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From sustainability to thrivability: A novel framework for entrepreneurial ecosystems

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Abstract

The present research proposes a theoretical framework for a thrivable entrepreneurial ecosystem in which thrivability is a novel entrepreneurship approach that embeds a comprehensive view in which sustainability is 'the way to walk' rather than the goal to reach. A thrivable entrepreneurial ecosystem aims to create prosperity through ecosystem resource (re)generation and transformation to define long-term economic goals. The framework is applied here to address the grand challenge of sustainable development in wineries. A local wine ecosystem in Italy is employed as a case study supported by mix-method-based, in-depth data collection (survey and interview). Results from the study support the idea that organizations can collaborate in a thrivable entrepreneurial ecosystem as a unique entity respectful of nature, driving economic viability of both firms and territories by improving quality of life, and caring for natural resources and local communities. This novel entrepreneurial approach may represent a turning point for facing increasingly grand business challenges.

Keywords Entrepreneurial ecosystem · Sustainable entrepreneurship · Sustainability · Thrivability

Introduction

The concept of entrepreneurial ecosystems has recently gained momentum in business studies and practice (Isenberg, 2010, 2011; Malecki, 2011; Spigel, 2017). This rising theoretical field broadly examines the attributes, elements and interdependent

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relationships within entrepreneurial ecosystems (Spigel, 2017). Scholars do not agree on a definition of entrepreneurial ecosystems (Roundy et al., 2018; Stam, 2015), but there is a common vision regarding its systemic nature (Stam, 2015). The systemic approach of ecosystems allows for a more comprehensive consideration of entrepreneurship by considering the activities of several actors as well as their interrelationships with a variety of contextual factors. These factors are increasingly influenced by exogenous grand societal challenges such as poverty, climate change and demographic imbalances (George et al., 2016).

Considering grand challenges to sustainable development (e.g. climate change, water pollution, inequality), recent studies on entrepreneurship widely recognise the need to define new tools for enhancing the sustainable use of resources (Schaltegger & Wagner, 2011; Terán-Yépez et al., 2020). At the same time, declarations, charters and the United Nations (UN) 2030 agenda (UN, 2015) underline the need for a depth and radical change in entrepreneurship to act against the effects of human impacts that have created a new era termed the Anthropocene (Bebbington et al., 2019).

In this context, an entrepreneur should act sustainably and consider the impacts their company is having on both local communities and the global system (Cavallo et al., 2019). According to the literature, the sustainable entrepreneurship concept is based on the development of practices and assessments that consider sustainability in a firm's triple bottom line (i.e. environmental, social and economic) (Fischer et al., 2020). However, recent studies underline the importance of considering the triple bottom line aspects embedded in the wider space created by the interaction of several linked actors pursuing a common aim: a sustainable entrepreneurial ecosystem (Alvedalen & Boschma, 2017). In this ecosystem, sustainable entrepreneurs are nested within a community in which each actor supports the system by playing a role in an interactive network that potentially supports value co-creation (Donaldson, 2020; Moggi & Dameri, 2021). However, recent studies underline the importance of considering ecosystems in their coherence with our natural world, as economic behaviours are increasingly being imposed on a different order (Smitsman & Currivan, 2019. Redesigning our ecosystem to become more sustainable is part of a process facilitating the development of people, organisations and our learning capacity regarding thrivability (Smitsman et al., 2019).

The concept of thrivability goes further than sustainability, and embeds a more comprehensive conception of sustainable behaviour that, from a holistic perspective, can help in addressing grand challenges in the long term to stimulate qualitative growth. Thrivability focuses on the qualitative growth that supports full prosperity in partnerships, not just by respecting nature but by being part of it and seeking co-designed development (Russell, 2013; Smitsman, 2019). Despite recent demonstrated interest in this concept, little is known about how thrivability works in practice, and scholars have called for applied studies in the field (Gibbons, 2020; Holliday, 2016). In this sense, the present research aims to first conceptualise thrivability in the context of entrepreneurial ecosystems; and second, increase understanding of how a thrivable entrepreneurial ecosystem can address grand challenges.

Grand challenges to sustainable development are accelerating the transition from a sustainable to a thrivable entrepreneurial ecosystem in several industries. Our study

considers the wine sector as an effective setting for examining this transition, as the sector is affected by sustainability issues in multiple ways (Moggi et al., 2020; Galbreath, 2011; Pucci et al., 2020; Winkler & Nicholas, 2016). For example, climate change for this sector is resulting in the appearance of new pathogens and parasites in vineyards; a decrease in the quality (or quantity) of the final product (Mozell & Thach, 2014); a progressive shift towards to higher latitudes in viticulture (Hannah et al., 2013); and consequent management of critical environmental areas of concern. These issues involve aspects such as water resources, soil consumption, solid waste management, electricity consumption and emissions, use of pesticides and fertilisers, and general impacts on the ecosystem (Christ & Burrit, 2013; Gabzdylova et al., 2009). In addition to environmental issues are concerns about social impacts that affect the relationship between companies and local communities (Cantino et al., 2019; Forbes et al., 2009; Pratt, 2012). The public health of communities is potentially threatened by viticulture, but the displacement of vineyard land to cooler production areas from the climatic point of view can contaminate fields—and their local communities—not previously affected by these sources of pollution (Mariani & Vastola, 2015; Pullman et al., 2010).

In analysing complex ecosystems that are facing grand challenges, the present research focuses on a sustainable entrepreneurial ecosystem in the Italian wine sector. The Canavese region of northern Italy was selected as the case study in this research as it has overcome a phase of industrial crisis by enhancing its sustainability practices. Canavese has a complex network of wineries of different sizes that are strongly bonded with the local community. The case presents a valuable context for exploring how a sustainable entrepreneurial ecosystem can become a thrivable ecosystem facing grand challenges. Data collection was carried out through a mixed-method approach based on a survey and semi-structured interviews with entrepreneurs and winemakers. The present research follows the sequential explanatory approach that consists of two distinct phases designed to improve data reliability (Creswell et al., 2003). The rationale for this two-step approach is that the quantitative data and their subsequent analysis provide a general understanding of the research problem by also exploring the key informants' views (Patton, 2002).

This study proposes a framework based on the seminal literature on sustainable entrepreneurial ecosystems and sustainable entrepreneurship (Kraus et al., 2018; Schaltegger & Wagner, 2011; Volkmann et al., 2021). The features of a thrivable entrepreneurial ecosystem are summarised in the theoretical literature on the topic (Bebbington et al., 2019; Gibbons, 2020; Smitsman, 2019). The case study analysis suggests that these two kinds of ecosystem are not in contrast with one another; rather one represents natural evolution from the other (Smitsman, 2019), which suggests that entrepreneurs' attitudes and beliefs might be pivotal in this evolutionary development.

The contribution of the study is threefold. First, the research expands knowledge on entrepreneur ecosystems by proposing a novel model that goes beyond sustainability and embraces the holistic concept of a thrivable entrepreneurial ecosystem. Second, it represents the first attempt to apply the concept of thrivability to entrepreneurship studies, moving from the theoretical concept to its practical implications at a business level. In doing so, the paper advances previous studies on entrepreneurial

ecosystems (see Schaltegger & Wagner, 2011) and proposes the novel approach of thrivable entrepreneurial ecosystems. Finally, the study identifies key aspects that permit a thrivable ecosystem to address grand challenges.

The paper is structured as follows. The next section provides the theoretical background on entrepreneurial ecosystems and sustainable entrepreneurship, and an overview of early studies on thrivability that support the proposed framework. The methodology section presents the case setting and how the Canavese sustainable ecosystem has been explored via mixed-method data collection. Section 4 presents the results of the survey and interviews with participating ecosystem wineries. Finally, the discussion and conclusion describe the paper's main contributions as the first attempt to describe thrivability in practice.

Theoretical background

Entrepreneurial ecosystems

Since the concept of entrepreneurial ecosystems is becoming increasingly popular (Audretsch & Link, 2019; Spigel, 2017; Spigel & Harrison, 2018), the number of studies on this topic is increasing rapidly and research is gathering momentum in business theory and practice (Isenberg, 2010, 2011; Malecki, 2011; Spigel, 2017). This is partly because of the need to conceptualise entrepreneurship more holistically, as part of a wider ecosystem that is influenced by the interactions among several stakeholders (e.g. institutions, companies and individuals) involved in innovative and entrepreneurial practices (Audretsch & Belitski, 2016; Autio et al., 2014). The concept of entrepreneurial ecosystems is strongly linked to regional development as it focuses on specific regions in terms of value creation (Ács et al., 2014). This physical dimension has been investigated to identify the determinants of entrepreneurial activity (Bischoff, 2021). Among these factors, social capital and relationship-based resources play an important role in understanding entrepreneurship and firm performance (Li et al., 2015; Westlund & Bolton, 2003).

An entrepreneurial ecosystem can be defined as 'a self-organized, adaptive, and geographically bounded community of complex agents operating at multiple, aggregated levels, whose non-linear interactions result in the patterns of activities through which new ventures form and dissolve over time' (Roundy et al., 2018, p. 5). While not all researchers agree with this definition (e.g. Stam, 2015), they share a collective vision for its systemic nature (DiVito & Ingen-Housz, 2019; Pankov et al., 2021; Volkmann et al., 2021). A systemic view on ecosystems considers entrepreneurship comprehensively in terms of the activities of several actors (Erina et al., 2017; Roundy et al., 2018). This view helps to shed light on entrepreneurs' actions when they are embedded in a complex multi-level economic system (Ács et al., 2014; Volkmann et al., 2021). These actions are largely influenced by contextual characteristics and components of the systems (Isenberg, 2010; Neck et al., 2004; Spigel, 2017; Stam, 2015; Szerb et al., 2013; Woolley, 2014). In recent studies of entrepreneurial ecosystems, increasing attention has been paid to sustainability issues (Pankov et al., 2021; Roundy et al., 2018; Volkmann et al., 2021).

Sustainable entrepreneurship and sustainable entrepreneurial ecosystems

As noted by Volkmann et al. (2021, p. 1049), 'the indifference of the sustainability dimension in the evolution of entrepreneurship practices leads to the presumption that ventures neglect their responsibility toward the environment and society'. Thus, stakeholders and general society need to enhance the development of sustainable entrepreneurship (Cohen & Winn, 2007; Kraus et al., 2018; Schaltegger & Wagner, 2011).

Sustainable entrepreneurship responds to the need for integrating environmental, social and economic activities (Kraus et al., 2018; Yi, 2020). Choi and Gray (2008) identify a sustainable entrepreneur as an individual who can create and build a profitable company while also pursuing environmental and social causes. In a broader sense, a sustainable entrepreneur should act in a way that considers the impacts the company is having on both local communities and the global system (Cavallo et al., 2019). Drivers for sustainable entrepreneurship are different from those of traditional businesses, which are focused more on profit (Hanohov & Baldacchino, 2018). Motivations for sustainable entrepreneurship combine sustainability-oriented goals with profit goals (Matzembacher et al., 2019). In some industries—such as the wine sector—this kind of entrepreneurship helps develop collective actions for overcoming natural system collapse in a sustainable approach to production (Smitsman & Currivan, 2019). The growing planetary complexity of the Anthropocene is steering entrepreneurs to spread new practices by first learning, and then networking with other entrepreneurs and stakeholders (Smitsman et al., 2019). This open environment favours the creation of new institutions, structures and certifications of legitimate practices (Bischoff & Volkmann, 2018; DiVito & Ingen-Housz, 2019).

Scholars do not agree on the conceptual link between sustainable entrepreneurship and entrepreneurial ecosystems. Entrepreneurial ecosystems can support and embed entrepreneurs that show sustainable behaviour in running their business, while sustainable entrepreneurship may require work and support ecosystems that are not always sustainable (Volkmann et al., 2021). According to Cohen (2006, p. 3), a sustainable entrepreneurial ecosystem is 'an interconnected group of actors in a local geographic community committed to sustainable development through the support and facilitation of new sustainable ventures'. Researchers suggest that the success of ventures depends on appropriate public and private support systems (Cavallo et al., 2019; Nylund & Cohen, 2017) as well as several institutional conditions including regulatory policies, innovation climates and social norms (Morozova et al., 2019; Sunny & Shu, 2019). In this context, entrepreneurship is usually orchestrated by a focal organisation and the ecosystem is characterised by transparency in the actors' actions (Moggi & Dameri, 2021; Parida & Wincent, 2019; Stam, 2018).

Outputs of a sustainable entrepreneurial ecosystem are goods and services with ecological, social and economic gains that are coherent with the triple bottom line model of the sustainability definition (Cohen & Winn, 2007; Mets et al., 2013; Patzelt & Shepherd, 2011). One of the main concerns of this approach is that the integration of all three dimensions of sustainability occurs not simultaneously but sequentially, as entrepreneurs focus mainly on one or two dimensions (Belz & Binder, 2017; Matzembacher et al., 2019).

Terms like regeneration, resilience and sustainable ecosystems are well known in the field and are the subject of several recent studies on sustainable entrepreneurial ecosystems (Cavallo et al., 2019; Parida & Wincent, 2019). Nonetheless, there is still a lack of understanding of how these systems can play a role as a whole. Holistic and transdisciplinary approaches are needed to further understand how these ecosystems can address grand challenges affecting both communities and territories (Cavallo et al., 2019).

From sustainability to thrivability

The concept of sustainability embeds the recognition that human beings negatively affect environmental resources and are detrimental to their own survival (Purvis et al., 2019). In this conceptualisation, the focus is anthropocentric and mainly on how to enable efficient economic development in an environment of limited resources (Bebbington et al., 2019). This concept has gradually advanced over time to include concrete developments in numerous areas such as social justice, social-ecological technical systems, innovation toward sustainability and self-sufficient ecosystems (Miller, 2013; Moggi & Dameri, 2021). Scholars have already underlined how entrepreneurs' sustainable behaviour may be a façade, and efficiency and technological improvements may unintentionally foster greater sustainability or hide unsustainable behaviour, in a form of 'greenwashing' (Gray & Milne, 2018, 2019). Unfortunately, this happens because contemporary sustainability mostly focuses on symptoms rather than the roots of unsustainability. These scholars also agree that sustainability efforts and studies in the field have failed to produce systemic change (Gray, 2014; Gray & Milne, 2002). Recognition of this failure provides a basis for rethinking the meaning of sustainable entrepreneurial ecosystems in a more comprehensive way (Volkmann et al., 2021). According to Gibbons (2020), this begins with the growing recognition that human efforts should be aligned with the proliferation of natural ecosystems; and sustainability goals should overcome the narrow anthropocentric view of holistic and thrivable ecosystems.

The concept of thrivability is recent and evolving, and arises from nature studies. Research has failed to provide a unique definition of the thrivability concept. In a general sense, thrivability is the act of thriving or prospering, and goes beyond simple survival to surpass the concept of sustainability. According to Smitsman (2019), the concept of thrivability is still poorly understood and novel in the managerial and entrepreneurship literature. Since little is still known on how thrivability works in practice, scholars have called for applied studies in the field (Gibbons, 2020; Holliday, 2016).

Relative to sustainability, thrivability is considered in the present research as a 'larger umbrella concept that has a different focus from sustainability and might perhaps bring things together in ways that sustainability as an umbrella concept did not manage to achieve' (Smitsman, 2019, p. 439). Whereas sustainability stems from actions towards impact reduction, limiting resource use and stopping uncontrolled growth, thrivability focuses on 'stimulating qualitative growth that is life-centric and

supports our full flourishing in partnership with our planetary life, through the evolutionary agency' (Smitsman, 2019, p. 439).

Since the recognition of an economic global system, political and economic models of growth have steered technological development, taking into account natural resources available for entrepreneurs. In this context, the pursuit of thrivability refers to the development of ecosystem processes where entrepreneurs oversee a collective sense of shared responsibility for a common outcome (Laszlo, 2018). This does not imply the design of processes that work against the pursuit of profit; rather, it embeds a deep rethinking of entrepreneurial ecosystems as a whole that are respectful of the nature in which they are rooted and that operate using natural resources, in light of their simultaneous regeneration and prosperity (Wahl, 2016).

Since its recent development, the idea of thrivability has been applied in few contexts including regenerative landscape and territory studies (Cerreta et al., 2020; Gibbons, 2019; Opdam et al., 2013) and education about thrivability (Burns, 2011; Gibbons et al., 2020). There has been a recent focus on agriculture that creates links between ecological, social and cultural components of communities that enhance the common growth of persons, farms and places. In these recent studies, agricultural practices— for instance, increased soil fertility, health and biodiversity, and improved plant resilience—build a common sense of belonging and support local economies (Gibbons, 2020).

Thrivability is a developmental status that potentially evolves through an ecosystem process for regaining reciprocity with the natural world (Smitsman, 2019). This approach reminds us that the evolutionary process for humans, firms and ecosystems is cyclical and reciprocal rather than extractive, linear and singular (Smitsman et al., 2019). In the socio-economic global system, predetermined criteria, standards and outcomes are created to increase productivity and profit within society; little space is given to the natural circle and life experience (Sachs et al., 2019; United Nations Educational, Scientific and Cultural Organization [UNESCO], 2012). In thrivable entrepreneurship practices, humans are seen as autopoietic actors of developmental change processes who should recognise the potential of each place or community (Gibbons, 2020; Khan & Gray, 2016).

Following this approach, it is an entrepreneur's challenge to support individual and collective processes of development that embrace evolutionary consonance (Smitsman & Currivan, 2019). Through collaboration inside the entrepreneurial ecosystem, engagement, trust, empathy, motivation, commitment and creativity increase and enhance systemic transformation strategies (Smitsman, 2019).

These processes reduce incoherence in the ecosystem by creating a new coherence dynamic among participants, and from complexity stems interdependencies and benefits for the members, instead of competitive advantage in the hands of a few (Smitsman & Currivan, 2019). Transparent boundaries and interdependencies among members, together with open learning capabilities, steer the creation of open business models that consider osmotic boundaries instead of systemic barriers (Chesbrough, 2006).

Table 1 presents a framework that summarises the main features of a sustainable entrepreneurial ecosystem and a thrivable entrepreneurial ecosystem. The features of the first kind of ecosystem are based on the seminal literature on sustainable

Table 1 Framework comparing the main features of sustainable and thrivable entrepreneurial ecosystems

	Sustainable entrepreneurial ecosystem	Thrivable entrepreneurial ecosystem
Core motivation	Contribute to solving societal and environmental problems through the realisation of a successful ecosystem	Prosperity for the entire ecosystem in a long-term view
Main goal	Creating sustainable development through merging of entrepreneurial corporate activities (anthropocentric view)	Creating prosperity through ecosystem resource (re)generation and transformation (life-centric view)
Role of economic goals	Means and ends	Means and long-term ends
Role of non-market goals	Core element for integrating economic end goal contributing to sustainable development	Core element that steers long-term economic prosperity
Organisational development challenge	From small contribution to large contribution to sustainable development	Only systemic point of view in which organisations are part of the system
Ecosystem boundaries	Systemic boundaries	Osmotic boundaries
Governance	Focal organisation/participative governance	Not formally defined
Assessment and reporting	Triple bottom line approach	Holistic and integrated

entrepreneurial ecosystems (Cohen, 2006; DiVito & Ingen-Housz, 2019; Volkmann et al., 2021) and sustainable entrepreneurship (Cohen & Winn, 2007; Kraus et al., 2018; Schaltegger & Wagner, 2011). The features of a thrivable entrepreneurial ecosystem are summarised in the theoretical literature on the topic (Bebbington et al., 2019; Gibbons, 2020; Smitsman, 2019). These two kinds of ecosystem are not in contrast; rather—as in our case study—one has natural evolved from the other (Smitsman, 2019).

Methodology

To explore how thrivability works in an entrepreneurial ecosystem, the present research considers the local area of Canavese, a wine production region in the north of Italy. Eisenhardt et al. (2016) encourage the use of complex case studies for shedding light on complex phenomena to enhance the development of new concepts, models and theories that contribute to solving societal issues. Currently, the few studies on thrivability have been mainly theoretical; rather little is known on how thrivability works in practice. Although case studies cannot be replicated or provide generalisation, they are expected to innovate field providing new frameworks (Parker & Northcott, 2016). Following this suggestion, the present study employs an explorative in-depth case study to investigate how the proposed framework on thrivable entrepreneurial ecosystems operates to overcome an industrial crisis by enhancing sustainable practice. The complex ecosystem of Canavese is explored through a qualitative mixed-method design, described by Creswell (2014) as a sequential explanatory approach (quantitative survey followed by qualitative interviews).

Case setting: The Canavese area for a sustainable wine industry

In the last decade, sustainability awareness has increased progressively in the wine sector, reaching all countries and markets, with the main attention being on environmental and social issues (Pullman et al., 2010). Several traditional wine regions are threatened by rising temperatures, which will lead to the loss of up to 73% of suitable area by 2050 and require the establishment of vineyards at higher elevations, with impacts on upland ecosystems (Hannah et al., 2013). However, the wine industry is already experiencing problems because of climate change: pest and disease attacks are increasing because of rising humidity and temperature (Galbreath, 2011). Moreover, grape chemistry is changing, with higher pH and higher sugar content—factors that require different processes in production and conservation, and lead to a different quality of the final product (Mozell & Thach, 2014). Other critical concerns relate to the use of natural resources, and pollution. The use of water and its dispersion in the environment, greenhouse gas emissions, use of energy, solid waste management, land exploitation and chemical treatments are major concerns in the wine industry (Christ & Burrit, 2013). In the future, attempts to maintain wine grape quality and productivity in the face of global warming will be associated with increased use of water for both irrigation and refrigeration, generating

scarcity of this important resource (Hannah et al., 2013). In its most recent resolutions, the International Organisation of Vine and Wine (OIV) (2004, 2008) provides guidelines for assessing the environmental risk of viticulture and wine production, considering the following dimensions: site selection (for new vineyards/wineries), biodiversity, variety selection (for new vineyards), solid waste management, soil management, energy use, water management, air quality, wastewater, land use, human resource management and chemical use.

In this context, the Canavese wine region is a well-recognised production area despite its limited size, with around 420 hectares of vineyards. This area is characterised by the moraine origin of its soil, which permits the production of very high-quality wines obtained by autochthonous varieties of grape grown on a terrace network. These terraces are based on dry-stone walls that UNESCO recognised in 2018 as World Heritage. The increased attention to the local community and region has driven a re-evaluation of traditional structures such as dry-stone walls and terraces on which crops such as olive trees and vines are grown, to limit problems such as erosion and landslides, and maintain the hydro-geological safety of the entire area (Koulouri & Giourga, 2007. The value of some traditional wine landscapes is recognised, both for their historical and cultural values and their conservation of the land (Cantino et al., 2019). The Canavese case study was selected because it represents an entrepreneurial ecosystem that has overcome a phase of profound industrial crisis by improving its sustainability practices. This wine production area involves a complex network of wineries of different sizes with strong connections to the local community. Since the area faced an economic and social crisis due to partial abandonment of the vineyards and climate change impacts to its agriculture and landscape, the entrepreneurial ecosystem structure was naturally created and developed to fight these issues with the common aim of reinvigorating the land and its community.

Methods and data analysis

According to Ivankova et al. (2006, p. 3) 'mixed methods is a procedure for collecting, analyzing, and "mixing" or integrating both quantitative and qualitative data at some stage of the research process within a single study to gain a better understanding of the research problem'. Following Creswell et al. (2003), our study follows a sequential explanatory approach consisting of two distinct phases. First, through a quantitative (numeric) and qualitative (open questions) survey, data were collected and analysed. Second, qualitative (transcribed interviews) data were collected and analysed to help explain the survey results obtained in the first phase. The second phase builds on the first phase, and the two phases are connected through data analysis aiming to identify the dimensions proposed in the framework for thrivable entrepreneurial ecosystems. As noted by Creswell et al. (2003), the rationale for this two-step approach is that quantitative data and their subsequent analysis provide a general understanding of a research problem by also exploring key informants' views. The two phases of data collection were carried out from April to December 2019.

According to the Italian Business Register, the local Chamber of Commerce lists 52 wineries for the Canavese area. As five companies were no longer in business, the survey was sent by email to 47 wineries, of which 32 responded, giving a final return rate of 68.1%. The survey contained 25 questions, including a few open questions but with most requiring a response on a five-point Likert scale. Two researchers prepared the questionnaire based on the literature in the field of sustainability in wineries, sustainable entrepreneurship, and sustainable ecosystems. The first version was tested by two winemakers in the zone and revised according to their suggestions. The updated version of the survey was sent by email, and could be answered on the online platform or by completing an attached pdf. The data collection period for the survey lasted four months (April–August 2019) and included several reminders via email as well as direct phone calls to wineries. The survey provided the first results on the sustainable practices carried out by these wineries. Responses to the open questions embedded in the survey suggested that the actions toward sustainable development were more complex and articulated compared with the practice that was developed into a sustainable ecosystem. This issue necessitated a more comprehensive investigation through additional and more in-depth qualitative data collection to explore the implementation of thrivability-oriented practices (Patton, 2002).

Therefore, the second phase of the sequential explanatory mixed-method analysis (Creswell et al., 2003) was carried out via semi-structured interviews. From the survey results, it was possible to identify wineries with a large number of sustainable practices in place. This sampling approach is defined by Patton (2002) as 'opportunistic'. In this sense, wineries with a larger number of sustainable practices were conceivably more knowledgeable about sustainability. Table 2 provides an overview of the key

Table 2 Main features of interviews and interviewee codes

Code	Role in the organisation	Years of experience	Interview date	Interview duration
Int 1	Entrepreneur	9	07/30/2019	1:02
Int 2	Entrepreneur	12	07/05/2019	00:47
Int 3	Entrepreneur	25	07/21/2019	00:22
Int 4	Entrepreneur	19	07/30/2019	00:48
Int 5	Entrepreneur/cellar manager	4	07/30/2019	00:31
Int 6	Entrepreneur	6	07/30/2019	01:24
Int 7	Entrepreneur/winemaker	18	07/04/2019	00:43
Int 8	Entrepreneur/winemaker	26	07/04/2019	00:35
Int 9	Entrepreneur/cellar manager	5	07/12/2019	00:44
Int 10	Winemaker	9	07/31/2019	00:23
Int 11	Entrepreneur	22	08/07/2019	00:45
Int 12	Entrepreneur	15	08/12/2019	00:35
Int 13	Entrepreneur/winemaker	20	11/18/2019	00:58
Int 14	Entrepreneur/cellar manager	7	11/19/2019	00:38
Int 15	Entrepreneur	12	12/06/2019	00:48
Int 16	Entrepreneur/winemaker	5	12/09/2019	00:51

informants' main features, such as their years of experience in the winery, role in the organisation, the interview date, and its duration.

The second phase of this mixed-method study focused on qualitative data collection. Interviews were carried out between September and December 2019 and involved 16 key informants in 15 wineries (e.g. entrepreneurs) among those that provided their availability after the survey. Semi-structured interviews lasted on average around 45 min each and were conducted according to an interview guide organised into three sections: sustainable practices (in the field, cellar, distribution) and related motivations; entrepreneurial triggers for sustainability; and interconnection among stakeholders of the ecosystem. Several entrepreneurs in the winery had dual roles as winemakers or cellar managers, providing useful technical insights into sustainable practices and their evolution over time (see Table 2).

Interviews were conducted at the wineries to ensure the respondents felt at ease and allow the researchers to directly observe sustainable entrepreneurship in practice. After each interview visit to the winery, one of the researchers wrote field notes about the experience. A saturation level was reached after 15 interviews, when interview content became redundant (Fusch & Ness, 2015) and the data enabled identification of the difference between sustainability-oriented and thrivability-oriented practices.

These interviews were transcribed and coded—together with the text responses to the open questions embedded in the survey—following the three phases proposed by Miles et al. (2014). First, *open coding* permitted the researchers to recognise and distinguish the main topics and general content of the collected data following the proposed framework on both entrepreneurial ecosystem approaches (sustainable and thrivable) (see Table 1). The *axial coding*, as the second phase, reviewed the open coding by identifying the relevant codes and connections between them, reducing all the open codes on general aspects of the thrivable entrepreneurial ecosystem to the dimensions identified in the framework. Finally, the *selective coding* identified just the definitive codes in the analysed data and the core aspects of thrivable entrepreneurial ecosystems.

This coding approach enabled the researchers to rationalise and discern the two ecosystem approaches and their main features, in which a thrivable entrepreneurial ecosystem was presented as a natural evolution from sustainable ones. Table 3 provides an example of coding in which the data were interpreted as indicating sustainability-oriented (mainly from the survey) and thrivability-oriented actions (mainly from interviews).

In addition, from the coding phase based on the proposed framework (see Table 1) and the comparison between the two ecosystem approaches (sustainable and thrivable), the study identified a number of entrepreneurs' attitudes and beliefs that might be pivotal to development of a thrivable entrepreneurial ecosystem able to face grand challenges.

Results

The following subsections present the main results from the data analysis. The first section is dedicated to sustainable practices already developed by Canavese's entrepreneurs. In the second section, sustainable aspects are explored from an

Table 3 Examples of coding sustainability-oriented and thrivability-oriented interpretations

Coded aspects	Sustainability-oriented interpretation	Thrivability-oriented interpretation
Vineyard maintenance	Reduce pesticide contamination Stability of soil Landscape protection Protection of biodiversity	Recovery of abandoned land and wooded areas for local community use Shared picnic zones Heritage preservation of the landscape (e.g. dry-stone walls) Improvement and regeneration of biodiversity
Water consumption	Protection of water courses and aquifers Reduce pesticide contamination	Water preservation Aquatic life protection Rainwater collection and re-use of water to create ponds and enhance biodiversity

ecosystem perspective focusing on the main aspects that encouraged the entrepreneurs' approaches towards a thrivable ecosystem.

Development of sustainable practices in Canavese wineries

Perceptions around sustainability were generally important to wineries in Canavese: 59% considered these perceptions very important and 28%, quite important. As shown in Table 4, the most relevant dimensions of sustainability were related to environmental aspects. Most practices mentioned by wineries concerned vineyard management and land protection in general. Reduction of chemicals in pest and disease management of grapes was the main activity for Canavese's wineries, associated with soil management and conservation of biodiversity in the vineyard ecosystem.

Table 4 Sustainable practices in Canavese wineries

Sustainable practices in Canavese wineries	% of very important	% of important
Agrochemical reduction	72	22
Soil management	50	47
Energy saving	50	22
Maintenance of land surrounding vineyards	45	26
Biodiversity conservation	39	45
Air quality	38	41
Recovery of uncultivated land	38	28
Solid waste management	38	41
Local networks involving producers	28	41
Water management	23	55
Human resources management	23	55
Involvement of the local community	16	38

In the open questions, wineries showed they took care not only of their vineyards but also of the surrounding land. They mentioned initiatives about abandoned land recovery and management of non-vineyard areas such as woods and fallows. However, water, energy-saving, solid waste disposal and air quality were not the major focus of sustainability practices. The social dimension of sustainability was less ehnanched among wineries. The involvement of local communities, both citizens and producers, was mainly focused on creating a solidarity network and sustainable management of human resources.

The importance given to activities concerning sustainability practices was mirrored by what wineries already did. For example, agrochemicals were perceived as the most important aspect among various practices, as was soil and land management. Energy saving also acquired a certain relevance in terms of importance in the sustainable management of wineries. Some wineries had already implemented projects for solar energy production and saving of rainwater for cellar duties.

The perception among interviewees was that entrepreneurs' practices were not just related to their sustainable behaviour. Sustainability was already taken for granted, as underlined in one of the first interviews in which the entrepreneur stated: 'we have been doing these practices, defined as sustainable, for years' (Int. 1).

From a sustainable to a thrivable ecosystem

The entrepreneurial ecosystem was also investigated through the survey, asking about the importance of different initiatives for a sustainable ecosystem. The results, summarised in Table 5, show that one of the most important areas of common action was related to the protection of water quality in waterways and aquifers, which required strict controls on agrochemical use in the vineyards. It was interesting to note how the ecosystem point of view also changed the prioritisation of sustainable actions such as water protection. Consequently, the general protection of biodiversity and the landscape was another concern for producers.

Recovery of abandoned land and activities that involved local communities, through educational offerings about sustainable viticulture, was an object of interest. Regarding viticulture, the importance of conservation of minor grape varieties was consolidated throughout the region, and included traditional systems of vine growing in the territory. Also, the maintenance of wooded areas was reported as generally important. Social sustainable activities such as solidarity networks among producers were generally important for wineries in the Canavese region.

One open question asked respondents to describe further actions they had developed towards the creation of their sustainable ecosystem. The results revealed a large variety of additional practices dedicated to the community, landscape, biodiversity and wellbeing of people as part of the ecosystem.

The words of interviewees represented their practices in a holistic way and showed their engagement with the long-term perspective. In this sense, the *core motivation* of the Canavese ecosystem was to thrive, thanks to a common way of acting in a way to bring prosperity. This was particularly well expressed by one interviewee:

Table 5 Sustainability practices in the Canavese ecosystem

Areas of action towards a sustainable ecosystem	% of very important	% of important
Protection of water courses and aquifers from agrichemicals	59	19
Protection of biodiversity in the vineyard ecosystem	56	23
Landscape protection	53	19
Recovery and redevelopment of uncultivated/abandoned land	44	27
Creation of paths walk and educational activities for the enhancement of the Canavese wine area	44	18
Conservation and enhancement of traditional systems of vine growing (pergola)	41	22
Conservation and recovery of native/ancient/minor varieties of wine grapes	41	32
Community awareness of sustainability issues	41	27
Creation of a solidarity network of local producers	32	47
Cleaning and maintenance of wooded areas	28	39

We imagine this as a community and not just as a corner of Canavese. Without our wineries, this place would be all brambles and thorns. (…) The further we move away from the cellars, the more the vineyards disappear … this activity is the glue for the community. (Int. 1).

As their *main goal*, all the entrepreneurs underlined the importance of being aligned in their ecosystem goals in terms of common pursuit and protection of the land from climate-related damage. Protection of biodiversity in vineyards and conservation of minor and rare varieties of grapes were activities in which producers were generally willing to invest. Regarding waterway protection from chemical contamination, wineries were increasing their reduction of any kind of treatment because, as noted by one entrepreneur, 'in the end we have more weeds but we are happier with the way we treat our land' (Int. 2). The gradual elimination of chemical treatment of plants and grapes was seen to function to make plants stronger. As pointed out by one winemaker, 'in this way the plant develops greater resistance and over the years we are seeing a gradual improvement in this sense' (Int. 4). One winery interviewee referenced the famous Esopus tale of the turtle and the hare to communicate their motto, using the turtle's words: 'You don't have to run, you have to start on time'.

Economic goals were considered a long-term issue and investment for conservation of the traditional growing system of vines was of pivotal importance for increasing profitability of the ecosystem. *Non-market goals* such as the recovery of abandoned land, maintenance of wooded areas, solidarity networks among producers, and protection of the landscape reflected the importance of transformation and regenerative practices. In this sense, safeguarding the land for the interviewed entrepreneurs meant also recovering and employing the unused resource of the community. This was highlighted by the words of one winemaker–entrepreneur who explained how they were intervening in the dry-stone walls and stability of the hills:

If these places were abandoned, as happened in other places, it would be a disaster, the hill would collapse … instead renovating the existing terraces and dry-stone walls and keeping the vineyards healthy, the landscape also benefits. The community and tourists find a beautiful place. (Int. 3).

Uncultivated land was being revitalised with crops that increased biodiversity, were profitable and maintained the stability of the soil. Speaking about olive trees, one entrepreneur underlined that, 'climate change has led us to adapt also in this sense; with the increase in temperatures we have begun to plant olive trees that are typical of the lake area and were based here in the ancient Roman period' (Int. 16). The same was being done with nettles, which, as weeds, were collected and used to prepare herbal teas to sell. Following a similar approach, another entrepreneur declared:

We left an uncultivated area set up by my father where you can only access it on foot and where people can stop to look at the view and have a picnic. In this way, people participate in the community and buy our products. (Int. 4).

It was interesting to note the strong sense of belonging and self-help among entrepreneurs who, apart from their winemaking goals, shared knowledge and tools in the case of need. As noted by one entrepreneur, 'Joining together is the only way. All together we create a single system, and we are big enough to reach our goal because our wine must be produced and aged here, in our area (Int. 8).

As with every entrepreneurial ecosystem, the winemakers were led to consider the vineyard within their business as an asset for seeking profit. Interviewees underlined that respect for the land itself allowed them to maintain and increase their business. This happened because the *anthropocentric view* did not prevail because entrepreneurs respected the rhythms of nature (*life-centric view*) and embedded their business into these rhythms without changing the ecosystem. This was clearly explained by one cellar manager: 'The [eco]system works just if the entrepreneur has an incentive to remain here. The incentive must be of an economic nature and here they understood it 50 years ago when winemakers started collaborating with one another' (Int. 10).

The perception of operating in a profitable entrepreneurial ecosystem could also be of great help as, 'the entrepreneur takes more time, takes more thought, shows more passion in improving their own land if they know that this behaviour will also be rewarded economically (Int. 13).

To face their *organisational development challenge* the entrepreneurs considered only a systemic point of view in running their businesses, in which their wineries were a 'piece of a puzzle' (Int. 15). At an ecosystem level, the entrepreneurs had also organised themselves to obtain European funding to purchase equipment for use by the embedded members. In this way, it was possible to achieve a goal that, because of lack of knowledge on fundraising and excessive red tape around the process, would otherwise not be achieved.

The entrepreneurs underlined the importance of maintaining *osmotic boundaries* by encouraging collaboration with other industries such as tourism, local retailers and other developed entrepreneurial ecosystems. This was the reason why it was quite normal for an entrepreneur to declare that:

We must rediscover all local producers, from small shops to winemakers. This is also why I prefer to sell products from other companies in the area; so those who buy know this place and don't buy from an ordinary supermarket. (Int. 3).

This attitude of openness was strictly connected with the need to create a future for younger generations of local entrepreneurs. As noted, 'Young people who are trained to become agricultural entrepreneurs return to these lands with skills, new ideas and innovations for developing the land' (Int. 4). This potential entrepreneurial ecosystem was well known to the interviewees who underlined the need to find incentives for these young entrepreneurs who wanted to follow in the footsteps of their fathers and grandparents, who had been able to improve the landscape and the quality of life of its community.

At the *governance* level, this thrivable ecosystem did not present a focal organisation that coordinated entrepreneurs' actions; instead they preferred local meetings and informal agreements. However, an important role was played by local consortia that periodically distributed bulletins to share their knowledge on environmental issues and suggest common actions to put in practice for climate change adaptation. In doing so, 'they advise the direction to take at the best time to respect the environment and make treatments more effective' (Int. 5). This could also be considered as saving on intangible overhead costs that could have an impact from the vineyard to the final product. This was also enabled by the installation of weather stations situated in vineyards that facilitated the measurement and monitoring of weather data and helped to provide information to improve vineyard management in the case of unexpected events caused by climate change. The monitoring stations and other forms of internal audit practices (e.g. consumption of water) were informal and not reported. Therefore, the Canavese ecosystem had not yet developed a holistic and integrated form of *assessment*.

Discussion

The explored ecosystem presents many entrepreneurship actions, practices and thoughts that are not covered by the concept of sustainability alone. In particular, the ecosystem reflects subjects and organisations merely operating in a systemic way and pursuing common prosperity in the long term. Specifically, since the region has faced an economic and social crisis because of the neglected ecosystem of the wine production area and climate change impacts on agriculture and landscape, the ecosystem was naturally created and developed to fight these issues and find a common aim to reinvigorate the landscape towards a thrivable ecosystem. Sustainable practices were actually the trigger for further actions that went beyond the concept of sustainability and were guided by a common sense of belonging, trust and willingness to generate a thrivable entrepreneurial ecosystem. This steered the entrepreneurs to pursue economic aims that considered their wineries as part of the ecosystem, which meant not just thinking about enhancing short-term returns but directing income towards future generations of entrepreneurs and the local community. Respect for nature was one of the key elements that enabled common thought and maintained the equilibrium inside the ecosystem. It was not nature that served

the entrepreneurs; rather the entrepreneurs considered nature's limits and shaped their actions within a natural system made of people and resources embedded in a natural context (Wahl, 2016).

A number of factors drove evolution towards a thrivable entrepreneurial ecosystem. Similar to previous studies (Moggi & Dameri, 2021; Parida & Wincent, 2019), the results showed that the sharing of knowledge and tools with a common goal was possible thanks to the profitable returns from the cooperation among entrepreneurs. Collected public and European funds and the savings in economic scale made possible by the recovery and reuse of discharged resources (such as land) enabled an increase in thrivability of the system and attracted young entrepreneurs. The latter reflected a greater openness of the ecosystem (osmotic boundaries), increasing collaboration with other industries, and innovation in production and monitoring systems that respected the land. While these entrepreneurs understood that to ensure long-term prosperity, their activities must respect and regenerate the ecosystem's natural resources, collaboration among entrepreneurs, engagement, trust, empathy, motivation, commitment and creativity also increased and enhanced systemic transformation strategies toward thrivability (Smitsman, 2019).

In summary, the findings of the present study suggest that entrepreneurs' attitudes and beliefs might be pivotal lever to the development of a thrivable entrepreneurial ecosystem that is able to face grand challenges. Specifically, the following aspects have been identified:

a) There are *systemic threats* at the ecosystem level that can only be addressed through collective action (shared with other entrepreneurs and the community); this translates into shared awareness that an entrepreneur's job is not limited to the enterprise's (or even business network's) boundaries, because enterprises may fail because of region-level system collapse unless most entrepreneurs collaborate to address systemic threats.
b) There is *shared responsibility, mutual trust* and *empathy* among entrepreneurs in regard to the wellbeing of the local community and future generations.
c) Business models should be based on *regenerative* (rather than recycling or extractive) processes of resource use. These are the only ones that really enable success and self-fulfilment in the long term, as they enhance prosperity.
d) An ecosystem must be *respectful of the natural environment* in which it is rooted, regaining reciprocity with the natural world.
e) *Shared and organised knowledge* helps overcome long-term systemic challenges. This process can be facilitated by a focal organisation (e.g. a local wine consortium) as long as it is considered legitimate as the common knowledge gatekeeper.

Awareness of these key features should be the starting point for enhancing the development of a thrivable entrepreneurial ecosystem, for both a sustainable ecosystem and a new ecosystem that aims to address grand challenges in sustainable development.

This research represents the first attempt in entrepreneurial ecosystem studies to examine the thrivability entrepreneur as a new entrepreneurship approach to

addressing grand business challenges. Previous studies of entrepreneurial ecosystems underline the importance of considering these systems more holistically; thus, scholars have called for a greater understanding of how a sustainable entrepreneurial ecosystem can evolve into a thrivable form. In shedding light on these issues, the present research presents a novel framework on thrivable entrepreneurial ecosystems, defined as natural systems in which the main goal is to create prosperity through ecosystem resource (re)generation and transformation (life-centric view), in which economic goals are considered from a long-term perspective of prosperity (Smitsman, 2019). To increase understanding of how thrivability works in practice, the research employed the explorative case study of the Canavese wine zone of production, which demonstrates how a sustainable ecosystem can improve its actions towards a more comprehensive view of thrivability. Numerous studies have shown how sustainability can be enhanced in an entrepreneurial ecosystem, describing conditions that help to address confronting challenges such as climate change (e.g. regulatory policies, innovation climates and social norms) (Belz & Binder, 2017; Cavallo et al., 2019; Perrini et al., 2010; Sunny & Shu, 2019). The present research has attempted to extend the discussion beyond the concept of sustainability by considering sustainable practices as a medium for developing a thrivable entrepreneurial ecosystem (Laszlo, 2018; Smitsman, 2019).

Conclusions

The entrepreneur ecosystem studies are recently embedding several issues in accordance with sectors and contextual claims. In this context, industries globally are facing increasing pressure to employ sustainable practices that consider issues such as natural resource use, energy saving and controlling sources of pollution. By considering the increasing attention on sustainable development goals at the ecosystem level, the present research proposes a theoretical framework for a thrivable entrepreneur ecosystem. Thrivability is defined as the act of thriving or prospering and this concept goes beyond mere survival and overcome the means of sustainability. In a holistic sense, thrivability is a novel entrepreneurship approach that aims to create prosperity through ecosystem resource (re)generation and transformation, defining long-term economic goals. Because of the grand challenges that companies are increasingly facing, a sustainable approach is sometimes not enough to overcome these issues; rather, a thrivable approach permits a radical change in entrepreneurship, stimulating regenerative life-centric growth.

In considering this novel approach, the present study proposes a framework based on the seminal literature on sustainable entrepreneurial ecosystems (Kraus et al., 2018; Schaltegger & Wagner, 2011; Volkmann et al., 2021) and a small number of theoretical studies on thrivability (Bebbington et al., 2019; Gibbons, 2020; Smitsman, 2019). In the case study, the two approaches resulted in the natural evolution of one from the other (Smitsman, 2019) and suggested that some entrepreneurs' attitudes and beliefs might be pivotal in this evolutionary development. In particular, a systemic approach to facing threats increases the potential to overcome economic crises. The resulting shared responsibility among entrepreneurs, mutual trust and

empathy are key levers that enhance the sharing of common knowledge. Osmotic boundaries are built into the system through respect of the natural environment in which companies are rooted, and in which their business models are based on regenerative processes in resource use. Entrepreneurs and managers aiming to address grand business challenges through sustainable development should consider these aspects as key levers for enhancing development towards a thrivable entrepreneurial ecosystem.

As a qualitative case study based on a specific local region, the present study is not without limitations. The narrow boundaries of the case study may limit generalisation of our identified practical implications, and further studies are needed to improve knowledge on how thrivable entrepreneurial ecosystems work in practice. Additionally, more research would be welcome about the individual practices and role of particular stakeholders, such as how they interact within the natural ecosystem. Since thrivable ecosystems are dynamic in nature, the levers to manage to maintain thrivability should be monitored over time to overcome new and greater entrepreneurship challenges. Finally, research on the conditions that enhance evolution towards thrivable ecosystems might include the study of governance, managerial and accounting practices.

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Declarations

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