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Ecological Economics and the Social and Solidarity Economy

Dražen Šimleša
Institute of Social Science Ivo Pilar

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Abstract

Ecological economics is a multidisciplinary scientific concept which emphasizes the interdependence of human and natural systems, with the environment providing the material base of economic activity . It offers a different perspective from mainstream environmental economics and provides instruments for addressing concrete problems or challenges relating to governing economic activity in a way that promotes human well-being, sustainability, and justice. Based on an approach of unique and far-reaching system thinking, it examines the economy's impact on our societies and, generally speaking, life on our planet. Proposing an alternative way to manage natural resources in a sustainable way, in local contexts, both ecological economics and the social and solidarity economy (SSE) are complementary, and their insights contribute to the development of a new theory and practice based on alternative cosmologies and systems of social construction.

Keywords: ecological economics; system view of life; sustainability; planetary boundaries; growth; wellbeing

1. Early days and conceptualization

The origins of ecological economics can be dated back to the debate on the political philosophy of the 19th century, or even before. However, it only began to be accepted as a field of study, or an academic subdiscipline in economics influencing academic debate, during and after the interwar period. As a countermovement to mainstream economics, such as neoclassical economics or Keynesian economics, which neglected natural resources and environmental concerns, ecological concerns emerged which contributed to the formation of ecological economics. Seminal works such as Frederick Soddy's 'Wealth, Virtual Wealth and Debt' (1926), Karl Polanyi's 'Great Transformation' (1944) and John Kenneth Galbraith's 'The Affluent Society' (1958) contributed to forming the concepts and theories of ecological economics. All these works warned about a malfunction in the design of time economy, advocating for changes that would secure more fairness and wellbeing in societies. However, such works all focused on the analysis of the economy and didn't make a clear connection between the economy and the ecosystems, which became the basis of ecological economics. One that led in that direction was Kenneth E. Boulding with his famous presentation of planet Earth as a spaceship with limited area and resources. Highlighting the connection between the economy and the environmental ecosystem in the essay 'The Economics of the Coming Spaceship Earth' (1966), he interpreted economy within an ecological system by describing the transition from the 'frontier economics' of the past, where growth in human welfare meant growth in material consumption, to the 'spaceship economics' of the future. This form of economics was fundamentally different from those of the past, with growth in welfare no longer fuelled by growth in material consumption. The author that had an incomparable effect on the later framework and development of ecological economics was Nicolas Georgescu-Roegen. In his seminal book 'The Entropy Law and the Economic Process' (1971), he positioned himself as a prominent critic of the growth paradigm, and a strong proponent of emphasizing Earth's carrying capacity as the crucial variable in any economic theory and practice. Georgescu-Roegen's theories had a huge influence on numerous ecological economics thinkers and researchers. Among these, Herman Daly has made a significant contribution to the development of ecological economics by (re)integrating nature into economics and elaborating the concept of a steady-state economy since the 1970s. According to him, the human economy is an open subsystem embedded in a finite natural environment of scarce resources and fragile ecosystems. Therefore the human economy which is a finite non-growing system should, at some point, become non-growing and start to maintain itself in a steady state. This steady-state economy is composed of a constant stock of physical wealth (capital), a constant stock of people (population), and a flow of natural resources that maintain these two stocks. In this steady-state economy, the durabilities of two stocks should be maximized, since a more durable stock of physical wealth demands a smaller flow of natural resources, and a more durable population means a higher life expectancy, maintained by a low birth rate and an equally low death rate.

Many economists, such as Georgescu-Roegen and Daly, who took alternative approaches to dominant neoclassical and Keynesian economics, contributed to establishing ecological economics as a unique sub-discipline within economics. They brought into economics a new view about the issues intersecting economy and ecology, such as limits to growth, weak vs. deep sustainability, Earth's ecosystem services, balance, etc. After several meetings of early ecological economics pioneers,

the International Society for Ecological Economics (ISEE) was founded in 1989, publishing the Journal of Ecological Economics.

2. Ecological economics as a transdiscipline

It is often emphasized that ecological economics is not a sub-discipline of economics, ecology or any other academic discipline. It is not a purely academic field either. It takes, therefore, a transdisciplinary approach to understand the world, which exists as a complex, interdependent and continually evolving system in which the economy is embedded within society, which is embedded within nature. Scholars and practitioners who consider ecological economics as a transdisciplinary approach generally characterize its goals, world views and methodology (Costanza et al. 2020). For them, the overarching goal of ecological economics is the sustainable well-being of humankind and all other forms of nature, with three broad sub-goals of sustainable scale, fair distribution, and efficient allocation of resources. These overarching goals of ecological economics resonate with the objectives of SSE, in particular the objectives associated with equal distribution of surpluses and sustainable local resource management. The world view of ecological economics includes an interdependent, co-evolving, complex system perspective of economies embedded in societies, which are embedded within nature. The perspective of economies embedded in societies is also central to the ideas underpinning the SSE. The methodology emphasizes intelligent pluralism and integration across disciplines. This methodological feature is partly based on the importance of understanding and solving complex and evolving world demands, moving beyond disciplinary boundaries and the so-called “the argument culture”, in which problems or discussions are cast as polar opposites (such as zero-sum, win-lose, either-or dichotomy). The methodology manifests that understanding or managing the complex, highly interdependent system that human beings now inhabit requires the transcendence of both disciplinary and academic boundaries.

To solve the problems of wellbeing, material standards of living, social, cultural and community interactions and institutions, and ecological life-support systems, ecological economics integrates three basic elements: tools for analysis and synthesis, promoting system thinking (e.g. systems analysis and modelling) in particular; a vision of how human beings would like to exist; and implementation which includes concrete and specific institutions, policies, and strategies that can realize the vision (Costanza et al. 2020). System thinking is highly important for ecological economics because it is grounded in the science-based “system view of life”, meaning thinking in terms of relationships, patterns, and context (Capra and Luisi 2014).

Ecological economics is also defined as the “union of economics and ecology, with the economy conceived as a subsystem of the Earth ecosystem that is sustained by a metabolic flow or “throughput” from and back to the larger system“. This elucidates the meaning of embedded economy in ecological economics (Daly and Farley 2004, 431). Another definition explains ecological economics as “the study of the relationships between human housekeeping and nature’s housekeeping. Put another way, it is about the interactions between economic systems and ecological systems” (Common and Stagl 2005, 1). Linked to the Greek root, ‘oikos’ (literally meaning house, but often meant as the world) shared by both ecology and economics, it highlights ecological economics’ interests in the management of the world in an integrated way.

The following summary shows crucial aspects of ecological economics discussed above (Costanza et al. 2020) :

- It is a transdisciplinary concept and discipline receiving inputs from many fields, where all involved appreciate the existence of economy as a subsystem of the environment (and society of course), and the requirement for us as a species to be aware, respectful and work within the limits of Earth's carrying capacity. However, divergences exist regarding how progression is made from this initial appreciation
- The interrelations and interconnectedness between the human system and the natural system are complex. Ecological economics is here to help us understand these ties and their impact on us
- The ultimate goal of ecological economics is mutually enhancing the well-being of all life on our planet.

3. Ecological economics and sustainability

Since the 1970s, ecological economics has grown increasingly more prominent in the academic and policy discourse, as the world has become more and more aware of the dangerous effects and long-term devastation to the environment that the modern economy gives rise to. For example, concerns have been increasing regarding environmental degradation and pollution, greenhouse effects and changes in climate, biodiversity losses, resource depletion, population growth, energy conflicts and wars, welfare state crisis, and social polarization.

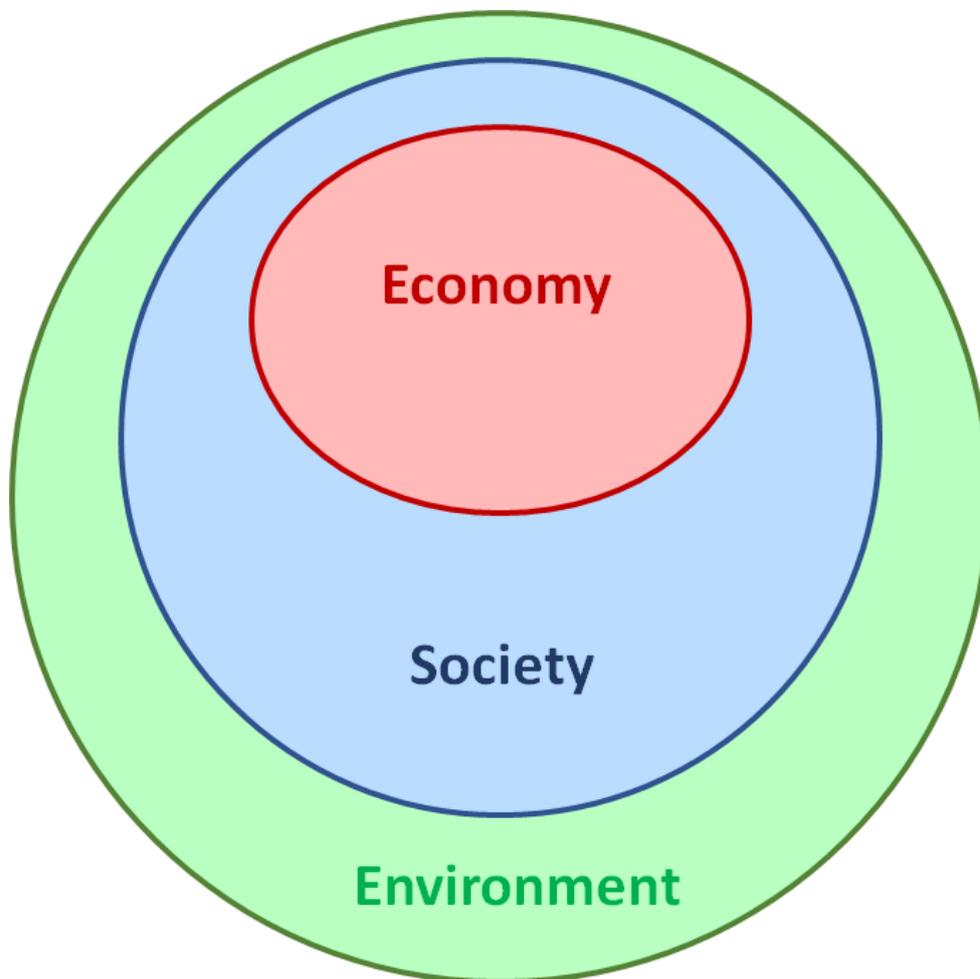
In this context, it is interesting to note that ecological economics has evolved in parallel with important discourses on the environment and society, which have led to the emergence of the concept of sustainable development. The major contributions to these discourses include 'The Limits to Growth' report (Meadows et al. 1972) and the subsequent quest for "global equilibrium", to the World Commission on Environment and Development (WCED), and the 'Our Common Future' report (1987), which defined the concept of sustainable development. The latter document has often been labelled as the 'Brundtland Report', and the concept of sustainable development was explained as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987, 40). The concept of sustainable development resonated with the values of those advocating for ecological economics. Ecological economics seemed to provide the best theoretical and operative tool to achieve sustainable development. Although the importance of sustainable development was widely accepted at the global level, policies and strategies for development were still shaped by the goal of economic growth.

The 'Caring for the Earth – A Strategy for Sustainable Living' report co-produced by UNEP, IUCN, and WWF in 1991 used the definition of sustainable development that was much more aligned with the theories and concepts of ecological economics: "Sustainable development improving the quality of human life while living within the carrying capacity of supporting ecosystems" (IUCN, UNEP and WWF 1991, 10).

As the discourse on sustainable development became more prominent in international discourses, ecological economics also elaborated its views, concepts and theories on sustainable development. Notable are the discussions on the concept of the nested

sustainability system or the so-called 'Levett's model' of sustainability (Chambers, Simmons and Wackernagel 2004) (see Figure 8.1). This new concept puts aside the outdated, and even misleading, visualization of sustainable development as three equal-sized circles representing the three pillars (environment, economy and society), in which the overlapped space indicates sustainable development, being expanded on all three circles. In reality, however, these three pillars are not equally represented and do not hold equal power in today's political and economic system. Rather more accurately, year by year the economic circles have started to expand and spread over the environmental and societal circles. A nested sustainability system follows one of the main principles of ecological economics - observing the human economy as a subsystem of ecology and not as something that should subordinate other systems to itself. This view still has economic, societal, and environmental components, but these pillars are positioned within nested circles, with the economy being central and shaped by the needs for wellbeing and good quality of living within society. These needs are encircled by the limits of the world's ecosystem, what is today called the nine planetary boundaries (Rockström et al. 2009) (see Figure 8.2).

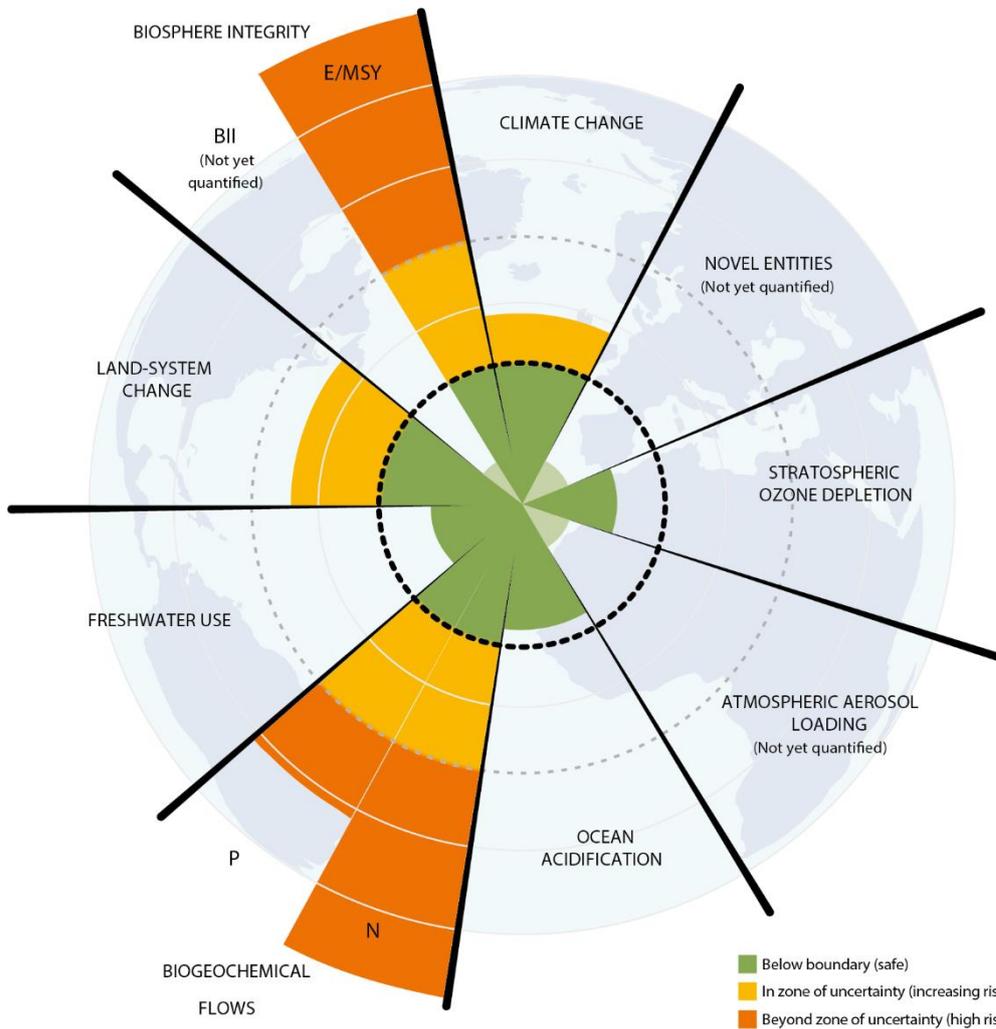
Figure 8.1: Nested model of sustainability



Source:

https://sustainabilitypopulareducation.files.wordpress.com/2014/07/nested_sustainability-v2.gif

Figure 8.2: Planetary boundaries



Source: <https://www.stockholmresilience.org/research/planetary-boundaries.html>

Observing this nested model of sustainability, ecological economics aims to address all three pillars of sustainable development at once. In this framework, the environment regards system-carrying capacity and resilience; society regards the distribution of wealth and rights, social capital, and coevolving preferences; and the economy regards the efficient allocation of resources, especially natural capital and ecosystem services (Costanza et al. 2020).

With its focus on both environmental limits and the unique value of nature and ecosystems, ecological economics paved the way for the profiling of a deep or strong sustainability approach vs. a weak sustainability approach. According to Jérôme Pelenc (2015), a weak sustainability approach postulates the substitutability of natural ecosystems or resources. It argues that with technological improvements and profit gained from the economy, natural ecosystems or resources can be compensated. Based on the theories and concepts of ecological economics, strong sustainability considers natural ecosystems as a set of complex systems that are inseparable from the “web of life” (Capra 1997) on our planet. This idea of strong sustainability is well practised in various SSE organizations and enterprises (SSEOs), in particular those which have emerged from grassroots, indigenous and community-based movements to develop a sustainable model to manage the commons (see the entry “The commons

and SSE” and “Food & agricultural sector and SSE”). The point of departure and principles these SSEOs are based upon are a commitment to the ethical organization of society and all of its activities, meeting the needs of all people in the community and enabling provision for the wellbeing of future generations (Barkin 2018).

Additionally, the importance and impact of the natural ecosystem were researched and verified by the ‘Millenium Ecosystem Assessment’ (2005). The report was the result of scientific research that presented conditions and trends in the global ecosystems and it concluded that 15 out of 24 planet ecosystem services had already been significantly degraded or were close to the tipping point. It also highlighted four ecosystem services crucial to the quality of life: supporting; provisioning; regulating; and cultural. According to the ‘Millennium Ecosystem Assessment’ (2005), these four ecosystem services with different strengths correspond to the main components of wellbeing, including the accessibility of basic materials for a good life, health, security, and good social relations. The authors of this research conclude that the condition of Earth's ecosystem and the ability to run a standard set of services is crucial for the human opportunity for freedom of choice and action. Without a good and balanced environment, there is no good and balanced society, and, in turn, there is no good and balanced economy. This mirrors the interconnected levels of the nested concept of sustainability. From awareness of ecosystem services, some went further and started to research the economic value of nature and its services. According to this research, the amount was estimated to be in the range 16–54 trillion per year, much more than the global gross national product at that time (Costanza et al. 1997). The intention of calculating the value of nature was to highlight the importance and preciousness of ecosystems and discover to what extent the value of nature exceeds what the economy produces, even in terms of economic standards. This research trend continued within studies such as ‘The Economics of Ecosystems and Biodiversity; (TEEB) from 2010, which also highlighted the scale of economic losses as a result of biodiversity degradation.

However, some criticized this approach in ecological economics as the path that “has served to blur the meaning of ecological economics” (Brown and Timmerman 2015) or as an “infiltration of inappropriate mainstream economic approaches” (Kish and Farley 2021). The point is that it is not possible to measure the real or actual value of nature or ecosystems since some of its characteristics are not measurable and can't be presented in monetary terms, being much deeper and broader. In this vein, some authors also pointed out that “ecosystem services should not be defined as nature's benefits to people, but rather as fund-services that benefit all members of the biotic community, not simply humans” (Washington 2020, 37). This debate has some similarities to the debate on the monetization of social values created by the SSE, which indicates the cross-fertilization of ecological economics and SSE studies (see the entry “Statistical measurement of the SSE”).

Others viewed this as methodological and content-oriented pluralism within the whole ecological economics. For instance, Clive Spash identifies three schools of thought in ecological economics: mainstream new resource economists who mostly focus on the inclusion of ecological costs into economic decisions; new environmental pragmatists that embrace any new theory or concept; and radical social-ecological economists who focus on alternatives to capitalism and recommend transformative social measures (Kish and Farley 2021, 3). According to Spash, only the last school is based on the key concepts and theories of ecological economics.

4. Critique of the growth fetish

Ecological economics is strongly critical of the growth imperative or even growth addiction of the modern economy. The modern economy pursues linear, ever-rising growth, without any limits or boundaries. This is in direct conflict with ecosystem principles and services and with the design and operation of a “web of life” on our planet (Daly and Farley 2004, 226). Notable researchers criticizing growth include Peter Victor and Tim Jackson (Victor 2008, Jackson 2009), both being ahead of their time.

The idea underpinning such a degrowth movement is Georgescu-Roegen’s “declining state” (as opposite to Daly’s steady-state) of the late 1970s. The movement originated in France (Muraca and Schmelzer 2017) with the name translating into *décroissance* (decay) in French. Degrowth is defined as “a socially sustainable and equitable reduction (and stabilization) in society’s throughput, where throughput denotes the materials and energy a society extracts, processes, transports and distributes, to consume and return back to the environment as waste” (Charonis 2012).

These concepts of degrowth or declining (decay in French) share in common a very critical position toward growth, and even green growth, which has been promoted within the sustainable development framework because growth in whatever form will not bring the absolute decoupling required for ecological economics. Although diverse schools employ these degrowth concepts, sometimes with different meanings and in different contexts, they are all upon the same unique quest for the radical transformation of social institutions and “structural (economic and institutional) and socio-cultural (modes of subjectivation, social imaginary, and colonization of the lifeworld) critique of economic growth as the main point of fixation of late capitalistic societies” (Muraca and Schmelzer 2017, 182-183).

5. Importance of well-being

From the very beginning of the formation period of ecological economics, many authors and researchers emphasized why, instead of the rise in material outputs and resources flow, society should focus on equality, human potential, and life satisfaction. Daly advocated for decreasing pressure on the planet’s ecosystems, in place of an increase in human wellbeing. He also developed new tools for measurement of well-being or quality of life, instead of growth dependent gross domestic product (GDP). Together with John and Clifford Cobb, Daly initiated a new approach in testing the level and scope of development success in some countries with their tool ‘Index of Sustainable Economic Welfare’ (ISEW), later known as the ‘Genuine Progress Indicator’ (GPI). They showed how GDP was constantly rising, but GPI in some countries stagnated and, in many cases, decreased. Along this line, many similar concepts and approaches developed which aimed to count not the amount of money going through the economy, but the effect of that amount on the quality of living and the environment. Since 1990, UNDP has announced its ‘Human Development Index (HDI)’, which still today has regular modifications and improvements. Questioning GDP as an indicator of society’s success became particularly prevalent after the global financial crisis in 2008/2009. It is not by accident that in 2011 the report about ecological footprint was announced with the title: “What happens when an infinite-growth

economy runs into a finite planet?”. From there we can follow the development of the EU-based ‘Quality of Life Index’, the new UN-initiated ‘World Happiness Report’, or even OECD’s ‘Beyond GDP’ program, which has resulted in their ‘Better Life Index’. Although they have a long way to go in matching the values and points of view of ecological economics, they all share the same goal of disconnecting societal progress from linear economic growth. Instead, they aim to measure the sharing of economic gains between more people within services in areas such as education, health, security and safety, gender rights, community bonds and trust, human rights, democracy, and transparency. Although it is not certain how much influence these new concepts, approaches and measurements exert on policy discourses, it is certain that these become prominent in various contexts. For instance, well-being economics provides a basis for a political agenda, and since 2018, countries like Scotland, Iceland and New Zealand (later joined by Finland and Wales, and considered by Canada) expressed their commitment to the collective wellbeing and quality of living for their citizens, instead of focusing on the constant rise of economic growth through the lens of GDP. Many cities also started to use measurement tools based on Kate Raworth’s idea of the ‘Doughnut Economy’ (Raworth 2017). She combined the nine planetary boundaries researched by the Stockholm Resilience Centre with the twelve areas of social foundations that are linked to the quality of living and level of satisfaction/happiness in life. Following Daly’s analyses, Raworth developed a tool for sustainable and resilient adaptation of cities where the use of the outer section of the doughnut (which houses the planetary boundaries) must be limited or shrunk, while the inside part of the doughnut (which houses social foundations) must be spread and made affordable to as many citizens as possible.

6.Link to the SSE

The development of SSE, in particular its goals, world perspectives, and operational norms and practices are very much in line with ecological economics, although both do not have explicit linkages to each other. Ecological economics came from the care for Earth’s ecosystems and natural resources. SSE came from the care for a more just, fair, and solidarity society. However, both concepts are seeking the same goal - a democratic transformation of the economy (Laville 2013).

In terms of world perspectives, as was explained earlier, ecological economics understands the world through the nested system of sustainability, in which the economy is embedded in society, and society is embedded in nature. Similarly, the fundamental premise or idea underpinning SSE is that the economy needs to be re-embedded in society, that is, “in ethical and social norms and democratizing the economy through active citizenship” (Utting, van Dijk and Matheï 2014, 1).

Both ecological economics and SSE also share in common the pursuit of a wide and deep transformation of the social/economic system. Ecological economics pursues transformation since, without transformation, the large ecological footprint and pressure on Earth’s carrying capacity and ecosystem would perpetuate. SSE also explicates that it “pursues the transformation of the economic system from a market-based capitalist model that gives primacy to maximizing private profit and blind growth to that of a radically different and sustainable economic model that places people and the planet at its core” (Nardi 2020, 6). This pursuit of transformation by SSE is not only

underpinned by social concern, but also an ecological concern. For instance, the Intercontinental Network for the Promotion of Social Solidarity Economy (RIPESS Int.) in their 'Global Vision for a Social Solidarity Economy: Convergences and Differences in Concepts, Definitions and Frameworks' report, announced that they advocate for a world in which of rational use of resources and respect for the balance of ecosystems is promoted, with a clear rejection of "neoliberal model of economic growth that threatens life on the planet." (RIPESS 2015, 5).

Some of the most known proponents of ecological economics advocate for measures to address social problems. For instance, they argue for quotas and taxes on basic resources and fossil fuel use, considering affordability for the poor and impoverished; limits to the inequality of society with maximum-minimum income; working weekdays adaptation; reform of international trade agreements and the financial sector in order for people to work in benefit of common good and wellbeing; and free use of cultural/knowledge commons (Daly and Farley 2004, Daly 2010, 2018). Many, if not all, of these actions and policies, are also mentioned within the agenda and campaign manifestos of the SSE.

Conclusion

There is no doubt that our world is in a systemic crisis. Ecological economics is conceptualized as a core solution to this crisis, especially in an environmental capacity. Endless linear economic growth which encapsulates the modern system is neither practical (in the long term, on the planet with limited resources) nor ethical (causing other crises including increases in inequality due to resource wars and debt-dependent societies). Ecological economics provides a solution for the future and can "help society move from an endless growth economy to one in balance with the world that sustains human society" (Washington 2020, 341). SSE also aims to achieve this by assuming responsibility for transitioning to more appropriate production and consumption patterns" to meet the "the needs of all people in the community ..., while also making provision for the well-being of future generations" (Utting, van Dijk and Matheï 2014, 9, Barkin 2018, 374).

The elective affinity between the SSE and ecological economies, and the possibility of cross-fertilization is also found in Karl Polanyi's remark that provides the basis of both ecological economics and the SSE: "the economy needs to be embedded in social relations, but capitalist society is diametrically opposite" (Kish and Farley 2021).

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