



Strategies for regenerative business

Strategic Organization

2021, Vol. 19(3) 456–477

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DOI: 10.1177/1476127020979228

journals.sagepub.com/home/soq



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Abstract

Escalating ecological degeneration and mounting social challenges highlight the need to rethink the current way of doing business. Human and business activities rely on functioning social-ecological systems but tend to take these for granted. Extant research on business sustainability has acknowledged the relevance of sustainability concerns for business strategy and organizing. Yet, dominant conceptualizations of business sustainability remain focused on the organization and its business case, in the quest to find strategies that translate less harmful social and environmental practices into competitive advantages. Only few scholars have gone beyond such a commercial logic and adopted a systems approach to derive business strategies from the logic of social-ecological systems. In this article, we propose that taking a systems approach means to conceptualize business sustainability in terms of regenerative business, that is, businesses that enhance, and thrive through, the health of social-ecological systems in a co-evolutionary process. As our main contribution, we develop the restore-preserve-enhance scale for regenerative business strategies reflecting a continuum of strategies for regeneration. These strategies follow from two main principles and related criteria for a systems-based level of aspiration and an adaptive management approach to regeneration. By doing so, we fundamentally shift the focus away from a business logic to a systems logic. Importantly, we offer concrete strategies for organizations to contribute to life-supporting conditions in social-ecological systems.

Keywords

Business sustainability, regeneration, social-ecological systems, strategy, systems thinking

Introduction

There is mounting evidence that the stress that human activity has placed on the planet has pushed several life-supporting social-ecological systems beyond critical limits and carrying capacities (Rockström et al., 2009; Steffen et al., 2015). Since business activities play an important role in this context, firms are increasingly confronted with demands to change toward more sustainable strategies and business models. Accordingly, research on the role of firms for achieving sustainability has been burgeoning over the recent decades (Bansal and Song, 2017; Meuer et al., 2020; Montiel

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and Delgado-Ceballos, 2014). While business sustainability has its roots in systems thinking and a concern about the degradation and loss of vital ecosystems (Bansal and Song, 2017; Gladwin et al., 1995; Purser et al., 1995; Starik and Rands, 1995), dominant conceptualizations of business sustainability do not follow a systems approach, but remain focused on the organization and its business logic (Williams et al., 2017). A systems approach to sustainability recognizes the inherently dynamic and non-linear interdependence among the different elements of economic, social, and ecological systems (Holling, 2001).

More tightly rooted in a systems approach is the notion of regenerative sustainability that has been developed in the field of urban planning and the built environment. Regenerative sustainability, defined as “a co-creative partnership with nature [. . .] to restore and regenerate the global social–ecological system” (du Plessis, 2012: 19), sees human activity as an integral part of the larger social-ecological system (SES), that is, an “integrated system of ecosystems and human society with reciprocal feedbacks and interdependence” (Folke et al., 2010: 3). Regeneration seeks “to cultivate relationships, which provide both life-support and life-enhancing conditions for the global human community within a healthy eco-system” (Zhang and Wu, 2015: 39). While some scholars have adopted a systems perspective on business sustainability (Williams et al., 2017, 2019) or have started to explore regenerative organizations (Slawinski et al., 2019), the conceptual and managerial implications of regenerative business remain unclear. Therefore, in this article, we argue for the need to conceptualize business sustainability in terms of regenerative business and related business strategies.

For doing so, we draw on the literature on regenerative sustainability. We translate the systems approach of regenerative business into two main principles—a systems-based definition of the level of aspiration and an adaptive management approach—and operationalize these principles through concrete criteria. Based on this framework, we develop a range of regenerative business strategies that we label as restore, preserve, and enhance strategies. These strategies all have in common that they take SES and their functioning as a starting point, but they differ in the degree to which they engage with the notion of regeneration.

In summary, we suggest that due to its inherent systems approach, the notion of regeneration provides a useful foundation for reconceptualizing and reorienting business sustainability toward its systemic roots (Williams et al., 2017, 2019). As our main contribution, we offer such a reconceptualization and operationalize it by developing the restore-preserve-enhance scale for regenerative business strategies. Importantly, our range of regenerative strategies does not conceptualize regenerative business as a dichotomous, ideal-typical category according to which firms are regenerative, or not. Rather, our argument highlights that firms can use different strategies that vary in the degree to which they incorporate elements of regeneration along the criteria for a systems-based level of aspiration and an adaptive management approach. Thus, our argument offers an important contribution toward the operationalization of regenerative business in that it goes beyond programmatic calls for a systems-based and regenerative approach to sustainability (Gladwin et al., 1995; Morseletto, 2020; Starik and Rands, 1995) and in that it defines principles and criteria that can be used to characterize and design strategies with regard to their regenerative nature.

Business sustainability

Research on the role of private companies for achieving sustainability has been burgeoning over the recent decades (Bansal and Song, 2017; Meuer et al., 2020; Montiel and Delgado-Ceballos, 2014). At the same time, despite numerous attempts to define business sustainability, no consensus has been reached (Meuer et al., 2020; Montiel and Delgado-Ceballos, 2014), which is why business sustainability has been characterized as an essentially contested concept (Lankoski, 2016).

The lowest common denominator for defining business sustainability seems to be the consideration of social and environmental concerns beyond financial aspects in the sense of “a company’s activities—voluntary by definition—demonstrating the inclusion of social and environmental concerns in business operations and in interactions with stakeholders” (van Marrewijk and Werre, 2003: 107).

Business sustainability is grounded in systems thinking and builds on concerns about environmental damages (Bansal and Song, 2017; Gladwin et al., 1995; Meadows et al., 1972). The early paradigmatic debate on business sustainability stresses this systems approach and places economic activity within the ecological limits of the natural biosphere (Purser et al., 1995). This notion of ecological and social embeddedness of economic activity (Marcus et al., 2010) implies that business sustainability refers to sustaining the viability of overarching SES rather than the longevity of individual organizations (Hahn and Figge, 2011). Accordingly, Jennings and Zandbergen (1995) stress that “individual organizations cannot become sustainable: Individual organizations simply contribute to the large system in which sustainability may or may not be achieved” (p. 1023).

However, with the maturation of business sustainability as a research field, the concept of business sustainability has lost much of this early systems-oriented zest. As Bansal and Song (2017) found, over the last decades business sustainability has been predominantly conceptualized in terms of a business case for sustainability. This understanding considerably narrowed the scope and ambition of business sustainability. Most importantly, it shifted the attention from the systemic to the organizational level (Whiteman et al., 2013) by focusing on sustaining the viability of single business organizations (through the consideration of environmental and social aspects) instead of businesses contributing to the sustainability of overarching SES (Hahn and Figge, 2011). Concomitantly, Linnenluecke and Griffiths (2013) found that existing conceptualizations of business sustainability are almost exclusively built upon standard organizational theories (predominantly institutional theory and the resource-based view) and rarely integrate or even only reference work from areas such as ecology or environmental science. Similarly, Williams et al. (2017) show that a “systemic approach [to sustainability management] is not yet prevalent in mainstream management journals” (p. 866). The move toward a business case conceptualization of business sustainability also narrows the scope of environmental and social concerns that are considered since it establishes an emphasis of business goals over environmental and social aspects. It thus excludes pressing environmental and social concerns that cannot be readily aligned with short-term business outcomes (Gao and Bansal, 2013; Hahn et al., 2015), among which are some of the most pressing challenges that humanity faces today (Steffen et al., 2015).

It is only in the light of escalating ecological degeneration and crises and mounting social challenges, such as climate change (Lenton et al., 2019), the sixth mass extinction (Ceballos et al., 2015), or inequality (Amis et al., 2020), that some scholars have gone back to the original understanding of business sustainability and its systemic approach. Whiteman et al. (2013) stipulate that it is “time for corporate sustainability scholars to reconsider the ecological and systemic foundations for sustainability, and to integrate our work more closely with the natural sciences” (p. 307). Winn and Pogutz (2013) argue that scholars and practitioners alike need to bridge knowledge domains between organizational theories and natural sciences to account for the embeddedness of organizations in SES and to make sure that economic activity does not destroy the life-supporting foundations provided by nature. Arguing against an organizational level understanding of business sustainability, Williams et al. (2019) stress the need for a cross-scale perspective that places organizations within overarching SES. In line with this re-emergent systems approach to business sustainability, management scholars have begun to adopt the idea of regenerative organizations (Slawinski et al., 2019; Vlasov, 2019). However, in the field of business sustainability, the notion of regeneration is nascent and peripheral at best. It has received more

attention in the field of urban planning and the built environment under the label regenerative sustainability, which we turn to next.

Regenerative sustainability

Largely disconnected from the field of business sustainability, researchers, and practitioners in urban planning and the built environment have developed the concept of regenerative sustainability. The intellectual lineage of regenerative sustainability scholars lies in ecology, living systems theory, and in systems thinking (Robinson and Cole, 2015). Regenerative sustainability rejects a mechanistic worldview and denotes efforts

to address the dysfunctional human–nature relationship by entering into a co-creative partnership with nature [in order] to restore and regenerate the global social–ecological system through a set of localized ecological design and engineering practices rooted in the context and its social-ecological narratives. (du Plessis, 2012: 19)

Regeneration seeks to be life-enhancing in that it “produces the field within which the improvement of living systems can take place” (Mang and Reed, 2012: 27). Accordingly, regenerative sustainability pursues the objective “to cultivate relationships, which provide both life-support and life-enhancing conditions for the global human community within a healthy eco-system” (Zhang and Wu, 2015: 39). Regenerative sustainability scholars turn against a narrower version of sustainability as limiting damage (Robinson and Cole, 2015) or as a purely anthropocentric and technological solution (Mang and Reed, 2015).

In contrast, what characterizes regenerative sustainability is that it is procedural, systemic, net positive, relational, and collaborative. Procedural means to take a process-based view to account for the dynamic nature of systems (du Plessis and Cole, 2011; Robinson and Cole, 2015). Accordingly, regenerative sustainability scholars advocate for a systems approach, focusing on the resilience and adaptive capacity of systems (Coleman et al., 2018; Reed, 2007). Net positive means to contribute to human wellbeing and to environmental goals (Holden et al., 2016; Zhang et al., 2015). Regenerative sustainability scholars are therefore critical of attempts to frame net positive with regard to only one indicator, such as energy efficiency (Mang and Reed, 2015). Regenerative sustainability aims to be relational, which means that human beings and nature are co-evolutionary (du Plessis and Cole, 2011; Zhang et al., 2015), turning against anthropocentrism. Finally, collaborative highlights the need for a wide range of stakeholders to participate (Holden et al., 2016; Robinson and Cole, 2015).

Regenerative sustainability has been applied, for example, in Vermont in the United States, where a cooperative started with a Leadership in Energy and Environmental Design (LEED) gold certified building, but then expanded to catalyze soil-regenerating practices with local agricultural producers and to support the community with initiatives, such as farmer education, micro-loans, and nutrition classes (Benne and Mang, 2015; du Plessis and Brandon, 2015). Still, most applications of regenerative sustainability lie in urban planning at the interface of city administrations and private business actors, for example in containing flood risk in Rotterdam and Hong Kong (Francesch-Huidobro, 2015), in managing urban stormwater in Benaguasil, Spain (Perales-Momparler et al., 2015), or in recovering phosphorus from water streams in Singapore and the San Francisco Bay Area (Pearce, 2015).

Like the early business sustainability literature, the regenerative sustainability literature suffers from being highly programmatic. Morseletto (2020) criticizes the concept of regeneration as symbolic and evocative, but with limited application for business, except the agricultural sector.

Moreover, many regenerative sustainability scholars contrast their own ecologic worldview versus a mechanistic worldview, and relatedly their own paradigm of sustainability as regenerative versus technological (du Plessis and Brandon, 2015; Kambo et al., 2016). While not necessarily calling for a wholesale substitution of this mechanistic worldview and seeing the two as nested (Reed, 2007) or complementary (du Plessis and Brandon, 2015), “they have essentially replaced one set of prescriptions of goals for how we ought to live with another” (Robinson and Cole, 2015: 139). Instead, Robinson and Cole (2015) see regenerative sustainability as procedural with an emphasis on collaborative decision making, accounting for the contested and socially constructed nature of sustainability.

Building on, but also seeking to overcome the limitations of regenerative sustainability in urban planning, we seek to conceptualize a regenerative approach to business. For doing to, we build on the systems approach and operationalize it by developing principles and criteria of regenerative business and the ensuing regenerative strategies.

Principles of regenerative business

At its heart, regenerative sustainability adopts a systems approach as it is ultimately concerned with restoring and enhancing the health of SES. While it was included in early studies on business sustainability, a systems approach has since been undermined by the business case for sustainability and its commercial logic at the organizational level. Based on the argument that regeneration “provides a foundation for a sustainability paradigm that is relevant to an ecological worldview” (du Plessis, 2012: 7), we propose that the notion of regeneration with its innate systems perspective provides a foundation to reconceptualize business sustainability toward regenerative business.

So far, systems thinking has been present in business sustainability through acknowledging interconnections, feedback loops, and, to a lesser extent, self-organization (Gladwin et al., 1995; Jennings and Zandbergen, 1995). For instance, Starik and Rands (1995) apply an “open-systems framework” (p. 912) and speak about flows and feedback. However, as Whiteman et al. (2013) rightfully point out, systems thinking is still inadequately integrated into business sustainability. We argue that developing the notion of regenerative business can help alleviating these shortcomings. Based on the literature on regenerative sustainability, we define regenerative business as businesses that enhance, and thrive through, the health of SES in a co-evolutionary process. Conceptualizing business sustainability in terms of regenerative business results in two fundamental principles, referring to the level of aspiration of and the management approach to regenerative business. These two principles that we develop below anchor business activities in SES.

Systems-based level of aspiration

The first principle of regenerative business stipulates that the objectives of business activities must be derived from the perspective of the SES into which business activity is embedded. This principle reflects that, from a systems perspective, the finality of business sustainability is not the sustainability of a single business organization, but the sustainability of overarching SES that enable and constrain human economic activity (Bansal and Song, 2017; Grumbine, 1994; Hahn and Figge, 2011; Starik and Kanashiro, 2013). Objectives for regenerative business strategies thus need to be derived from the functioning and constraints of the SES that the business organization interacts with. We operationalize this first principle in terms of three different criteria.

First, given the ongoing degradation of many SES (Chaplin-Kramer et al., 2019), the aspiration of regenerative business most commonly refers to the acceptable *impact* that business activities may leave on SES. While business sustainability scholars have defined sustainability with varying

degrees of ambition and specificity (Meuer et al., 2020), “sustainability . . . researchers . . . lack the tools to assess the desirability of different systems” (Bansal and Song, 2017: 128). Regenerative business provides a clear reference point in this context since it refers to the health of SES in terms of their resilience and integrity (du Plessis, 2012; Grumbine, 1994; Williams et al., 2019). Based on the literature on regenerative sustainability, we conceptualize desired impact on a spectrum from a net positive impact on SES, leaving them in better than pre-strategy implementation conditions (du Plessis and Cole, 2011), to “net zero,” and “less harm” solutions (Zhang et al., 2015). Seeing impact on a spectrum acknowledges that achieving a net positive outcome may not always be possible, and that, instead, limiting or compensating damage may be the best achievable outcome (Holden et al., 2016).

Second, this focus on the impact on SES is closely related to the *relationship* of business activities with SES. This relationship has long been overlooked, continuing a social science tradition to ignore natural resources (Freudenburg et al., 1995; Goldman and Schurman, 2000). Despite early calls for an ecocentric or a sustaincentric view (Gladwin et al., 1995; Purser et al., 1995), the business case for sustainability that has dominated the literature since is still firmly grounded in an instrumental and anthropocentric view of SES (Bansal and Song, 2017; Hahn and Figge, 2011). We also conceptualize the relationship between business activities and SES on a spectrum. On the one end of the spectrum, there is an instrumental separation of humans and the ecosystem with a primacy of business needs. An in-between position is the co-existence between humans and the ecosystem, resembling a dualistic balance (Freudenburg et al., 1995). On the other end of the spectrum, proponents of regenerative sustainability portray the relationship of human activity with SES “as one that embraces nature and participates in and coevolves through its processes” (du Plessis and Cole, 2011: 439). What makes regeneration stand out is an understanding of the relationship between business activities and SES as mutually embedded, meaning that business is nested in and dependent on SES (Marcus et al., 2010) in that “all human organizations are embedded within the natural environment, and . . . all of those which have human managers and other employees, also contain the natural environment inside of their respective biophysical bodies” (Starik and Kanashiro, 2013: 9). This embedded view goes beyond a purely ecocentric perspective and argues for a symbiotic relationship between economic activity and nature. For instance, Oakes (2018) reports that Indigenous people in Alaska scoffed at the idea of natural parks to protect old-growth forests. Instead, they preferred to use the forests for economic activities, but in a symbiotic relationship.

Accordingly, and third, the *underlying rationale* of business interactions with SES reflects the finality of business activities. It can be positioned on a spectrum from, at the one end, the desire to secure services and steady yields from SES to, at the other end, enhancing the viability and resilience of SES (Folke et al., 2010; Walker and Salt, 2012). The underlying rationale from an anthropocentric perspective refers to securing the provision of goods and services by ecosystems for the purposes of the organization and human activities (Grumbine, 1994). Such goods and services include, among others, air and water decontamination, pollination, flood control, climate stabilization, fertile soil, storm water retention, raw materials, and food. This contrasts with the position that pervades the regenerative sustainability literature. Here, regeneration is about establishing a mutually beneficial relationship between SES and human and organizational activities in terms of a co-evolution (Mang and Reed, 2012; Robinson and Cole, 2015).

All these positions have in common that they derive the underlying rationale for regenerative business from the targeted SES. It is noteworthy that both ends of the spectrum for the underlying rationale of business-systems interaction bear an instrumental element. However, while an anthropocentric position is interested in ecosystem health for purely instrumental reasons, regeneration places human activity within ecological limits and accepts the health of SES in its own right.

Consequently, “human activity does not necessarily have to be minimized because it is inherently harmful, but can instead contribute directly to both environmental and human well-being” (Robinson and Cole, 2015: 138). Hence, the interaction with SES is no longer unidirectional with the objective of receiving a yield from such systems.

Adaptive management approach

The second principle of regenerative business posits that its management approach must be adaptive for being commensurate with the characteristics and the complexity of SES. The adaptive nature of the management approach results from the inherently non-linear and therefore unpredictable characteristics of SES. Adaptation has been defined as enabling “the system to better cope with, manage or adjust to some changing condition, stress, hazards, risk, or opportunity” (Smit and Wandel, 2006: 282). Regenerative approaches are adaptive in that they are based on reflexive responses to change and surprise in order to sustain the life-enhancing capacity of SES (du Plessis and Brandon, 2015; Quarshie et al., 2019). Adaptation is seen as a co-evolutionary process where regenerative organizational practices and strategies enable the adaptive capacity of SES, while in turn adapting to changes of SES (Folke et al., 2005). In the following, we build on research on robust action and grand challenges (Etzion et al., 2017; Ferraro et al., 2015), the procedural approach to regenerative sustainability (Robinson and Cole, 2015), and process perspectives in business sustainability (Fleischman et al., 2010; Hengst et al., 2020) to operationalize this second principle through three criteria.

First, due to its focus on SES, an adaptive management approach is necessarily place-sensitive and local (Benne and Mang, 2015; Mang and Reed, 2015). Whereas attention to place is lacking in the context of business sustainability (Guthey et al., 2014; Shrivastava and Kennelly, 2013), for a regenerative management approach, *sense of place*, that is, the interpretations and meanings associated with a place that “are constructed and experienced as material ecological artefacts and intricate networks of social relations” (Harvey, 1996: 316) is an important element. While a disconnected sense of place is associated with standardization and uniformity of place, a connected sense of place is infused with place-specific narratives, history, and cultural meaning (Shrivastava and Kennelly, 2013). Consequently, regenerative strategies cannot be based on one-size-fits-all solutions but are necessarily targeted to the specific characteristics of the SES that business organizations interact with. This interaction can take place at different scales (Bowen et al., 2018), ranging from local to global ecosystems. Moreover, a systems approach to place also entails the nestedness of local SES in a larger context where small “acupuncture interventions [. . .] can influence the health and renewal of the whole system” (Benne and Mang, 2015: 42). At the same time, changes in larger ecosystems can have repercussions on the resilience and integrity of the focal SES. Therefore, “the outcome of intervention at a specific acupuncture point cannot be fully controlled or even predicted” (du Plessis and Cole, 2011: 441).

The *temporal orientation* represents a second criterion of an adaptive management approach. Management scholars have increasingly recognized that temporal orientation represents an important factor for organizations to effectively address sustainability challenges (Kim et al., 2019; Slawinski and Bansal, 2015). The time orientation in business sustainability can range from more backward-looking and linear perspectives to forward-looking and cyclical perspectives. Recent studies in business sustainability have discussed both long-term and lagged effects (Slawinski and Bansal, 2012, 2015), as well as a present time focus for sustainability (Kim et al., 2019). In accordance to the underlying systems approach, an adaptive approach stresses the synchronicity of human activities with SES (Muñoz and Cohen, 2017). From this perspective, business activities need to be aligned with the seasonality and time cycles of SES (Mang and Reed, 2012). Therefore, the

temporal orientation of regenerative business acknowledges long-term, lagged, and non-linear effects of human interventions in SES (Bansal and Song, 2017; Williams et al., 2017).

Third, a central question of an adaptive management approach refers to the extent to which the notion of regeneration permeates the *core strategy* and related *practices* of business organizations. While the integration of sustainability into business activities has been discussed mainly from an organizational perspective (Engert et al., 2016), only recently, scholars have started to do so using a systems approach (Muñoz and Cohen, 2017; Upward and Jones, 2016). Regenerative initiatives can be peripheral to the core strategy, ultimately aiming at stabilizing business as usual, or they can fully permeate the business model of the organization in terms of strategically integrating core practices and products designed to foster the co-evolution of economic activities and SES.

Accordingly, strategizing practices differ in the extent to which an organization adapts to SES. Generally, an adaptive management approach relies on the understanding of relationship patterns between the parts and actors of SES (Mang and Reed, 2012). Since the behavior of SES is marked by instability, indeterminism, and multiple equilibria and cannot be predicted with certainty (Bansal and Song, 2017), regenerative practices are, ideally, iterative and procedural in that they are based on ongoing experimentation, reflective processes, and probing based on the feedback from SES (du Plessis and Brandon, 2015; du Plessis and Cole, 2011; Williams et al., 2017). In addition, regenerative practices are collective and participatory in that they include all actors that participate in an SES. The focus shifts away from prescriptive and fixed control mechanisms based on expertise toward a process of co-learning and co-development based on a responsive process (du Plessis and Cole, 2011). Aply, participation of key stakeholders has been shown to improve the effectiveness of ecosystem management measures (Brody, 2003). This focus on adaptive practices resonates with recent work on pragmatic robust action to address grand challenges based on iterative action that allows for evolutionary learning (Ferraro et al., 2015).

Table 1 summarizes the principles of regenerative business and the related criteria that we have developed earlier. Next, we use these criteria to develop a range of regenerative strategies. In doing so, we aim to bring the programmatic and normative discussion around regenerative organizations down to earth and offer a more nuanced categorization of regenerative strategies.

Strategies for regenerative business

To operationalize the notion of regenerative business, we develop a range of regenerative strategies—restore, preserve, and enhance. We explicitly do not conceptualize regenerative strategy as a dichotomous category as being regenerative or not. Rather, we understand regenerative strategies on a continuum that differ in the degree to which they are based on, and live up to, the two principles of regenerative business sketched out above. Conceiving of regenerative strategies as a range acknowledges that in practice, businesses may not be able or willing to fully live up to regenerative principles and criteria but only do so to different degrees. The three regenerative strategies we propose all have in common that they take SES and their functioning as a starting point. However, they differ in the degree to which they fully engage with the notion of regeneration. In the following, we develop each of the three strategies in more detail and illustrate our reasoning with examples from sectors, such as extractive industries, agrifood, tourism, retail, and manufacturing.

Restore

Restoration has been defined as the return to a previous or original state (Mang and Reed, 2012; Morseletto, 2020). Restoration strategies reflect a comparatively low level of aspiration regarding regeneration. The underlying rationale of restoration is to maximize yield from ecosystems where,

Table 1. Principles and criteria of regenerative business.

Principles	Systems based level of aspiration			Adaptive management approach			
	Criteria	Impact on ecosystem	Relation with ecosystem	Underlying business rationale	Sense of place	Temporal orientation	Business strategy and strategizing practices
Strategies	Exploit	Impact as externality	Domination	Maximize shareholder value	Disembedded from place and ecosystem	Short-term, linear	Business as usual within minimum legal requirements
	Restore	Compensate negative impact	Instrumental separation	Secure exploitation and maximize yield from ecosystem	Place and ecosystem as exchangeable commodity	Transactional, linear	Enlightened business as usual through post hoc repair, punctual and unilateral intervention
	Preserve	Avoid impact or net zero impact	Mutually dependent co-existence	Operate business within ecological boundaries	Acknowledgement of place-specific characteristics and requirements	Long-term, linear	Adjustment of business operations through regular feedback and adaptation
	Enhance	Net positive impact	Symbiotic embeddedness	Mutually enhancing co-evolution of ecosystem and business	Uniqueness and nestedness of place within social-ecological system	Long-term, cyclical, synchronic	Strategic integration through iterative and participative experimentation
	Degree of regeneration						

for examples, forests, fisheries, or minerals are exploited. Therefore, an economic rationality is in the foreground and the interaction with SES follows an instrumental, business-centric approach (Banerjee, 2003). Typical examples for restoration include land rehabilitation projects after open pit mining or the creation of ecological compensation areas for infrastructure projects. However, in comparison with exploit strategies that reflect a business as usual approach to SES, restore strategies incorporate some regenerative elements (see Table 1).

Exploit strategies are based on the rationale that human (economic) activity dominates over nature and see the services of SES as free gifts and damage to those systems as externalities. Restoration has a regenerative element in that it recognizes value in restoring an SES after an intervention. Moreover, restoration is not limited to repairing damage after the fact. Rather restoration starts earlier by designing the intervention in a way that permits the SES to resume functioning more easily. Such an approach requires an understanding of the functioning of SES and highlights that, while the focus of restoration strategies is on compensating for negative impacts on SES, it requires a systems logic. In this respect, it is distinct from currently dominant practices in business sustainability to reduce impacts on SES. Reducing impacts, such as air emissions, water intake, or waste disposal, usually follows an organizational logic and is not based in systems thinking. In other words, standard business sustainability strategies to reduce impacts are mainly driven by technical and/or operational feasibility and optimization. Only recently, some firms have started to consider so-called science-based reduction targets that are derived from the carrying capacity of SES (Haffar and Searcy, 2018). In that respect, while remaining reactive and corrective, restoration strategies follow a systems approach in that they seek to reestablish a functioning SES after an intervention.

The management approach of restoration strategies highlights their limited degree of regeneration. Restoration strategies do not induce any fundamental changes to business models; rather, they represent adjustments to stabilize established business models (such as extractive mining). While restoration strategies build on the characteristics of SES to design interventions and post hoc repair practices, they are not adaptive in the sense of responding to evolving conditions of SES. At the same time, restore strategies are more regenerative than exploit strategies that borrow no attention to SES beyond minimum legal requirements. Some more advanced restoration practices include a participative element though, when stakeholders and their knowledge are consulted in the planning and implementation of natural rehabilitation projects (Robertson and McGee, 2003; Sardinha et al., 2013). With regard to temporal and spatial orientation, restoration strategies usually have a limited time horizon and see places as interchangeable since they are often associated with business practices that move from one site to the next after exploitation and restoration.

Table 2 characterizes practical applications of regenerative business strategies along the principles and criteria that we developed. An illustrative example for restoration comes from the chocolate industry in West Africa that has been put in the spotlight for deforestation (Mufson, 2019). In response, the cocoa industry has entered a public-private partnership, the Cocoa & Forests Initiative (CFI), to achieve a deforestation-free cocoa supply chain. While the business rationale is mostly about reducing risks for reputation and for continued sourcing (Carodenuto, 2019), some confectionary companies have gone beyond the commitment to stop deforestation and to support restoration. For instance, Mars has announced in its CFI action plans to “[s]upport the restoration of Classified Forests [. . .] to implement contracts for mixed agroforestry as a restoration and livelihoods intervention” (Mars, 2019: 7). Similarly, Nestlé’s CFI action plan contains a commitment to agroforestry (Nestlé, 2019). By mentioning agroforestry, both commitments demonstrate that restoration follows a logic of securing yields from an ecosystem as the underlying rationale but they do so under the constraint of restoring SES as indicated in Table 2.

Table 2. Practical applications of regenerative business strategies.

Principles Criteria Strategies	Systems based level of aspiration			Adaptive management approach			
	Impact on ecosystem	Relation with ecosystem	Underlying business rationale	Sense of place	Temporal orientation	Business strategy and strategizing practices	
Degree of regeneration	Restore	Firms deploy damaging activities, such as open pit mining, but acknowledge the need to repair the damage.	Firms see ecosystems, such as mineral deposits, as commercially valuable objects to be owned and exploited.	Firms optimize the rent from exploiting ecosystems under the constraint of restoring ecosystem functioning.	Firms engage with place to the degree necessary to restore ecosystem functioning, for instance, through renaturation plans.	Firms interact with the ecosystem for the limited time of the transaction, often codified through temporary exploitation rights.	Firms adhere to profit maximizing strategies but adjust practices so that SES can resume functioning.
	Preserve	Firms choose practices that safeguard the functioning of the SES, such as restricting access to ecotourism sites.	Firms understand that they depend on functioning ecosystems, such as ecotourism sites.	Firms are willing to limit business growth to remain within the carrying capacity of the ecosystem they depend on.	Firms seek to understand the conditions and dynamics of local SES they rely on.	Firms are interested in the long-term functioning of ecosystems that they depend on.	Firms react to changing conditions of SES to preserve the status quo, such as fauna and flora of an ecotourism destination.
	Enhance	Firms develop business practices that enhance the health of SES, for instance, through farming practices that increase soil quality.	Firms see themselves as one part among others in a SES.	Firms couple their business activities to the development and health of SES.	Firms see themselves as integral part of a specific place and its SES dynamics.	Firms live with the cyclical and seasonal rhythm of the SES they are part of.	Firms iteratively adapt to the evolving conditions through robust action in collaboration with stakeholders.

SES: social-ecological system.

Preserve

Preservation is defined as maintaining the status quo of an area to prevent the extinction of species or a reduction in biodiversity (Mang and Reed, 2012). Traditionally, preservation has been achieved by protecting natural reserves, and hence, shielding certain SES from the impacts of economic activity. Preservation strategies are more strongly embedded in the notion of regeneration compared to restorative strategies since they seek to protect the functioning of SES from the outset (see Table 1). Accordingly, the aspiration of preservation strategies is to have net zero impact on SES. Through respecting ecological boundaries, ideally, they seek to secure a viable status quo between a functioning SES and business activities. Preservation is, therefore, more integrative as it conceives of the relationship of business activity with SES as a mutually dependent co-existence rather than a restoration of damage.

The management approach of preservation strategies clearly deviates from business as usual practices. Business operations are adjusted to respect ecological limits as preservation strategies acknowledge that ecological limits constrain economic activity (Grumbine, 1994). Preservation thus manifests in business models that reflect the limited carrying capacity of SES, as can be seen, for instance, in business models for sustainable tourism that restrict access to protect or pristine natural areas that are at the heart of the value proposition of sustainable tourism ventures. In that respect, preservative strategies engage more deeply with a specific place and manage the interaction with a SES at its temporal and seasonal rhythm in order to preserve its functioning. Several studies provide examples for different SES and their sustainable touristic use (Salerno et al., 2013), such as the coastal area Hengistbury Head in the United Kingdom (Garrigós Simón et al., 2004) or scuba diving in marine protected areas (Davis and Tisdell, 1995).

Preservative practices are based on regular feedback from the SES to maintain a dynamic equilibrium between system health and viable economic activity (Starik and Rands, 1995; Williams et al., 2017). Achieving such a dynamic equilibrium is based on adaptive practices. Since system behavior cannot be fully predicted (Etzion, 2018), preservation practices “respond and adapt to, and evolve with, change and surprise, while avoiding changes threatening the life-supporting and life-enhancing capacity of global and local social-ecological systems” (du Plessis and Brandon, 2015: 56).

Examples for the application of preservation strategies (see Table 2) come from the Brazilian cosmetics company Natura & Co and from Apple. Natura collaborates with local, often indigenous, communities living in forests to harvest natural ingredients, such as Brazil nuts, from surrounding forests, thus preserving forests from being logged or otherwise degraded and showcasing that an existing ecosystem can be preserved, while providing income to a community (Le Tourneau and Greissing, 2010). Their preserve strategy builds on a relation with the local SES that is marked by the acceptance of mutual co-dependence and by practices that safeguard the functioning of the SES (see Table 2). Preservation strategies often also require initiatives that reach beyond the focal business organization, such as collaborations along the value chain, across sectors and scales (Williams et al., 2019). One such example is how Apple, to preserve forests while securing paper supplies for packaging, bought over 36,000 acres of forests, which it manages together with the Conservation Fund. This initiative to adapt business practices grew out of a commitment to “zero out” the impact of Apple’s packaging (Jackson, 2016), reflecting a willingness to understand and engage with the dynamics of the local SES that the firm relies on (see Table 2).

Enhance

Regeneration seeks to enhance the conditions for life in SES (du Plessis and Brandon, 2015). The aspiration of enhance strategies fully embraces a systems approach by aiming at a net positive

impact on SES (Mang and Reed, 2015). Enhance strategies understand the relationship between business activities and SES as symbiotically embedded (Marcus et al., 2010). This understanding goes beyond securing life-supporting functions of systems (as with preservation), but aims at improving the adaptive, life-enhancing capacity of SES (du Plessis and Brandon, 2015). Enhance strategies do not aim at the regeneration of the organization; they are about the ways in that a business “can be a catalyst for positive change within and add value to the unique ‘place’ in which it is situated” (Robinson and Cole, 2015: 135).

This strong systems orientation of enhance strategies does not reject organizational resilience altogether. Rather, organizational resilience is intrinsically dependent upon the adaptive capacity of “broader social-ecological systems in which the firm is embedded” (Williams et al., 2019: 1). Adding value to the broader SES means “increasing its systemic capability to generate, sustain and evolve increasingly higher orders of vitality and viability for the life of a particular place” (Mang and Reed, 2015: 8). This capability is not static but depends upon the adaptive capacity of the SES, that is, its capacity for “maintaining options in order to buffer disturbance and to create novelty” (Holling and Gunderson, 2002: 32). Enhancing adaptive capacity thus does not merely focus on maintaining a resilient status quo of a SES, but seeks to improve its life-enhancing services for all system members by enabling its transition toward more generative states.

The adaptive management approach to enhance strategies is characterized by experimentation with different business practices aimed at improving the life-enhancing capacity of SES. Enhance strategies use a process approach to measure up to the complexity of SES (Coleman et al., 2018). Such experimentation has been described as robust action for sustainability where businesses simultaneously pursue different practices in an iterative and reflexive manner (Etzion et al., 2017; Ferraro et al., 2015) with the aim to act toward enhancing SES in the short run without compromising long-term flexibility (Etzion, 2018). Evidence comes from a study of the SES in self-organized forest communities in the Midwest of the United States. The communities that displayed mostly adaptive responses to disturbances were those that learned from experience and used “that learning to change institutions . . . [for] enhanced robustness” (Fleischman et al., 2010: 16).

Due to the aspiration for net positive impact and enhancement, the interaction of business with SES is deeper than with preservation strategies (see Table 1). Since system behavior depends on the feedback from all participants in the system (Sterman, 2001), enhancing practices are distributed and participative, reflecting that “system-level resilience is influenced by the interactions of interdependent firms” (McKnight, 2019: 222) and actors. By including other system participants, enhancing practices aim at the creation of system services for other species (human and non-human) in a specific place, that is, services that benefit humans and nature. Since regeneration “cannot be well managed without an understanding of the feedback effects across nested systems” (Williams et al., 2019: 1), enhancing practices seek to identify leverage points across different scales to improve the adaptive capacity of SES (Etzion, 2018; Meadows, 1999). For instance, Playa Viva, a sustainable boutique hotel on Mexico’s Pacific coast, in seeking to revitalize the land it is built on (a former coconut plantation), realized that it had to act outside the boundaries of the resort area. By engaging with members of the local community, the hotel identified measures to restore coastal mangrove forests in the region. The hotel also engaged in training local farmers in organic agriculture and permaculture and created a demand for the products. At the same time, it included enhancing elements into its value proposition to guests by furnishing the hotel with locally produced furniture or by offering guests the opportunity to participate in regenerative projects during their stay (Benne and Mang, 2015).

Examples for the application of enhance strategies (see Table 2) exist across different scales. At the local level, the documentary “The Biggest Little Farm” (Chester, 2018) followed the travails of a Californian couple to transform a farm from degraded land into a regenerative enterprise with

cover crops, diversified fruit orchards, and improved soil. Their experience showed how successive improvements led to disequilibria that could only be resolved when the SES rebalanced itself. For instance, the fruit trees attracted birds that fed on large amounts of fruit, which achieved a new balance as predator birds reappeared. Their experience is illustrative of an adaptive and iterative approach through robust action that takes a long-term perspective. It also reflects the tight coupling of business activities to the SES based on a business identity of being an integral part of the SES and its cyclical and seasonal rhythms (see Table 2).

Medium-range initiatives come from Patagonia Provisions, a part of Patagonia, which seeks to promote regenerative practices in the food industry. On its website, Patagonia Provisions (2020) states, “We believe it’s possible to grow food and fiber in harmony to make our land more fertile and our future brighter, with the goal of not just doing less harm, but also doing some good.” Evident are the aspiration of a net positive impact and the underlying rationale of having ecosystems and business coevolve as reflected by the development of business practices that enhance the health of SES (see Table 2).

At the multinational level, General Mills and Danone have started programs to facilitate the transition from conventional to regenerative farming. Although early stage, these initiatives depart from standard industry practice in taking a long-term, participative, and tailored perspective. For example, Danone offers 3-year contracts to dairy farmers, making prices more predictable for them (Clancy, 2020). Both multinationals operate these initiatives together with partners across sectors, including an impact investment fund, government agencies, research universities, non-profit organizations, and other industry players (Clancy, 2020; Danone, 2018; General Mills, 2020b). Noteworthy is the recognition of local context of enhance strategies as indicated in Table 2, or as General Mills (2020a) states, “No two farms or ranches are the same, and the regenerative agriculture principles should be implemented based on the environmental, economic and cultural context of each unique operation.”

Enhance strategies also leverage synergies across sectors. For instance, “agrivoltaic systems” bridge the food and energy sector where crops grow under raised solar voltaic panels. Agrivoltaic systems have been shown to significantly increase crop production and water efficiency as well as improve energy production due to a cooling effect on the solar panels from crops below (Barron-Gafford et al., 2019). Such synergies illustrate how enhance strategies are often based on experimentation and on unusual alliances (see Table 2).

Discussion

The purpose of this article is to operationalize the notion of regenerative business. By drawing from literature on regenerative sustainability from the fields of urban planning and the built environment, we translate programmatic ideas around regeneration into strategic implications for regenerative business. We advance the nascent literature on regenerative business by offering a nuanced understanding of the different strategies available to firms to move toward regeneration. By showing a range of regenerative strategies, we deepen the understanding of regenerative business beyond normative calls (Gladwin et al., 1995; Morseletto, 2020; Starik and Rands, 1995). In the following, we develop this contribution in more detail and discuss conceptual and managerial implications as well as opportunities for future research.

As our main contribution, we develop the restore-preserve-enhance scale for regenerative business strategies. We base these strategies on criteria that follow from two main principles of regenerative business that define the level of aspiration and the management approach from a systems perspective. By doing so, we offer a conceptualization of regenerative business rather than merely identifying regenerative practices by firms (Slawinski et al., 2019). Most importantly, while

following the systems approach that is at the heart of regenerative sustainability (Williams et al., 2017, 2019), our range of strategies differ in the degree to which they live up to the notion of regeneration. Implementing regenerative strategies is thus not a binary choice. Rather, our restore-preserve-enhance scale highlights that firms can pursue different regenerative strategies, through adjusting their levels of aspiration and management approaches to their specific circumstances.

In this context, the criteria for regenerative business with regard to the level of aspiration and the management approach represent an important contribution toward the operationalization of regenerative business. Positioning regenerative strategies on a continuum is valuable since it reflects that ideal outcomes in terms of a net positive impact of business activities on SES may not always be possible, at least not in the short run (Holden et al., 2016). The range of regenerative strategies that we propose defines a possibility space under different conditions.

Our argument has two main conceptual implications. First, it offers an alternative to the dominant approach to business sustainability that is based on an inside-out perspective. Inside-out approaches take the organization as a starting point to formulate sustainability strategies (Winn and Kirchgeorg, 2005). They aim to reduce impacts on SES based on organizational capabilities rather than deriving strategies from the requirements of specific SES. For instance, the natural resource-based view (Hart, 1995; Russo and Fouts, 1997) posits that firms develop unique capabilities to manage the natural environment in order to yield abnormal rents. The guiding principle for inside-out strategies is thus not based on the state and functioning of SES, but on the ability of the firm to increase profits. Our regenerative strategies differ fundamentally from such inside-out approaches since they adopt a systems approach with the aim to sustain healthy SES. They are, therefore, based on an outside-in perspective, where business strategies are derived from system requirements (Winn and Kirchgeorg, 2005).

Second, our proposed range of regenerative business strategies offers an alternative perspective on the underlying logic of businesses' relationship with their wider social-ecological context. Most commonly, business strategies to address environmental and social concerns are based on a stakeholder pressure logic or on a market logic. For instance, the widely used RDAP scale (Clarkson, 1995) categorizes strategies to respond to stakeholder pressures in terms of reactive (denying responsibility and doing less than required to address the issue), defensive (admitting responsibility but fight it and doing the least that is required), accommodative (accepting responsibility and doing all that is required), and proactive strategies (anticipating responsibility and doing more than is required). Here, proactiveness is understood in terms of responsiveness to stakeholder demands. With a market logic, strategies aim at increasing financial performance through addressing sustainability issues. Most commonly, such a market-based logic distinguished between cost-leadership and differentiation and process- and product-focused strategies (Orsato, 2006; Reinhardt, 1999). Here, proactiveness is understood as beyond compliance behavior driven by economic incentives.

Our restore-preserve-enhance scale offers an alternative perspective on proactiveness. Many sustainability concerns, such as biodiversity, are not yet integrated in market mechanisms nor do they enjoy large-scale stakeholder advocacy. Moreover, markets and stakeholder demands do not follow a systems logic. Hence, existing categorizations of sustainability strategies are unlikely to measure up to the challenges of sustainability. From the perspective of our proposed scale of regenerative strategies, proactiveness reflects the degree to which a business organization contributes to the vitality of SES. It is noteworthy that this regenerative perspective is not completely at odds with stakeholder-based and market-based views. Regenerative strategies are oftentimes proactive in the sense of the RDAP scale in that they exceed common stakeholder expectations and anticipate responsibilities. Ideally, regenerative strategies are also financially viable for businesses, albeit they may well require fundamental changes in the business model (Muñoz and Cohen, 2017) and/

or the departure from short-term profit-maximization as the overriding business objective (Schrader, 1987). While regenerative business accommodates financial viability of firms, it puts the viability and resilience of SES in front of organizational outcomes by placing the organization within its surrounding SES.

We would like to highlight two particularly important managerial implications. First, from a regenerative perspective, the formulation of business strategies is necessarily local and decentralized as opposed to standardized global strategies (Epstein and Roy, 2001). Some regenerative strategies may well address global ecological systems, such as the climate system in the context of global warming. However, due to the nested and interdependent nature of SES, strategic action must be defined at the local level. Likewise, from a regenerative perspective, strategies cannot be fully planned, but rely on emergent, participative, and iterative practices based on robust action and continued feedback from SES (Neugebauer et al., 2016).

Second, regenerative business brings about specific leadership challenges. Because regenerative business cannot be fully planned, regenerative organizations will benefit from leaders establishing and sustaining an organizational climate for reflexivity (Burgelman, 1996). In such a climate, organizational members are encouraged to dissent around strategic direction and to cultivate reflexivity, that is, “a concern with reviewing and reflecting upon objectives, strategies, and work processes” (Patterson et al., 2005: 386). The emergent process of strategic action is strongly shaped through actors’ constructions of ambiguity (Sillince et al., 2012). Therefore, conveying an organizational climate for reflexivity requires leaders with tolerance of ambiguity, that is, the ability to perceive “ambiguous situations/stimuli as desirable, challenging and interesting” (Furnham and Ribchester, 1995: 179) when facing complexity and uncertainty. In this way, leaders are better equipped to embrace the tensions that are inherent in sustainable robust action (Etzion et al., 2017; Hahn et al., 2015; Slawinski et al., 2019) and in curating a regenerative approach throughout the organization.

Our argument offers a range of opportunities for future research. Future studies could explore the process of the enactment of regenerative practices in business organizations and their surrounding SES. Given the nascent state of research into regenerative business, qualitative methods (Edmondson and McManus, 2007) and process-based approaches (Langley, 1999) appear most promising to explore the enactment of regenerative strategies. Longitudinal studies could explore the dynamics of a shift toward more regenerative business strategies over time (Langley et al., 2013). An intriguing question is whether organizations take different pathways from less regenerative to more regenerative strategic practices and what factors drive such transition pathways.

It appears particularly promising to explore the boundary conditions of regenerative business to understand the conditions under which firms adopt regenerative strategies by addressing systemic, institutional, and organizational factors. Regarding systemic factors, the state of SES determines the suitability of different strategies. For instance, for a malfunctioning or degraded SES, preservation may not be a suitable option. Future research on the role of systemic conditions should be interdisciplinary and draw on insights from research on the state and dynamics of ecosystems (Steffen et al., 2015; van Jaarsveld et al., 2005).

Institutional factors cover regulatory frameworks, but also cultural and ethical norms and habits. Regulatory frameworks can enhance or undermine regenerative business practices. For instance, in Germany, legal requirements to link the size of stockbreeding businesses to an equivalent land area to bring out manure was abandoned in the late 1990s. As a result, stockbreeding businesses grew and eutrophication levels of groundwater in many German regions exceed EU thresholds. More regenerative practices of stockbreeding that keep the nitrate load onto the land within carrying capacity were undermined. Enhance strategies and related business models may well depend on changes in cultural consumption patterns, for instance, on the likelihood of

large-scale shift of consumers toward a more plant-based diet to address climate change (de Bakker and Dagevos, 2012).

Finally, organizational factors, such as size and identity, may influence the choice of regenerative strategies. Future research could explore whether larger or smaller organizations are more likely to adopt restore, preserve, or enhance strategies. While larger organizations may have the necessary organizational slack to undertake shifts toward more regenerative practices, smaller organizations may be more connected to and rooted in local SES and therefore adopt regenerative strategies (DeBoer et al., 2017). Organizational identity represents another important factor in how organizations address sustainability challenges (Weber et al., 2008; Zellweger et al., 2013). For instance, Kearins et al. (2010) report that a nature-based identity was prominent among small entrepreneurs from New Zealand who deliberately chose to limit the growth of their ventures in order to stay within carrying capacities of ecosystems. Future research could address if and how the choice of regenerative strategies is related to organizations defining “who they are” in relation to the business-society-nature interface (Marcus et al., 2010).

Overall, sustainability scholars increasingly argue for the need to adopt a systems approach to business strategy (Whiteman et al., 2013; Williams et al., 2017, 2019; Winn and Pogutz, 2013). The stress that many SES are under and the pressure that human economic activity, and not least business activity, puts on these SES highlight the need to rethink business strategy. We argue that regenerative business provides an important step into this direction and hope that our proposed range of regenerative strategies will help to move the field toward theories and practices as if the sustainability and health of social-ecological systems really mattered.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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