

## Spazializzare la transizione come processo sociale, tecnico ed ecologico: il caso della Corona verde di Roma est

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### Abstract

Diversi approcci alla transizione ecologica convergono verso la necessità di definire la sostenibilità su scala locale, concentrandosi sull'azione trasformativa, al tempo stesso conflittuale e cooperativa, delle iniziative dal basso. La tesi sostenuta è che questo processo può derivare da una ricombinazione in una prospettiva multiscalare tra transizione verde e digitale. Le riflessioni articolate nel contributo nascono da una ricerca-azione che promuove l'uso di 'tecnologie civiche' per consentire alle reti sociali esistenti di sviluppare i processi di co-creazione per valorizzare una rete ecologica urbana, portando a un radicale cambiamento del modello di sviluppo locale. Ne consegue che solo un processo di 'deframmentazione' sociale può portare a un processo di 'deframmentazione' ecologica, e che questo deve avvenire attraverso una riconfigurazione dal basso, abilitata dalle nuove tecnologie, dei modelli relazionali, insediativi e produttivi.

Various approaches to the green transition converge on the need to define sustainability at the local level, focusing on transformative actions driven by bottom-up initiatives that are both confrontational and cooperative. The argument is that this process can result from a multiscalar perspective that combines green and digital transition. The reflections presented in this contribution stem from action-research that advocates for the use of 'civic technologies' to empower existing social networks to engage in co-creation processes that enhance urban ecological networks. This, in turn, leads to a radical shift in the local development model. It follows that only a process of social 'defragmentation' can lead to ecological 'defragmentation,' and this can only occur through a bottom-up reconfiguration, facilitated by new technologies, in relational, settlement, and production patterns.

**Parole Chiave:** reti socio-ecologiche; sistemi socio-tecnici; transizione ecologica.

**Keywords:** socio-ecological networks; socio-technical systems; ecological transition.

### Introduction

From different disciplines, various approaches to the transition (Escobar, 2015; Ghelfi, Papadopoulos, 2022) converge towards the need to define sustainability at the territorial scale (Magnaghi, 2020; Magnaghi and Marzocca, 2023) by focusing on

the transformative action, at once conflictual and cooperative, of grassroots initiatives for sustainability, defined as social-ecological networks (Chapin *et al.*, 2011; Bennett *et al.*, 2018; Bodin *et al.*, 2020; Brignone, Cellamare and Simoncini, 2022). Additionally, well-known theoretical frameworks, such as Bruno Latour's 'Actor-Network Theory' (ANT) (1991; 2022), have contributed to the widespread awareness of the fundamental role of the technological dimension in defining the relationships between society and nature. Awareness to this interpretative framework of 'urban political ecology' have also contributed (Heynen, Kaika and Swyngedouw, 2006), as well as, on the scientific side, several analytical models recently constructed, including that of Socio-Technological-Ecological Systems (SETS) (McPhearson *et al.*, 2022; McPhearson, Kabisch and Frantzeskaki, 2023). In this context, the city itself is interpreted as a hybrid, in which it is possible to experiment with new forms of co-evolution based on the consciousness of these complex interdependencies.

The paper intends to address these issues, starting from the restitution and discussion of the results of an articulated action-research project named *MenteLocale* that the authors conducted over the last two years in the eastern suburbs of Rome. Launched in 2020, the project involved the university supporting the socio-ecological network of the eastern quadrant of Rome with the aim of mapping, co-planning and enhancing a large urban green infrastructure that has been named the 'Green Crown of East Rome' [*Corona verde di Roma Est*]. In this first phase of the path, the university set up a system of enabling 'civic technologies' (Chatwin and Mayne, 2020) for this network, aimed at activating knowledge-based co-creation processes (Seve and Redondo, 2022; Leino and Puumala, 2021).

The question that has delimited the research terrain, and which remains currently open, is under what circumstances, in local contexts characterized by increasing fragmentation, both ecological and social (Mingione, 1991; Putnam, 1998; Healey, 1997), bottom-up transition processes aimed at reconfiguring the urban development model in the perspective of self-sustainability are possible (Barbanente and Borri, 1999; Tarozzi, 1998; Vicari, Haddock and Mingione, 2017). Reflectively, in response to the 'smartification' and 'platformization' of the

city (Stiegler, 2020) linked with the rise of so-called 'platform capitalism' (Srnicek, 2017) – which is causing further social fragmentation and commodification of the urban dimension – the question also arises whether forms of 'civic technologies' (Simoncini, 2020; Chatwin and Mayne, 2020) can enable socio-ecological networks to promote an effective bottom-up transition.

The first section of the contribution describes and discusses the main nodes and theoretical frameworks taken as reference points. The second paragraph presents the main theoretical insights that frame the need to view transition as a bottom-up multiscale co-creation process, and the third explores the possibility of a more effective socio-technical-ecological model for transition. The fourth paragraph describes and analyzes the developments and outcomes, including some particularly problematic ones, of the action-research, attempting to take up and advance in the conclusions the discussion on the more general questions posed by the paper. From a methodological point of view, the described action-research is in line with approaches aiming to involve local communities in knowledge co-creation processes, leveraging its transformative capacity (Lewin, 1954; Reason and Bradbury, 2008; Saija, 2017; Lambert-Pennington and Saija, 2020) and its use for public policymaking (Lindblom and Cohen, 1979; Crosta, 1985).

### **Spatializing the transition as a local and multiscale process. Amid institutional and grassroots approaches**

The need to decline the ecological transition at the local scale is increasingly recognized, both on the institutional and academic side (Pickerill, 2020; Pellizzoni *et al.* 2022; Krähmer, 2022). Regarding the first side, consider the importance attributed to adaptation policies by the IPCC (2023) or the success of initiatives such as the Covenant of Mayors. These institutional approaches, while recognizing the importance of the social dimension of sustainability, suffer from several limitations. In general, they appear to overlook the evident contradictions of the dominant development model, which is based on profit maximization, the extraction of value from both tangible and intangible resources, and unlimited economic growth. Institutional strategies continue to seek solutions within the paradigms that drive the current

market economy. Consider, for example, the controversial effectiveness of the emission trading systems and carbon credit mechanism introduced in the Kyoto Protocol, or the questionable reality of the 'myth' of decoupling environmental impacts from economic growth (Parrique *et al.* 2019; Quirion, 2021).

Faced with the very doubtful capacity – especially in the short time horizon of the climate crisis – of the economic system to instrumentally self-regulate through the green economy, there exist other situated approaches and responses. They range from energy and food sovereignty to alternative action organizations, from sustainable community movements to community and climate urbanism, from transformative environmental justice activism to alternative technological development (Forno and Graziano, 2014; Pickerill, 2020; Ghelfi and Papadopoulos, 2022; Magnaghi and Marzocca, 2023). These approaches and practices attempt to construct an alternative aimed at more profoundly altering the development model of 'neo-liberal globalization'. They are attributable to 'transition discourses' (Escobar, 2015) that seek to define perspectives of degrowth and post-development, such as 'Buen Vivir', the 'Rights of Nature', 'Post-extractivism', 'Territorialization', etc.

Beyond some significant differences and points of tension, these theories highlight the need to build sustainability from a local scale. They envision a different relationship between settlement, productive systems and natural ecosystems, placing the issue of urban sustainability and the grassroots innovations, both in digital and ecological transitions (Feola and Nunes, 2014; Smith *et al.*, 2017). They not only capture the inherently social dimension of sustainability but also question the cultural, social, and economic roots of contemporary capitalism.

However, these perspectives often risk transforming into a form of 'localism' (Mocca, 2020) balanced between radical and potentially utopian ambitions and small-scale projects that do not have a transformative impact on the structures of the dominant model (Krähmer, 2022). Localism often claims to generalize models without taking into account the peculiarities of different contexts or the multiscalar relationship between different spatial dimensions (*Ibid.*). Moreover, in terms of planning, the different proposals attempting to modify planning principles from a post-growth perspective (Wachter, 2013; Xue,

2021; Savini, 2021) do not always adequately consider the need for identifying new forms of political subjectivity-and the processes that foster its emergence-and different institutions (Kallis *et al.* 2012). In a context of social fragmentation (Mingione, 1991; Putnam, 1998; Healey, 1997) and the depoliticization of urban life, urban self-organizations (Cellamare, 2019) that experiment with forms of 'self-produced territorial democracy' (Cellamare, 2023), if 'de-fragmented' in a multiscalar perspective that overcomes the trap of hyper localism, can constitute innovative subjectivities capable of engaging with public policies (Ostanel, 2017; Cognetti and Calvaresi, 2023; Brignone *et al.*, 2022) and have a transformative impact on local development models.

### **Green transition and technologies. The 'civic tech' perspective**

Transition, as a process that aims at the radical change of local systems in their multiscale relationships, implies the need to analyze the material and immaterial relationships between different systems and scales. A framework that very effectively describes the multiscalar and multidimensional connections between society and nature is Socio-Ecological Systems (SES), proposed by Elinor Ostrom. It is an analytical model designed to assess and promote sustainability at the local scale through the analysis of complex interactions between human and natural systems and subsystems (Ostrom, 2009; Chapin *et al.*, 2011). This model has been subject to debates and updates. One of these, the Socio-Ecological-Technological Systems (SETS) framework, corrects SES by recuperating sociologist Otis Duncan's earlier POET (People, Organization, Ecology, Technology) interpretive model and 'ecological modernization' theory to place greater emphasis on the technological component of socio-ecological systems in the local production of ecosystem services (McPhearson *et al.*, 2023). This integration has the merit of highlighting the growing influence of the technical dimension, in line with Bruno Latour's ANT (Actor-Network Theory) framework, whereby French sociologist sought to 'broaden the audience of actors' through the inclusion of non-human actors, including technical objects, in the analysis of social realities (Latour, 1991; 2022). If the lens of these more complex frameworks is adopted, the centrality of the issue of technologies' role emerges very clearly, to be considered

first and foremost in relation to the impacts of ICTs on society and the local dimension. Indeed, technological innovation is playing a decisive role as a fundamental driver of political and socioeconomic transformations, as well as a matrix of new social structures and settlement patterns. By expanding automation from production to social life through tracking, profiling, and manipulation technologies, 'platform capitalism' (Srnicsek, 2017) has been able to establish unprecedented information monopolies and economies of scale, producing forms of 'remote governance' associated with the processes of 'smartification' and 'platformization' of cities. This led to further fragmentation and commodification of social dimensions, especially at local level, deconstructing knowledge, intelligence, economies, and democracies (De Bonis and Simoncini, 2022; Simoncini, 2019, 2020), in favor of extractive capitalism (Mezzadra and Neilson, 2019).

Despite the need to investigate these emerging scenarios, there is currently a lack of a comprehensive theoretical and analytical framework for alternative digital mediation models. In summary, two broad tendencies coexist. Especially in the European context, there is a strand of political initiatives that seeks to regulate the platform economy of 'big tech' while also looking at the possibility of building technological sovereignty anchored in the democratic institutions of territories. Another level involves grassroots experiments that seek to unleash the enabling power of new technologies at the local and civic level. With regard to this latter strand, many definitions have actually been coined, including Civic Tech, Community Informatics, Public Interest Technologies, but two main fundamental frameworks from a theoretical perspective can be considered: the so-called 'Commons-Based Peer Production' (CBPP) and 'Platform Cooperativism' (Chatwin and Mayne, 2020; Scholz 2016; Benkler, 2016). These approaches all agree in attributing a political dimension to technologies. Technology increasingly conditions behavior and social organization, and for this reason, as Bernard Stiegler argues, the 'technological sovereignty' of a true 'smart city' implies to «have the capacity to participate and have a say in how technological infrastructures surrounding them is operating, as well as put into question their purposes [...] This means that inhabitants should have not only the skills

for using ready-for-use technology, but also the knowledge to create techno-local alternatives proper to their locality» (Stiegler, 2020:108)<sup>1</sup>.

This background suggests that the transition can only be considered as «a multiscale process of ecological reparation that involves technological experimentation, institutional invention, and local spatial diffusion» (Ghelfi and Papadopoulos, 2022: 16). But the technology component calls into question not only the SETS issue of innovations directly involved in ecosystem services production but also those technologies that mediate social and local relations, and access to knowledge, determining the responsiveness of social actors.

### **The Green Crown of East Rome**

The 'Green Crown of East Rome' ['Corona verde di Roma Est'] is the main result of *MenteLocale*, an action-research project conducted by LabSU (Laboratorio di Studi Urbani "Territori dell'Abitare"). Launched in 2020, the action-research aimed to promote the development of new social formations organized in networks, particularly those active in marginal contexts on issues related to local commons. To this end, it was chosen to work in the eastern quadrant of the Capital city – that is, the one most characterized by socio-economic and environmental imbalances (Sebastiani, Marando and Manes, 2021) – and, in particular, in the Centocelle neighborhood, where, in 2019, the 'Free Assembly of Centocelle' ['Libera Assemblea di Centocelle' – LAC], a network operating on issues of mutualism and urban political ecology, was born. The neighborhood, characterized by a regular urban fabric with high population density, lacks green space within it. However, it is surrounded by a potential 'green belt' that, far from being promoted, is now severely hampered by exploitation, negligence, fragmentation, and recurrent speculation attempts.

Initially, the goal of *MenteLocale* was to promote a collaborative mapping process of neighborhood natural, social, and cultural capital with LAC's 'ecological' group through the use of 'civic technologies' capable of optimizing co-creation and sharing of spatial knowledge.

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<sup>1</sup> The English translation is taken from the version published online at the following link: <https://internation.world/arguments-on-transition/chapter-2/>

Within a few months, this mapping evolved into a collaborative planning process aimed at the co-creation of the participatory master plan of an urban ecological infrastructure named 'Green Crown of East Rome' (Fig. 1). The opportunities revealed by digital collaboration resulted in a sort of extroversion of the social network, both in terms of a scale leap in vision and action aimed at the whole quadrant's territories and networks, and in terms of a more intensive interaction with institutions, thanks to a stronger planning capacity – without losing the conflict orientation. The strengthened transformative capacity and the enlargement of the network were also the result of dialectical confrontation, in the initial phase of this process, with an institutional project called the 'Green Ring', an initiative aimed at creating a system of green areas similar to the 'Green Crown', but with very different criteria and purposes: the Green Ring, which was never approved, embraced only the areas of the Eastern quadrant closest to the historic center, and subordinated their environmental enhancement to real estate development through the densification of the nodes of the adjacent 'railroad ring'. Moreover, the Green Ring underwent a participatory process by resorting to the use of digital technologies not very different from those used for *MenteLocale*, but configured from above by the administration and significantly less open to horizontal forms of interaction. Through a bottom-up process, the 'Green Crown' 'overturns' the ecological infrastructure of the Green Ring toward the periphery and frees it from all speculative logic – excluding the possibility of shifting building forecasts to private areas in other parts of the city and providing for the expropriation of privately owned areas falling within the 'Crown' – proposing itself as an alternative vision of the urban layout of the entire quadrant. In fact, it privileges the defragmentation of urban 'voids', starting with the peripheries, in order to convert them into an ecological infrastructure capable of constituting a new 'urban form' and at the same time transforming the Capital's development model at its roots. In fact, urban green space in the Green Crown projects has been interpreted by the socio-ecological network not only as a city service component, but as the pivot of a development model based on production of ecosystem services, green jobs and local economies (urban forestry and forest nurseries,



local renewable energy production, forest management, short chain organic farming, food forestry, soft mobility services, cooperative management of historical-archaeological heritage and local tourism, etc.).

This was not a new vision *per sé*. Innovation lies in the process by which it was constructed, which would prefigure a broader co-creation model based on the idea that such a radically alternative vision can only be conceived and created from a new social infrastructure, and that the latter must be enabled at the local level by an appropriate technological infrastructure, to be understood as a fundamental component of a 'new social space'. In other papers (Brignone, Cellamare and Simoncini, 2022; 2023), we have described in detail tools and processes adopted and defined during research activities. Briefly, a dedicated digital system-open-source and decentralized (Fig. 2) consisting of the integration of Web GIS, Wikis, and mobile applications-was employed in a recursive process of actions taken for each area of the 'Crown': knowledge sharing, collaborative on-site mapping, and co-design, involving relevant organizations for each area. Often the mapping step turned into a public claiming initiative, which also aimed to network local grassroots organizations interested in the project.

Description of results of the action-research project, which lasted more than two years, can be divided into four distinct levels, any of which is subject to further development – some of which is currently underway, and would require in-depth analysis.

1. Networking of more than 20 grassroots organizations constitutes the potential social-ecological infrastructure emerged during the process. These associations are of different types: some of them are informal movements with a predominantly (but not exclusively) conflictual orientation, such as the LAC itself; others are 'third sector entities' (recognized by Italian legislation) that when given the opportunity work with greater synergy with institutions, such as social cooperatives (e.g., Cooperativa Capodarco, or CooperACTiva, the community cooperatives of the Alessandrino – Centocelle – Torre Spaccata neighborhoods) providing services while generating economy. Others are Committees created *ad hoc* on certain local disputes, such as the Committee for the 'Pratone di Torre

Spaccata', an area of the 'Crown', which has since linked up with other similar experiences in the same quadrant and in the city. Currently, the network appears to have given greater prominence to both specific issues and the whole Green Crown proposal, while contributing to a change in approach within single organizations, who are less enclosed in the hyperlocal dimension. However, there is no shortage of challenges, related on the one hand to the discontinuous nature of the process, partly due to the scarcity of time and resources available, and on the other hand to the latent conflicts that sometimes emerge among the organizations, which may be due to political and cultural divergences, conflicting interests, or competitions for network leadership. These are critical issues which tend to weaken networking ties.

2. The vision of the potential ecological infrastructure, in the form of a masterplan for the Green Crown, covering more than 1,000 hectares of territory and aiming to reconfigure the overall urban layout of the quadrant, prioritizing ecological transition as a driver of self-sustainable local development. The interventions outlined in the masterplan strive to safeguard and promote the natural and cultural heritage, connecting it through environmental and functional connections, increasing the availability of accessible public green spaces, and, most importantly, providing ecosystem services and supporting transformative economies related to the management of the areas.

3. The creation of an elementary ICT infrastructure, with effective results for both collaborative mapping and co-planning activities based on co-produced knowledge. However, the socio-technical process required constant supervision by researchers, who sometimes failed to overcome digital divide problems. The main challenge is linked to the lack of autonomy of the socio-technical process due to the poor usability of the system, both in terms of interfaces and architecture. In order to address this problem, an upgrading of the technologies has been launched, thanks to funding from the University for Third Mission initiatives: the development of a new platform is underway with the aim of integrating and making the system's functions more attractive and usable. The ultimate goal is decentralizing the infrastructure governance through its

devolution as a 'civic technology' to the Roman socio-ecological network, allowing it to activate different project instances similar to the Green Crown.

4. Finally, a spin-off project was carried out with the purpose of promoting institutional innovation. As part of an agreement with the Municipality of Rome, LabSU is developing a project relating to the 'Green Crown' as a co-design laboratory aimed at the creation of a specific sub-area called 'Cultural and Environmental Valorization Axis of the Alexandrin Aqueduct and Mistica Park'. This complementary experimentation represents an attempt to refine administrative innovation processes and tools that can validly integrate the social innovation processes already in place. The main result of this 'multidirectional' co-creative process model – a 'double movement' between practices and policies in which the Third Mission of the University plays a central role – is, on the institutional side, the promotion of an integrated approach in urban policies focusing on co-creation and ecology, leading to a global vision of the revision of forecasts and planning approaches.

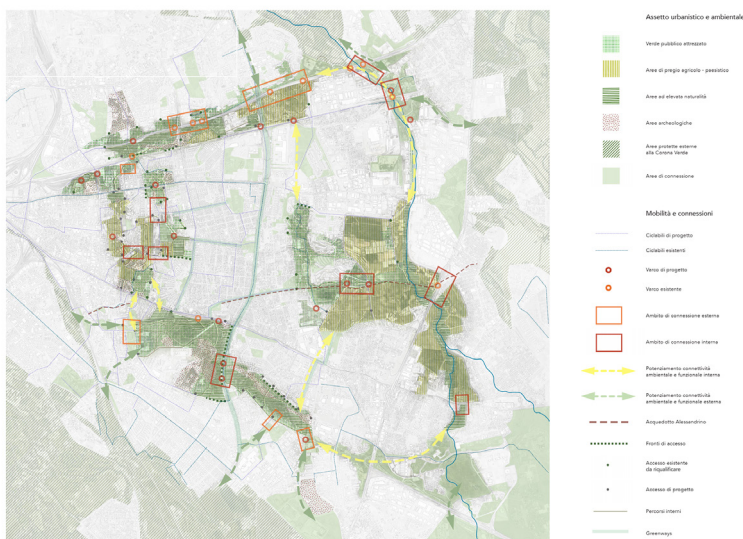


Figure 1. Green Crown of East Rome Masterplan.

Source: authors elaboration with the collaboration of Arch. Gaia Martellucci

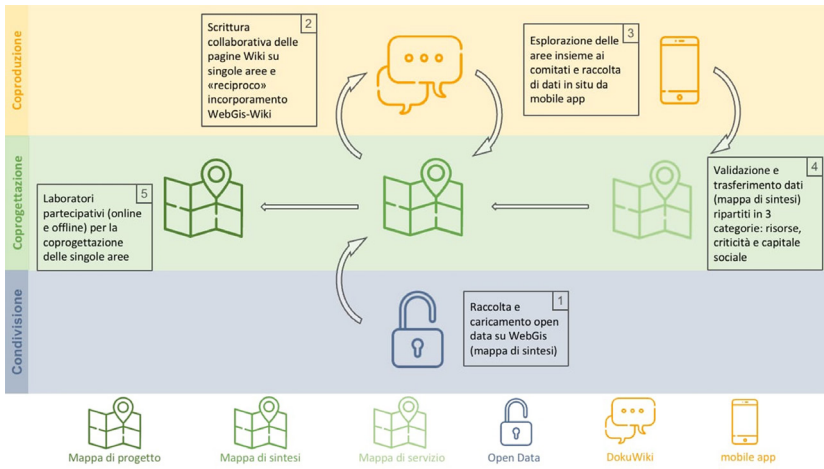


Figure 2. Flow schema of the Technical Infrastructure elaborated during the project. Source: authors elaboration

### Conclusions

Starting from the recognition of the need to ‘spatialize’ transition as a local process – simultaneously social, technical, and ecological – the action-research promoted the use of ‘civic technologies’ (technological infrastructure) to facilitate the transformative actions of existing social-ecological networks (social infrastructure), enabling them to develop multiscale co-creation processes for ecosystem valorization (green infrastructure), and the consequent change of the overall local development model.

The research assumes that new social formations are emerging which, even unintentionally, attempt to establish a new social space. This space is made up of hybrid local relations that combine physical and digital space with the aim of transcending hyperlocal self-organization towards embryonic forms of self-government that radically address the issue of socio-ecological sustainability on multiple scales. The interpretative premise is that ICT must be considered a dimension of governmentality with profound impact on the cities, determining to some extent its uses and representations. In response to the ‘deterritorializing’ effects of ‘platform capitalism’ on the urban dimension, a politicization of digital technologies is necessary and must be reconfigured according to local networking and co-creation objectives.

In this direction, the case study has shown that the main impact of civic technologies on social-ecological networks has been, albeit still in an incipient manner, to produce a 'social defragmentation' both in a horizontal sense, activating more intense, extended, and effective relationships between actors, and vertically, resulting in a leap in scale of conflict and proposals that have moved from the hyperlocal sphere to an urban scale (the 'Green crown').

MenteLocale has certainly fostered the development of a specific social-ecological network, as well as an effective multiscale strategy capable of combining the most radical approaches with institutional cooperation. It is still an open question whether, as a result of this multiscale tension and the politicization of technologies that allows them to 'become actors' (Crosta, 2010), social-ecological networks can actually succeed in activating interscalar and multidirectional co-creative processes aimed at collectively reconfiguring the relationships between city, society, and nature.

In conclusion, we believe that the case study has demonstrated that digital infrastructures aimed at local cooperation (civic tech) are decisive for encouraging the growth of social-ecological networks that promote bottom-up policies for ecological transition and, along with them, new governance, urban planning, and self-sustainable local development models.

## Bibliography

Barbanente A., Borri D. (1999). «Reviewing Self-Sustainability». *Plurimondi, an International Forum for Research and Debate on Human Settlements*, 4: 5-19.

Benkler Y. (2016). «Degrees of Freedom, Dimensions of Power». *Dædalus, the Journal of the American Academy of Arts & Sciences*, 145, 1: 18-32. DOI: 10.1162/daed\_a\_00362.

Bennett N.J., Whitty T.S., Finkbeiner E., Pittman J., Bassett H., Gelcich S., Allison E.H. (2018). «Environmental stewardship: A conceptual review and analytical framework». *Environmental Management*, 4, 61: 597-614. DOI: 10.1007/s00267-017-0993-2.

Bodin Ö., Mancilla García M., Robins G. (2020). «Reconciling Conflict and Cooperation in Environmental Governance: A

Social Network Perspective». *Annual Review of Environment and Resources*, 45: 471-495. DOI: 10.1146/annurev-environ-011020-064352.

Brignone L., Cellamare C., Gissara M., Montillo F., Olcuire S., Simoncini S. (2022). «Autorganizzazione e rigenerazione urbana: ripensare le politiche a partire dalle pratiche. Tre esperienze della periferia romana». *Tracce urbane. Rivista italiana transdisciplinare di studi urbani*, 8(12). DOI: 10.13133/2532-6562/18128.

Brignone L., Cellamare C., Simoncini S. (2022). «Cittadinanza attiva, reti ecologiche e beni comuni digitali: tecnologie e processi collaborativi per la mappatura e progettazione dal basso di una 'corona verde' nella periferia Est di Roma». *TRIA - Territorio della Ricerca su Insediamenti e Ambiente*, 1(28), pp. 41-58. DOI 10.6092/2281-4574/9253.

Brignone L., Cellamare C., Simoncini S. (2023). «Reti sociali, tecnologie civiche e infrastrutture verdi. Il caso della progettazione partecipata della Corona Verde di Roma Est». In: Zoppi C., Musco F., eds., *Conoscenza materiale e immateriale e gestione delle informazioni*. Roma-Milano: Planum Publisher; Società Italiana degli Urbanisti, 103-109.

Cellamare C. (2019). *Città fai-da-te: Tra antagonismo e cittadinanza. Storie di autorganizzazione urbana*. Roma: Donzelli Editore.

Cellamare C. (2023). «Democrazia territoriale autoprodotta». *IN\_BO. Ricerche e progetti per il territorio, la città e l'architettura*. 14(18), 30-41. DOI 10.6092/issn.2036-1602/14745.

Chapin F.S. III, Pickett S.A., Power M., Jackson R., Carter D., Duke C. (2011). «Earth stewardship: A strategy for social-ecological transformation to reverse planetary degradation». *Journal of Environmental Studies and Sciences*, 1(1): 44-53. DOI: 10.1007/s13412-011-0010-7.

Chatwin M., Mayne J. (2020). «Improving Monitoring and Evaluation in the Civic Tech Ecosystem: Applying Contribution Analysis to Digital Transformation». *JeDEM, - EJournal of EDemocracy and Open Government*, 12(2): 216-241. DOI: 10.29379/jedem.v12i2.598.

Cognetti F., Calvaresi C. (2023). «La rigenerazione urbana è apprendimento». *Tracce Urbane. Rivista Italiana Transdisciplinare Di Studi Urbani*, 9 (13): 45-66. DOI: 10.13133/2532-6562/18372.

Crosta P. (1985). «Ricerca e azione pubblica: è la connessione incerta, ovvero è dubbio il paradigma del trattamento politico della domanda sociale?». *Urbanistica*, 78: 101-105.

Crosta P. (2010). *Pratiche. Il territorio «è l'uso che se ne fa*. Roma: Franco Angeli.

De Bonis L., Simoncini S. (2022). «Tra determinismo e filogenesi. Tecnologia, potere e territorio». *Scienze del Territorio*, 10,(1): 36-43. DOI: 10.13128/sdt-13205.

Escobar, A. (2015). «Degrowth, postdevelopment, and transitions: a preliminary conversation». *Sustainability Science*, 10: 451-462. DOI: 10.1007/s11625-015-0297-5.

Feola, G., Nunes, R. (2014). «Success and failure of grassroots innovations for addressing climate change: The case of the Transition Movement». *Global Environmental Change*, 24, 232-250. DOI: 10.1016/j.gloenvcha.2013.11.011.

Forno, F., Graziano, P. R. (2014). «Sustainable community movement organizations». *Journal of Consumer Culture*, 14(2): 139-157. DOI: 10.1177/1469540514526225.

Ghelfi A., Papadopoulos D. (2022). «Ecological transition: What it is and how to do it. Community technoscience and green democracy». *Tecnoscienza: Italian Journal of Science & Technology Studies*, 12 (2): 13-38.

Healey P. (1997). *Collaborative Planning. Shaping Places in Fragmented Societies*, London: Macmillan.

Heynen N., Kaika, M., Swyngedouw E., eds., (2006). *In the nature of cities: Urban political ecology and the politics of urban metabolism*. Abingdon: Taylor & Francis.

IPCC, (2023). «Summary for Policymakers». In: Lee H. and Romero J., eds., *Climate Change 2023, Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Geneva: IPCC, 1-34. DOI: 10.59327/IPCC/AR6-9789291691647.001.

- Kallis G., Kerschner C., Martinez-Alier J. (2012). «The economics of degrowth». *Ecological Economics*, 84: 172-180. DOI: 84:172-180. 10.1016/j.ecolecon.2012.08.017.
- Krähmer K. (2022). «Degrowth and the city», *City*, 26: 2-3: 316-345. DOI: 10.1080/13604813.2022.2035969.
- Lambert-Pennington K., Saija L. (2020). «To do and know something together: overcoming the challenges of action-research in making better urban worlds». *Tracce Urbane: Rivista Italiana Transdisciplinare di Studi Urbani*, 4 (8): 6-18. DOI: 10.13133/2532-6562\_4.8.17278.
- Latour B. (1991). *We have never been modern*. Cambridge (MA): Harvard University Press.
- Latour B. (2022). *Riassemblare il sociale: Actor-Network theory*. Milano: Mimesis.
- Leino H., Puumala E. (2021). «What can co-creation do for the citizens? Applying co-creation for the promotion of participation in cities». *Environment and Planning C: Politics and Space*, 39 (4): 781-799. DOI: 10.1177/2399654420957337.
- Lewin K. (1946). «Action Research and Minority Problems». *Journal of Social Issues*, 2(4): 34-46. DOI: 10.1111/j.1540-4560.1946.tb02295.x.
- Lindblom C. E., Cohen D. K. (1979). *Usable knowledge: Social science and social problem solving*. New Haven: Yale University Press.
- Magnaghi A. (2020). *Il Principio Territoriale*. Torino: Bollati Boringhieri.
- Magnaghi A., Marzocca O., eds., (2023). *Ecoterritorialismo*, Firenze: Firenze University Press.
- McPhearson T., Cook E., Barbés-Blázquez M., Grimm N., Cheng C., Barbosa O., Chandler D., Chang H., Chester M., Childers D., Eakin H., Groffman P., Hale R., Iwaniec D., Lugo A., Markolf S., Matzler M., McPhillips L., Miller T., Rosi E., Swindell D., Roy Chowdhury R., and Troxler T (2022). «A social-ecological-technological systems framework for urban ecosystem services». *One Earth*. 5(5): 505-518. DOI: 10.1016/j.oneear.2022.04.00.



McPhearson T., Kabisch N., Frantzeskaki N., eds., (2023). *Nature-Based Solutions for Cities*, Cheltenham, UK: Edward Elgar.

Mezzadra S., Neilson B. (2019). *The politics of operations: Excavating contemporary capitalism*. Durham (NC): Duke University Press.

Mingione E. (1991). *Fragmented Societies*, Blackwell: Oxford.

Mocca E., (2020). «The Local Dimension in the Degrowth Literature. A Critical Discussion». *Journal of Political Ideologies*, 25 (1): 78–93. DOI: 10.1080/13569317.2019.1696926.

Ostanel E. (2017). *Spazi fuori dal comune. Rigenerare, includere, innovare*. Milano: Franco Angeli.

Ostrom E. (2009). «A General Framework for Analyzing Sustainability of Social-Ecological Systems». *Science*, 5939(325): 419-422. DOI: 10.1126/science.1172133.

Parrique T., Barth J., Briens F., Joachim J.H. (2019). *Decoupling Debunked. Evidence and Arguments Against Green Growth as a Sole Strategy for Sustainability*. Brussels: European Environmental Bureau.

Pellizzoni L., Leonardi E., Asara V., eds., (2022). *Handbook of Critical Environmental Politics*. Cheltenham: Edward Elgar.

Pickerill J. (2020). «Making climate urbanism from the grassroots: Eco-communities, experiments and divergent temporalities». In: Broto C., Robin E., While A., eds., *Climate Urbanism. Towards a Critical Research Agenda*. Basingstoke: Palgrave Macmillan: 227-242. DOI: 10.1007/978-3-030-53386-1\_14.

Putnam R. D. (1998). *Bowling alone: The collapse and revival of American Community*. New York: Simon & Schuster.

Quirion P. (2021). «Tradable instruments to fight climate change: A disappointing outcome». *WIREs Clim Change*, 12: e705. DOI: 10.1002/wcc.705.

Reason P., Bradbury H., eds., (2008). *The Sage Book of Action Research. Participative Inquiry and Practice*. London: SAGE Publications.

- Saija L. (2017). *La ricerca-azione in pianificazione territoriale e urbanistica*. Milano: Franco Angeli.
- Savini F. (2021). «Towards an Urban Degrowth: Habitability, Finiteness and Polycentric Autonomism». *Environment and Planning A: Economy and Space*, 53(5): 1076–1095. DOI: 10.1177/0308518x20981391.
- Scholz T. (2016). *Platform Cooperativism. Challenging the Corporate Sharing Economy*. New York: Rosa Luxemburg Stiftung.
- Sebastiani A., Marando F., Manes F. (2021). «Mismatch of regulating ecosystem services for sustainable urban planning: PM10 removal and urban heat island effect mitigation in the municipality of Rome (Italy)». *Urban Forestry & Urban Greening*, 57: 126938. DOI: 10.1016/j.ufug.2020.126938.
- Seve B., Redondo E., Segal R. (2022). «Urban co-creation taxonomy». *Journal of Urban Design*, 27(5): 589-604. DOI: 10.1080/13574809.2022.2053283.
- Simoncini S. (2020). «Reti sociali interorganizzative, tecnologie del sociale e autogoverno del territorio: l'avvio di una ricerca sul contesto romano». In: Gisotti M. R., Rossi M., *Territori e comunità. Le sfide dell'autogoverno comunitario*, Atti dei Laboratori del VI Convegno della Società dei Territorialisti. Castel del Monte (BA), 15-17 novembre 2018. Firenze: SdT, pp. 226-238.
- Simoncini S. (2019). «Superstrutture digitali, neogeografie e produzione di territorio. Percorsi e progetti di comunità (in rete) di Patrimonio». In: Butelli E., Lombardini G. e Rossi M., eds., *Dai territori della resistenza alle comunità di patrimonio: percorsi di autorganizzazione e autogoverno per le aree fragili*, Atti dei Laboratori del V Convegno della Società dei Territorialisti, Matelica (MC), 12-14 ottobre 2017. Firenze: SdT, pp. 89-99.
- Smith, A., Fressoli, M., Abrol, D., Arond, E., Ely, A. (2017) *Grassroots innovation movements* (p. 240). London: Routledge.
- Srnicek N., (2017). *Platform Capitalism*, Cambridge: Polity Press.
- Stiegler B. (2020). *L'assoluta necessità. In risposta ad Antonio Guterres e Greta Thunberg*. Milano: Meltemi.

Tarozzi A. (1998). «Autosostenibilità: Una parola chiave e i suoi antefatti». In: Magnaghi A., ed., *Il territorio degli abitanti. Società locali e autosostenibilità*, Milano: Dunod, pp. 21-48.

Vicari Haddock S., Mingione E. (2017). «Innovazione sociale e città. Innovazione sociale e città», *Sociologia urbana e rurale*, 113: 13-29. DOI: 10.3280/sur2017-113002.

Wächter P. (2013). «The Impacts of Spatial Planning on Degrowth». *Sustainability*, 5(3): 1067–1079. DOI: 10.3390/su5031067.

Xue J. (2021). «Urban Planning and Degrowth: A Missing Dialogue». *Local Environment*, 27 (4): 404-422. DOI: 10.1080/13549839.2020.1867840.

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