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The Role of Cooperatives in Mitigating the Effects of the Eco-Climate Crisis

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Abstract: In the context of this paper, the climate crisis will be treated first as a facet of the overall systemic biosphere crisis and second as a multiplier of existing crises, which are independent of each other, but which unfold in synergy, evolving together in interdependence.

In such a context, the report refers, at the first level, to the characteristics and causes of the ecological and climate crisis. Then, the dominant logic that runs through the "green" deal currently promoted by the EU, will be explored to address this crisis. This logic only prolongs ineffective symptomatic "treatments", while leading, in the long run, to the reproduction of the same vicious circles that nurtured the growing crisis. We propose as a solution a Copernican revolution in our mindsets, which will allow us to see in a different light the ways of dealing with the consequences of the ecological climate crisis. This will mark a "tipping point" — a paradigm shift in a post-growth direction where the institutions of the social and solidarity economy (SSE), being exemplary, are called upon to provide a transformative contribution. Among these institutions, the cooperatives, which are governed by SSE's constituent principles, express a mild and "bottom-up" local and democratic economic activity, based on an economy of needs and not sizes.

Through a multidisciplinary and multifaceted literature approach, this paper seeks to highlight the role of the SSE and, in particular, of cooperatives in mitigating the effects of the eco-climate crisis and in formulating feasible proposals and solutions.

Key words: eco-climatic crisis, green economy, cooperatives economy of needs
JEL codes: Q56

1. Introduction

In the context of this paper, the eco-climate crisis will be treated first as a facet of the overall systemic biosphere crisis (Nikolopoulos, 2021, p. 12; Fotopoulos, 2008) and second as a multiplier of existing crises. (Laurent, 2010, pp. 48-51; Fitoussi & Laurent, 2008; Larrière, 2017). These crises are relatively autonomous or independent of each other, but eventually unfold in synergy, evolve together, interact and are interdependent (Skordoulis, 2005, pp. 234-247; Foster, 2005).

In such a context, the paper refers, at the first level, to the aspects and nature of the ecological and climate

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crisis. At a second level, it assesses ways to address this crisis and its negative effects, in particular. At this level, the appropriateness of Social and Solidarity Economy (SSE) institutions, such as cooperatives, is examined. Indeed, while the SSE is usually promoted as an antidote to the economic and social crisis, its role in addressing the ecological and environmental crisis has not been promoted. In particular, we investigate whether synergy cooperatives can be part, if not of the solution, then certainly of the strategies to contain and mitigate the preliminary and subsequent consequences of the eco-climate crisis, and can open up new possibilities for the creation of an eco-community and eco-society.

2. Aspects, Characteristics and Causes of the Eco-Climate Crisis

The eco-climate crisis, as examined here, is considered to be in osmosis with some of its versions and can be detected in most of the forms (social, health, dietary, epidemic, pandemic, etc.) in which the problem itself is demonstrated (Morin, 2020) Namely, the capitalist (including social-capitalist) and growth-focused catastrophe itself, which is exacerbated by the neoliberal barbarism of the last decades. What remains understated is that the eco-climate crisis is not only linked to economic and social (as well as cognitive) (Augé, 2008, p. 105) inequalities (Nikolopoulos, 2021, pp. 13-18; Laurent, 2010, pp. 100-101), or only to the uncontrollable economic (and political) power of mega-businesses or (only) to the lack of (substantive) legitimacy of representative /electoral "democracy"/governance (a democracy without the "demos" part) (Geinberg, 2012) and that, ultimately, it does not have exclusively "anthropogenic" causes. Nevertheless, said crisis, as regards its features, is part of all the above major problems (some or even all of them). Indeed, its involvement is not just energetic; particularly insofar as it allows for confusion as to the specific historical and economic causes (and, ultimately, the cultural and value causes) of this generalized and global crisis, that is to say, the market/development and production-orientated "model" itself that was adopted about 250 years ago (Nikolopoulos, 2021, p. 38; Fotopoulos, 2008). This is a model that accompanies (and is fed by) capitalism both at the level of "unlimited" accumulation (with structural ecological/planet and recurrent reversals-crises) and in the field of the formation of a multi-tentacled and uncontrollable "mega-system". A system of production (for production) and consumption (for consumption) that results, through the infamous increase in "productivity", in excessive productivity and consumption, even in countries of the developing world (Wright, 2018, pp. 132-133).

In short, characteristics and aspects that "remain in the shade" actually conceal that the eco-climate crisis is structural and systemic. It is part of the overall — generalized/multidimensional and universal crisis (economic, social, values, political-democratic). It is an integral part of a specific and now monstrous mega-system (Nikolopoulos, 2021). It is not a crisis that came out of the blue, but was the "evolutionary" result of a specific and long-lasting economic, ideological and political process. The eco-climate, as well as the food and health crisis — the pandemic is included in the same field, as consequences of the alteration or/and destruction of the relationship between humans and nature and between humans or other forms of life. Considered as such, the eco-climate crisis therefore requires a radical-systemic approach both per se and in terms of its consequences. It must be repulsed for as it really is: as part of an uncontrollable (or, more correctly, non-controllable, as it is diffuse and invisible), currently multi-tentacle mega system of societal organization with techno-totalitarian characteristics.

3. The Inappropriateness of the Proposed "Green" Corrective Interventions

Nowadays, it is undoubted that the crisis is intensifying rather than being abated. This means that the measures taken prove to be inappropriate, as they operate as technical-administrative patches and the "remedies" are ineffective. We witness the desperate moves of a globalized capital which, mainly in the energy sector, is shifting from one market (e.g., fossil fuels) to others ("green" or greener markets, with new "vehicles" and accessories, e.g., electric cars, etc.).

This transition is taking place following the same (perpetual) growth-focused model that has brought us here. In other words, precisely with the ingredients that, in the name of progress, led us to the present intensifying eco-climate crisis. Once again, we are faced with a strategy that presents many analogies to what happened in the agricultural sector, with the hard-to-forget "green revolution" at the beginning of the decade (which resulted in the notorious intensive, anti-environmental and growth-focused policy with mass use of pesticides, herbicides, chemical fertilizers that prioritized the sector's productive and industrial expansion). In short, a strategy was followed that, in fact, came to confirm Foster's well-known finding of environmental economics and their growing tendency to integrate (in their own view) the natural environment into the market system, regardless of whether the "treatment" becomes more dangerous than the disease itself, regardless of whether the "remedy" becomes more dangerous than the disease itself (Nikolaidis, 2010, p. 76). Even worse, it becomes increasingly more obvious that the (green) new deal of "green" capitalism cannot prevent the further intensification (Lipietz, 2012) of the eco-climate crisis, due to an inherent and endogenous conflict of two different logics and principles/values. On the one hand, the logic of Nature, i.e., resources as use values (and not economic values for the benefit of shareholders) and, on the other, the logic of the new green market with all the additional contradictions that arise and will arise, mainly those of green consumption (Jevons paradox) (Nikolopoulos, 2021, p. 100).

It is eventually proven once more that capitalism and its market may "get greener", but its irrationalism and its economic-social order will remain intact, mainly due to its growth-focused competitiveness. Therefore, it must be globally understood that the ecological balance cannot be maintained in a market economy, which is based on, preaches and promotes — in every way and in every field — competition, growth and human dominance in society which is the source of dominance over nature. The capitalist market economy pits people against each other and society against nature, leading to a global catastrophe.

4. The Anticipated Appropriateness of Cooperative Institutions to Mitigate the Effects of the Eco-Climate Crisis

Therefore, our starting point before further establishing our arguments is that the nature of the crisis is such that the prevailing logic, in terms of the methodology used in the attempt to overcome it, ultimately leads to the prolongation of ineffective "remedy" strategies. However, this achieves nothing more than ending up, in the medium to long term, reproducing the same vicious circles that nurtured the growing eco-climate crisis.

Based on the above, we argue that we are now faced with the demand for a radical, "Copernican" type of shift. A shift that will allow us to see in a different light the ways in which the consequences of this crisis can be contained. In specific, we will subsequently attempt to clarify the new rationalism that needs to reign in such a "direction/paradigm shift" oriented in a post-growth direction. A direction that will help formulate more

favourable conditions, so as to give space to Social and Solidarity Economy (SSE) institutions, enabling them — from better positions — to contribute, positively and steadily, not only to halting the adverse effects of this crisis, but also to building a new eco-society.

This is to the extent that this more global approach, which is compatible with both the priorities of the ecological economics and the values of the SSE, will help to challenge the growth-focused quantitative logic and replace it with a logic that favours better quality (or the "qualitative transformation of growth" (Lowy, 2007, pp. 81-97) with more added value for the same quantity. Indeed, the above have been introduced by some eco(eco)nomists, as a response to the "colonization" of life by economic ideology, and as alternative economic and "accounting" wealth indicators that will take into account the depletion of resources and the flows of energy and matter, as well as the creation of use values in a relational economy of needs. In a more radical direction, it is proposed to replace, inter alia, commercial and market relations by various collaborative and co/self-managed alternative structures at the biosphere/local level.

This specifies the field of osmosis between the radical ecological economy and the SSE. That is, a dynamic field is created where solid steps are taken for a gradual and organized transition to an eco-society, that has economic democracy (democratic planning and social control of economic power at all levels) as a prerequisite, through specific (alternative) milestones - mechanisms (new institutions and new relations), which open up a wide range of possibilities. In the environment of new institutions, the contribution of cooperatives in their various versions (traditional and more modern) acquires new significance. It is therefore cooperatives in general that are asked to contribute their own values and to provide new standards for comparing and reassessing existing values. In other words, they propose a new human quality, a "new sensitivity" (Marcuse, 1978, pp. 58-59) according to Marcuse inspired by values that are constituents of the SSE and cooperation (values such as: solidarity, self-help, equity, direct participatory democracy, self-responsibility, social responsibility, justice) (Klimi-Kaminari & Papageorgiou, 2010, p. 58). Through these they form a field of osmosis and work jointly with other institutions of radical ecological economy inspired by similar values and principles. These are also institutions that, as they are intended precisely to contain the consequences that have been (and are) caused by the eco-climate crisis, will help create the conditions for the gradual elimination of the factors that nurtured and intensified it.

We should also take into account, in this respect, that cooperatives too, which are usually active on a small and local scale, are addressed first and foremost at less integrated population groups. These are groups that are less "trapped" in the dominant system of values and needs (Marcuse, 1978, p. 59) and seek outlets and alternative routes.

In giving form to this course, a process is evolving where the co-shaping of ecological consciousness and practice finds fertile ground to grow, through active participation in cooperatives motivated by mutual aid. The existence of symbiotic cooperation at all levels is equally dependent to the co-creation of a mutual aid community (Clark, 1992, p. 66). In the words of John Clark, the outcome and success of such ventures presupposes "a new ecological sensitivity that permeates all aspects of our social existence" (Clark, 1992, p. 69).

In this way, for example, cooperatives that seek and offer local alternatives in the energy sector, through the utilization of solar and wind power, reintroduce the sun and the wind in the field of technology to meet the needs of local communities. They revive in real life the presence of forgotten means of survival and renew the bond between man and Nature (Bookchin, 1979, p. 761). By making this close relationship between man and nature tangible, in a way that gives a sense of uniqueness to each specific local community through its own particularities, this upgraded relationship acquires a truly ecological content.

In this context, cooperatives also implement the seventh principle of the ICA with regard to concern for the community. Cooperatives thus work for the sustainable development of communities and, as stressed, because of their strong cohesive relationship with their members, they also acquire close social ties with the communities where these partners live and develop their activities. According to an I.C.A. report, cooperatives assume and undertake "...the responsibility to work steadily to protect the environment of these communities" (Mariadis, 2012, p. 307).

However, cooperatives can also contribute to the realization of the above (7^{th}) principle of the ICA, in another respect (Laidlaw, 1994, pp. 96-97). In particular, they can offer the creation of new relation networks in urban areas of mainly loose ties, beyond those of mere proximity. These are networks that, using the cooperative principle of self-(and mutual-)aid as cohesive substance, will help create and strength diverse social ties. For example, through the establishment of cooperatives providing a variety of necessary services (care of the elderly, infants, patients, but also dry cleaners, repairs, appliances, etc.) a distinct cooperative economy is networked at a micro level. An economy capable of helping reduce dependence on cars, as neighbours (members and non-members alike) will find and cover several of their everyday needs in close proximity. Thus, as Laidlaw points out, it will be as if a village has been built inside the city where individuals will be interconnected but will also "… feel 'tied' to it" (Laidlaw, 1994, p. 97).

Similar types of cooperatives, supported by cooperative communal gardens, energy cooperatives, etc., can be "technical" symbols of a new identity for citizens who have been deprived of identity and of a fuller sense of adequacy, which they have lost, as they are being treated simply as customers of faceless mega-businesses (Bookchin, 1991, p. 130).

Let us now focus on another, more specific, field where we will highlight two specific categories of cooperative institutions, which in a more direct way are called upon to address some of the effects of the eco-climate crisis.

We will refer mainly to energy cooperatives and secondly to rehabilitation and support cooperatives for climate or environmental refugees and migrants.

5. Energy Cooperatives

There are many human activities that use energy derived from the combustion of fossil fuels (oil, gas, natural gas). These include the process of producing electricity, which, despite more systematic efforts over the last few decades, in many parts of the world continues to rely on such combustion to meet demand, leading to an increase in carbon dioxide concentrations. It is rightly considered to be one of the causes of the climate crisis (WWF, 2022).

In Europe too, although the contribution of RES, as a percentage of the fuel mix, is significantly improving, the dependence on fossil fuels continues (as has been tragically demonstrated in recent months).

According to the European Environment Agency (2021) the questions raised and examined in relation to energy environmental indicators in order to formulate and take the required policy measures include the following: a) Do the measures taken contribute to reducing the impact of energy use and production on the environment? b) Does the participation of the least polluting fuels in the final mix prevail over that of the most harmful? c) Does and to what extent the speed of implementation and expansion of renewable energy technologies increase?

In this paper we argue that such questions can be answered in a meaningful way insofar as they are addressed through a multifaceted approach. We appreciate that such an approach can be achieved by adopting a way of examining the above-mentioned issues similar to that adopted by political ecology (Carbou, 2021, pp. 36-47) and the ecological economy (Jany-Catrice & Meda, 2019), but combined with the logic that governs the social experiments attempted by the SSE (Social and Solidarity Economy).

In this context, it is understood that the expansion of institutions, such as energy cooperatives, could, under certain conditions, prove to be one of the most effective strategies for halting the harmfulness of the eco-climate crisis. This is true to the extent that it offers the most appropriate answers to requests – questions, such as those posed by the European Environment Agency (see above).

Indeed, cooperatives active in the energy field, as autonomous and voluntary associations of persons, can, with the mutual aid of their members, contribute to the satisfaction of the energy needs of their members and their local community, offering optimal conditions for sustainability, environmental respect and viability, while also contributing in the long term to the creation of a wider system of clean energy supply (Damasiotis, 2017). These goals are pursued and achieved through a co-owned and democratically organized, managed and operating business structure of social and solidarity economy.

In specific, energy cooperatives and communities inspired by the principles and values of the SSE:

1) Are distinguished by strong constitutive features of the cooperative identity, found in them and their members. In this way their members: a) can, in response to the cooperative value of self-help, cover their energy needs with their own forces, b) are, at the same time, apart from owners and managers, also users of the cooperative's services and, in response to the cooperative value of self-responsibility, have the primary or/and sole responsibility to ensure their dedication to the statutory purposes and the proper functioning of the specific legal entity, c) form, with their active participation and belief in the value of solidarity, a strong common understanding that there is an interaction between the interest of each individual and the well-being of the other members of the community where they live, while they are consequently possessed by a sense of indebtedness to future generations (solidarity between generations) (Kitsikopoulos, Proka, Savvakis, Tsoutsos, INavaro & Rodriguez, 2019, p. 47).

2) Are (also) active in projects for the production, self-consumption and storage of thermal and cooling energy from RES stations. Among other things, they produce energy using solar panels (through small hydroelectric installations) and by installing and using wind turbines (through the operation of biogas plants). The immediate goal is to derive direct or indirect benefits from these activities for their members and the communities where they live, in ways that will protect or upgrade the environment. This goal is recorded first and foremost in the context of national policies which, as in Greece for instance, aim to "...shape the national energy mix, ensure security of energy supply and address climate change" (Explanatory Report, 2018).

However, the strategic objective of energy cooperatives is to contribute to the gradual change of the power supply system through the production of energy from renewable sources, in a way that guarantees respect for the environment and the principles of sustainability (Iglesias, 2017).

3) Promote the consolidation of the need for an energy democracy and contribute to addressing energy poverty. In particular, based on the priority for energy democracy, which mobilizes the forces of radical ecology, there are efforts internationally to connect and implement the transition to a new renewable energy production system with terms of energy justice. To the extent that energy will be treated as a public good, energy cooperatives will be preferred as the structures that are, by nature, the most appropriate not only to make energy accessible,

even to the most vulnerable, but also to implement this, creating and ensuring the conditions and conditions for equality and justice (Bee Green, Smart Rue, 2021, pp. 5-6).

Consequently, in the direction of such prospect, these cooperatives assume the task of helping energy-poor consumers either with cheaper tariffs or other appropriate tools and mechanisms to support them (Energy cities, 2022).

Note that such vulnerable groups, who usually have difficult access to energy sources and do not have adequate coverage of their needs, are (except people with low income) single-parent families, the unemployed and the elderly (people aged 65 or over) (Bee Green, Smart Rueop, 2021, p. 29). If these citizens are not treated and cared for properly, they will be led to solutions which oppose — if not cancel altogether — policies for the reduction of carbon emissions. It is therefore considered that, to the extent that it is imperative to provide all social strata with adequate energy services, the role of these cooperatives, especially in cooperation with local government, could prove important and act as a deterrent against phenomena that aggravate the climate crisis. Both in Greece and internationally, good practices are already recorded, showing the awareness regarding the seriousness of this issue.

These examples include cases where municipalities install photovoltaic systems in public buildings (school roofs, sheds of stadiums and other sports facilities, etc.) for self-consumption or/and for distributing the energy produced to vulnerable households (Energy cities, 2022). In several cases these actions involve cooperatives which are either granted the right of establishment in exchange for the preferential treatment of vulnerable groups (e.g., shares that the municipality grants free of charge to partners coming from these groups or, sometimes (in places like Greece where the relevant legislation allows it) the participation of the legal person of the Municipality in the energy cooperative(s) (Energy cities, 2021).

Below, we will further elaborate on these cooperation relationships between local authorities and energy cooperatives.

4) Seek and open up areas of synergies with Local Authorities (Communities/Municipalities & Regions) to jointly implement energy and climate objectives. They do this either by facilitating the work of local Municipalities, which have made commitments to achieve such objectives, or by accepting as their members the Municipalities or other Local Authorities that join cooperative actions that are already in progress and promote the energy transition (Energy cities, 2021).

Such synergies were particularly promoted by the general climate created after the reassignment of previously privatized (in the 1980s and 1990s) water supply systems to local governments. This climate apparently encouraged initiatives to also treat energy as a public good which should, as such, be treated in the same way (see: rekindling of the interest and movements to bring energy under public and social control) (Bee Green, Smart Rue, 2021, pp. 5-6).

Note that an important incentive for the establishment of energy cooperatives was the concession, free of charge or at very low (almost symbolic) rents, of public areas and land either for the installation of panels or other equipment or for the installation of wind farms, wind turbines, etc. Such synergies usually result in mutual benefit as, apart from the fact that the surpluses created are reinvested in the local community, the cooperatives also help with the implementation of projects that include energy savings etc. in favour of the local community (C4S "Energy Partnerships, 2022). On the other hand, cooperatives also derive significant benefits as they usually enjoy preferential treatment, e.g., through long-term contracts with Municipalities for the purchase of the energy produced. As these contracts also serve public facilities of high energy consumption, they provide cooperatives

with investment security and a stable revenue stream (Energy cities, 2021). At the same time, the attraction and subscription of new members in cooperatives that cooperate with Municipalities becomes easier, since the participation and presence of Municipalities and other Local Authorities offers reliability to these projects (C4S Energy Partnerships, 2022). Moreover, the increasing participation of citizens-members, when it becomes more active and conscious, through "energy literacy" (see below), guarantees that the risks of projects deviating to concepts that are incompatible with the value content of the Social and Solidarity Economy (SSE) will be avoided.

5) Participate in efforts to diffuse energy literacy and, more generally, to cultivate and form an ecological consciousness. In this way, they contribute, even indirectly, to the gradual alleviation of some of the effects of the eco-climate crisis.

More specifically, cooperative members, through their active participation in the processes of establishing and realizing the objectives of the cooperative, acquire substantial familiarity with the "field" of energy. At the same time, they are forced to be more systematically interested in Nature and the role and the role of energy so that they can form an opinion on the problems set before them. Among the principles known from bibliography to govern energy literacy, we will select and elaborate on the following three which we consider to be of particular interest, as part of the subject of this paper. These are: a) the principle of "environmental burden", b) the principle of "hidden sources of energy" and c) the principle of "common unit of measurement" (Sarris, 2015). The first highlights the fact that, on a controlled scale, energy production itself constitutes the absorption of resources from the environment in variable degrees (from almost zero or minimal, e.g., wind energy, to the maximum degree, which is associated with forms of energy production that bring, over time, irreversible results and environmental disasters, e.g., fossil fuels). The second principle deciphers the knowledge regarding the existence of quantities and forms of energy, which, once we learn their properties and behaviour and without being immediately perceived, can be arranged in a way that has significant expected impact on the quality of our lives (e.g., knowledge about insulations, energy loss, friction, etc.). Through the third principle we acquire the knowledge and understand that (and how) modern science and technology allow us, in a "tangible" way, to have easy and direct information regarding the respective energy flows and behave accordingly (Sarris, 2015).

In other words, the more actively citizens are involved in energy matters, the more they understand the energy system as a whole.

So, what is perceived through energy literacy, is not limited to energy, but has to do, in general, with established knowledge on matters related to energy and the environment. Which, eventually, refers to the relationship between man and nature. It also refers to the fact that this (energy) literacy should not be perceived as something separate and independent of environmental literacy. This is true to the extent that human interaction on the one hand takes place within "nature" and, on the other, reaffirms that we are nature. In this way there is a continuity between the mutual influence among citizens in society and the interaction between people and nature. In essence, this means that there is now the need for parallel systematization of environmental literacy in general. Much more so when this literacy is called upon to contribute to the formation of ecologically conscious citizens "… with active participation in society and different attitudes and behaviours towards the environment" (Second Chance School (SDE) of Preveza, 2022). Consequently, through it, real meaning is given to the formation of ecological consciousness, since the transformation of human society (through ecological consciousness and practice) is dependent on the transformation of modes (and patterns) of interaction among men and the rest of nature (Clark, 1992, p. 65). In this context, it is accepted (Mandrikas, 2015, p. 30). that the environmentally aware citizen, among other things, must: a) Know the extent and the ways in which the natural environment is subject to

harmful modifications due to anthropogenic activities and become aware of the upcoming changes in terms of use of natural resources. b) Possess skills that will allow them to make the best choices among more alternatives and bring about, during their implementation, the corrective changes required by the changing circumstances, utilizing cooperative and collective action and c) Conquer the mental capabilities to search and identify "... the causes rather than the symptoms in dysfunctional systems" (Mandrikas, 2015, p. 31).

6. Cooperatives for the Rehabilitation of Climate or Environmental Refugees and Migrants

In addition to the above-mentioned effects of the eco-climate crisis and resulting from the disorderly management of the "energy issue", huge problems are created by the same crisis, which contribute and lead to large population movements. Movements that are already taking place and are expected to increase much more, especially in the coming decades.

More specifically, we refer to extensive population movements caused by natural disasters, environmental degradation, desertification and, consequently, the reduction of agricultural production, food stocks, etc. (Voutirakis, 2022). The refugees and migrants (Kostopoulou, 2020, pp. 18-20), resulting from the above are accordingly distinguished to: a) those who are forced to move by natural disasters, floods, droughts, landslides, tropical cyclones, etc., and therefore are affected in a sudden and immediate way, b) those who move due to environmental degradation (desertification, reduction of soil productivity or consequences of environmental degradation, such as the rise of the sea level, i.e. conditions that are gradually changing, meaning that those who are affected by them are gradually migrating (this is why, in this case, we mainly refer to environmental migrants) (Tsoumparis, 2010, pp. 46-48).

Such phenomena, directly or indirectly linked to the eco-climate crisis, which alter the demographic composition and the economic structure in outflow countries of refugees and migrants but also in their host countries, need to be treated accordingly. The policies elaborated as part of the solutions required must also allow for actions stemming from the institutional features of social and solidarity economy and well-intended social entrepreneurship (Chrysogelos, 2022, pp. 39-40).

This is true to the extent that it is now widely accepted that these institutions, at an international level, especially in times of crisis, either by acting to supplement pre-existing institutions or by self-reliant organization and expansion, have much to offer to the survival and rehabilitation of socially marginalized and disadvantaged populations, such as refugees and immigrants of all kinds (Explanatory Report Bill, 2016, p. 3). In other words, to phenomena that allow for a multi-faceted approach, as they touch on critical (economic, social, political, demographic, etc.) parameters. However, if even one of these parameters becomes uncontrollable in these phenomena, it may fuel their threatening swelling in the coming decades.

Therefore, regardless of the expected peaks and lows that will be recorded as this migration and refugee phenomenon evolves, we need to have long-term strategic planning and inventing or "reinvent" regulatory mechanisms to manage their indirect and direct consequences.

The task of regulating such flows becomes more complex, since, in addition to preventing or mitigating adverse effects of the flows per se, it must also take into account of the possibilities that arise. Possibilities both for the host societies and for the social formations from which these flows originate. In this broader aspect, the regulatory mechanisms must be motivated by a new kind of "positive sociotropism" that will operate in parallel,

but with increased significance, against the state-driven and market-driven regulation models of the past. Such an approach, as well as the institutional framework that will govern it, must entail an upgraded and more active role for civil society organizations. A role related to the utilization of the "latent" potential that is also included in the organizations of the Cooperative Social and Solidarity Economy (SSE), which is related to the ability of such institutions to mobilize resources that other sectors cannot mobilize. These are resources related to solidarity, volunteering, social bonding and the "proximity economy" that characterize local networks and communities (Georgmas, pp. 201-210). We argue, therefore, that when we have to deal with the aftermath of crises of a broader nature, such as the eco-climate crisis, institutions that are already "worn out" as part of the existing dominant ways of regulating the crisis prove to be ineffective. All the more so as these ways, even if they are not in direct and causal connection with the resulting imbalances, are not "without blame" nor contribute to overcoming crises such as the eco-climate one, which are now also experienced as "social organization crises" (Vathi-Sarava & Kapogiannis, 2021, pp. 964-971). As a result, the most urgent demand is for other, parallel or complementary types of regulation and "social organization", beyond the state-driven and the market-driven, that can lead to the creation of a new equilibrium.

In this context, cooperatives are considered appropriate to contribute balancing functions to at least two key points of imbalance, which are linked to the management of migration/refugee flows resulting from the eco-climate crisis. One concerns the labour market and the other the sphere of distribution (Vathi & Kapogiannis, 2016, p. 36; Georgmas, n.d., pp. 201-210).

Taking into account the major challenges of the 21st century, Laidlaw stressed, just before the turn of the century, the importance of worker cooperatives and the expectations of their new roles. Indeed, today, the active flows of this kind and the ever-increasing labour-power supply (as a result of such flows), seem to verify his prognoses for the upcoming massive changes in the organization of production relations. As Laidlaw had aptly put it, the quintessence of change will be that, while until recently the capital employed labour, we are moving on to an era where labour will employ the capital! (Laidlaw, 1994, p. 86).

The institution that makes this possible is none other than the workers' cooperative. It is through such cooperatives that labour, as a factor of production, offered in cases of influx of moving populations in abundance, can exploit, through cooperatives, the capital also "… by social mobilization and utilization of unexploited public and private property" (Explanatory Report Bill, 2016, p. 3).

Laidlaw lists a variety of activities where these cooperatives can thrive. This variety extends from the production of clothing, furniture and electrical appliances to activity in repairs to construction (Laidlaw, op. cit.:87). We would also add, building homes for the homeless as well as synergistic actions to ensure food through cooperative bakery and livestock farming (TATORT Kurdistan, 2015, pp. 33, 38).

In other words, the expected proliferation of situations as the one we are dealing with here, which resemble situations of systems lacking equilibrium, create opportunities and needs that incubate institutional innovation. As Restakis (2015) has been observed, the level of innovation of Cooperative Social and Solidarity Economy (SSE) structures that emerged in times of crisis is impressive. The same also applies to their qualitative upgrading of such institutional formations, to the extent that they often reach such a degree of maturity that brings about a new debate, this time for their further promotion. That is, their promotion to more complex forms of organization as well as to different levels of cooperation" (Restakis, 2015).

Finally, the most remarkable aspect is that such worker cooperatives do not just offer employment and professional scope to vulnerable groups but, as underlined, "(they) approach an internal necessity that is even

deeper than employment and the sense of ownership, that is, they offer the connection between human personality and work" (Laidlaw, 1994).

All the above show that a very wide range of possibilities opens up for cooperatives regarding, first, the containment of the eco-climate crisis impact and, then, the establishment of an eco-community and eco-society. In this field, cooperatives are appropriate to contribute by promoting, as has already been said, a value system that is different from the dominant and is more compatible with the institutions favoured by a radical post-growth ecological economy, and by changing the economic mindset of the citizens as consumers and producers. Indeed, this contribution is expressed in a way that facilitates a type of mild economic activity, which prioritizes the coverage of the actual needs of the cooperative citizens and of the communities where they live (economy of needs and relations). At the same time, during this evolutionary process, the creation of balancing dynamics is sought that will allow small and medium-sized "entrepreneurs" — members of cooperative enterprises (new, urban and non-urban, cooperatives) to act as a counterweight to the market dominating, highly competitive, mega-enterprises. These dynamics are also derived from the constantly strengthening negotiating power, which is part of a post-growth direction that cooperatives are moving towards, and which will allow them to act as a deterrent to the dynamics of factors that are linked to and fuel the effects of the eco-climate crisis.

In short, in a theoretical framework such as the one described above, we attempted to answer whether cooperatives can contribute to the containment of the effects of the eco-climate crisis. More specifically, in what differentiated (alternative to the ones followed so far) ways can cooperatives contribute to this direction. In the attempt to investigate and answer the question:

1) We highlighted as privileged space the space that includes the element of locality, combined with the general addressing of the cooperatives under consideration to meet local needs and promote an economy of needs and relations.
2) We supported and clarified how these cooperatives (energy, worker/rehabilitation of climate or environmental refugees and migrants), on the one hand are compatible with a mild economic activity that unfolds on a micro scale (on a human scale) and on the other hand are oriented towards the production of use values.
3) We emphasized the need to devise and maintain special rules for the management of surpluses and/or profits.

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