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SPECIAL ISSUE ARTICLE

Sustainable entrepreneurship and the Sustainable Development Goals: Community-led initiatives, the social solidarity economy and commons ecologies

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Abstract

The social solidarity economy is an approach to the production and consumption of goods, services and knowledge that promises to address contemporary economic, social and environmental crises more effectively than business as usual. The paper employs the concept of commons ecologies to examine the practices, relationships and interactions among actors and organisations in the social solidarity economy, as well as between them and the mainstream economy, which shape the field and its degree of autonomy in relation to capitalism, through a process defined as boundary commoning. Such process shapes both local and regional commons ecologies, as well as the participation of local and regional actors in wider networks at national, international and global levels. The paper takes a case study-based approach to identify practices, relationships and interactions of commons ecologies in relation to selected community-led initiatives in the UK, Portugal, Brazil and Senegal. Each case study illuminates different qualities of local/regional commons ecologies and their forms of engagement with wider networks. Further, the paper shows that these cases demonstrate how the social solidarity economy may facilitate delivery of the Sustainable Development Goals in a distinctive way. In each case, SSE acts as a vehicle for expressing participants' values and principles consistent with those underlying the SDGs. Local implementation of SDGs is thus an in-built feature of these commons ecologies. The participation of community-led initiatives in international and global networks offers opportunities to learn from local level experiences and successes, potentially strengthening SDG implementation more generally.

KEYWORDS

commons ecologies, community-led initiatives, social solidarity economy, Sustainable Development Goals, sustainable entrepreneurship

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1 | INTRODUCTION

Since their ratification by the UN in 2015, the Sustainable Development Goals (SDGs), 17 in number and covering a wide range of environmental, economic and social concerns, have become the predominant global framework for addressing societal progress towards sustainable prosperity.¹ According to a recent OECD (2019) report, most countries covered are closer to achieving SDGs concerned with ecological sustainability (SDGs 6 [clean water and sanitation]; 7 [affordable and clean energy]; 11 [sustainable cities and communities]; 12 [responsible consumption and production]; 13 [climate action]; and 15 [life on land]) than those related to social justice (SDGs 1 [no poverty]; 2 [zero hunger]; 5 [gender equality]; 10 [reduced inequalities]; and 16 [peace, justice and strong institutions]). This paper examines the scope for balancing the implementation of these differently oriented SDGs through social solidarity economy (henceforth SSE)-based strategies that combine regenerative ecology with the promotion of postgrowth livelihoods based on cooperative approaches to production, commercialisation and consumption (see Ridley-Duff & Bull, 2020). The paper addresses key aspects of this Special Issue involving attention to the substantive rather than definitional qualities of sustainable or regenerative entrepreneurship (Muñoz, Janssen, Nicolopoulou, & Hockerts, 2018) (Roland & Landua, 2013). These issues extend to how to transcend the preoccupation with trade-offs between ecological, social and economic goals that has been typical of research on sustainable entrepreneurship to date (as noted by Muñoz & Cohen, 2018; cf. Schaltegger & Wagner, 2011; Shepherd & Patzelt, 2011; cf. Genus, Iskandarova, & Warburton Brown, 2020).

The empirical focus of the paper is on how particular forms of SSE arising within movements of community-led initiatives (CLIs) for sustainability and social justice facilitate the delivery of SDGs.

The analysis employs the concept of commons ecologies and examines processes of boundary commoning. Both commons ecologies and boundary commoning have received little attention within the research literature to date. The concept of commons ecologies emphasises the self-organised and highly democratic nature of CLIs and the conceptual and practical interdependency among social and ecological outcomes that characterises their work. Commons ecologies are local networks of commons, purposely interconnected so as to promote positive environmental and social outcomes (de Angelis, 2017, p. 22).

The paper employs the concept of commons ecologies to examine the practices, relationships and interactions among actors and organisations in the social and solidarity economy, as well as between them and the mainstream economy, which shape the field and its degree of autonomy in relation to capitalism, through a process defined as boundary commoning. 'Boundary commoning' (de Angelis, 2017) is understood as a synergistic relationship among commons-based enterprises, and between commons-based and

profit-led enterprises, that maximise their autonomy in relation to capitalism's isomorphic pressures. Fundamentally, such commoning 'opens up the boundaries [of commons systems], establishes the connections and sustains commons ecologies [and] could reshape existing institutions from the ground up' (de Angelis, 2017, p. 24).

This paper analyses how the concept of common ecologies brings into focus distinctive features of the ways CLIs mobilise SSE as a vehicle for action both within and between commons. In doing so, the paper advances the argument that CLIs and their SSE activities are not just powerful vehicles for SDG implementation but also offer alternative framings and understandings that can enable improvements in SDG conceptualisation and implementation more widely. Consideration of CLIs and SSE activities based on an appreciation of commons ecologies and boundary commoning can enrich and extend our understanding of sustainable entrepreneurship as collective action and the relevance of local practice to global objectives and initiatives.

The institutionalisation of the SDGs has provided new possibilities for linking the aspirations and activities of CLIs with those of governments and intergovernmental bodies. Based on long-term experience of practical action towards linked environmental and social goals, in some cases over several decades, the actions and achievements of CLIs prefigure, at local and/or regional scales, wider SDG implementation (Penha-Lopes & Henfrey, 2019). Some CLIs have adopted the SDGs as an explicit framework to advance and evaluate preexisting work. However, CLIs often question key structural conditions that are taken for granted in the SDGs as currently articulated and framed. In particular, the pervasive and growing influence of postgrowth thinking (Jackson, 2017; Kallis, 2018; Raworth, 2017) leads many CLIs, and their networks, to problematise the position of economic growth, both as a goal in itself (SDG8) and as a framing condition for achieving other goals (Penha-Lopes & Henfrey, 2019). SSE thus becomes a vehicle through which CLIs seek to explore approaches framed within different social, economic and political assumptions (Asara, Profumi, & Kallis, 2013; Fullerton, 2015). CLIs bring to this great depth of hands-on practical experience developed largely outside of or in isolation from conventional institutions (Penha-Lopes & Henfrey, 2019). Accordingly, the alternative practices, relationships and interactions deployed by CLIs, through SSE, in working towards the SDGs, can be a great source of insights into the relevance of commons ecologies for wider SDG implementation.

2 | LITERATURE REVIEW

An underexplored aspect of the SDGs concerns the interrelationships among their social, economic and ecological dimensions and the implications for the governance of CLIs, namely, in what regards property regimes, task allocation and cross-scale exchanges between initiatives nested in different scales of the social and solidarity economy (Cox, Arnold, & Villamayor Tomás, 2010; Marshall, 2018; Ostrom, 1990; Peredo, Haugh, & McLean, 2018). The argument here is that

¹The UN Sustainable Development Goals are listed on the United Nations website (at <https://sustainabledevelopment.un.org/>).

integration of social, economic and ecological aspects can be promoted by systemic approaches based on creating synergies among different scales of CLIs.

The basic premises of this approach are twofold. First, that commons provide a necessary alternative to market-based and state-led action towards the SDGs because, by nature, they integrate environmental and social concerns (De Angelis, 2017). Second, that SSE's potential to contribute to delivery of the SDGs arises largely because SSE can help commons to exist and flourish despite the predominance, and favouring by governments, of capitalist organisations with limited potential to deliver beneficial social and environmental outcomes (Gibson-Graham, 2006, 2008; Laville, 2016; Mendell, 2009). This approach stands in contrast with much work within sustainable entrepreneurship, which concerns the problem of trade-offs that individual entrepreneurs are supposed to make among competing social, environmental and economic objectives (*op. cit.*). In making this argument, the paper employs commons ecologies as a holding concept that captures the essential general features of CLIs, their distinctive approaches to SSE, and the constructive critique of the SDGs these approaches enact.

Commons, a form of socio-economic organisation in which users self-organise for collective management of shared resources, take diverse forms and are an accepted alternative to market, state and their various hybrids (Ostrom, 1990, 2005). Bollier (2016) considers how the concept of the commons has evolved—and been misunderstood—over a roughly 50-year period. Beginning in 1968, with Hardin's work on the 'tragedy of the commons', commons has been treated as an 'unmanaged resource'. Bollier (2016) notes that what Hardin designates as a 'commons'—the shared pasture that farmers with free access had no incentive to control the amount of grazing done by their cattle—was not a commons at all. Rather, what Hardin was talking about was unmanaged land to which users had open and unlimited access.

Berkes, Feeny, McCay, and Acheson (1989) distinguish between open access, private, communal property and state governance types of rights regimes in which commons resources may be held. One may distinguish open access commons at the centre of Hardin's (1968) 'tragedy' from communal property resources, over which an identified community exercises control over who has access to the common resource and the rules governing and monitoring its use, including penalties for misuse or overuse (Berkes et al., 1989). Elinor Ostrom's (1990, 2005) work, for which she won a Nobel Prize in economics, conceived of commons as 'social institutions'. Here, social relationships play just as important a role in economic systems as impersonal market transactions (Bollier, 2016, p. 6). Recently, there has been growing concern with commons as political engagement, emphasising the practice(s) of 'commoning' within living social systems inhabited by creative agents (Cox et al., 2010; Marshall, 2018; Mendell, 2009). This more political view highlights the transformation of economic systems, so that they meet social need rather than consumer demand. Bollier (2016) argues that for the commons movement to develop institutions fit for a 'postcapitalist, postgrowth order' requires different human capacities; innovative social forms; access to

financing/credit; open knowledge and networking technology and possibly a 'commons-friendly' partner state (Gibson-Graham, 2006, 2008; Laville, 2016; Mendell, 2009).

Extensive empirical research has shown traditional commons, which still support the livelihoods of the majority of the world's population, to be a necessary (but not sufficient) feature of all documented cases of sustainability and resilience in social-ecological systems (Berkes, 1990; Berkes & Folke, 1998). CLIs have, through conscious imitation or convergence based on the structural limitations of both state-led and market-led approaches, widely adopted commons as a medium of organisation and action (Henfrey & Kenrick, 2017; Penha-Lopes & Henfrey, 2019). CLIs are self-organised initiatives of people working together towards some defined set of environmental and/or social goals and most identify themselves with defined localities or communities of place (Penha-Lopes & Henfrey, 2019). Many also form part of translocal movements that seek to strengthen local action via networking, collective learning, pooling and sharing resources and mutual support (Avelino, Dumitru, Cipolla, Kunze, & Wittmayer, 2019). Although 'community' is identified as the key locus of action, its existence may be an outcome of rather than precondition for such action, and such initiatives in any case change the nature of the communities that undertake them. CLIs arise and operate independently of government but often seek to collaborate with local government and/or seek to influence policy (Esteves, 2017; Penha-Lopes & Henfrey, 2019).

Commons ecologies demonstrate this focus on relationships in two key ways. First, they prioritise local and regional (especially bioregional) level organisation of production and consumption. Such 'short circuit' approaches seek to structure chains of production, supply, consumption and disposal on a human scale, maximising use of local resources (natural and human) and ensuring the impacts (positive and negative) of production and consumption are experienced by those directly involved (Douthwaite, 1996). From the point of view of specific projects and enterprises, this means the effects on SDG implementation (whether activities enhance or conflict with delivery of one or more SDGs) are visible, creating feedback loops through which enterprises can modify their activities in order better to serve the SDGs (De Angelis, 2017; Douthwaite, 1996). At the level of the regional economy, the effect is to reconfigure the societal metabolism in ways that are more amenable to SDG delivery (Cato, 2013). Second, they place greater emphasis on nonmaterial (and nonmarketised) assets and, in particular, nurture and make effective use of social, human and (renewable and/or regenerated) natural capital in order to support high quality of life on the basis of relatively low levels of material consumption (Hall, 2015). This creates many natural synergies among different SDGs, more difficult to achieve in socio-economic models that assume correlation between wellbeing and material affluence.

Commons ecologies are a necessary feature of SSE, organisations and practices of which are in isolation vulnerable to capitalism's isomorphic pressures (Estivil, 2018). In other words, market forces and regulatory pressures induce enterprises to prioritise market over social and environmental concerns (Dey, 2014; Estivil, 2018; Mason, 2012;

Roy, Sato, & Calò, 2015). These pressures can be overcome through forms of 'boundary commoning' (de Angelis, 2017): synergistic relationships among commons-based enterprises, and between commons-based and profit-led enterprises, that maximise their autonomy in relation to capitalism's isomorphic pressures. A preponderance of such interrelationships among commons in a single locality leads to a form of social power that instead subverts and constrains traditional business models (Bauwens & Niaros, 2017). Fundamentally, such commoning 'opens up the boundaries [of commons systems], establishes the connections and sustains commons ecologies [and] could reshape existing institutions from the ground up' (de Angelis, 2017, p. 24). Boundary commoning contributes to the nesting of CLIs at different scales of the SSE by giving 'shape to commons at larger scales, pervading social spaces' (de Angelis, 2017, p. 287).

The central argument of this paper is that the formation of commons ecologies through the deliberate practices, relationships and interactions that constitute processes of boundary commoning is the central mechanism by which CLIs successfully deploy SSE as a vehicle for effective action towards the SDGs. In this way, SSE itself becomes a form of boundary commoning that expands the potential scope and extent of commons-based action of the kinds inherently compatible with the aims of the SDGs. In very simple terms, SSE mitigates the damaging effects of profit-led activity and government action by supporting commons of all kinds. SSE also thwarts the drive of mainstream politics and economics to enclose commons in market-based or otherwise formally regulated organisational forms. SSE complements this inward buffering effect with a centrifugal dynamic, pushing outwards the possible boundaries of commons-based action. The

paper illustrates this in practice with reference to four different case studies from Europe, South America and Africa.

3 | METHOD

Based on the above review, the paper seeks to answer three research questions, which are set out as follows:

- i. What is the nature of commons systems implicated with CLIs that contribute to achieving SDGs?
- ii. What processes enable the boundary commoning required to build commons ecologies relevant to the SSE?
- iii. How do the answers to the above questions inform sustainable development-related policy-making and research on CLIs?

The paper adopts a case study approach to answering the research questions posed in the previous paragraph. Four case study examples are selected for their potential to illustrate features of commons ecologies and processes of commoning and contribute to SDGs. The characteristics of commons systems are drawn from previous literature and include self-organisation; the prevalence of nested units; shared practices; shared values and emphasis on interdependent social and ecological outcomes (see Table 1 for a summary of how the case studies exemplify these characteristics). The case studies identify features of boundary commoning required to build commons ecologies (see Table 2). These features are human capacities distinct from those typifying consumer capitalism; innovative social form; access to finance and/or nonmarketised/nonmaterial assets; open knowledge

TABLE 1 Characteristics of commons systems in four case studies

Case study	Community	Common resources of production/consumption	Activity/practice performed in common	Social and ecological values/outcomes
Permaculture UK	Individual local activists/start-ups forming part of local, regional, national, international teams	Land	Farming; teaching	Multiple types of capital made available for social use; 'Earth care', 'people care', 'fair shares'
Tamera ecovillage (Southern Portugal)	Local SSE enterprises integrated into regional commons	Sharing locally produced water, renewable energy and organic food	Local supply of water, renewable energy and organic food; development of healing biotope model	Increase consumption of locally generated energy; water self-sufficiency; impact of above on livelihoods and lifestyles of residents
Esperança/ Cooesperança	Women, subsistence farmers, unemployed industrial workers, indigenous, afrodescendants and other marginalised communities	Organic food; public land (for holding markets)	Local organic farming; artisanal products	Reduction of poverty, hunger; promotion of food security, employment, political identity and self-determination
Gaia Education Podor	Villagers (especially women) in Podor region	Farming land; forests	Agroforestry; farming; food production and processing	Increasing community resilience to impacts of climate change, agroecological and social enterprise skills. Learners as active political agents.

TABLE 2 Characteristics of boundary commoning in four case studies

Case study	Human capacities	Social space(s)	Key assets	Open knowledge networks	Commons-friendly partners
Permaculture UK	Developed knowledge of design thinking, ethics and practices through permaculture design certificate and diploma	Cooperation within local, regional and international permaculture movement and through funding and project networks	Crowdfunding as redistributed financial capital; donations; grants; design thinking and principles of permaculture	ECOLISE; CASA; Thriving Resilient Communities network (USA)	European Union; local authorities
Tamera ecovillage (Southern Portugal)	Land, energy and water management; organic food production methods and changed consumption habits	Intraecovillage and exchanges between ecovillage and regional organic and biodynamic producers	Community-owned land, water, off-grid solar energy, biogas digesters, low carbon buildings. Water retention landscape methodology	Regional linkages between food autonomy network, energy and water supply and use	Regional linkages with renewable energy technology developers, for example, Testfield 1 solar village
Esperança/Cooperança	Traditional practices of production and exchange	Project development activities in 'prefigurative' public spaces. Urban fairs (weekly or annual); temporary markets; permanent space—Centro de Referência Dom Ivo Lorscheider	Centro de Referência venue; community-based microfinance; alternative currency scheme; open workshops on agricultural techniques	Caritas; UNISOL; Cooperative Network of Women Entrepreneurs (Rio de Janeiro); Network of Women's Solidarity of the Western Region of Rio de Janeiro	Municipality of Santa Maria and regional public authorities; National Program for Solidarity Economy Fairs; international donors and NGOs
Gaia Education, Podor region of Northern Senegal	Active citizens using knowledge and skills learned to use resources regeneratively	Project work; wider network of courses, action learning	Curricula and pedagogic methods; indigenous and professional scientific knowledge. Agroforestry nurseries	Gaia Education global network	Regional/international experts in farming, forestry, food processing; United Nations

systems or networking technology and collaboration with commons-friendly partners. The number of cases chosen permits identification of common features across the examples but also attention to the specificities of each case study implicated with particular sites of activity. The case study analysis of permaculture enterprise in the UK (see also Genus, Iskandarova & Warburton Brown, this volume), Tamera Ecovillage and the *Esperança/Cooperança* solidarity economy markets in Brazil is based on fieldwork carried out by the authors. The case study of food security in Podor, Senegal, is informed by action research conducted by Gaia Education (GE) there.

4 | CASE STUDIES

4.1 | Permaculture enterprise in the UK

Permaculture is a design system based on observation of natural systems and rooted in overlapping ethics of 'Earth care', 'people care' and 'fair shares' (Burnett, 2008; Mollison & Slay, 1994). Its core methodology is to apply principles observed to promote self-organisation

and resilience in 'natural' ecosystems in the deliberate design of social and social-ecological systems (Holmgren, 2002). The aim is that these designed systems support people's needs in ways that maximise their ecological value and require minimal ongoing maintenance. This is achieved by deliberately fostering mutually beneficial relationships among elements in the system, maximising alignment between the needs of each and design goals for the system itself. This emphasis on maximising self-generative potentially through appropriate interrelationship makes permaculture an exemplary strategy for the promotion of commons ecologies.

Permaculture has an inherent connection with the SDGs, in multiple types of spatial arrangement (Henfrey & Penha-Lopes, 2015). The permaculture ethics anticipate six 'essential elements' of the SDGs identified by former UN Secretary General Ban Ki-moon: dignity, prosperity, justice, partnership, planet and people (Henfrey & Penha-Lopes, 2015, p. 34). Permaculture design offers a tested methodology for creating practical solutions that reflect these ethics. Specific fields of application of permaculture design—and of operation of permaculture enterprises—are diverse, including both material and social applications. They include many areas covered by the SDGs,

including food production (SDG2), sustainable livelihoods (SDG1, SDG8), water management (SDG6), land restoration (SDG15), climate change (SDG13), and conflict transformation (SDG16).

The relationship between permaculture and enterprise is two-way: enterprise is both an organisational vehicle for permaculture projects and supporting the livelihoods of permaculture practitioners, and one of many fields of application of permaculture design. Permaculture enterprises thus build in, as inherent features, the three core ethics of sustainability, social justice and equity, and, by extension, the essential elements of the SDGs.

The link between SDG delivery and commons ecologies expressed by permaculture enterprises is captured in the concept of regenerative enterprise, in which businesses exist in order to create, and make available for social use, one or more of eight different forms of capital: financial, material, living, social, cultural, experiential, living and spiritual. Businesses in any locality interact as enterprise ecologies, specialising in producing different forms of capital and redistributing these in line with the 'fair shares' principle so that, for example, a highly financially productive enterprise might redirect fiscal surpluses to others generative of living, cultural or other capitals (Roland & Landua, 2013). Such enterprise ecologies, in line with other commons ecologies, embed ethics conducive to SDG delivery as their essential nature, not a secondary add-on or correction to market pressures. Consistent with these ethics, and favourable to both SDG delivery and working within commons ecologies, the financial motivation of permaculture activists tends to be weak compared with social and environmental concerns (cf. McMullen & Warnick, 2016).

Recent research on permaculture and enterprise shows that permaculture increasingly forms the basis of SSE initiatives that both directly enable SDG implementation and integrate it into broader fields of practice. The 'Knowledge Exchange for Entrepreneurship in Permaculture' (KEEP) project, a 2016 research collaboration between Kingston University Business School and the Permaculture Association (Britain), mapped permaculture enterprises in Great Britain using data provided by the Permaculture Association and its 1,500 members. From these data, over 150 permaculture enterprises were identified. Owner/founders of 20 of these enterprises subsequently took part in interviews, 1 or 2 hours in length.

Results of the KEEP Project show that permaculture enterprises are spread over the whole country, with notably high numbers in Leeds in northern England (where the Permaculture Association's head office is located), London and South-West England. They are found in both rural and urban locations, with rural locations overrepresented compared to the overall UK population distribution. Three business types predominate: teaching, food growing and garden design and maintenance. However, permaculture entrepreneurs are also working in fields as diverse as publishing, cosmetics, tourism, IT, jewellery making, community development, holistic therapies, writing and construction.

The survey identified some detailed characteristics of permaculture-inspired enterprises. About one third of responding businesses were community or social enterprises or charities. These enterprises are durable; more than half of businesses in the survey

had been in operation for 5 years or longer and more than a quarter for over 10 years. In relation to gender equality and female empowerment (SDG5), nearly half of the businesses (45%) are owned by women, consistent with relatively high female representation in leadership positions in the UK permaculture movement as a whole (see Henfrey, 2014). Twenty-five per cent of businesses surveyed employed more than one member of the same family. However, in keeping with findings from other research that show low ethnic diversity in many segments of the permaculture movement (Ferguson & Lovell, 2015), only two businesses (about 5%) were owned by someone from a minority ethnic background.

The KEEP interviews show that permaculture enterprises may be started up at low cost, thus lowering one barrier—the need for financial capital—which commonly inhibits people from setting up their own firm. Further, those involved in teaching permaculture mainly teach at venues that supply all required equipment, an example of how material capital is shared within a commons ecology. The Permaculture Association Britain itself was a source of funding for new enterprises, and some permaculture entrepreneurs were able to access the fiscal and/or material capacity necessary to start their business through ownership of private property, donations of land and/or cash, other paid work or family savings. Those needing external funding obtained it from a variety of sources, including community funding and crowdsourcing (redistribution of financial capital in the commons ecology), government or local authority grants, charities and bank loans. A couple of interviewees reported having received European Union funding, including a 3-year Children in Permaculture project supported by an Erasmus+ grant.

Permaculture generates and distributes cultural, intellectual and experiential capitals through academic and professional qualifications such as the Permaculture Design Certificate and Diploma in Applied Permaculture Design (SDG4). Training for these qualifications emphasises the acquisition and sharing of knowledge for sustainable production and consumption (SDG12) and establishment of sustainable communities (SDG11). Most permaculture entrepreneurs surveyed in the KEEP project reported having taken such courses.

In relation to social capital, interviewees emphasised the importance of being part of a network of permaculture activists and having representative organisations. The various training courses, gatherings and workshops are sites at which interviewees build the networks through which ideas diffuse and are consolidated (also see Esteves, 2017). They take place in locations across the UK, and interviewees also mentioned international partnerships, such as with an olive oil grower in southern Italy and project collaborators in Sao Paulo and Hong Kong. Network formation and maintenance seem to rely largely on individuals being proactive in organising meetings (e.g., of permaculture teachers) or assuming committee roles with the Permaculture Association or other organisations. Respondents typically work in teams with others in the international permaculture movement—a common phrase used to describe collaboration therein is 'cooperation not competition'. Through such processes, permaculture has created collaborative partnerships within the movement at local, regional, national and international scales and played an integral

part in establishing international cross-movement networks such as ECOLISE (the European network of CLIs on sustainability and climate change),² CASA (the Latin American Council of Sustainable Settlements)³ and the Thriving Resilient Communities Network in the USA⁴ (SDG17).

The essential elements of the SDGs thus appear to be well served by the application of permaculture design thinking to SSE. Its integration within new enterprises, social organisation and business models enables the generation and sharing of multiple forms of capital. This in turn establishes commons ecologies in many ways better suited than capitalist economies to the realisation of the SDGs.

4.2 | Tamera ecovillage

Tamera is an ecovillage in Southern Portugal that was founded in 1978 and currently has around 200 residents. Tamera has a mixed organizational identity, composed of a for-profit and a nonprofit sector, which includes three different legal entities. Ilos, Peace Research Center, Lda., is the 'umbrella' company that owns the land and infrastructure of Tamera and deals with household expenses, such as food, healthcare and restorations. Revenues are equally shared among the shareholders of Ilos, two nonprofit associations known as 'GRACE' and 'Associação para um Mundo Humanitário' (AMH). AMH is responsible for the environmental and technological research projects of Tamera: the Solar Village Test Field, landscape and ecosystem restoration and the food autonomy network. The GRACE Association is responsible for educational projects such as the Global Campus programme of cooperation with emerging community-based transition initiatives in the Global South, as well as educational projects for children, such as the internal childhood and youth educational programme, as well as the projected International School 'Escola da Esperança' ('hope school'). The Association also manages a scholarship fund that allows people from developing countries and crisis areas to attend Tamera's educational and training initiatives.

Tamera developed the 'Healing Biotope' model as the result of a deliberate strategy to establish a regional level commons ecology that integrates SSE enterprises into self-regenerative economic and ecological circuits of value via strategic promotion of water, energy and food autonomy (SDG16). This happens through ecosystem management strategies based on permaculture (SDG15), use of renewable energy technologies (SDG7) and development of a regional food autonomy network (SDG2) (Esteves, 2017). Tamera residents share water and energy produced within the community's boundaries and organic food grown either on the community's own land or within an emerging regional food autonomy network based on exchanges between intentional communities and small- and medium-sized organic and biodynamic producers in the region. This

is supported by use of permaculture for ecological regeneration, low carbon architecture and use of off-grid renewable energy sources (Esteves, 2017).

Tamera started moving towards energy autonomy in 2006 with the creation of Testfield 1 Solar Village, where research in the field of solar energy and biogas is undertaken, assessed and integrated into everyday life (SDG11). Testfield 1 supports experimentation by Sunvention International GmbH, developing and testing an off-grid solar energy system for pumping water, powering greenhouses and processing and storing food, complemented by other experimental technologies like Scheffler mirrors and biogas digesters. The aim is to develop strategies for community living that combine use of these technologies with changing consumption habits to bring them in line with the productive capacity of the regional food autonomy network (SDG12) (Esteves, 2017). According to data from the EU-funded ORIGIN research project,⁵ over the course of 2015 Tamera produced 45% of its electricity consumption from onsite renewable resources. Its goal is to achieve complete energy autonomy and self-sufficiency during the following decade.

Since 2007, the community has also been moving towards water and food autonomy, developing a regenerative methodology for land management and food production known as a water retention landscape (WRL). A WRL recovers eroded soils for farming through construction of a system of lakes, ponds, terraces and other features that maximise retention of rainwater (Holzer, 2011). In Tamera, WRL supports numerous ecological functions that link SSE to various SDGs: autonomous water supply (SDG6); food production (SDG2) and regeneration of topsoil, pasture and forest and local enrichment of biodiversity (SDG15) (Anderson, 2011). Members of Tamera's Ecology Team reported that through this strategy Tamera became self-sufficient in water supply and management in 2009 (Esteves, 2017). External assessment of Tamera's WRL suggests that it increases the capacity of the soil to return water to the atmosphere through evapotranspiration (SDG13) (Krivcik, Pokorny, & Kohutiar, 2008).

The activities of the intentional community based at Tamera thus support development of a commons ecology at two nested, interdependent levels. Within the community itself, it supports radical innovation for sustainable production and consumption in ways basic to residents' lifestyles and livelihoods. In the wider region, by promoting linkages among enterprises in ecologically and economically regenerative circuits of value that support emergence of a regional SSE, it spreads those innovations more widely, contributing in significant ways to multiple SDGs.

4.3 | Esperança/Coesperança

An example from Brazil shows how distinct social movements converge through regular solidarity economy markets, generating commons ecologies conducive to SDG delivery. Esperança/Coesperança,

²See the website for ECOLISE (at www.ecolise.eu).

³The website for CASA (at <https://redcasalatina.org/>).

⁴The website for the Thriving Resilient Communities Network (at <https://thrivingresilience.org/>).

⁵On the ORIGIN project see: <https://cordis.europa.eu/project/rcn/105918/factsheet/en>

a solidarity economy network in Rio Grande do Sul, links movements of small-scale farmers, landless workers and a wide range of local coalitions. It organises regular markets at various scales and time intervals, from the weekly Feirão Colonial to annual international thematic fairs.

The markets promoted by Esperança/Coesperança are new urban commons that connect preexisting commons-based practices of provisioning and are collectively governed by their co-users as venues for solidarity enterprise. These emergent commons include a permanent space, the Centro de Referência Dom Ivo Lorscheider, where the Feirão Colonial takes place, along with a number of temporary thematic markets held in public spaces around the city. They anticipate the SDGs by enabling the scaling up and adaptation to current social and economic conditions of traditional practices of production and exchange that, although a poor fit with capitalist logics, support subsistence of local communities in ways that are in harmony with the local ecology (SDG15 and SDG16).

Participating producers, selected on the basis of these criteria, have access to marketplaces where they can receive financial revenue for goods that cannot easily access mainstream markets due to economies of scale and regulatory barriers. This strategy has helped decrease poverty in the region (SDG1) and promote sustainable and inclusive livelihoods (SDG8) by supporting market integration of provisioning practices traditionally undertaken by women, indigenous people and quilombola communities (of African descent) for social reproduction within their families and kinship groups (SDG5 and SDG10). It also contributed to reduce hunger and promote food security in the region by enabling small-scale organic farming and creating short production-consumption circuits that do not lose value to middlemen (SDG2).

This project is a source of best practices that have become a template for similar initiatives worldwide, especially in Latin America and Europe. One of the most notable cases is the yearly Solidarity Economy Fair organised by Xarxa d'Economia Solidària de Catalunya (Catalan Network of Solidarity Economy), supported both directly by the Barcelona municipality and via regional-level public policies promoted by the Catalan government (*Generalitat*).⁶ These markets use public spaces to commercialise the products of organised groups of small-scale farmers and artisans who were previously largely isolated from markets by a combination of globalised supply chains and regulatory requirements that restrict their access to commercial licences. Such strategies do far more than provide a source of income for participants: they also create commons ecologies that support forms of mobilisational citizenship (Ecoffier, 2018). Concretely, they make visible and tangible economic practices marginalised due to their incompatibility with state and market logics, but possessing in-built affinities with the aspirations of the SDGs. By strengthening the political subjectivity and agency of participants, they offer them possibilities of influencing policy both in their own favour and in ways conducive to delivery of the SDGs.

4.4 | GE and food security in Podor, Senegal

GE is an international NGO, with headquarters in Scotland, dedicated to pioneering community-based educational approaches to sustainable design and development. Founded at the same time as the launch of the UN Decade of Education for Sustainable Development (2005–2014), GE has been developing unique curricula and pedagogic methods that draw upon the educational experiences of ecovillage communities around the globe (SDG4). GE programmes are delivered in 54 countries on five continents, in settings ranging from tribal and traditional communities to intentional eco-communities, from urban slums to universities and commercial research and development centres (SDG16). GE educational programmes equip students of all ages and cultural backgrounds with the appropriate knowledge, skills and critical thinking tools necessary to cocreate a society that uses energy and resources with greater efficiency (SDG12), distributes wealth equitably (SDG10), centres autonomy within local communities and makes quality of life, rather than open-ended economic growth, the focus of future thinking. Learners become change-makers capable of playing active roles in transitioning their existing communities and neighbourhoods to sustainable and regenerative practices, lifestyles and infrastructures (SDG9 and SDG11). GE's work with local communities operates on the basis that SDG implementation via SSE requires locally adaptable strategies, activities and products, carefully tailored to the biocultural uniqueness of each location in ways that promote social and ecological regeneration.

Accordingly, the project examined here adopted an approach to sustainable food production that rejected the resource-intensive, technologically dominated, expert controlled paradigm imposed by the corporate agribusiness forces of globalisation. It sought to address multiple linked threats to the livelihoods of small-scale producers in the Podor region of Senegal, including transfer of the most productive land from production for local needs to commercial exports and decades of misguided policy favouritism towards industrial agriculture. These factors undermine traditional methods and degrading soils, compounded by the relentless desertification of the Sahel and forcing constant adaptation and innovation on the part of small-scale producers.

In response to this, GE took part in a 3-year food security project engaging four villages in the Podor Region of Northern Senegal. The project aimed to develop more efficient methods of organic food production on 16 hectares of community land, in order increase the communities' resilience and capacity to adapt to the increasing effects of climate change. It aimed to strengthen the communities' social, economic and ecological competences and to build skills in agroforestry, permaculture, food processing and trade. By combining indigenous and scientific knowledge in the design of productive agroecological systems, the project directly benefitted over 3,000 community members, especially women, by enhancing their agricultural and social enterprise knowledge and skills.

Over 3 years, GE, in collaboration with international and regional experts, conducted a series of capacity-building activities in permaculture, agroforestry and food processing. Agroforestry practices

⁶<https://www.economiasolidaria.org/xes-xarxa-deconomia-solidaria-de-catalunya>

regenerated the fragile ecosystem by storing carbon, preventing deforestation, increasing biodiversity, protecting water resources and reducing erosion (SDG15 and SDG6). Throughout its life, the project has promoted the full and active participation of women, who were its main implementers and beneficiaries (SDG5). Women made the initial decisions about which land to use and crops to plant and were given roles that ensured equal access in power structures; whenever possible, female tutors were identified.

In 3 years, the project successfully transformed 21.3 hectares from arid wasteland into productive soil, supporting flourishing gardens and high yields. In rigorous formal evaluations, participants reported increased food production, dietary diversification, high levels of use of permaculture farming techniques emphasised in skill transfer components and complete cessation of use of agrochemical inputs. New income-generating activities have arisen (SDG8), with separate groups forming to produce and market preserved, processed and dried food. Agroforestry nurseries have been initiated in each participating village in order to enable acquisition of skills in tree husbandry and continued expansion of agroforestry activities beyond the project. Several people have been trained in operation and maintenance of water pumps, part of a wider strategy to ensure proactive engagement with challenges by participants who, for example, have had to self-organise to maintain and provide fuel for the pumps and to expand planting capacity through seed saving.

GE's involvement not only enabled delivery at project level but also connected local action to the wider commons ecology of GE's global network of courses, projects, trainers, students, alumni, beneficiaries and other collaborators. Sharing of knowledge, skills and experience through this action learning commons is its key self-regenerative dynamic. It provides a rich body of collective wisdom upon which action at the scale of local communities can draw and allows these experiences to feed into both the GE global community itself and the wider collaborations and networks, including various UN processes, of which it is a part (SDG17).

5 | DISCUSSION

The case studies presented in this paper are from diverse geographical (urban and rural), social, cultural and economic settings. They nevertheless illustrate common patterns illustrating both the difficulties of reconciling SDG implementation with capitalist logics and how such difficulties can be overcome through establishment of commons ecologies appropriate to their respective contexts. In each case, pressures originating in both states and markets mitigate against socially and ecologically regenerative livelihoods, buffered by multiactor networks of relationships within commons ecologies originating through self-organised action at community scale. This suggests that commons ecologies are a transferable strategy that can inform development of systemic approaches integrating environmental and social aims, thus mobilising SSE as a means of decreasing the disparity between scales of implementation of different SDGs.

Each of the four case studies considered here demonstrates, in its own way, the distinctive features of commons ecology approaches to deploying SSE as a vehicle for SDG implementation at the scale of the local community and linking this with wider fields of activity to engage with global action. Application of permaculture to the design and operation of SSE enterprises roots these enterprises in ethical orientations and organisational strategies that integrate SDG delivery as a core feature. Permaculture enterprises generate relationships of mutual support via their participation in regional enterprise ecologies and networks of action learning and strategic collaborations at or among local, regional, national, international and global scales. At Tamera ecovillage, these principles are integrated into the daily life of the residential community and regional networks of cooperation among SSE actors within and outside the community, making SDG implementation an embedded feature of local and regional economies. The work of Esperança/Coesperança enables self-organisation of economically marginalised actors into local and regional SSE networks reflecting autochthonous social and ecological principles that strongly align with, and enable implementation of, the SDGs. GE's work in Senegal supports local people to mobilise their own material, intellectual, social and cultural resources for economic empowerment and participation in global networks for innovative deployment of SSE as a vehicle for SDG implementation. GE understands empowerment as a social action process that promotes the participation of local people in gaining control over their lives within their community, acting with other members of the community to effect change and improve sustainability of livelihoods. In all these cases, SSE connects local self-organisation towards SDG delivery with a range of local, regional, international and global networks. In this way, diverse perspectives, ways of knowing, practices and organisational strategies originating at locally, shared through multiscale commons ecologies, become the basis of wider collective learning and collaborative action towards the SDGs, as mentioned recently in an European state of the art by ECOLISE, an European network of CLIs towards sustainability (Penha-Lopes & Henfrey, 2019).

It is interesting to reflect now on differences between the four case studies. The case studies are drawn from different geographical settings, with two cases being located in the global south (Esperança/Coesperança and GE Podor, Senegal) and two in the global north (Tamera ecovillage and permaculture in the UK). One case study setting is predominantly urban in character—Esperança/Coesperança—whereas UK permaculture is practised in urban and rural settings. Tamera ecovillage and GE's work in Podor are both located in rural areas. The nature of commons in each case does tend to revolve around land, space and food, but there are distinctions to be made. For example, some permaculture entrepreneurs in the UK study share property and related responsibilities with other activists. In contrast, in other cases commoners do not share dwelling space. Tamera is different again, being a deliberately established new ecovillage. There are certain institutionalised differences in the profile of commoners, with one (GE, Podor) emphasising the role of women, another (Esperança/Coesperança) women and other marginalised groups. Tamera's commoners are its ecovillage residents, whereas the

commoners in the UK permaculture case are members of the Permaculture Association engaging in, for example, local food networks. Whereas organic food and farming are core activities in all cases, one case study (Tamera) also engages in activities relating to energy and water management. The rules of inclusion/exclusion are administered by community members in the case of Tamera or project facilitators in that of GE, Podor. The other two case studies have admission governed by membership rules of a local community initiative but also by an association of which CLI participants may also be members (Permaculture Association Britain and Esperança/Cooesperança).

The case studies best fit the communal type of property rights regime (Berkes et al., 1989). What the case studies demonstrate is that CLIs can govern commons to afford socially just as well as ecologically mindful use and, they would say, regeneration of resources. They draw attention to the development of commons ecologies as living processes (Bollier, 2016), as distinct from focusing merely on the characteristics of individual CLIs as a 'point' activity. Thus, the cases transcend the limitations of single-scale studies or isolated examples of community initiatives (Armitage, 2008) by foregrounding relations between multiple actors operating at or with different scales and resources and capitals.

As far as issues of scaling such initiatives is concerned, the case studies illustrate how boundary commoning helps to build commons ecologies and in doing so helps to contribute to SDGs. Contrary to Bollier (2016), the CLIs in the cases do not enrol the state, and only in one is a municipality central to building a wider commons ecology. However, the case studies do emphasise the importance of network-based regimes to commons governance, and there is some evidence of engagement with wider processes such as those of the United Nations and contribution to SDGs.

It could be argued that the cases depict the build-up of networks of supportive partners to the commons systems discussed in the paper and that these are represented best as 'flat' interactions among partners that are enrolled in commons ecologies, rather than as hierarchical relations among actors at the 'top' and those nearer the 'bottom' level of society. Certainly, much of the debate to date regarding commons ecologies has been couched in terms of 'multi-level' governance. However, there is further discussion to be had regarding a picture based on the established and growth of commons ecologies as extending communities of practice or interest, incorporating a different perspective—or ontology—of the structure of such ecologies.

It has been recognised for some time now that 'context matters' (Armitage, 2008) and that understanding better the potential contribution of commons systems and ecologies to SDGs requires closer attention to the specificities of particular cases. The above case studies query these observations to the extent that they draw attention to how CLIs and their 'friendly' partners in ecologies cocreate (part of) the context over a period of time through unfolding efforts and relationship building. These findings are in accordance with emerging thinking about institutions in that they appreciate the diffusion of what have been unconventional patterned relationships, which have the potential (at least) to challenge and possibly transform business as usual and thus become a new 'normal'. Moreover, the case studies

emphasise the collaborative work that diverse actors are undertaking in establishing and maintain commons ecologies, including the combining of lay and scientific knowledge (as in the case of GE in Podor) and the pooling of knowledge (within the permaculture knowledge commons). Further, the examples presented here do not appear to be ones in which cooperation with municipal, state or industry partners has come at the cost of co-optation of CLIs or diminution or trade-off of core socio-ecological concerns. One needs to appreciate in these cases a holistic view of society-ecology-economy that is the object of the practice of CLIs at the heart of commons ecologies, not the coexisting but distinct logics identified in previous work (De Clercq & Voronov, 2011; Muñoz & Dimov, 2015). The institutional work being undertaken by the actors in each case variously builds human, social, intellectual and economic capital required to nurture the commons system and ecology in question as commons address the complex of societal, environmental and economic challenges they face.

The cases show that diverse forms of organisation may be identified with SSE, including intentionally established eco-communities, socio-ecological movements such as permaculture, urban food networks and community development programmes. Self-organisation is a common characteristic of the initiatives presented in the paper, though one should note the prevalence of capacity development led by an external agency in the case of GE's work in Podor, Senegal, that enables participants to then undertake the actions discussed above. In all cases, the core assumptions challenge business as usual, being concerned to implement local, collective and practical actions to address integrated socio and ecological objectives. The rules of access vary for each commons system. In some, it is clear that an inclusivity/exclusivity rule is applied, such as that emphasising the participation of women or other marginalised actor or approach. In others, such rules of admission are unclear or may be absent. There is insufficient evidence regarding sanctions or penalties to be applied to rule breaking.

Across the cases, there is evidence of the importance of embedded relationships to commons ecologies and collective entrepreneurial action (cf. Muñoz & Cohen, 2018). This is shown in the alternative production/consumption chains that have been developed, for example, in connection with organic food provisioning. Relationships facilitate boundary commoning practices through which regional, national and international knowledge- and practice-sharing networks are built.

The analysis challenges policy-makers and practitioners to develop strategies for SDG implementation based on promoting local-regional clusters of community initiatives/SSE enterprises and other agencies as commons ecologies in the following ways:

- a. by adopting regenerative approaches based on synergies between regenerative ecology and commons-based, cooperative postgrowth strategies;
- b. by localising supply chains and promoting autonomy and sovereignty in terms of water, energy and food production, so as to make SSE clusters more resilient to pressures from the mainstream economy, as well as fluctuations in availability of public funding;
- c. by developing context-sensitive strategies through epistemologies that combine scientific and local/traditional knowledge; and

- d. by strengthening and widening decision making processes to leave no one behind, particularly those who are presently unable to meaningfully participate in the decisions that impact them (UNDP, 2018).

6 | CONCLUSIONS

The paper addresses core concerns of this special issue of *Business Strategy and the Environment* pertaining to sustainable entrepreneurship and relationships among social movements, business development and SSE. The policy context of the paper refers to the attainment of, or even going beyond, the UN SDGs. In connection with developing research agenda, the paper is motivated to interrogate sustainable entrepreneurship from a perspective that embraces collective action of marginalised actors who challenge institutionalised practices and forms of social and economic organisation. Thus, the paper helps to move the topic on from definitional exercises (Muñoz et al., 2018) to address substantive issues concerning the practice of sustainable entrepreneurship and how this may be understood better.

Empirically, the paper presented four case studies with which to explore developments in SSE that have the potential to illuminate the transformational potential and possible achievement of SDGs and provide fresh thinking about the nature and practice of sustainable entrepreneurship. The case studies were of CLIs, examples of communal governance analysed using the concept of commons ecologies. The concept of commons ecologies reveals the shared features that allow diverse forms of local SSE organisation to incorporate SDG delivery as an in-built feature. Such commons ecologies address economic, social and ecological factors in inherently synergistic fashion, in which they are mutually enabling, avoiding the tensions and trade-offs that inevitably arise under conventional market logic and approaches to sustainable entrepreneurship to be found in the extant research. Their involvement in global networks provides a ready-made basis for their deeper and fuller engagement with mainstream processes within the UN and elsewhere, which can benefit greatly from the novel solutions, insights and perspectives they provide. Fundamentally, the paper illustrates that commons resources need not be subject to overexploitation (cf. Hardin, 1968, on the tragedy of the commons; Berkes et al., 1989). The case studies illustrate how cooperative approaches embracing local communities and commons-friendly partners can address socio-ecological and SDG goals within particular commons systems and wider commons ecologies.

There are several limitations to the work reported in the paper. For instance, the comparative case study method applied was designed to explore and to illustrate the phenomenon of social and solidarity economy, primarily based on examples of CLIs. Thus, the selection of cases was nonrandom, being biased towards potentially insightful candidate cases. Moreover, the case studies were not all informed by a common approach to data collection. In addition, although the cases were drawn from different parts of the world and

subject to varying local and national contextual conditions, the study was limited primarily to data that were available in English. Arguably, this limitation imparted a bias which affected the depiction and accuracy of the case studies as commons ecologies and their relevance to SDGs.

Future research could develop the exploratory work reported here. Three strands of inquiry are suggested. One strand is to conduct a more systematic, forensic analysis of community-led commons systems, to enrich understanding of different types of communal governance regimes. Relatedly, such a study could also probe more fully the boundary commoning processes which might stimulate and nurture commons ecologies, including analysis of the factors that enhance the development of capitals and anticapitalist (or possibly 'postcapitalist'; see Gibson-Graham, Cameron, & Healy, 2016), value systems and their relation to global ends such as the SDGs. 'Capitals' here emphasises knowledge, experience and cultural human capacities as well as natural phenomena which can benefit and be regenerated in commons ecologies. This is to be distinguished from conventional references to (especially financial) capitals as sources of privatised benefits. Clearly, from the standpoint of sustainable entrepreneurship, research should seek to add to those contributions that transcend methodological individualism and instead seek to build insights into collective action in commons ecologies not reliant on the single heroic entrepreneur. As the paper has shown, such studies may be less concerned with trade-offs between sustainability goals and take greater interest in alternative, integrated paradigms, which prize the holistic and simultaneous pursuit and the regeneration of multiple social, political, economic and ecological objectives.

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