The conflicts of ecological transition on the ground and the role of eco-social policies: lessons from Italian case studies

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Abstract

The paper analyzes the complexity of social-ecological transition policies and processes on the ground focusing on trade-offs and emerging conflicts engendered by combined environmental-social-technological programs and innovations. To date, there has been a limited focus in the literature on empirical cases analyzing ecological transition, distributive effects, social risks and policies to counter them. To help fill this gap, the paper discusses three qualitative case studies as part of a research project on social cohesion in ecological transitions in Tuscany, Italy. In particular, it examines the ongoing transition strategies and practices, bringing out several aspects that highlight the sources of controversies among actors and the contextual variability and complexity of their "playgrounds", namely: (1) the role of time, space and relational patterns, and ensuing problems of governance, coordination and synchronization; (2) the way in which institutional and technological transformations are embedded in trans-contextual relations and conflicts; (3) the role of different sources and kinds of knowledge in supporting or hampering the ecological transitions; and (4) the shifting balances between top-down strategies and regulation, and bottom-up processes of civic associations and social movements. The paper then contributes by analyzing the attempts at providing social security by means of more or less explicitly designed eco-social policies and practices and highlighting some relevant lessons learned and methodological recommendations for future sustainable welfare design.

Key words: eco-social risks, conflicts, eco-social policy, sustainable welfare, just transition, context, human-nature relationship.

Introduction

In the last fifteen years, we have witnessed the first developments and subsequently a major growth of literature on the role of welfare, social policies and social work in the ecological crisis and the transition strategies to deal with it. Several researches have been implemented around concepts such as 'sustainable welfare', 'just transition' and 'eco-social policies', underlining the need for an integrated understanding of the complex social-ecological (eco-social, *henceforth*) dynamics of the crisis, as well as an alleged necessary transformation of our welfare and social protection systems; for instance, moving from a welfare designed around *wants* and preferences to a *sustainable welfare* aimed at satisfying universal basic *needs* within ecological limits and from an inter-generational and global perspective (Koch and Mont 2016: 5).

This effort seems particularly urgent given that the tightening conditions of the ecological crisis (Richardson et al*.,* 2023) and the policy responses themselves – or their lack or inadequacy – are likely to exacerbate existing social and environmental risks and related conflicts, or spark new ones (Cucca et al., 2023). However, it still appears difficult to establish a research field that reconnects what has been divided (man from nature, environment from society and vice versa), overcoming ideas rooted in

previous eras (Espinosa and Walker, 2011), namely – as highlighted by Gough (2017) – identifying paradigms and methods suitable for understanding integrated eco-social problems and coping strategies. To date, in particular there has been a limited focus in the literature on empirical cases analyzing the ecological transition, distributive effects, social risks and policies to counter them (Cucca et al., 2023). Such research explores the first measures implemented by the EU, macro-scenarios of eco-social change based on simulations (D'Alessandro, et al. 2021), the relationship between growth and welfare – either in general or regarding specific measures to boost the ecological transition in a post-growth scenario (Büchs, 2021; Corlet Walker and Jackson, 2021) – as well as citizens' attitudes and ideas for change towards a sustainable welfare (Fritz and Koch, 2019). Other studies consider the evolution of the European policy context, the link between welfare and labor transformations in the ecological transition (Benegiamo et al., 2023), and the possible actualization of *eco-social* welfare regimes to be compared with the classical European *social* welfare regimes (Esping-Andersen 1999), either embracing or criticizing the synergy hypothesis[1] (Zimmerman and Graziano, 2020; García-García et al., 2022). Some works also observe partial transformations of social policy-making towards a more eco-social agenda in specific countries and policy fields (e.g. Schoyen et al., 2022). Further contributions – moving from the concept of just transition – analyze the different models through which productive innovations are possibly accompanied by policies aimed at reducing employment risks, ensuring continuity of income if not employment, or even conveying a radical transformation of the economic system (Krawchenko and Gordon, 2021). Moreover, other works explore the possible changing social intervention approaches from the perspective of eco-social work (Matthies and Närhi, 2017).

In this context, only very few studies analyze the territorial dimension of the nexus between welfare and the environment (Bonetti, 2023; Carrosio and Devidovich, 2023; Villa, 2023), discussing the emerging eco-social risks for different actors (workers, citizens, firms, public institution), the possible conflicts between them and the way in which to address the latter through more or less combined top-down and bottom-up strategies, policies and mobilizations. In particular, there appears to be a lack of studies concerning transition processes on the ground (Galgóczi, 2020) and the actual and potential role of eco-social policies, including both their pragmatic aspects and systemic complexity.

To take a further step in this direction, in this article we explore some conditions and forms of ecological crises and transitions, focusing on emergent eco-social risks and conflicts to understand how possible integrated eco-social policies and practices are designed and take shape to deal with them, as well as identifying their characteristics, limitations and the role that they undertake or could potentially play. For this purpose, the paper builds on the results of the *Ecoesione* project ("Ecohesion, Social Cohesion in the Ecological Transition"), which was aimed at observing the social implications of the ecological transition processes underway in Italy, with a specific focus on the Tuscany region.[2] Our argument is that local contexts and conflicts provide an effective lens to analyze the multifaceted and multi-level features on these processes, with particular reference to the threefold nexus between the social and environmental dimensions, between policies and practices,[3] and between top-down and bottom-up dynamics of political and social activation and mobilization. The aim is to analyze the possible emerging forms and roles of *sustainable welfare* and grasp the lessons that can be learned for its

[1]According to which there is a synergy between countries' welfare regimes and environmental policy models.
[2]See https://ecoesione.ec.unipi.it/360-2/ .
[3]Shove and Spurling (2013).

future design at different levels.

In the next section, we will move from the need to better understand the relationship between welfare and environment to introduce the theoretical and methodological background. In the third section, we will briefly outline the research design, before the fourth section discusses the main findings, showing the complexity of the processes observed, the uncertain conditions of the transition scenarios and the attempts at providing social security for the actors involved. Concluding remarks summarize the emerging results, the relevant lessons learned and some methodological recommendations for future sustainable welfare design.

Towards a pragmatist-systemic theoretical and methodological framework

The *great acceleration* (McNeill and Engelke, 2018; Eriksen, 2016) in the processes of the extraction, transformation, use, consumption and waste of matter, energy, soil and information as well as the organizational processes and lifestyles have conveyed the perception of a clean separation and independence between the latter, well-being conditions and natural cycles. However, the ecological crisis has called into question this idea of independence from and dominion over nature (Iofrida, 2019; Merleau-Ponty, 1996), revealing how the rapid consumption of flexibility and variability (Bateson, 1972)[4] in the human-environment relationship make it more rigid and fragile, thereby contributing to restructuring – if not reversing – the temporal dynamics of the last one-and-a-half centuries (Tiezzi 2005). Paradoxically, it is now human society that has to 'chase' the great acceleration of the ecological crisis in an attempt to contain its rapid dynamics and the risk of dangerous tipping points (Lenton 2019).

At the *basic or ready-made ideas* level,[5] several reasons still make it difficult to understand this paradox and act consistently (Harries-Jones, 1995; Stehr and Machin, 2019): (1) the persistence to situate the environment outside of society (*anthropocentrism*), and vice versa (*biocentrism*); (2) the persistence to situate oneself as an observer outside of both (*positivism*) in search of a sort of "decontextualized ideal;"[6] (3) the failure to grasp the recursiveness of the co-evolutionary and observational processes between humans and nature (*lineal* vs. *recursive* view); and (4) the failure to grasp the space-time complexity and its increasingly unpredictability with the acceleration of the overheating dynamic (*ultra-simplified assumptions*; Bateson 1972, p. 166 ss).

Overcoming these reasons could follow from a Merleau-Pontinean approach that envisages an idea of nature as *inherence* – namely as belonging to a being that is not reduced to the limits of our activism (1996) – and an understanding of the human-nature relationship that is ecological (Bateson, 1979)[7], namely based on a logic of inquiry and action that is *immanent*, *embedded* and *rooted* in that same relationship (Villa, 2022). Hence, depending on these – among others – different perspectives, conflicting ideas of ecological transition may emerge. For instance, if *mitigation* (reducing climate-altering gas emissions), *adaptation* (preparing infrastructures and social organization for the inevitable

[4]Bateson – inspired by Ross Ashby – discusses the concept of economics of flexibility, defined as the uncommitted potential for change in the processes of adaptation and co-evolution between species and environment.
[5]See Bateson (1972, p. 26).
[6]Toulmin (1990).
[7]See also IPBES (20221.

effects of the crisis) and *countering social risks* (economic, employment and redistributive[8]) are the more or less shared strategies of the ecological transition, *whether* or *not* to think them based on an ecological understanding of the above paradox – namely the interdependent and recursive dynamics of the human-nature relationship – deeply modifies their meaning and actualization.

In the *second* case, the human-nature relationship is hardly considered a source and foundation for critically understanding and challenging the established societal models. Indeed, transition strategies are more likely interpreted as mechanisms for their *incremental* innovation through technological breakthroughs and limited behavioral changes (e.g. the so-called *green growth*), and social policies are asked to play a subsidiary function to help 'those at risk of being left behind.'

Instead, in the *first* case – namely a thorough rethinking of that relationship – it is plausible to think of transition strategies as being transformative towards a *radical* shift in the development models, where social policies are called upon to change their role and operation in depth for this purpose.

The *former* hypothesis appears to be better known, "simpler" and most commonly pursued, even if it is at risk of leading to us reaching the aforementioned tipping points (Parrique et al. 2019), because it moves from often unproved but taken-for-granted assumptions in policy-making and social organization in recent decades (e.g., Latouche 2005).

The *latter* hypothesis appears more uncertain and difficult to imagine, experience and learn, because while lacking a clearly identifiable and somehow shared paradigm, it implies – beyond technologies – major transformations in the economic, behavioral and organizational models through which we produce, accumulate and redistribute, consume, feed, heat, move, and interact.

Between these opposing hypotheses and the many possible variations in between, we can try to understand the possible role of welfare in the transition. For this purpose, we need to consider certain premises.

The *first* is that many basic concepts behind this research field (cf. Introduction of the special issue) are not necessarily established and their meaning is not necessarily agreed upon. Against this, we will resort to some aforementioned works to identify some essential definitions, first by referring to the one of sustainable welfare by Koch and Mont (2016, p. 5 see above), then identifying – according to Mandelli (2022, p. 340) – the eco-social policies as "public policies *explicitly* pursuing both environmental and social policy goals in an *integrated* way". Finally, inspired by Matthies et al. (2001), conceiving of eco-social work as a holistic and reflexive model of socio-political practice based on a systemic understanding of the human-nature relationship.

The *second* premise is that to date possible sorts of eco-social measures do not necessarily follow from any explicit eco-social framework, strategy or programming, so that their implementation in local and regional welfare systems is deeply diversified, fragmented and their emergent role is not easily recognizable. Therefore, the potential role of eco-social policies might emerge, not only based on formal and top-down applications of large-scale programs but through many kinds of trans-contextual policy processes, experiments and actions, including ideas and practices of translation, enactment and assembling in their moving across contexts and from decision-making to implementation (Clarke et al., 2015), and including the conflicts that accompany this moving (Mann 2021). Policies and conflicts may therefore both be reflected in the territories where it might be possible to draw out their complex plots, how they take shape and are embedded in trans-contextual relations and how they are regarded by

[8]"Leaving No One Behind", according to the European Green Deal.

actors who are required to trespass their usual sphere of competence, including the new eco-social risks. For these reasons, differently from Mandelli (2022), we will address the possible integrated value of eco-social policies even when they are *not explicitly* designed for this purpose.

Levels	Roles	Description
Outcomes	R1: Counteracting eco-social risks	Counteracting the eco-social risks of the ecological crisis and transition by providing mainly reactive protective and compensation measures (e.g. universalistic/basic income and services; Büchs, 2021) and combining social and environmental justice conditions with a focus on the most vulnerable (Fitzpatrick 2011).
	R2: Preventing harmful eco-social effects	Preventing harmful social effects of the ecological crisis and transition through social investment interventions with a focus on people's life course (e.g. education and training, equal opportunity, work-life quality and balance; e.g. Hemerijck, 2017) and inter-generational justice (Carter 2011).
	R3: Supporting bottom-up experimental actions	Supporting experimental, bottom-up and context-based actions and collaborative mobilizations aimed at empowering weaker and exposed communities developing new lifestyles, behavioral and relational patterns, local economies and forms of protection, possibly integrated with top-down policies (e.g. community organization[9], renewable energy communities; Oreszczyn e Lane 2017; Stave 2010; Villa 2016), focusing on sorts of affirmative justice.
Processes	R4: Accompany inclusion and participation processes	Accompanying transition processes, dealing with emerging trade-offs and conflicts and facilitating inclusion and participation of weaker actors in defining problems and designing solutions (e.g. systemic action research[10], deliberative citizen forums[11]), combining conditions of procedural justice and substantive aspects of ecological transition (Boström, 2012).
	R5: Leading transformative governance processes	Supporting formal and informal (mixed public and private) rule-making systems and actor-networks activations and leaderships, enabling transformative change[12] according to different paradigms/ narratives (green growth / post-growth models) and ideas of sustainable development, circular economy, sustainable business model, etc.
Organization	R6: Decarbonizing welfare operation	Decarbonizing welfare operation and public spending through, e.g. distributional, functional, institutional and regulatory recalibration[13] towards ecological limits; organizational learning and flexibilization, territorialization and reduction of dissipative sector-specific mechanisms; sustainable procurement practices.[14]

Tab.1. Typology in the making of welfare roles in the ecological transition

The *third* premise is that large-scale research usually struggles to capture such kinds of policy processes and their embeddedness in contexts (Brans and Pattyn, 2017). Conversely, case study research – while making it easier to find practicable solutions for this purpose – raises controversies about modes and scope of inference (Evers and Wu, 2006). We therefore opted for cases studies based on inward, context-based and meso-level observations (Granovetter, 2017; Mangen, 2006; Tight, 2017) combined with an *abductive* approach to move between those extremes. Abduction reflects the process of pragmatically

[9]Carrosio and Devidovich (2023).
[10]Ison (2017)
[11]Koch et al. (2021).
[12]Visseren-Hamakers and Kok (2022); Jessop (2007).
[13]Ferrera et al. (2000).
[14]Meehan e Bryde (2011).

querying/forming/testing hypotheses in situations in which the previous ones fail, appear obsolete or are simply lacking. Additionally, it enables overcoming the supposed limited usability of case study findings: first, by producing multiple descriptions; second, by identifying hypotheses on regularities that can lead to the formation of plausible patterns; and third, by comparing similarities and differences in series of field works (Bateson 1979; Øyen, 2006; Peirce 1958; Swedberg 2014). Hence, in this research, the purpose of detecting case studies was to identify even very early and fragmented modes of addressing eco-social risks as sort of emerging sustainable welfare patterns to be compared within a typology in the making.

The *fourth* premise is that given that eco-social policies are an unfolding object that is still poorly mapped, any attempt to design a descriptive typology is all the more tentative and incomplete. Accordingly, and based on the mentioned literature, our recent research in this field (Cucca et al., 2023; Benegiamo et al., 2023) and the expanding research in context-based social policy analysis (Mangen, 2006; Vanderbroucke, 2017; Villa and Johansen, 2019), we have identified six possible main roles that policies and social work practices can play in the ecological transition (tab.1). Roles (R#, *henceforth*) are identified in relation to three main levels/dimensions that characterize the actualization of the welfare system: outcomes, processes, and organization (tab. 1). Roles and levels identify as many categories of observation, and as such they lack objective value and should not be regarded as rigid separations but rather distinctions (or gaps) that are useful for mapping interdependent and not easily distinguishable aspects of the pragmatic functioning of welfare systems on the ground.

For this reason, and consistent with the abductive approach, the output outlined in tab.1 is a provisional classification or typology that is primarily useful for studying the processes that generate the differences summarized in the same typology (Bateson 1979, p. 192), which over time – facing changes arising from various parts of the system – may show the need for its own redefinition.

With the mentioned aim of analyzing the emerging forms of sustainable welfare in the observed contexts and their capability to deal with social risks and conflicts, we will use this typology to map policies and practices in the ecological transitions on the ground, identifying potentials, limitations and the more or less transformative approaches, as well as learning some possible lessons to outline some methodological recommendations for effective future implementation.

Ecoesione research design

The research started in late 2020 with a preliminary survey followed by an in-depth local case study inquiry. Both phases were carried out through analysis of institutional documentation, gray literature, press articles, and semi-structured one-on-one interviews (22 in the first phase, 30 in the second) with key informants (political, institutional, and economic actors, experts, entrepreneurs, trade union representatives, social workers, movements, and associative bodies), as well as informal on-site observation and talks with citizens.

According to the described approach (§ 2), interviewees were engaged to learn from their practice and representations, their ways of describing and dealing with situations, and their own explanations and solutions, including their theories on where the latter come from and how and why they work or fail (Villa and Johansen, 2019).

Descriptions provided from all of the sources of observation were systematized and reported in the participatory workshops in both the first and second stage, with the aim of giving back, processing and analyzing the data collected, bringing different modes of knowledge into dialogue and identifying plausible patterns of emerging transitions to be compared with the above typology.

The aim of the first stage was to build up background knowledge identifying ongoing changes, narratives about them, and so-called "context markers" (Bateson, 1972) of the ecological transition in the Tuscany region, including selecting the local case studies as "appropriate fields of investigation" (Fischer and Maggetti, 2017) for the second step.

Sixteen local cases of transition in progress that are underway and carried out or reported as necessary by the interviewees were identified (see Figure 1), displaying a broad range of emerging eco-social issues: reduced employment and skills mismatch due to technological changes; risks for local economies from the implementation of sustainable business models (circular economy); territorial conflicts due to energy transition processes, land use changes and regenerative experiments; and social consequence from exogenous shocks at the large- (Covid-19) and small-scale level (extreme weather, hydro-geological risk, environmental-industrial crisis).

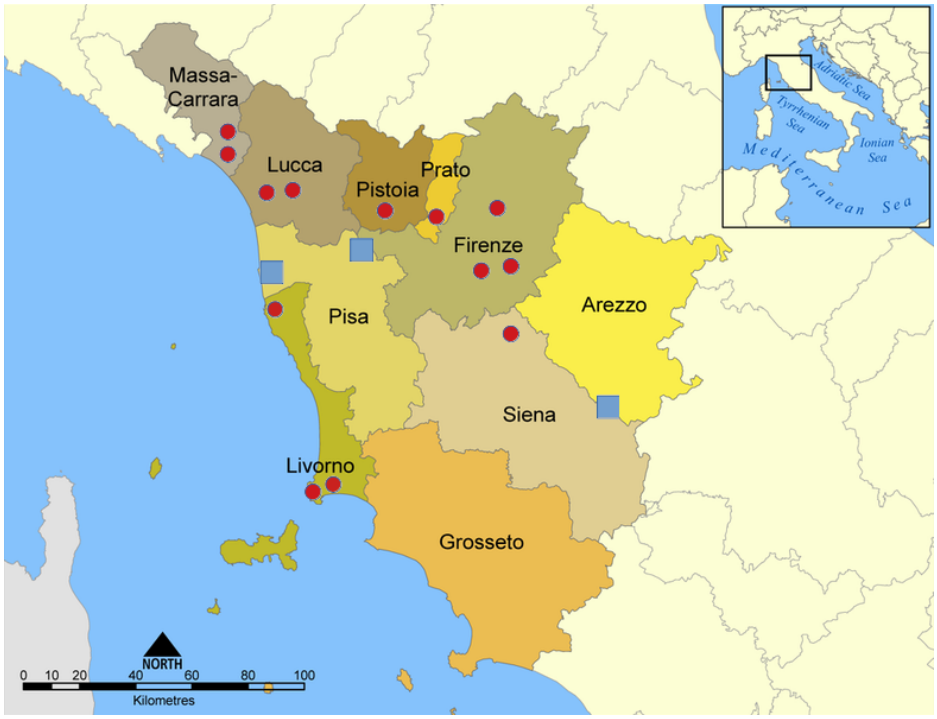

Fig. 1 - Map of case studies in Tuscany. The ones selected are of square form.
Source: Free Software Foundation, under the license https://creativecommons.org/licenses/by-sa/3.0/deed.en and modified by the authors.

Three case studies were selected for deeper investigation in the second stage. They were chosen for their centrality in the regional political strategies and the relevant economic-productive sectors involved in transition processes (automotive, energy, fashion), their differences in terms of territorial characteristics, eco-social risks/opportunities, conflicts between actors and type of actors.

The *first* case concerns a company in the automotive sector (Vitesco technologies, Pisa) producing components (injectors) for internal combustion engines, where a process of reconversion to electric motor technology is underway. In 2019, the headquarter announced 750 lay-offs and the maintenance

of its R&D department only as part of a global restructuring program. The announcement sparked unions' mobilization and a number of initiatives were promoted by the local and regional governments, involving the University of Pisa and other actors mainly to attract new investments.
The *second* case concerns geothermal cultivation on Mount Amiata (between Siena and Grosseto) where for more than two decades multiple conflicts have been triggered between the regional government, the power plants operator, the local governments and opposing citizens, committees and small entrepreneurs. Conflict objects are the suspected risks to health, environment, local economies and the climate itself, given the impact of geothermal extraction in terms of CO_2 emissions, heavy metal and chemical dispersion and groundwater exploitation. The visual and land use impacts of the power plants have also been a subject of contention.
The *third* case concerns the ongoing changes in tanning industry production processes in the Valdarno industrial district, nearby Pisa. Here, tensions, conflicts and sustainability risks for business and employment are observable due to the historical role that these productions have played in the local economy and the fashion system's role in the ecological crisis (chemical pollution, waste processing, biodiversity loss, CO_2 emissions), the pressures to change the business model (coming from large brands, consumers and public regulators), the protests of local committees, and some judicial investigations due to alleged irregularities in waste disposal.

Results: Eco-social policies, what are they and how do they work?

Conflicting contexts of transitions

In the observed contexts, the ecological transition takes the form of an intermittent and adaptive process rather than a far-reaching paradigm shift. Here, assorted combinations of political strategies and regulations, experts and consultants' recipes and narratives as well as forms of path-dependency and technological lock-ins lead to the emergence of trade-offs and conflicts between actors, interests and visions. On the one hand – as a ministerial official also observed - there is a tendency to handle policy processes as linear and sector-specific sequences separated from each other and the contexts, and/or based on simplifying assumptions or alleged and unshared rationales. Nonetheless, in practice, the different types of policy processes – scientific, economic, and regulatory, according to Stehr and Machin's (2019 p.227ff.) classification[15] - emerge as being strongly intertwined and rooted in many of the implementation context's own specifics. Measures and innovations are implemented, hindered or left hanging over time due to the reciprocal effects of these processes, the mechanisms of programming, contingency and randomness, and the peculiar forms of actors' activation (Room 2016, Weick 1977) and ensuing multifaceted conflicts. All of these aspects concur to reinterpret and reassemble the same policy processes on the ground. Four major issues can be identified:
First, scenarios appear to be all but defined, and even the expert assessments become part and subject of controversies in which technical opinions, political visions, social problems and perceptions interact. Values, expectations and emotional-affective linkages with the natural environment (e.g. Mount Amiata

[15]Respectively: fostering the application of defensive and alternative technological innovations, fostering economic transformations through incentives, taxation, cap-and-trade mechanisms, and limiting environmental damage.

as a sacred place, “the mother-mountain”) or – on the contrary – with the very activity or mode of production that threatens its ecology (e.g., the tanning) also play an important role (Granovetter 2017).
In the case of geothermal cultivation, it is difficult to integrate the results of geological, engineering, health, environmental, social and historical analyses that have occurred and changed over time to jointly assess the 'sustainability' of the exploitation of the resource in that specific environmental and social context. In particular, it appears difficult to accommodate the viewpoints of those looking from 'outside' at the role of geothermal resource for addressing the large-scale problem of energy transition and those looking from 'inside' concerned about the small-scale environmental and social risks and the sort of colonization process that – according to local actors – has been imposed on the territory, its nature and identity.
Even in the case of tanneries and the electric car, any attempts thus far to construct a shared evaluation of the overall end-to-end economic processes[16] and their sustainability under current and future conditions (e.g. based on technological and organizational changes and/or different mobility and consumption models) have failed. In both cases, transformations towards sustainability appear to be contested and debated. On the one hand, in tanneries and the fashion industry, there is a multiplicity of problems and solutions discussed or implemented in a global value chain and very complex business models that include land use for cultivation (cotton, soybeans) and livestock farming, transportation, raw material processing (leather), waste and processing sludge, up to the use and waste of final product. On the other hand, the automotive sector there is the supposedly straightforward shift in engine technology, which instead has manifold implications in the production chain from raw materials to waste, and in business and employment models. In the two cases, the disputes play out over very different types of *clashing scales* (Eriksen, 2016). Hence, in all three cases it appears difficult to thematize eco-social risks within a transition process with a somewhat shared idea of sustainable future.
Second, sustainability as a concept does not appear to have any clear-cut character, being depicted by actors through alleged solutions referred to as efficiency, technological – or seldom, social – innovation, up- or re-skilling, circularity and renewability. Their operationalization, consequences and meanings cannot be taken for granted. Moreover, methods and procedures that lead to their interpretation are circulated through different sources of communication, based on self-referenced languages and assumptions that are sometimes implicit, and conveying a mostly indirect dialogue between the parties that take forms of soliloquies at times (Weick, 1977). The sustainability discourse is also structured around contents that are easily confused, e.g. environmental with economic and employment issues, as well as cultural and identity aspects.
Third, conflicts do not always present themselves logically as such. In the automotive factory case, the conflict is open and explicit but some actors struggle to engage the extra-local level where global competition, European policies, and large business interests are likely playing a crucial role. In the tannery industry, it crosses multiple levels but remains under the radar, within a context where social-environmental-health risks are often minimized or unspoken behind a culturally entrenched consensus and behavioral patterns characteristic of such an industrial district (Whitford, 2001). By contrast, disputes on Mount Amiata are more widely known but the reasons and forms of the different positions are often unclear and not necessarily mutually recognized between the parties involved. For example, according to a technician of an energy company of Mount Amiata, “there are no committees, only a few

[16]Namely, from the extraction of raw materials to the production, use, consumption and waste of resources

individuals with particular interests, or who belong to certain networks…." Moreover, according to a public sewage treatment plant technician, many critics "move from prejudiced positions, unfounded representations of the problems or out of distrust," and according to some opposing committees, "after all these twists and turns of technical opinions and political positions trust is lost... we are not listened to and we feel like we are moving in a vacuum." Paradoxically enough, committees, experts and institutional actors all at times claim that they are not being heard.

Fourth, as argued by some of the same experts interviewed, decisions are nevertheless political processes: "they may be based on scientific advice, but must take into account the related socio-economic and cultural factors, including people's legitimate concerns." Furthermore, "since optimal solutions do not exist, decisions can aim at good, excellent or mediocre compromises, which must include political assessments of want we want to do," referring to the well-being, lifestyle, consumption and jobs that we desire.

However, technical and political assessments hardly become the subject of public debate and political decisions. Many interviewees claim that politics above all tends to *tinker* and postpone uncomfortable choices or even backtrack on decisions made to avoid criticism (blame avoidance), also due to the difficulties of assessing risks and opportunities under conditions of *uncertainty* (when there is insufficient data and/or expertise) or *ambiguity* (when there is 'too much' information, i.e. multiple and divergent interpretations of data).[17] Indeed, scientific opinions themselves are not immediately comprehensible and usable materials but involve complex problems of 'translation' (Ruser, 2018) while interacting with other viewpoints originating in different domains.

Ultimately, the very idea of transition is disputed and – particularly in a context of widespread *political tinkering*[18] – does not convey clear *markers* around which to outline effective and integrated eco-social strategies.

Eco-social risks and policies from the perspective of actors

The research reveals that it is precisely concerning the relationship between welfare and the environment that the risks of separation between policy processes and between them and contexts appear the most relevant.

First, regarding *eco-social risks* and possible related conflicts, at the regional political level the topic is not yet part of any systematic institutional strategy, nor are there any advanced signs of integration between the policy fields involved according to the regional actors interviewed. By contrast, trade unionist and members of associations and movements voice several points of criticism about the current transition policies and how the policy processes from decision-making to implementation are attended, highlighting discontinuities, inconsistencies and bureaucratic hurdles (see R6, tab.1).

However, even among these actors, the connection between the ecological and social dimensions of risks emerges only against specific questions: some trade unionists and local politicians refer to the crisis of the automotive factory and similar stories[19] to remark upon the employment effects of closing down or

[17]Baer and Risbey (2009), Weick (1995).

[18]The expression is inspired by Bateson which stated that "no amount of political tinkering can save the old system, only a fundamental change in ideas." See Harries-Jones (1995, p. 30).

[19]E.g. the case of GKN nearby Florence (Andretta et al., 2023).

transforming production, discuss this by bridging to the *just transition* debate and express the need for anticipatory policies to ensure continuity of income – if not employment – for workers. Representatives of movements address the welfare-environment issue in relation to global phenomena such as migration, health, land consumption and the impact of polluting activities, linking specific cases to the *environmental justice* theme. Instead, social workers take their cue from recent events (Covid-19, floods, industrial crises) to link impoverishment, job loss and housing needs to the general ecological crisis, observing that "such experiences reveal the unequal effects of the crises, between the better-off families and other segments of population," as well as the persistent institutional limits in making connections. For example, "every year the Region draws up a map of territorial risks... such kinds of events should no longer be a surprise; instead we are always at emergency."

Second, the interviews also reveal many obstacles and some scope for developing *eco-social policies* and practices, with a few examples of measures taking on their valences. Five of the most prominent ones are outlined below:

(1) At the local level, social workers implement responses to destructive events and specific conditions related to climate change or industrial-environmental crises with outplacement tools for elderly people and families (vacated from later demolished social housing), short-term measures of economic (e.g. food vouchers) and psycho-social support, integrated social health care and support volunteering action.

(2) The civil protection social service acts in emergency situations, also creating a space for enhancing the growing environmental sensitivity among younger social workers.

(3) In industrial crises involving employment impacts (Vitesco and other cases identified in the preliminary inquiry), social shock absorbers (redundancy and mobility allowance) and/or early retirement and internal redeployment processes are implemented. Where crises involve small firms and such measures are not applicable, as in the tanning district, local social and employment services are more likely to activate (limited) economic support and job inclusion measures, and social support for migrant workers.

(4) In the Vitesco case, initiatives include a training program on electrification for workers and support to funding and business scouting by the regional government in the latency of national-level industrial policies and forms of governance.

(5) On Mount Amiata, the power plants operator – according to a 2007 agreement with the regional government and the geothermal municipalities – distributes economic compensations to the latter, which has been used for road modernization, public transportation, child and community services, cultural initiatives and measures to support local associations.

Overall, these types of actions are characterized by organizational fragmentation and randomness. They are not explicitly identified in any coordinated eco-social strategy or programming (§ 2), nor are they always identified as such by respondents.

Within social services, the above-described actions (1; tab.1, R1) are implemented in a work organization that responds to an institutional structure absorbed by other goals and operationally marked by emergency and reactive approaches and a propensity at all levels, according to interviewees, "to underestimate premonitory signs." Without focused design, they observe that certain welfare measures even risk having anti-ecological effects, as in the cases of food vouchers incentivizing poor families to economize by purchasing junk food, or job placements in polluting and health-risky companies.

Employment social shock absorbers remain effective with adult workers, much less so with under-40s hired on temporary contracts and staff leasing, and they are not applicable in several situations . Moreover, they have a reactive protective function against the short-term effects of the crisis (tab.1, R1) but no future projection towards individuals, households and/or local economic systems, e.g. in terms of accompaniment, reconversion and social investment (tab. 1, R2).

Vocational education and training policies seem to be an exception. In the case of the automotive factory, they were implemented as part of a sketchy regional strategy that looks at the green economy from the perspective of green growth. Indeed, literature and political discourse identify the above as important measures of eco-social investment, preparing people for changes in production processes (tab.1, R2). However, according to some unionists interviewed, training is conceptualized within a framework where technological innovation appears to be the only answer to the ecological crisis and it is not designed within a more comprehensive strategy (e.g. integration with social safety net and plans for local economic reconversion or regeneration). Moreover, amid the uncertainty of the site's industrial future, it is unclear how many jobs will be lost, which different skills will be in demand and hence how many will have to qualify within the same profile (*upskilling*) or need radical retraining (*re-skilling*). Again in the Vitesco case, the initiative for business scouting could be understood as an eco-social strategy (tab.1, R5), although at the regional level, still sector-specific within the economic and educational policy system and excluding the environmental and welfare departments.

Finally, with respect to compensation (tab.1, R1) from geothermal activity, it should be noted that the agreement did not result in an integrated strategy between the actors involved; for instance, to develop a comprehensive community-based project but also to avoid further divisions between the same actors.

Alongside these limited actions, it is necessary to take into account institutions and policies that are structural parts of regional and national welfare systems (e.g. health, social, housing and work policies), as well as some specific initiatives (tab.1, R3) that – despite lacking eco-social purposefulness – sometimes play an indirect role in the ecological crisis and transition. Their effectiveness appears to be partial and contingent, dependent on situation-specific adaptive capacities, available local resources – which in Italy are very diversified - and implementation processes that are designed apart from the ecological problem.

In fact, as observed in this and other researches, policies, measures and service operation either develop in continuity from the past or undergo innovations that have a temporary character, have a solely managerial purpose and/or are not addressed to eco-social risks. For instance, as the social workers highlight, community-based social services and primary care have seen no investment even after Covid-19, but rather further growth or fragmentation, if not impoverishment. Therefore, ultimately, "when crisis strikes, we are anyhow the ones picking up the pieces... and keep on doing."

As a whole, compared to eco-social issues, the overall effect is a policy design that respondents perceive as even more fragmented than how the Italian social policy systems ordinarily result.

Towards an anticipatory eco-social policy?

However, some interviewees in the social policy arena, practitioners, experts and policy-makers point to a potential positive role of welfare in the climate crisis. They envision a system designed around a non-

merely workerist and economistic social investment aimed at promoting communities in which cultural, educational, social health and ecological resources work together; for example, regarding sustainable mobility and healthy short chain food, environmental education and information, etc. In their opinion, such a kind of proactive model (tab.1, R2-3) is expected to produce quality jobs and foster prevention, reduce the risks of diseases outbreaks and fragile conditions while not increasing costs, and – in the long run – even fostering their decrease (and hence reducing the dependence on growth), lessening direct environmental impacts (e.g. through lower intensity of hospital activity, mobility and transportation), and establishing a decentralized support network in the face of emergencies.

Based on this perspective, respondents highlight how the concepts of sustainability and environment could and should blend into citizens, users and patients social security systems, and hence accompany the transition of the latter beyond the mere intervention on already-deflated problems (tab.1, R5).

For this purpose, in their opinion, investing in skills training and changing the current bureaucratic functioning is necessary to optimize resources, reduce the current dissipative effects, and improve the system's flexibility (tab.1, R6). In addition, institutional conditions should be created to promote effective interactions between different social actors (including the weaker ones, R4) and support transition pathways at least partly based on bottom-up participatory and organizational processes (R3-4).

Interviewees remark that the above assumptions have a foundation in participatory-based experiences; for example, in some social work practices and traditions (participatory action research, community organization and networking), as well as the increasingly widespread experiments of self-organized local economies based on short chains of consumption and production and very low environmental impact, which move from varied forms of community and associative mobilization (e.g. ecovillages, alternative production networks, solidarity purchasing groups, green social enterprises; R3). They also point to some experiences of participatory governance (R4-5) and highlight the importance of the local dimension and the role of not only institutional resources.

No such experiments were identified in this research, although examples are easily found in literature (e.g. Villa, 2016; Oreszczyn e Lane, 2017).

Discussion: Some conditions for a transformative eco-social policy

Contexts, trans-contextual relations (Bateson, 1972) and scalar conflicts (Eriksen, 2016) matter, depending on and giving forms to peculiar dynamics as summarized in tab. 2.

From such complex plots, political processes take shape and give rise to patterns of intermittent and adaptive transitions that are observable on the ground. Such patterns highlight a mix of context-based differences, *clashing scales* but also similarities and a number of cross-cutting aspects that are peculiar to the regional model of governance and the national welfare regime, hence emphasizing the importance of understanding the specific combinations of top-down and bottom-up multi-level policy processes, including the scattering forms of eco-social policies.

Compared with the typology in tab.1, our case studies mostly highlight partial aspects of R1 (*counteracting social risks*) and even more limited ones of R2 (*preventing harmful social effects*), while

some specific and local experiences of R3 (*supporting bottom-up experimental actions*) and R4 (*accompany inclusion and participation processes*) are observed in different contexts and previous research studies.

Policy processes	Policy-making: experiments and innovations on a variety of scales and problems with different levels of formality, visibility and recognition, as well as fragmentation and asynchronies.
	Policy mix: combined effects from sector-specific institutional designs and practices of adaptation.
	Policy embeddedness: combined effects of non-integrated top-down and bottom-up policies through context-based practices of translation, implementation and assembling (Clarke et al., 2015).
Context-based practices	Diverse eco-social risks and different coping/adaptation practices/methods.
	Diversified proximity patterns, risk perception and experiences in the relationship with the natural environment.
	Shared or divided practical knowledge according to local cultures and forms of belonging to eco-social environments.
	Different forms of mobilization in explicit and implicit conflicts.
Trans-contextual relations	Organizational patterns and practices as learning sources for conflict management, problem-setting and/or problem solving (Pellizzoni, 2023).
	Separations, linkages and conflicts between local and extra-local actors.
	Interaction and conflict between scientific, expert and practical knowledge (Villa, 2008) and between localized and non-localized information (Bateson, 1972).

Tab.2 - Why contexts matter: dynamics emerging from observation

However, the shortage and fragmentation of detected actions are not the only and main issue: implementing not merely ancillary and contingent eco-social policy systems implies – as previously discussed – developing a careful understanding of the relationship between them and the transition strategies, starting with the latter's positioning between incremental innovation and radical transformation. Some normative expectations on this point emerge from non-institutional actors, who stress the need for a major paradigm shift, and from institutional strategies on paper, which show some ambition but, as mentioned, within the EU's green growth framework. Conversely, no systematic attempt to connect eco-social policies and transition strategies according to a specific perspective can yet be identified on the ground. And still, such an attempt might not be driven by any normative interpretation, rather by methodological considerations that, from these case studies, previous research and the literature, emerge as the weakest point in current eco-social transition policies and studies. Three types of remarks on this issue may therefore be worthwhile to conclude:

First, different eco-social policy roles (tab.1) may carry – and variously combine with – different approaches to transition, and from here convey distinct types of transformative change (Leichenko and O'Brein, 2019), from the implementation of specific measures to more far-reaching recalibration processes; for example, related to our case studies aiming at (1) containing social risks emerging from ongoing transformation in the automotive industry, tannery production, or geothermal resource exploitation (R1), (2) acting in a proactive and integrated role (R2-3) in strategies for transforming mobility, energy production and consumption, as well as impactful production processes (e.g. from

linear to circular ones; Korhonen et al., 2018), and (3) incorporating both of the latter points into a sequential or dual strategy that is more or less participatory and rooted in contexts as well as more or less based on transformative governance processes (Visseren-Hamakers and Kok, 2022 R4-5).
Second, strategies and measures are implemented in a context in which risks and needs emerge from the complexity of non-predictable, non-linear and trans-contextual processes requiring them to be addressed with "methodological savvy" (Saukko, 2003) at all three levels outlined above.
Third, it is possible to translate that *savviness* – without any claim to completeness – into a few recommendations helpful for designing and implementing effective sustainable welfare systems on the ground.

1) *Integrating policy processes*. Research shows the importance of enhancing effective integration among different types of policy processes, breaking out of the sector-specific logic behind them; for example, by promoting metagovernance processes (Jessop, 2007) that simultaneously involve ongoing changes in the labor market, the world of production and of reproduction, the role of technology, and the evolving characteristics of the natural environment that make them possible and are at risk of suffering their destructive impacts.

2) *Synchronization.* The theme of policy process synchronization holds particular relevance against the complexity of the ecological crisis and transition. Eco-social risks – unlike "classical" ones – are unpredictable both individually and collectively and from a space-time perspective (Baer and Risbey, 2009; Gough, 2017). Nonetheless, the research highlights that the transition in some sectors (e.g. automotive and fashion) is driven by political and market choices that can at least become the object of probabilistic, flexible and synchronized anticipatory policies to counter social risks in given places and with given populations.

3) *What and how?* A non-mere subsidiary and ancillary eco-social policy requires both imagining and outlining a future different socio-economic organization (*what*) and understanding how to move towards it (*how*), as well as considering that they are two orders of ideas of different complexity that recursively affect each other (Boström, 2012). The failure to address this point seems to be contributing to the stalemate in which many observed processes are found, while overcoming it implies self-reflexivity (Bateson, 1972), methodological savviness and metagovernance tools (Jessop, 2007).

4) *Combining roles*. The design of eco-social policies should also take into account how specific measures might work on the ground depending on which of the six roles listed in tab.1 are implemented and how they are combined. For example, investing only in R1 or R2 according to a mere top-down and sector-specific approach could fail to enhance local, informal and community resources and amplify the vicious circle of destructive economic growth. Conversely, merely investing in the latter (R3) without addressing the first and second roles could indirectly foster further inequality, favoring stronger people and communities. Again, taking care of R6 exclusively through cost reduction (*retrenchment*) could disempower the welfare capacity to perform all of the other roles. Finally, an investment in R5 without simultaneously preparing/investing on the other roles could foster the emergence of risks and conflict

caused by the combined conditions of uncertainty, ambiguity and the absence or lack of adequate social protections.

5) *Self-subversion*. Ultimately, policy systems should in turn develop adaptive and innovative capacities (R6) in relation to the aforementioned obstacles and the need to combine eco-social policies and transition strategies, taking a proactive role first and foremost towards themselves by developing capacities for self-reflexivity, self-subversion and self-correction (Bateson, 1972; Hirschman, 1981).

For each of these five points, further in-depth analysis and discussion is certainly needed. Indeed, this research has brought out some complexity of the socio-political dynamics taking place in the territories, their interconnectedness with trans-contextual environmental and technological factors, and their interdependence with many sources of policy and market change. Likewise, it has highlighted the need for more interdisciplinary and multi-level research designs to fully grasp the multidimensional characteristics and implications of the transition, and for a more nuanced understanding of the ongoing and multifaceted changes in different environments, economic sectors, technological systems and policy processes.

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Bibliography

Andretta M, Gabbriellini F and Imperatore P (2023) Un ambientalismo di classe. Il caso GKN. *Sociologia del lavoro*. 165: 133-154. DOI 10.3280/SL2023-165007.
Baer P and Risbey JS (2009) Uncertainty and assessment of the issues posed by urgent climate change. An editorial comment. *Climatic Change*, 92: 31–36 DOI 10.1007/s10584-008-9529-3.

Bateson G (1972) *Steps to an Ecology of Mind*. New York: Chandler Publishing Company.
Bateson G (1979) *Mind and Nature. A Necessary Unity*. Toronto: Bantam Books.
Benegiamo M, Guillibert P and Villa M (2023) Work and welfare transformations in the climate crisis: A research pathway towards an ecological, just transition. Introduction to the special issue. *Sociologia del lavoro*. 165: 9-29. DOI: 10.3280/SL2023-165001oa.
Bonetti M (2023) Alle prese con la transizione. Rischi sociali, innovazione e crescita nel progetto di

riconversione di una multinazionale del settore automotive in Toscana. *Sociologia del lavoro*. 165(1): pp. 68-89. DOI 10.3280/SL2023-165004.

Boström M (2012) A missing pillar? Challenges in theorizing and practicing social sustainability: introduction to the special issue. *Sustainability: Science, Practice and Policy*. (8)1: 3-14. DOI: 10.1080/15487733.2012.11908080

Brans M and Pattyn V (2017) Validating Methods for Comparing Public Policy: Perspective from Academics and "Pracademics". Introduction to the Special Issue, *Journal of Comparative Policy Analysis*, 19(4): 303-312.

Büchs M (2021) Sustainable welfare: How do universal basic income and universal basic services compare?. *Ecological Economics*. 189. https://doi.org/10.1016/j.ecolecon.2021.107152.

Carrosio G and Devidovich L (2023), Eco-welfare tra crisi socio-ecologica e campi d'applicazione per politiche eco-sociali. *Social Policy*. 1/2023: pp. 43-62. doi: 10.7389/107138.

Carter A (2011) *Environmental* ethics. In: Fitzpatrick T (ed) *Understanding the Environment and Social Policy*. Bristol: Policy Press.

Clarke J, Bainton D, Lendvai N and Stubbs P (2015) *Making Policy Move. Towards a Politics of Translation and Assemblage* Bristol: Policy Press.

Corlet Walker C and Jackson T (2021) Tackling growth dependency. The case of adult social care. *CUSP Working Paper No 28*. Guildford: Centre for the Understanding of Sustainable Prosperity. Online at: www.cusp.ac.uk/publications.

Cucca R, Kazepov Y, Villa M (2023) (eds.) Towards a sustainable welfare system? The challenges and scenarios of eco-social transitions. *Social Policy*, 1/2023: pp. 3-26. DOI: 10.7389/107136.D'alessandro S, Ciepliski AG, Distefano T and Guarnieri P (2021) Coupling environmental transition and social prosperity: a scenario-analysis of the Italian case. *Structural Change and Economic Dynamics*. 57: 265-278. https://doi.org/10.1016/j.strueco.2021.03.007.

Eriksen TH (2016) *Overheating. An antropology of accelerated change*. Chicago: University of Chicago Press.

Esping-Andersen G (1999) *Social Foundations of Postindustrial Economies*. Oxford: Oxford University Press.

Espinosa A and Walker J (2011) *A Complexity Approach to Sustainability. Theory and Application*. London: Imperial College Press.

Evers CW and Wu EH (2006) On generalising from single case studies: epistemological reflections. *Journal of Philosophy of Education*, 40(4): 511-526. https://doi.org/10.1111/j.1467-9752.2006.00519.x.

Ferrera M, Hemerijck A and Rhodes M (2000) *The future of social Europe: recasting work and welfare in the new Economy*. Celta: Oeiras.

Fischer M and Maggetti M (2017) Qualitative comparative analysis and the Study of Policy Process. *Journal of Comparative Policy Analysis*. 19(4): 345-361. https://doi.org/10.1080/13876988.2016.1149281.

Fitzpatrick T (2011) (ed) *Understanding the Environment and Social Policy*. Bristol: Policy Press.

Fritz M and Koch M (2019) Public Support for Sustainable Welfare Compared: Links between Attitudes towards Climate and Welfare Policies. *Sustainability*, 11(15)-4146. doi:10.3390/su11154146.

García-García P, Buendía L and Carpintero O (2022) Welfare regimes as enablers of just energy transitions: Revisiting and testing the hypothesis of synergy for Europe. *Ecological Economics*. 197. https://doi.org/10.1016/j.ecolecon.2022.107434.

Galgóczi B (2020) Just transition on the ground: Challenges and opportunities for social dialogue. *European Journal of Industrial Relations*, 26(4): pp. 367–382. https://doi.org/10.1177/0959680120951704.

Gough I (2017) *Heat, Greed and Human Need. Climate Change, Capitalism and Sustainable Wellbeing*.

Cheltenham: Eward Elgar.

Granovetter M (2017) *Society and Economy. Framework and principles*. Harvard: Harvard University Press.

Harries-Jones P (1995) *A recursive vision. Ecological Understanding and Gregory Bateson*. Toronto: University of Toronto Press.

Hemerijck A (2017) *The uses of Social Investment*. Oxford: Oxford University Press.

Hirschman AO (1981) *Essays in Trespassing: Economics to Politics and Beyond*. Cambridge: Cambridge University Press.

Iofrida M (2019) *Per un paradigma del corpo. Una rifondazione filosofica dell'ecologia*. Macerata: Quodlibet.

IPBES (2022) *Report of the Plenary of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services on the work of its ninth session*, IPBES/9/14/Add.2, available at: https://www.ipbes.net/.

Ison R (2017) *Systems Practice: How to Act. In Situations of Uncertainty and Complexity in a Climate-Change World*. London: Springer.

Jessop B (2007) The governance of complexity and the complexity of governance, revisited. In: Bogg I and Geyer R (eds.) *Complexity, Science and Society*, Radcliffe Publishing, Oxford, pp. 151-155.

Koch M, Lindellee J and Alkan Olsson J (2021) Beyond the growth imperative and neoliberal doxa: Expanding alternative societal spaces through deliberative citizen forums on needs satisfaction. *Real-world economics review*. 96: 168-183, http://www.paecon.net/PAEReview/issue96/Koch-et-al96.pdf

Koch M and Mont O (2016) *Sustainability and the Political Economy of Welfare*. London: Routledge.

Korhonen J, Honkasalo A. and Seppälä J (2018) Circular Economy: The Concept and its Limitations. *Ecological Economics*. 143: 37–46. http://dx.doi.org/10.1016/j.ecolecon.2017.06.041

Krawchenko TA and Gordon M (2021) How Do We Manage a Just Transition? A Comparative Review of National and Regional Just Transition Initiatives. *Sustainability.* 13-6070. https://doi.org/10.3390/su13116070ù

Latouche S (2005), *L'invention de l'économie*. Paris : Albin Michel.

Leichenko R, O'brien K (2019) *Climate and society. Transforming the future*. Cambridge: Polity Press.

Lenton TM et al (2019) Climate tipping points - too risky to bet against. *Nature*. 575: 592-595. doi: https://doi.org/10.1038/d41586-019-03595-0.

Mandelli M (2022) Understanding eco-social policies: A proposed definition and typology, *Transfer: European Review of Labour and Research*. 28(3): 333–348. DOI: 10.1177/10242589221125083.

Mangen S (2006) "Fit for Purpose?" Qualitative Methods in Comparative Social Policy. In: Kennet P (ed) *A Handbook of Comparative Social Policy*. Cheltenham: Edward Elgar. pp. 307-23.

Mann EM (2021) *La nuova guerra del clima. Le battaglie per riprenderci il pianeta*. Milano: Edizioni Ambiente.

Matthies A-L Närhi K (2017) *The Ecosocial Transition of Societies. The contribution of social work and social policy*. London: Routledge.

McNeill JR and Engelke P (2016) *The Great Acceleration. An Environmental History of the Anthropocene since 1945*. Harvard: Harvard University Press.

Meehan J and Bryde D (2011) Sustainable procurement practice. *Business Strategy and the Environment*. 20: 94-106. https://doi.org/10.1002/bse.678.

Merleau-Ponty M (1996) *La natura.* Milano: Raffaello Cortina.

Oreszczyn S and Lane E (2017) *Mapping environmental sustainability: Reflecting on systemic practices for*

participatory research. Bristol: Policy Press.

Øyen E (2006) Living with imperfect comparisons. In: Kennet P (ed) *A Handbook of Comparative Social Policy*. Cheltenham: Edward Elgar. pp. 276-291.

Parrique T et al (2019) *Decoupling debunked: Evidence and arguments against green growth as a sole strategy for sustainability*. Report. Bruxelles: European Environmental Bureau.

Peirce CS (1958) *Values in a universe of chance. Selected writings*. Wiener P (ed). New york: Doubleday Anchor Books.

Pellizzoni L (2023) *Introduzione all'ecologia politica*. Bologna: Il Mulino.

Richardson K et al (2023) Earth beyond six of nine planetary boundaries, *Science Advance.* 9(37), eadh2458. doi: 10.1126/sciadv.adh2458.

Room G (2016) *Agile Actors on Complex Terrains: Transformative Realism and Public Policy*. London: Routledge.

Ruser A (2018) *Climate Politics and the Impact of Think Tanks. Scientific Expertise in Germany and the US*. London: Palgrave MacMillan.

Saukko P (2003) *Doing Research in Cultural Studies. An Introduction to Classical and New Methodological Approaches*. London: Sage.

Schoyen MA Hvinden B and Leiren MD (2022) (eds) *Towards Sustainable Welfare States in Europe. Social Policy and Climate Change*. Cheltenham: Edward Elgar.

Shove E and Spurling N (2013) *Sustainable Practices. Social theory and climate change*. London: Routledge.

Stave K (2010) Participatory System Dynamics Modeling for Sustainable Environmental Management: Observations from Four Cases. *Sustainability*. 2(9): 2762-2784. https://doi.org/10.3390/su2092762.

Stehr N and Machin A (2019) *Società e clima. Trasformazioni e cambiamenti*. Roma: Armando.Swedberg R (2014) *The Art of Social Theory*. Princeton: Princeton University Press.

Tiezzi E (2005) *Tempi storici, tempi biologici*. Roma: Donzelli.

Tight M (2017) *Understanding Case Study Research. Small-scale Research with Meaning*. London: Sage.

Toulmin S (1990) *Cosmopolis: the hidden agenda of modernity*. Chicago: University of Chicago Press.

Vanderbroucke F (2017) Comparative Social Policy Analysis in the EU at the Brink of a New Era. *Journal of Comparative Policy Analysis*. 19(4): 390-402. DOI: 10.1080/13876988.2016.1168618.

Visseren-Hamakers IJ and Kok MTJ (2022) (ed) *Transforming Biodiversity Governance*. Cambridge: Cambridge University Press.

Villa M (2016) The transformative role of the social investment welfare state towards sustainability. Criticisms and potentialities in fragile areas. Sociologia e Politiche Sociali, 3/2016: pp. 29-49. DOI: 10.3280/SP2016-003003.

Villa M (2022) La comprensione ecologica deve essere ecologica: note metodologiche su inerenza, immanenza e incorporazione dei processi conoscitivi. In Perullo N, Fadini U (ed.) *Storia, natura, ecologia. Scritti per Manlio Iofrida*. Modena: Mucchi Editore.

Villa M (2023) Cambiare o traccheggiare? Politica e lavoro eco-sociale, transizione ecologica e la sfida della complessità: note di campo. In Matutini E. (ed.) *Eco-social work. Politica e lavoro sociale nella crisi ecologica*. Varazze: PM Edizioni.

Villa M and Johansen VF (2019) What difference does the context of activation make? Challenges and innovations in the Italian and Norwegian local welfare. *International Journal of Sociology and Social Policy*. 39(5/6): pp. 478-493. DOI: 10.1108/IJSSP-11-2018-0196.

Weick KE (1977) Enactment Processes in Organizations. In: Staw BM and Salancik GR (ed) *New Directions in Organizational Behaoviour*. Chicago: St.Clair Press.

Weick KE (1995) *Sensemaking in Organizations*. Thousand Oaks: Sage.

Whitford J (2001) The decline of a model? Challenge and response in the Italian industrial districts. *Economy and Society*. 30(1): 38–65. https://doi.org/10.1080/03085140020019089.

Zimmermann K and Graziano P (2020) Mapping different worlds of eco-welfare states. *Sustainability*. 12(5): 1819-1838. https://doi.org/10.3390/su12051819.