



**Politecnico  
di Torino**

## **Honors Thesis**

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**Master of Science in Sustainable Architecture**

**Abstract**

**Title**

**"ECO3R TERRITORIAL ECOSYSTEM FOR A TRANSITION TOWARDS THE  
CIRCULAR ECONOMY".**

**Analysis of practices and strategies in the European scenario for  
the elaboration of a contribution within a participatory process.**

**Tutor/Correlator**

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In the European Union, the construction sector is responsible for 50% of the extraction of raw materials, 40% of energy consumption, 36% of waste production, 36% of greenhouse gas emissions and 21% of water consumption. The construction sector accounts for 12.5% of total industrial enterprises with 1.4 million employees. The extent of these impacts on the environment gives this sector a great responsibility in achieving the objectives set by the European Union to combat climate change. This is part of the discourse around the climate crisis that we have to face: pollution, over-exploitation of raw materials and the growing production of waste are pushing us to find concrete solutions to avoid causing irreparable damage to the environment. Natural systems at risk, depletion of non-renewable resources and an increase in the amount of non-recoverable materials that are difficult to dispose of are just some of the consequences that urgently need to be remedied.

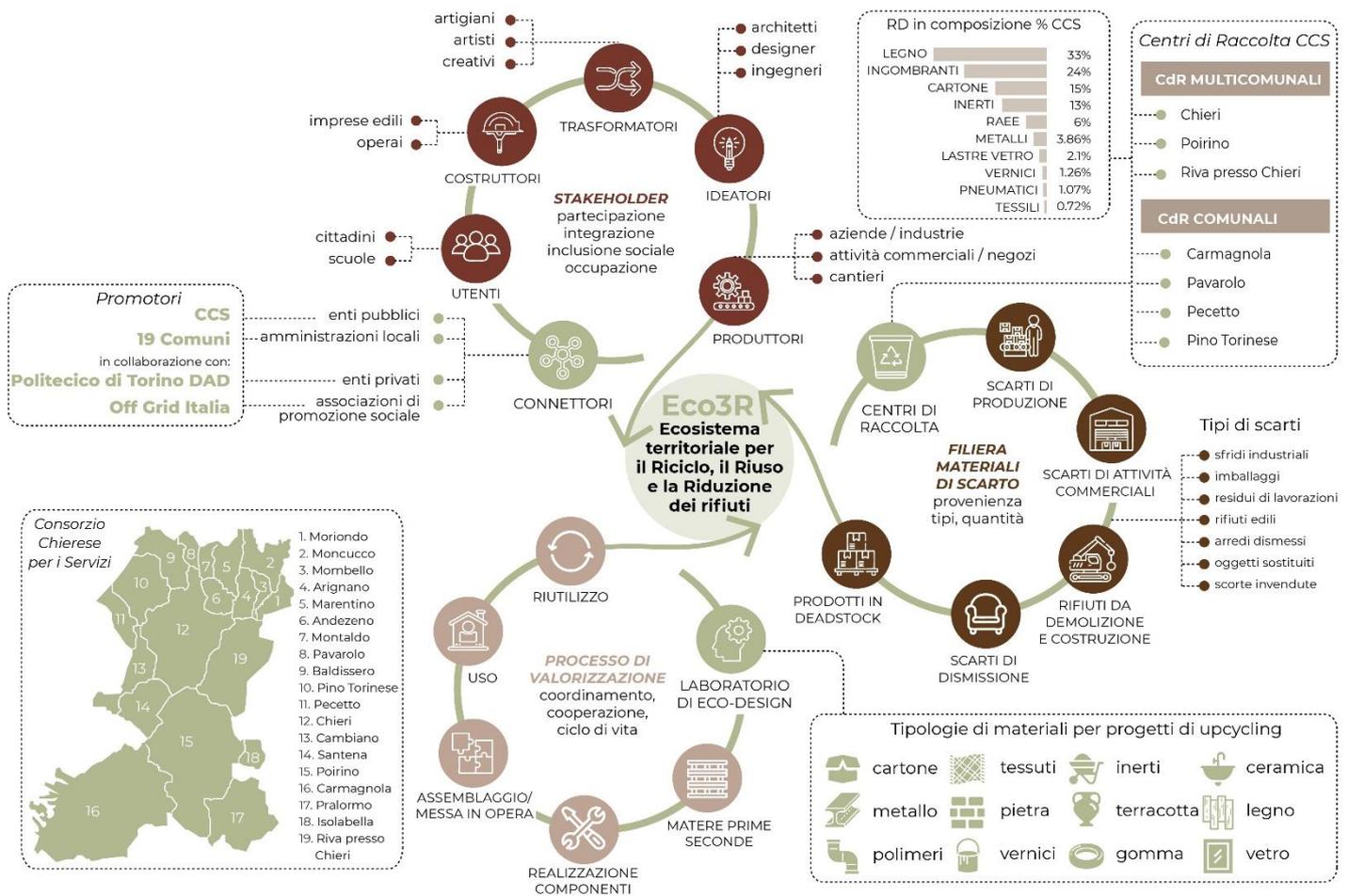
This thesis is the result of some ideas that emerged from the internship at the Offgrid Italia association, as well as from a collaboration with *Eco3R- Ecosistema territoriale per il riutilizzo, il riciclo e la riduzione dei rifiuti*, a project that I have followed from the start, facilitating dialogue with various local actors. It is an experimental project with a territorial dimension promoted by ATOR, the "Consorzio Chierese per i Servizi", the DAD of the Polytechnic of Turin, the Offgrid Italia association and representatives of 19 municipalities in Piedmont.

This research sets out a reflection on economic models that focus exclusively on profit and profitability, proposing an alternative that focuses more on social progress and the protection of the environment and natural resources. Developing economic systems that allow for the circularity of end-of-life products, to ensure that they can be reused as secondary raw materials in subsequent life cycles, would maintain their use value for as long as possible, generating positive impacts on the environment, the society and the economy.

Starting from the study on recent European initiatives on circular economy and in particular on the reuse and recycling of construction, industrial, commercial and urban waste materials and from the analysis of the regulatory framework on waste management, this research examines the tools, principles and stakeholders needed to create a new territorial ecosystem. Thus, it moves from the concept of an economic system to that of an eco-system, where an urban metabolism develops, characterized by a network of relationships, collaboration and sharing in which resources are exchanged for a process of reuse and recycling and virtuous mechanisms are activated to connect the various actors, expanding collective participation and the birth of capillary projects.

Considering the territory as an "urban mine" of secondary resources, to be used as an alternative to natural capital, cities are transformed into material deposits of anthropic origin, a wealth to be re-evaluated, rethought and transformed in the elaboration of new original and sustainable projects.

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