a cura di
LETIZIA DIPASQUALE
SAVERIO MECCA
LUCIA MONTONI

Heritage for people

Sharing vernacular knowledge to build the future

With the support of the
Culture Programme
of the European Union

With the support of the Culture Programme of the European Union

This publication is the result of the project **VerSus+ / Heritage for People** [Grant Agreement Ref. 607593-CREA-1-2019-1-ES-CULT-COOP1], co-funded by the European Union (2019-2023), under the Creative Europe Culture Programme.

The European Commission support for the production of this publication does not constitute endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

This collective work gathers five European university institutions and integrates contributions from the project leader and the project partners. In addition to the Editors, the main contributors are:

Project leader

Universitat Politècnica de València, Escuela Técnica Superior de Arquitectura, Spain

Camilla Mileto, Fernando Vegas (*Project leaders and Principal investigators*), Valentina Cristini, Lidia García-Soriano, Guillermo Guimaraens, Marina Elia, María Lidón de Miguel, Juan María Songel, Juan Bravo Bravo, Jose Luis Baró Zarzo, Alicia Hueto Escobar, Sergio Manzano Fernández

Partners

Università degli Studi di Cagliari, Italy

Maddalena Achenza, Ivan Blecic, Amanda Rivera Vidal, Alice Agus

École Nationale Supérieure d'Architecture de Grenoble, France

Bakonirina Rakotomamonjy (*Principal investigator*), Sebastien Moriset, Nuria Sánchez Muñoz, Manon Mabille, Audrey Carbonnelle

Università degli Studi di Firenze, DIDA Dipartimento di Architettura, Italy

Letizia Dipasquale (*Principal investigator*), Alessandro Merlo, Saverio Mecca, Lucia Montoni, Edoardo Paolo Ferrari, Gaia Lavoratti, Giulia Lazzari, Matteo Zambelli

Universidade Portucalense, Portugal

Mariana Correia (*Principal investigator*), Gilberto Duarte Carlos, Goreti Sousa, Mónica Alcindor, Rui Florentino, Emília Simão, Ana Lima, Telma Ribeiro, Bruno Andrade

With the Support of

International Committee of *Vernacular Architecture ICOMOS-CIAV*

International Scientific Committee on *Earthen Architectural Heritage ICOMOS-ISCEAH*

Unesco Chaire *Earthen architecture, building cultures and sustainable development CRATERRE | AE&CC | ENSAG | UGA*

Acknowledgments: Municipality of Formentera and Municipality of Calasetta for the hospitality, European Heritage Volunteers for the photos provided, all the authors for their cooperation and effort.

English proofreading: Luis Gatt

LogoVersus + graphic design: Teresa Correia, UPT

Cover: Kids playing with building materials at the "Grains d'Isère" festival. Photo: PatriceDoat

Website: www.versus-people.webs.upv.es | **Instagram**: VerSus Heritage for PEOPLE | **App**: www.heritageforpeople.unifi.it

a cura di

LETIZIA DIPASQUALE
SAVERIO MECCA
LUCIA MONTONI

Heritage for people

Sharing vernacular knowledge to build the future

authors

Maddalena Achenza, Mónica Alcindor, Bruno Andrade, José Baganha, Stefan Balici, Julieta Barada, Sara Bartolini, José Luis Baró, Juan Bravo, Gisella Calcagno, Gilberto Duarte Carlos, Alicia Casals, Carlos Castillo Levicoy, Valentina Cristini, Mariana Correia, Edoardo Paolo Ferrari, Teresa Cunha Ferreira, Soraya Genin, Carmen Gómez Maestro, Borut Juvanac, Marwa Dabaieh, Letizia Dipasquale, Marina Elia, Rui Florentino, Lidia García-Soriano, Alejandro García Hermida, Debora Giorgi, Leticia Grappi, Kin Guerra, Hubert Guillaud, Gaia Lavoratti, Davide Leone, Ana Lima, Saverio Mecca, Alessandro Merlo, Camilla Mileto, Magda Minguzzi, Lucia Montoni, Sebastien Moriset, David Morocho, Cristian Muñoz Catalán, Alina Negru, Amalia Nuevo-Delaunay, Karl Nyqvist, Constanza Pérez Lira, Giacomo Pierucci, Bakonirina Rakotomamonjy, Telma Ribeiro, Amanda Rivera Vidal, Alba Rivero Olmos, Elena Rigano, Nathalie Sabatier, Nuria Sánchez Muñoz, Emilia Simão, Juan María Songel, Goreti Sousa, Angela Squassina, François Streiff, Birgitte Tanderup Eybye, Jorge Tomasi, Antonella Trombadore, Francesco Trovò, Fernando Vegas, Marzia Varaldo, Montserrat Villaverde, Matteo Zambelli.

UNIVERSITÀ DEGLI STUDI FIRENZE | DIDA DIPARTIMENTO DI ARCHITETTURA

Heritage for people. Sharing vernacular knowledge to build the future / eds. Letizia Dipasquale, Saverio Mecca, Lucia Montoni — Firenze - DIDA Press, 2023.

ISBN: 978-88-3338-200-5

All publications are submitted to an external double refereeing process under the responsibility of the DIDA Scientific Editorial Board.

Content license: the present work is released under Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0: https://creativecommons.org/licenses/by-nc-sa/4.0/legalcode).

© **2023** Author(s)

Published by

didapress
Dipartimento di Architettura
Università degli Studi di Firenze
via della Mattonaia, 8 Firenze 50121
https://didapress.it/

progetto grafico
dida**communicationlab**
Dipartimento di Architettura
Università degli Studi di Firenze

Stampato su carta di pura cellulosa *Fedrigoni Arcoset*

ELEMENTAL CHLORINE FREE GUARANTEED · ACID FREE · LONG-LIFE ISO 9706 · HEAVY METAL ABSENCE CE 94/62

CONTENTS

INTRODUCTION

Foreword 12
Hubert Guillaud

Foreword 14
Marwa Dabaieh

Heritage for People. A project for connecting people with their tangible and intangible heritage 16
Camilla Mileto, Fernando Vegas

LESSONS FROM VERNACULAR ARCHITECTURE TO SUSTAINABILITY 30

VerSus Methodology: development and application 32
Gilberto Duarte Carlos, Mariana Correia

Transmission of the VerSus method to architecture students and lecturers 38
Sebastien Moriset

From intangible heritage to circular knowledge 44
Letizia Dipasquale, Saverio Mecca, Lucia Montoni

Indigenous & traditional knowledge systems and the circular paradigm 50
Debora Giorgi

Diversity and sustainability of traditional architecture in global warming and ecological and digital transitions 56
Saverio Mecca

Lessons on conservation from vernacular architecture 62
Fernando Vegas, Camilla Mileto, Valentina Cristini, Lidia García-Soriano

Vernacular parameters of sustainability in 21st century architecture 68
Juan María Songel, Fernando Vegas, Camilla Mileto, Juan Bravo

STRATEGIES FOR THE MANAGEMENT AND DISSEMINATION OF TRADITIONAL KNOWLEDGE FOR A SUSTAINABLE FUTURE 74

Conservation and design 76
Fernando Vegas, Camilla Mileto

Conservation and restoration of traditional architecture 80
Camilla Mileto, Fernando Vegas

Restoration of a vernacular house in Sesga, Valencia (ES) | Camilla Mileto, Fernando Vegas 86

Urban building on calle Maldonado 33, Valencia (ES) | Fernando Vegas, Camilla Mileto 87

Conservation of a Valencian barraca (ES) | Fernando Vegas, Camilla Mileto 88

The sun temple (IN) | Edoardo Paolo Ferrari 89

Renovation and adaptive reuse of vernacular architecture 90
Letizia Dipasquale

Alcino Cardoso house renovation by Álvaro Siza (PT) | Teresa Cunha Ferreira, Soraya Genin, Mariana Correia 97

Toolkit for innovative and eco-sustainable renovation process | Lucia Montoni, Gisella Calcagno, Giacomo Pierucci, Antonella Trombadore 98

Renovation of a stone and rammed earth house in Tuscany (IT) | Elena Rigano 99

Memory garden in Vinaroz, Castellón (ES) | Fernando Vegas, Camilla Mileto 100

Renovation, seismic and energy retrofit of a farmhouse in Val di Chiana, Tuscany (IT) | Sara Bartolini 101

Designing with tradition: old techniques for modern architecture 102
José Luis Baró, Fernando Vegas, Camilla Mileto

Tile vaulting in 21st century | Fernando Vegas, Camilla Mileto, Lidia García-Soriano 108

House of Nature, Silkeborg Højskole by Reværk | Birgitte Tanderup Eybye 109

Ses Menorquines | Alicia Casals, Karl Nyqvist 110

Fan Forest Houses by Bergmeisterwolf Studio (IT) | Matteo Zambelli 111

Education strategies **112**
Sebastien Moriset

Teaching architecture and heritage to kids 118
Sebastien Moriset

Educational trunk in support of traditional architecture | Camilla Mileto, Fernando Vegas, Lidia García-Soriano, Valentina Cristini 124

Rehabimed kids: workshop on traditional architecture | Letizia Dipasquale, Montserrat Villaverde 125

Practical tools for teaching architecture and heritage to children | Borut Juvanac 126

Elémenterre | Nathalie Sabatier, Alba Rivero Olmos 127

An overview of university and post-university education in vernacular architecture 128
Bruno Andrade, Telma Ribeiro, Mariana Correia, Goreti Sousa, Ana Lima

DSA: earthen architecture, building cultures and sustainable development | Bakonirina Rakotomamonjy 136

Workshops on traditional trades and preservation of traditional techniques | Camilla Mileto, Fernando Vegas, Valentina Cristini, Lidia García-Soriano 137

The first Traditional Architecture Summer School in Portugal | Rui Florentino, José Baganha, Alejandro García Hermida 138

Teaching vernacular architecture: different pedagogical approaches in higher education | Telma Ribeiro 139

Training with craftspeople and maintenance of traditional knowledge 140
Sebastien Moriset

The artisans of Venice | Angela Squassina 145

Italian Dry Stone Walling School | Edoardo Paolo Ferrari 146

Restoration of heritage assets programme atDuoc UC professional institute | Carmen Gómez Maestro 147

Community engagement 148
Mónica Alcindor, Emilia Simão

Traditional heritage preservation and enhancement through community participation 152
Sebastien Moriset

Terraccogliente experience | Walter Secci 158

El Cabanyal: neighbourhood participation against urban expropriation | Camilla Mileto, Fernando Vegas, David Morocho 159

Adopt a house in Rosia Montana, Romania | Stefan Balici 160

Andean architecture and earthen construction Lab | Julieta Barada, Jorge Tomasi 161

Participating in building and restoring vernacular heritage 162
Fernando Vegas, Camilla Mileto

Rempart | Fernando Vegas, Camilla Mileto 167

European Heritage Volunteers | Valentina Cristini 168

Cob in Lower Normandy, France | François Streiff 169

Gamification for community engagement in heritage and sustainability **170**
Alessandro Merlo, Letizia Dipasquale

Calasetta heritage games | Amanda Rivera Vidal, Maddalena Achenza 176

Artisans to the rescue | Davide Leone 177

The Seven Families of Formentera | Nuria Sánchez Muñoz 178

Contahistoria | Camilla Mileto, Fernando Vegas, Marina Elia 179

Knowledge management and dissemination **180**
Letizia Dipasquale, Saverio Mecca

Documenting and safeguarding intangible heritage **184**
Letizia Dipasquale, Edoardo Paolo Ferrari

Ràixe: Digital Spaces for Tabarkan Culture | Marzia Varaldo 190

Practices of Cultural Re-appropriation: projects in co-authorship with the First Indigenous Peoples of South Africa | Magda Minguzzi 191

The village of Esfahak: knowledge transmission on vernacular construction techniques in the Iranian desert | Edoardo Paolo Ferrari 192

Red de maestros - network of master builders | Camilla Mileto, Fernando Vegas, Valentina Cristini 193

Documentation and digital survey of tangible heritage **194**
Alessandro Merlo, Gaia Lavoratti

International workshops on traditional architecture in Rincón de Ademuz, Valencia (Spain)
Fernando Vegas, Camilla Mileto 200

Documenting and virtual visiting World Heritage in 3DPAST | Mariana Correia, Gilberto Carlos 201

3D survey of the vernacular architecture of the Aysén region | Carlos Castillo Levicoy, Constanza Pérez Lira, Amalia Nuevo-Delaunay 202

Modelling traditional knowledge on earthen domes of Syria | Letizia Dipasquale, Saverio Mecca 203

Managing constructive and architectural knowledge for builders and designers 204
Letizia Dipasquale, Telma Ribeiro, Rui Florentino, Mariana Correia

Heritage for people: a collaborative app | Letizia Dipasquale, Lucia Montoni, Edoardo Paolo Ferrari 210

Learning to conserve | Fernando Vegas, Camilla Mileto 211

Cartoterra | Sebastien Moriset 212

Mapadaterra platform | Leticia Grappi, Kin Guerra 213

Sharing knowledge with a wide public 214
Sebastien Moriset

Full Immersion nella Terra | Maddalena Achenza 219

Grains d'Isère Festival | Bakonirina Rakotomamonjy 220

Homo faber Exhibition | Francesco Trovò 221

Regio heart | Alina Negru, Alessandro Serra 222

El Adobe educational video | Amanda Rivera Vidal, Cristian Muñoz Catalán 223

CASE STUDIES: FORMENTERA AND SANT'ANTIOCO ISLANDS 224

Formentera: cultural heritage and sustainability 226
Fernando Vegas, Camilla Mileto, Lidia García-Soriano, Valentina Cristini

Sant'Antioco: cultural heritage and sustainability 240
Letizia Dipasquale, Alessandro Merlo, Gaia Lavoratti, Lucia Montoni, Maddalena Achenza

FROM INTANGIBLE HERITAGE TO CIRCULAR KNOWLEDGE

Letizia Dipasquale, Saverio Mecca, Lucia Montoni
Università degli Studi di Firenze, Florence, Italy

VerSus+ / Heritage for People project and the previous *VerSus / Lessons from Vernacular Heritage to Sustainable Architecture* project have focused on the intangible dimension of the vernacular architectural heritage, a heritage of mainly tacit technical and scientific knowledge characterised by a high level of diversity. Intangible heritage refers to the living expressions and practices inherited from our ancestors, including traditions, rituals, music, dance, oral histories, craftsmanship, and other forms of cultural knowledge which rely on the active transmission and sharing of knowledge between individuals and communities. This knowledge is not confined to textbooks or formal education systems but is rather passed down through informal channels, such as storytelling, apprenticeships, and communal practices. This continuous transmission has ensured that the knowledge remains alive and relevant, allowing future generations to learn, practice, and reinterpret it. Indeed, intangible heritage is not static; it is able to adapt to changing social, cultural, and environmental contexts.

Traditional technical know-how refers to the specialised knowledge, skills, and techniques that have been developed and passed down through generations within traditional and indigenous communities. It encompasses the traditional practices, craftsmanship, and expertise associated with specific trades, crafts, or professions. This kind of knowledge is characterised by its adaptability, sustainability, and resource efficiency. It is rooted in the principles of circular economy, such as the reuse, repair, and recycling of materials, as well as the optimisation of resource use and waste reduction. Such a knowledge system is often closely tied to cultural traditions, natural resource management, and sustainable livelihoods, and it plays a vital role in preserving cultural identities, fostering community resilience, and contributing to the sustainable development of societies

VerSus+ / Heritage for People project is based on the concept that communities can engage creatively with their intangible heritage, incorporating new elements and ideas while retaining its essence. This adaptability fosters innovation and enables the knowledge to remain vibrant and meaningful in contemporary society. When we study traditional technical knowledge, and in particular architectural knowledge, trying to codify the elements useful for the design of conservation and restoration work, renovation or new buildings, we perform an important operation, transforming this know-how into circular knowledge.

opposite page
A student working on the analysis of a traditional building in Formentera, Spain
(credits: T. D'Intino)

Circular knowledge as relevant part of circular economy

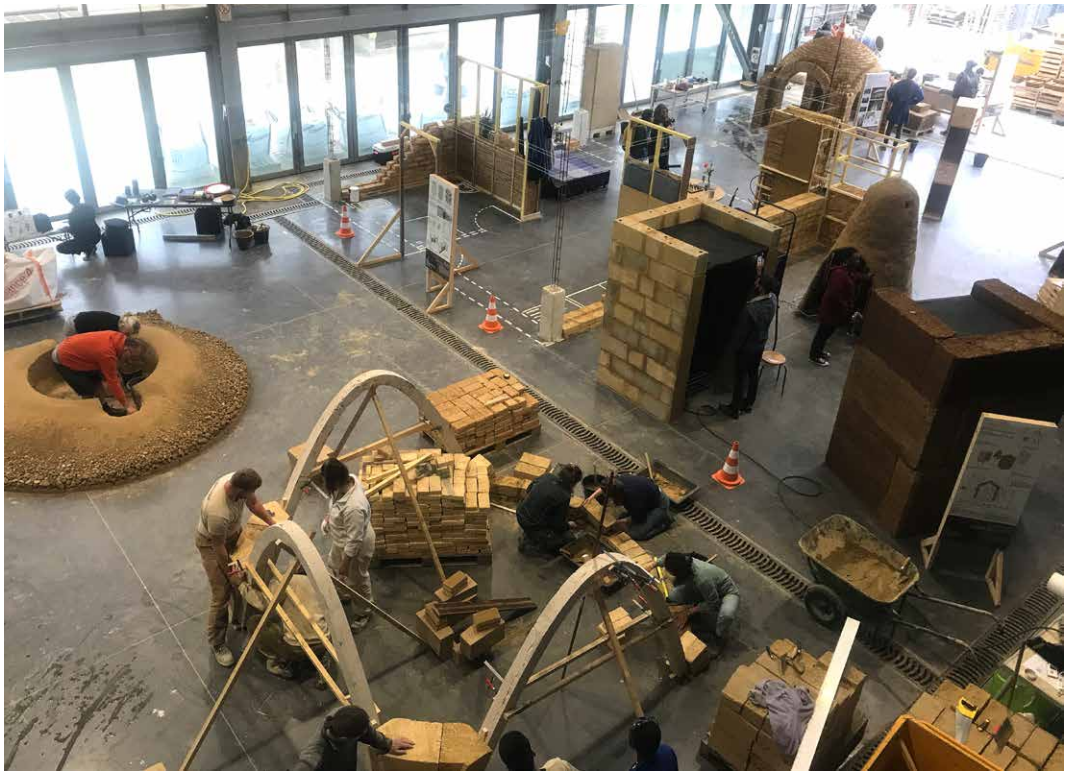
Circular knowledge can be defined as a type of knowledge that forms a closed loop, where the information or understanding obtained is shared, reused, and regenerated within a community or society. The

Interview with builders and inhabitants of the villages of Northern Syria
(credits L. Lupi, 2009)

basis of this approach is a continuous flow, exchange, and application of knowledge, with the aim of fostering innovation, sustainability, and societal development. To promote circular knowledge, it is necessary to encourage collaboration, information sharing, learning from historical experiences, fostering innovation, and actively involving stakeholders. Its validity for sustainable development is linked to the ability to recognise its dynamic nature and its potential for adaptation, transformation, and regeneration to address contemporary challenges and promote positive change.

Circular knowledge can be considered a relevant part of the broader concept of a circular economy. The circular economy is an economic model that aims to minimise waste, optimise the use of resources, and foster sustainability by promoting the reuse, recycling, and regeneration of materials and products. Circular knowledge complements the principles of a circular economy by focusing on the sharing, reuse, and regeneration of knowledge within society.

Intangible heritage reflects the rich cultural diversity of different communities around the world. Circular knowledge recognises the importance of diverse perspectives and encourages intergenerational dialogue. In the case of intangible heritage, older generations share their knowledge and experiences with younger generations, fostering a sense of continuity and cultural identity. This exchange of knowledge strengthens social cohesion and promotes understanding and respect for diverse cultural practices. Circular knowledge encourages sustainable practices by emphasising the conservation and revitalisation of traditional knowledge and skills. By integrating intangible heritage into sustainable development strategies, communities can ensure the preservation of their cultural identities while contributing to the well-being of their environment and society.



Workshops on innovation of traditional materials and building techniques at the Festival *Grains d'Isère* 2023, Grands Ateliers, Villefontaine, France
(credits L. Dipasquale)

From a circular knowledge perspective, the dynamic nature of intangible heritage and its potential for transmission, adaptation and regeneration is thus recognised. This perspective highlights the role of communities, intergenerational dialogue, and sustainable practices in preserving and revitalising cultural traditions and knowledge for future generations, which is the aim and meaning of the project line from *VerSus / Lessons from Vernacular Heritage to Sustainable Architecture* to the present *VerSus+/ Heritage for People*.

Based on the lessons learnt in this project, we can identify some principles for the implementation of circular knowledge processes to promote a more sustainable and resilient future.

- *Knowledge sharing and collaboration*: encouraging the sharing of expertise, best practices, and lessons learned among different stakeholders, such as researchers, businesses, communities, and policymakers. By sharing knowledge, valuable insights can be gained, leading to the the acceleration of the transition to a sustainable development.
- *Learning from the past*: acknowledging the value of traditional knowledge and practices inherited from previous generations. By studying and understanding past approaches, societies can extract lessons and insights to inform present-day strategies.
- *Innovation and continuous improvement*: fostering innovation and continuous improvement by encouraging the regeneration and reinterpretation of existing knowledge.
- *Engaging stakeholders and community participation*: Fostering the circular knowledge means encouraging the active involvement of individuals in the creation, interpretation, and regeneration of knowledge. Community members play a crucial role in keeping the knowledge alive through their

continuous engagement, participation in rituals and festivals, and the transmission of skills and traditions. By sharing knowledge and building capacity, circular knowledge initiatives facilitate the capacity to develop sustainable solutions and create a more resource-efficient and resilient future by enabling stakeholders to make informed decisions and take meaningful actions.

The role of circular traditional knowledge for the sustainability and resilience of human ecosystems

Circular traditional technical knowledge plays a crucial role in promoting sustainability and resilience within human ecosystems. As evidenced by the investigation and experiences conducted, it is evident that traditional knowledge encompasses various crucial facets that are pertinent in addressing contemporary global environmental and societal concerns.

- *Sustainable Resource Management*: traditional technical knowledge frequently encompasses practises that effectively facilitate sustainable resource management. Indigenous and traditional communities have developed intricate systems and techniques for utilising natural resources in a sustainable manner. This includes methods for selective harvesting, rotational farming, water management, and biodiversity conservation. By integrating such knowledge into contemporary practices, human ecosystems can achieve long-term sustainability by ensuring the responsible use and preservation of natural resources.
- *Adaptation to Environmental Changes:* human ecosystems are constantly exposed to environmental changes, including climate variability, natural disasters, and ecological shifts. Circular traditional technical knowledge holds valuable insights into adaptation strategies that have been developed and refined over generations. This knowledge equips communities with the skills and practices necessary to adapt to changing environmental conditions. It enables them to respond to challenges such as changing rainfall patterns, loss of biodiversity, or shifts in agricultural productivity, thereby enhancing the resilience of human ecosystems.
- *Conservation of Cultural Heritage*: circular traditional technical knowledge is often closely tied to preservation of cultural heritage. Preserving and revitalizing this knowledge is crucial for maintaining cultural diversity and promoting social cohesion within human ecosystems. By safeguarding traditional knowledge systems, communities can reinforce their cultural values, knowledge transmission mechanisms, and intergenerational dialogue. This conservation of cultural heritage contributes to the overall resilience and well-being of human ecosystems by fostering a sense of identity, community pride, and social cohesion.
- *Local Economic Development*: traditional technical knowledge can provide the foundation for sustainable and locally appropriate economic activities. Traditional crafts, agriculture, fishing techniques, and other practices rooted in circular traditional technical knowledge offer opportunities

for livelihoods that are well-suited to local ecosystems and cultural contexts. By promoting these traditional economic activities, human ecosystems can enhance their resilience by reducing dependence on external inputs, diversifying livelihood options, and strengthening local economies.

- *Knowledge Transfer and Community Empowerment*: traditional technical knowledge is typically transmitted through community-based learning processes and hands-on experiences. This knowledge transfer fosters community empowerment by valuing and involving local expertise. By recognising and integrating circular traditional technical knowledge into decision-making processes, policies, and education systems, human ecosystems can empower local communities to actively participate in the management and governance of their resources. This involvement strengthens the resilience of human ecosystems by fostering a sense of ownership, promoting sustainable practices, and ensuring the continuity of traditional knowledge systems.

Hence, the incorporation of traditional technical knowledge into present-day practises and policies has the potential to enhance the capabilities of human ecosystems in addressing environmental issues, promoting social welfare, and guaranteeing the long-term sustainability of natural and cultural resources.

References

Asquith L., Vellinga M. 2006, *Vernacular Architecture in the Twenty-First century*, Taylor & Francis, London.

Correia M., Dipasquale L., Mecca S. (eds.) 2014, *Versus: Heritage for Tomorrow: Vernacular Knowledge for Sustainable Architecture*, Firenze University Press, Florence.

Dipasquale L., Mecca I. 2016, *Vernacular architecture as codified model for the contemporary sustainable project*, «TECHNE - Journal of Technology for Architecture and Environment», pp. 190-198.

Dipasquale L., Mecca S., Özel B., Kısa Ovalı P. 2014, *Resilience and Intangible Heritage of Vernacular Architecture*, in Correia M., Dipasquale L., Mecca S. (eds.), *VerSus: heritage for the future. Vernacular knowledge for sustainable architecture*, FUP, Florence.

Ellen R., Parkes P., Bicker A. (eds.) 2016, *Indigenous environmental knowledge and its transformations: Critical anthropological perspectives*. Routledge, London.

Magni G. 2016, *Indigenous knowledge and implications for the sustainable development agenda*, UNESCO, <https://unesdoc.unesco.org/ark:/48223/pf0000245623> (04/2023).

Mileto C., Vegas F., García L., Cristini V. 2015, *Vernacular architecture: towards a sustainable future: Proceedings of the international conference on vernacular heritage, sustainability and earthen architecture, Valencia, Spain, 11-13 September 2014*, Taylor & Francis, London.

Reyes-García V., Fernández-Llamazares Á., Guèze M., Garcés A., Mallo M., Vila-Gómez M., Vilaseca M. (eds.) 2020, *Local indicators of resilience to climate change: Integration of scientific and indigenous knowledge* «Global Environmental Change», 63, 102105, doi: 10.1002/wcc.374.

UNESCO 2003, *Text of the Convention for the Safeguarding of the Intangible Cultural Heritage*, <https://ich.unesco.org/en/convention> (04/2023).