

# Bringing waste to the foreground of cities. Towards sustainable transition management in the urban region of Naples (Italy)\*

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**Abstract:** Circular economy suggests new visions of how the urban space should be lived and managed. These visions depend on metaphors such as urban metabolism, that implies a completely rethinking of the governance model. Achieving such a transition will demand deep changes in dominant practices and ways of thinking, which will in turn call for new knowledge on the part of ordinary people and different responsibilities on the part of institutions. In this perspective, while the production of waste is being reduced through innovative practices, former industrial, rural or infrastructural areas are more difficult to include in a closed loop production cycle. Such wastelands, often merging into wastescapes, need to be completely re-imaged as a precondition for their sustainable transition. Assuming the metaphor of urban metabolism as a device to address the transition, turning the definition of “neglected area” into “wasteland” becomes a tactic for generating alternative policies and practices in urban regions. In exploring how the transition is affecting social actors, decision models, formal and informal practices in the urban region of Naples, the paper focuses on how turning wastelands into resources has the double potential of rehabilitating urban spaces and challenging the governance model in use.

**Keywords:** wastescape regeneration, multilevel governance, waste circularity, transition management

## 1. Introduction

Circular economy, one of the pillars of sustainable transitions promoted by the EU, suggests new visions of how the urban space should be lived and, as a consequence, managed. The roots of such rather conceptual visions are strongly dependent on the successful working of the powerful metaphor of urban metabolism. The latter helps not only imaging and organizing strategies for the transition process, but also situating them and completely rethinking the governance model consistent with the urban metabolism itself. Metabolizing such transitions demands deep changes in dominant practices, policies and ways of thinking, which will in turn call for new knowledge on the

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\* This article is the result of a joint effort by the authors. In particular, sections 1-2 are attributed to Palestino, section 3-4 are attributed to Berruti, while 5 to both the authors.

part of ordinary people and different research frameworks and responsibilities on the part of scholars and institutions respectively.

The Horizon 2020 research REPAiR, “Resource Management in Peri-urban Areas: Going Beyond Urban Metabolism” promotes the reuse of waste as a resource. In this framework peri-urban areas have to be reinterpreted as those “transition spaces with some degree of intermingling of urban and rural uses” which characterize urban regions of European cities (Wandl and Magoni, 2017, 1).

As for the methodology, the transition management has been adopted in order to experiment how to reduce waste flows in peri-urban areas, beginning from the pilot cases of Naples and Amsterdam<sup>1</sup>.

According to the metaphor of urban metabolism, considered as a device to address the transition, urban regions have been interpreted as complex ecosystems. Consistent with this conceptual framework, one of the first steps of the REPAiR strategy consisted of deliberately turning a definition like “neglected area” into “wasteland”, in order to emphasize the shift from the socio-technical regime of the linear economy, where the adjective “neglected” refers to the end of the Fordist domain, to the socio-technical regime of the circular economy, where how regulating the metabolism of waste is crucial. Since this shift has been generating alternative narratives and different public discourses and images, REPAiR researchers have been exploring policy instruments and practices that fit the new vision.

According to the new narrative, waste flows in peri-urban areas have to be tightly related to the entanglement between solid waste and wastelands. The latter to be considered as ruins germinated from the shrinkage or even death of past land uses such as industrial, rural, infrastructural and so on, with the consequent degradation into wasteland.

In the urban region of Naples, Caserta and Salerno waste has often been stock-piled or even concealed in peri-urban areas with the effect of transforming abandoned or soon to be abandoned open spaces and land into wasteland. A few years ago, following the socio-ecological disaster nicknamed as “the Land of Fires”, the plan of the Province of Caserta defined this phenomenon as “negated land”, referring to an amount of about 5000 ha of critical areas, a part of which had informal and managed accumulations of waste (Provincia di Caserta, 2012).

In the same region, due to a previous long lasting, unresolved regional waste emergency, different patterns of wastelands still exist, and in addition there are spaces and surfaces where toxic waste, pollutants, and other dangerous materials are illegally stored and hidden, temporarily or persistently. These wastelands include: stretches of agricultural land housing unauthorized buildings; portions of abandoned historical heritage; polluted sites under designated state tutorship; housing or productive facilities confiscated by the state from the criminal organizations and so on (Berruti and Palestino, 2018).

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<sup>1</sup> The academic partners of REPAiR (Grant Agreement n. 688920), together with the *Joint Research Center* by EU, and several public institutions and public/private companies in the field of waste management, are universities and research institutes from Delft (the Netherlands), Naples (Italy), Hamburg (Germany), Lodz (Poland), Pécs (Hungary), Ghent (Belgium). The Naples REPAiR team is composed by researchers from the Department of Architecture of the Federico II University and officials from the Campania Regional Authority, while the mayor of Naples is in the user board. See <http://h2020repair.eu/>.

As a consequence, the quality of life is very low and inhabitants do not trust institutions and even struggle against them in order to defend their rights to urban environments (Berruti and Palestino, 2019).

Moreover, what happens when many wastelands compound the effect of bringing waste to the foreground of cities is the proliferation of wastescapes (REPAiR 2017, Amenta and Van Tjimmeren 2018). Such wastescapes even overspill the administrative borders of each municipality, thus involving different communities and institutions and requiring complex multilevel governance. They need, therefore, to be completely re-imaged, re-framed and re-organized as a precondition for their sustainable transition.

This is why, one of the most important challenges for REPAiR-Naples is the promotion of shared understanding of how to include not only waste and waste flows, but also wastelands, in a closed loop production cycle.

Exploring how the transition toward sustainability is affecting social actors, decision models, formal and informal practices in the urban region of Naples, the paper focuses on how turning wastelands into resources has the double potential of rehabilitating urban spaces and challenging the governance model in use. In so doing the framework of transition management offers an inspiring methodology to collaboratively plan how to reduce, recycle and regenerate waste and wastelands in peri-urban Naples.

## **2. The theory of transition management at work**

The framing of environmental problems triggers complex societal challenges that require socio-technical transitions and modify the working of territorial systems. Contemporary transitions towards sustainability can be considered as those specific processes of long-term, multilevel and multiphase change that happen in complex and adaptive systems such as cities and urban regions. As a consequence, sustainable transitions work as multi-actor processes involving firms, industries, policy makers and politicians, but also consumers, civil society and researchers. It is important to underline that, being focused on the environment, transitions towards sustainability are closely related to collective goods (Geels, 2011).

Being an open-ended process aimed at reframing problems through social learning and experimenting, the transition management approach can be successfully adapted both for supporting policies, and engaging actors, in order to find innovative solutions. As a matter of fact, its recent “urban turn” (Wittmayer and Loorbach, 2016) has provided site-specific applications in domains such as energy, water, mobility or climate change, since the challenges to applying circular economy are frequently localized in cities, towns and neighbourhoods. Furthermore, these applications of transition management describe governance processes where frontrunners from policy, science, business and society are asked to share their understanding of complex challenges. In doing so, they help researchers to deeply analyse urban sustainability, supporting shared visions and strategies and experimenting social innovations (Loorbach, 2010, Wittmayer and Loorbach, 2016).

It is important to add that the transition management is conceived as a kind of selective participative setting that works as an iterative cycle of mutual learning. Thanks to *ad hoc* networks of pivot stakeholders coming from different backgrounds, it develops a plural discourse which is aimed at guiding sustainable transitions. Given the cyclical nature of the transition management framework, strategic level activities are followed by tactical and operational phases, while the cycle itself is closed by means of the resulting appropriate reflexive measures.

The aim of the strategic activities is “orienting” the public discourse and the related narrative through long-term visions. An arena of frontrunners with different backgrounds has to be formed during this stage in order to imagine a future perspective, together with transition pathways.

The tactical activities have to be built in the mid and the long term, dividing the public discourse into steps, preparing the transition agenda and analysing gaps between different scenarios. Consistent with this “agenda

setting” stage, tactics to explore and specific pathways can be further developed by means of negotiation and collaboration among actors.

The operational activities, working in the short term, are oriented towards sharing those specific needs coming from practice, projects and experiments. This stage is based on “activating” communities and anchoring ideas from below.

The reflexive activities offer the basis for monitoring the previous three levels, where the focus is on how to support and enable societal learning processes.

When all four levels are embedded in urban contexts, the related actions are carried out through experimentation at the so-called Urban Transition Labs which are inspired by the Living Labs approach. Living Labs are defined as “user-centered, open innovation ecosystems based on a systematic user co-creation approach in public-private-people partnership, integrating research and innovation processes in real life communities and settings” (ENoLL 2013; Concilio, 2016). With the aim of accelerating the transition, enough time is provided to produce mutual learning and develop solutions far beyond the existing regime contexts.

### 3. Promoting the waste circularity in peri-urban Naples

As seen in Figure 1, the focus area of REPAiR Naples includes eleven municipalities, going from the eastern city to the town of Acerra, making up a peri-urban area of 519.425 inhabitants and 164,6 square kilometers where different wastelands and waste flows intersect. This vast area, and a smaller sample area were selected, mainly due to the following reasons: its being an area strongly affected by the fifteen-year-old regional waste emergency and socio-ecological disaster known as the Land of Fires (Armiero, 2014; Palestino, 2015), the high percentage and variety of wastelands, and its location within the administrative boundaries of the regional waste management system.

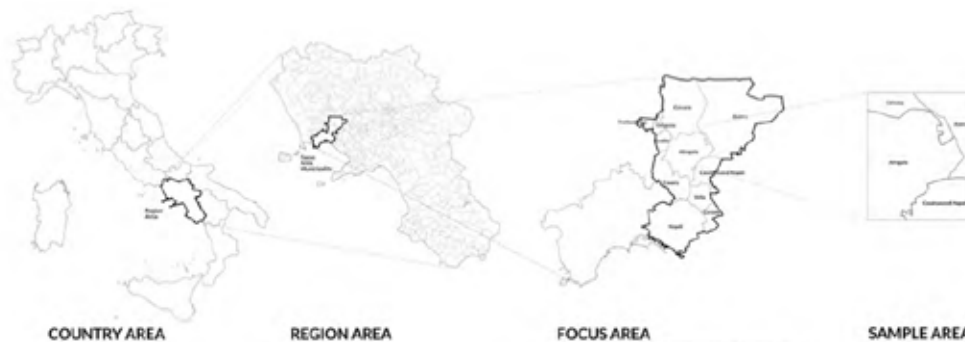


Figure 1 Naples' Focus and sample area in the REPAiR Project

In line with the transition management model, the research was organized by means of an “orienting phase” where the strategy of looking at waste as a resource was defined. In this perspective, redefining the abandonment of places provided the agenda for regenerating them with a new perspective, and using the provided funding. Thus, focusing on wastescapes has supported a vision strong enough to allow putting into practice circular economy principles both through designing new measures and policies, and involving distrustful citizens in taking care of peri-urban spaces. At the beginning, the arena of frontrunners was composed by the research team from the Department of Architecture of Federico II University of Naples, several officials of the Campania Region belonging to the Departments of Environment, Planning and Agriculture and selected user-board members from the City of Naples. Citizens as representatives of local associations and movements were added later.

The “agenda setting” was supported by interviews with politicians and officials aimed at analyzing the governance of waste in the focus area and by institutional meetings where shared knowledge on the working of

the waste management system and the related challenges was collected. Representatives of regional, metropolitan and municipal governments and policy makers, waste management administrators, local company representatives all joined these meetings. In directing them, the research team worked hard to set the agenda, starting from the outcomes of this stage. Later on, with the organization of peri-urban living labs (PULLs) the “*activating stage*” started. Besides institutional actors and companies, social organizations and active citizens were also involved in the experiments of innovation.

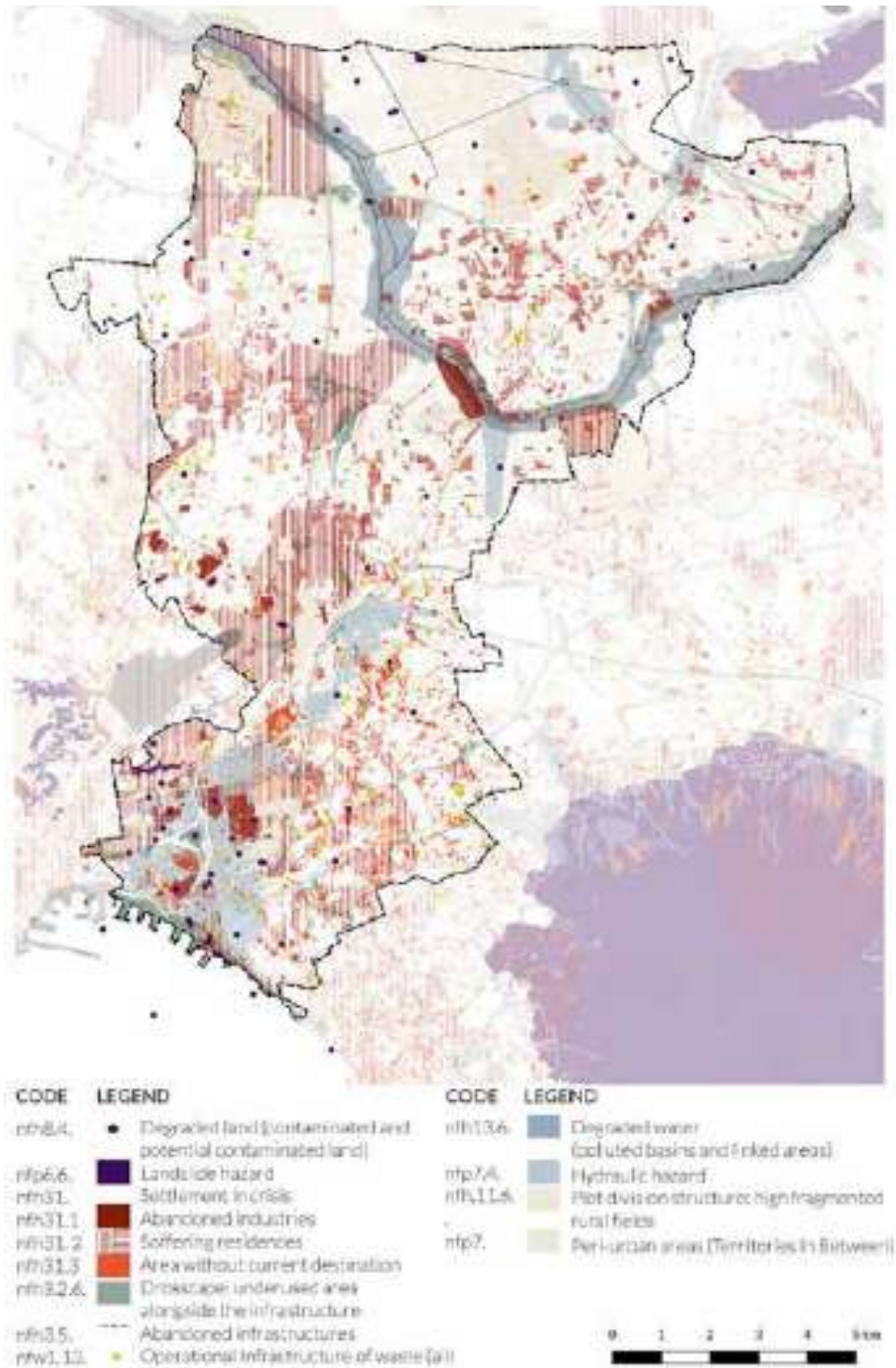


Figure 2 Wastescapes in the focus area: analytical description (Source: REPAiR 2018)

PULLs have mainly focused on wastescapes and eco-innovative solutions. First, participants identified critical wastescapes in the focus area, located them on the map and collectively updated the map and its legend (see Figure 2). Then, they framed solutions for wastescapes. Participants were organized into three worktables, each one focused on a territorial project to carry out together, with the aim of discovering the proper eco-innovative solutions to the investigated wastescapes. Later, proposals coming from previous workshops were analyzed and each territorial project was transformed into action. The current possibility of funding the proposed actions has been explored, as well as actors' commitment to support them.

The “operational activities” included the co-design of actions aimed at solving problems of abandonment related to wastescapes and the attribution of specific responsibilities to the actors involved in Living Labs. At this stage, some negotiations between public administrators and inhabitants were carried out by the REPAiR team in order to reveal previous conflicts or solve those produced during interactions.

Actions proposed during living labs provided the base for drawing eco-innovative solutions, also by means of improvements made by the research team, through the involvement of public sector officials and companies, carrying out part of the reflexive activities. This step aimed mainly at transforming them from site-specific to generally transferable and pointing on aspects of innovation.

The activating phase has been planned as the result of a further learning process in which collaborative decisions shall be taken by means of a geo-design planning support system that is currently under investigation by the research team.

#### **4. Discussion**

As shown by the transition management process applied to the metabolism of waste in Naples, the first important step towards transition consists of overcoming the current provisional nature of the waste management system, due to partial enforcement of the regional law on waste management (R.L. n. 14/2016).

On the one hand, though the Campania Region makes circular economy a leading principle in the regional law on the waste management, it seems to be neglected in calibrating laws and plans to local contexts; on the other hand, municipalities are interested in maintaining the benefits coming from the previous waste system, often accruing to companies selected through political nepotism. In so doing, some decision-makers appear to share the same interests as organized crime in maintaining the waste management status quo ante developed during the two previous environmental emergencies affecting the Campania Region. Moreover, the Metropolitan City of Naples which might exert a connective role in the transition stage, has been erroneously excluded from the waste management.

Intra-institutional difficulties in overcoming sectorial policies, together with the lack of shared knowledge about waste management among institutions and for citizens also contribute to hindering the application of circular economy principles. In addition, social attitudes also play their role, through suspicion of the waste quality, and the consequent stigmatization and distrust that prevent the innovation of policies and the development of new economies. For instance, companies managing composting plants do not use organic waste coming from Campania because of its supposed (and often real) bad quality; local communities fight against any proposal

concerning waste coming from above, even if concerned with the location of a new composting plant, that could be effective in resolving the organic waste management system at a local scale<sup>2</sup>.

As for wastescapes, there are some interesting experiences of recovery and re-appropriation in the metropolitan area of Naples that require but do not get the appropriate support from institutions. In addition to governance aspects, the capability of including wastescapes regeneration in an overall vision covering peri-urban areas and defining their potentialities has to be enhanced.

## 5. Conclusions

In short, the conclusion we can draw from applying the transition management approach to the metropolitan area of Naples, is that circular economy currently works mainly as a rhetorical argument that is still hard to apply through policies, mainly due to ineffective sectorial planning and to difficulties in making urban metabolism work. Therefore, clear suggestions appear for how to enhance circular policies and regenerate circular landscapes.

First, PULLs function as useful environments for driving all the actors involved in the process to co-design site specific policies, while unravelling conflicts and issues coming from the past. Second, people and companies are a reliable source of creative actions and entrepreneurial initiatives on wastelands and waste flows. Third, public officials have to overcome sectorial and departmental barriers within the bureaucratic apparatus in order to apply their theoretical arguments on circular economy to real and effective policies, while at the same time catching the innovations coming from local contexts. As a consequence, we suggest the adoption of a multilevel and cross-sectorial governance as the right way for designing and implementing circular policies.

As for wastelands, the transition management approach revealed itself useful for designing eco-innovative strategies and solutions and for rethinking new uses and practices for their regeneration. Such regeneration implies, on the one hand, that wastelands have to be treated as complex groupings of people and places, and on the other hand that, since landscapes do not follow administrative borders, a synergy between institutions is needed able to create bridges between different actors and centers of responsibility. Innovations always require the courage to change, in multiple sectors (legal, political, economic, social, environmental, technological) and overcoming barriers. Among these innovations we would stress the need for governance of wastescapes regeneration, that has to be designed and implemented in order to effectively re-introduce wastescapes into urban metabolism.

## References

- Amenta L., Van Timmeren A., 2018, Beyond Wastescapes: Towards Circular Landscapes. Addressing the Spatial Dimension of Circularity through the regeneration of Wastescapes, *Sustainability*, 10(12), 4740
- Armiero, M., 2014, Garbage under the Volcano: The Waste Crisis in Campania and the Struggles for Environmental Justice. In: *A History of Environmentalism*, edited by M. Armiero, and L. Sedrez (London: Bloomsbury), 167-184.
- Berruti, G., Palestino, M.F., 2019, Contested land and blurred rights in the Land of Fires (Italy). *International Planning Studies*, published on line 22 Feb 2019
- Berruti, G., Palestino, M.F., 2018, Looking from Italy at the fertile boundary between formality and informality. *Crios*, 15, 27-40

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<sup>2</sup>Actually, in the region a high percentage of organic waste is displaced in Northern Italy's plants. The lack of composting plants risks to bring about a new emergency concerning organic waste.

- Concilio, G., 2016, Urban Living Labs: Opportunities in and for Planning. In: Human Smart Cities. Rethinking the Interplay between Design and Planning, edited by G. Concilio, and F. Rizzo (Switzerland: Springer), pp. 21-40
- Geels, F. W., 2011, The multilevel perspective on sustainability transitions: Responses to seven criticism. *Environmental Innovation and Societal Transitions*, 1, 24-40
- ENoLL 2013, *ENoLL Living Labs*. Date of access: 15/05/2019. <http://www.openlivinglabs.eu/livinglabs>
- Loorbach, D., 2010, Transition Management for Sustainable Development: A Prescriptive, Complexity-Based Governance Framework. *Governance: An International Journal of Policy, Administration, and Institutions*, 23(1), 161-183
- Palestino, M.F., 2015. How to put environmental injustice on the planner's radical agenda. Learning on the Land of Fires-Italy. Proceedings of the 29th AESOP Congress on Definite Space – Fuzzy Responsibility, Prague, Czech Republic, July, pp. 2576-86
- Provincia di Caserta, 2012, Il territorio dell'illegalità, Relazione di accompagnamento al Piano Territoriale di Coordinamento Provinciale, pp. 222-233
- REPAiR 2018, *D3.3 Process model for the two pilot cases: Amsterdam, the Netherlands and Naples, Italy* [<http://h2020repair.eu/wp-content/uploads/2018/06/Deliverable-3.3-Process-model-for-the-two-pilot-cases-Amsterdam-the-Netherlands-and-Naples-Italy.pdf>].
- Wandl, A., Magoni, M., 2017, Sustainable Planning of Peri-Urban Areas: Introduction to the Special Issue. *Planning Practice & Research*, 32(1), 1-3
- Wittmayer, J. M., Loorbach, D. 2016, Governing Transitions in Cities: Fostering Alternative Ideas, Practices and Social Relations Through Transition Management. In: *Governance of Urban Sustainability Transitions. European and Asian Experiences*, edited by D. Loorbach *et al.* (Japan, Springer), pp. 13-32