

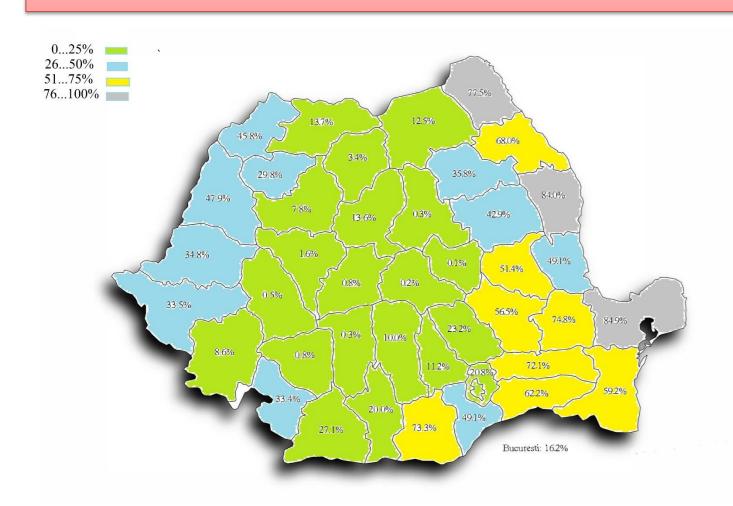
Research and Development in Construction, Urban Planning and Sustainable Territorial Development National Institute "URBAN-INCERC" R&DNI "URBAN-INCERC"

NEW SOLUTIONS FOR INNOVATIVE CONCEPTUAL&APPLICATIVE VALORISATION OF THE TRADITIONAL EARTH TECHNOLOGIES OF ROMANIAN INHABITED SPACES

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I. 2011 POPULATION AND HOUSING **CENSUS (INCS)**

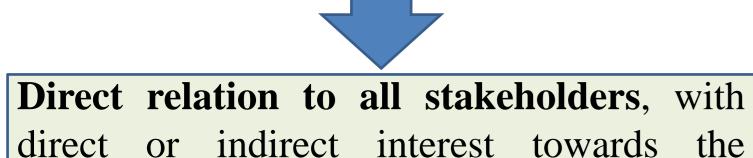


National distribution of percent share of adobe and cob buildings

Almost half of Romanian population lives in rural areas and approximately 2 million residential buildings are made of earth, of which approx. 75% are located in rural areas.

RESEARCH MAIN OBJECTIVE:

Identify innovative solutions directions for enhancing the conceptual and applied valorisation of the traditional technologies of earth inhabited spaces, using modern methods, techniques and tools, with multiple applicability, both on the existing buildings as well as for new housing entities.



- outcomes of the study: The academic and research media;
- The entrepreneurs;
- The users (clients);
- The suppliers;
- The social, politic economic and compounds, local and central authorities.

ROMANIAN CONTEXT

III. SUSTAINABILITY: **European and National** strategies for Circular **Economy implementation**



II. RESIDENTIAL **MARKET DYNAMICS**

END-OF-LIFE CIRCULAR **ECONOMY** COLLECTION FINAL DESTINATION

> Sustainable Research&Development **Strategies**

Significant increase starting with 2014, as a comeback after the 2008-2012 crisis and the 2015-2023 period follows the trend and shows increases of 25-30% every year;

2020-2023 was in line with trends, with increased focus on houses located in rural areas, mostly due to Covid 19 pandemic.

DISEMINATION

current practice

Innovative Development of Earthen Constructions: INVESTIGATION DIRECTIONS

design optimization:

engineering / non-

engineering approach

STAKEHOLDERS Eco-Clay MET: integrated Technologies for the Eco-Clay Materials **Eco-Clay Elements** solutions (Materials, Elements innovative making of Ecoand Compositions and Structures / Structures and Technologies Clay Products (T&P) (M&C) (E&S) **Eco-Clay Design of** Design of technologies for the structural / noninnovative realization of Eco-Compositional structural solutions Clay solutions (materials, **Eco-Clay MET Design Guide** development of Eco-Clay elements and structures) materials Evaluation of the **Experimental to conceptual** bearing capacity Physical, mechanical Current practice guide for the use evaluation of Eco-Clay performance of Ecoand durability of earth-based materials, technologies Clay building solutions performance evaluation elements and techniques in of Eco-Clay materials construction **Evaluation of the** Correlation of viable Eco-Clay seismic load Technologies with compatible **Eco-Clay Repair** Technological transfer to the performance of the Eco-Materials: evaluation of domain of applicability entrepreneurial environment Clay building concept the compatibility materials with the support structure Specific optimizations on the Legislative adjustment Eco Clay building recommendations for the technological flow concept - structural integration of Eco-Clay MET in

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Eco-Clay specific

compositional

optimization approach