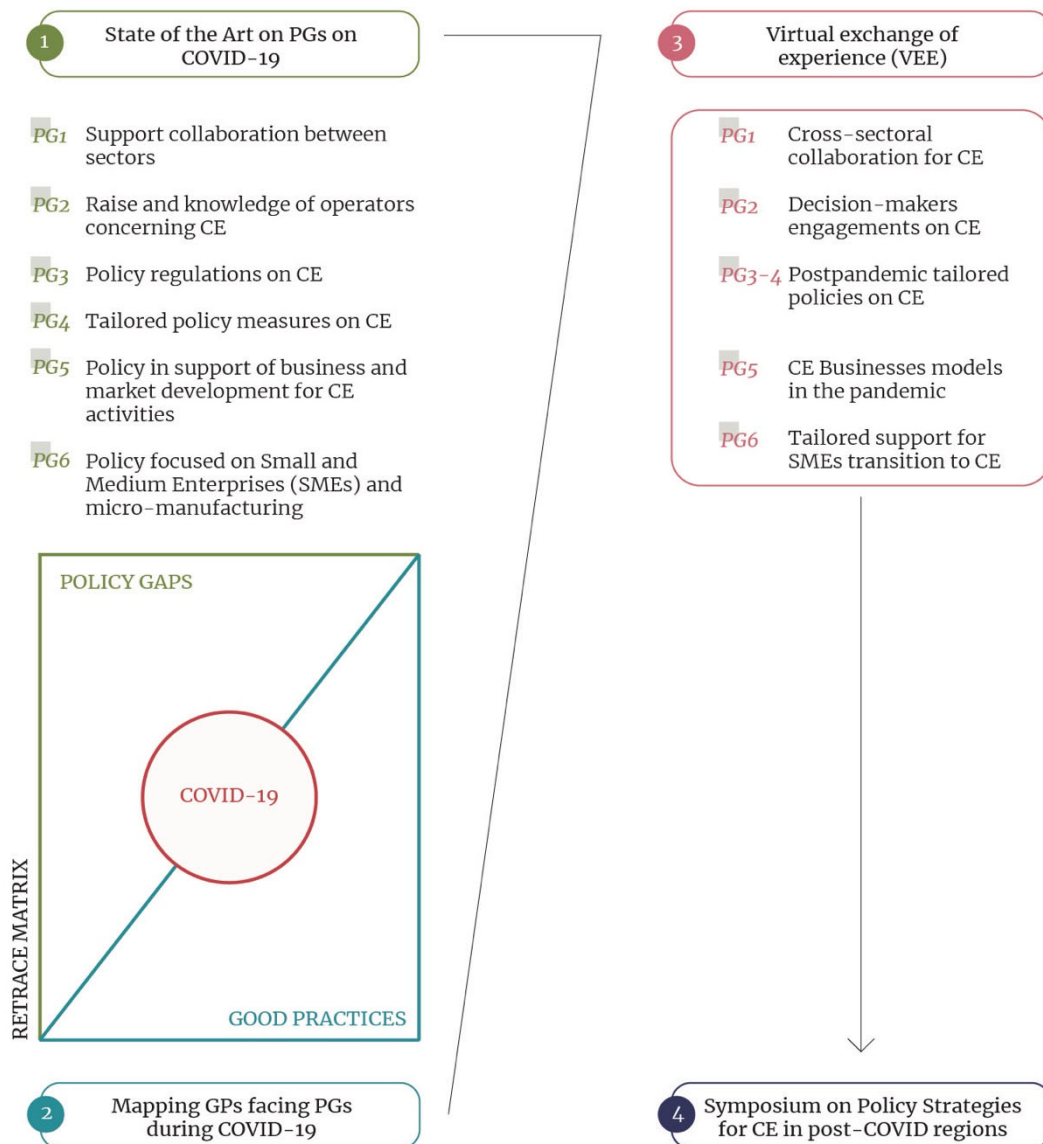


Fig 1. Building on the results of RETRACE: the four phases of the project's additional activities aim to reactivate a process of experience exchange that identifies the new GPs that have been generated in this accelerated innovation process induced by COVID-19. Courtesy of: Padula Cecilia, Pereno Amina, RETRACE: additional activities, 2022.

2. The impact of COVID-19 on the Policy Gaps highlighted in Piedmont Region

The main goal of RETRACE was to promote the adoption of SD as a method to support the transition of regional policies towards CE: in outlining the approach to the development of a new paradigm, the process of breaking down barriers between sectors must be supported at the policymaking level with a shift in the structure of policy instruments towards a more cross-sectoral approach (Barbero & Pallaro, 2018). The outcomes of the RETRACE Action Plans aim to address the cross-cutting Policy Gaps identified through an exchange of experiences that have hindered the regions involved on their path to CE (Barbero & Giraldo Nohra, 2018).

In 2021, the RETRACE project is further funded to carry out additional work on the impacts of the pandemic by addressing the regions' upcoming recovery strategies. The breakdown of COVID-19 strongly influences the relevance of future work on RETRACE project outcomes, as regions play a

crucial role at the forefront of responses to the crisis, which could help implement measures at the national level. The RETRACE consortium aims to assess the current state of Policy Gaps in all partner regions by reactivating a process of experience exchange that identifies new GPs that have been generated in this accelerated innovation process that COVID-19 has fostered [fig. 1]. Throughout the Holistic Diagnosis (HD) process to map the current state of the regional economies, the three strategic economic sectors of each of the regions were investigated. Within these sectors, the most influential stakeholders were identified to be involved in both an assessment phase and the following exploitation of project results and implementation to drive the four regional economies towards a CE model.

Strategic sectors in Piedmont have manifested rather negative economic consequences linked to COVID-19, as it represented a break in the business cycle: the lack of technological tools necessary to deal with the problems in procurement and the management of the supply chain has been denounced. Stakeholders have found a lack of coordination between the production sector and regional actors, a key element to design and implement the measures to outline a successful exit strategy. Pandemic has accelerated the digital transition of the various sectors, however, it still faces some barriers that will have to be overcome: the general level of digitization of the population, the internal skills of companies, and the related management culture.

The importance of implementing a transition towards a CE, as reported in the Piedmont *Smart Specialisation Strategy* (2021), lies in the ongoing change process on three strategic axes: ecological transition, digital transition, social and territorial impact. The instances of renewal of the productive system come from the need to restore the interrupted growth path. The boost to the economy mobilized by national and EU institutions and the urge to renew economic assets, strongly oriented to new technologies, decarbonization, and eco-investments, social infrastructure, are great opportunities to renew the distinctive skills of Piedmont, diversify assets, strengthen the entrepreneurial structure and develop companies in the productions with greater growth potential.

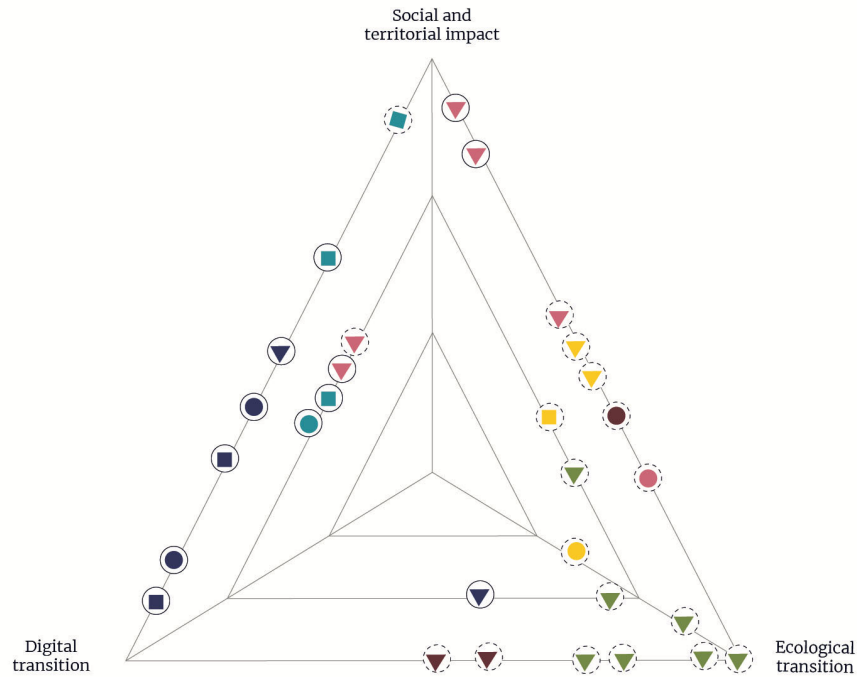
3. Systemic Design: boosting Circular Economy policy tools on a post-pandemic scenario

During the 4 stakeholder group meetings and the partner meeting, 40 best practices were presented out of which 24 were selected through the Online Peer Review process among the partners. The selection criteria for the best GPs in the field of Circular Economy were: degree of innovation, impact on the territory, and link to COVID-19. To assess how GPs could truly help bridge the Policy Gaps identified in each region, it was necessary to refer to the multi-criteria RETRACE Matrix as, in completing the format, partners could cite any GP that provided an inspiring perspective on how to bridge each of the Policy Gaps identified. The selection of GPs (virtuous examples of implementation of CE, tools, and policies) has allowed the identification of development trends that can facilitate the decisions of policymakers:

- green entrepreneurship: the environmental sustainability of processes is a central topic in the current political and economic debate. The crisis caused by the recent pandemic has strengthened the idea that ecological - and digital - transition must be one of the pillars of the new economic and social development model;
- digitalization: the digital transition has been the process that has been accelerated most of all during the pandemic emergency;
- city-system: whose goals, prompted more urgently by the pandemic, have generated a rethinking of private and shared spaces, mobility, and accessibility to places and services.

The results of the bottom-up approach applied, which involves the final users of the policies - the citizens - highlight the potential of the Quadruple Helix paradigm to foster and implement processes through collaboration and proactive sharing of experiences to understand the latent needs and capabilities of Piedmont in post-COVID19 [fig. 2].

In April 2022, an evaluation process of the governance tools delivered will start in order to create tangible results on the process of exchange of experiences among partner territories and to generate, through the SD methodology, concrete impacts on policymaking processes, fostering a transdisciplinary approach to close the policy cycle on CE.



Trends identified

- Green entrepreneurship
- Digitalisation
- City system
- Food
- Mobility
- Rural areas

Type of GP

- Tools/ others
- ▼ CE implementations
- Good practices of CE

Link to COVID-19

- Indirect link to covid-19
- Direct link to covid-19

Fig 2. GPs framework of the Piedmont Region has been structured according to the three strategic axes indicated, highlighting the types according to a subsequent categorization based on development trends and the relationship with the COVID-19. Courtesy of: Padula Cecilia, Puglielli Mariapaola, Marchesi Alice, RETRACE: additional activities, 2022.

4. Conclusion

In the Piedmont region, linking the three analyses conducted - HD, Good Practices Framework, and Policy Framework - it is possible to identify areas of intervention and their respective potential applications which, with the use of a multi-criteria matrix, has led to the identification of four complementary strategies. The strategies are based on a meta-strategic vision, which leads to the identification of urban-rural territorial systems for a more holistic consideration of the regional territory. The three sectoral strategies and a fourth transversal one, propose policies and tools for sustainable development of land management, mobility networks, and digital ecosystems, with a view to inclusion and social cohesion.

The outcomes of this extension of RETRACE aim to update the project results on the current erratic scenario of COVID-19. The exchange of experiences among partner regions will provide more tools for the policymakers to deliver innovative approaches to circularity amid challenging circumstances. Practical recommendations will support the different regions on the use of recovery funds towards a *Circular Economic Recovery*. Also, it will showcase an overview of the innovative environment for the CE that the COVID-19 phenomenon brewed. Overall, the expected results will provide regional policymakers with new tools to improve policy instruments in the post-pandemic era. Collaborative methodologies have immense potential in the renovation sector, fostering sustainability through the

introduction of complementary systems. This vision of the ecosystem promotes the idea of smart territories, going beyond the idea of smart cities, by promoting the idea of a networked *place for life* revolving around the cohabitation of humans and nature on the planet, to foster a socioeconomic context that allows creating a *New Sustainability Culture* for sustainable human-nature harmony, inherent in the concept of *New Bauhaus* (Rosado-García et al., 2021).

References

- Barbero S. (2017). *Systemic Design Method Guide for Policymaking: A Circular Europe on the Way*. Allemandi.
- Barbero S., Bicocca M. (2017). Systemic Design approach in policy-making for sustainable territorial development. *Design Journal*, 20(sup1), S3496-S3506.
- Barbero S., Giraldo Nohra C. (2018). *Policy Road Map: A Systemic Approach for Circular Regions*. Allemandi.
- Barbero S., Pallaro A. (2018). *Systemic design and policy making: The case of the RETRACE project*. *FormAkademisk*, 11(4). <https://doi.org/10.7577/formakademisk.2219>
- Capano G. (2020). *Policy design and state capacity in the COVID-19 emergency in Italy: if you are not prepared for the (un)expected, you can be only what you already are*. *Policy and Society*, 39(3), 326-344. <https://doi.org/10.1080/14494035.2020.1783790>
- Giraldo Nohra C., Pereno A., Barbero S. (2020). *Systemic Design for Policy Making: Towards the Next Circular Regions*. *Sustainability*, 12(11), 4494. <https://doi.org/10.3390/su12114494>
- Hermus M., van Buuren A., Bekkers V. (2020). *Applying design in public administration: A literature review to explore the state of the art*. *Policy and Politics*, 48(1), 21–48. <https://doi.org/10.1332/030557319X15579230420126>
- Maffei S., Mortati M., & Villari B. (2016). *Le politiche per il design e il design per le politiche: dal focus sulla soluzione alla centralità della valutazione*. Maggioli.
- Regione Piemonte. (2021). *Smart Specialisation Strategy (S3)*.
- Rosado-García M.J., Kubus R., Argüelles-Bustillo R., García-García M.J. (2021). *A New European Bauhaus for a Culture of Transversality and Sustainability*. *Sustainability*, 13(21), 11844. <https://doi.org/10.3390/su132111844>