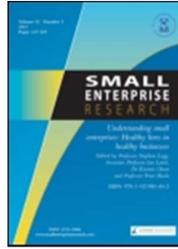


A short note on applying a community entrepreneurship development (CED) framework

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Abstract:	The present study develops and offers a tool the community entrepreneurship development (CED) framework and illustrates its use in a case study of the current and potential value of agriculture to the Barossa Valley in South Australia. The CED offers a framework for rural regional development that both practitioners and policymakers can use to develop and leverage entrepreneurial competencies and other forms of community capitals to foster entrepreneurship at the community level. It assesses the potential for leveraging Emery and Flora's (2006) community capital framework to build entrepreneurship and innovation. The findings suggest that the success of firm-level entrepreneurship is often dependent upon leveraging the rural region's idiosyncratic natural capitals with human and social/entrepreneurial capitals to result in community-level entrepreneurial market development initiatives.

A short note on applying a community entrepreneurship development (CED) framework

The present study develops and offers a tool the community entrepreneurship development (CED) framework and illustrates its use in a case study of the current and potential value of agriculture to the Barossa Valley in South Australia. The CED offers a framework for rural regional development that both practitioners and policymakers can use to develop and leverage entrepreneurial competencies and other forms of community capitals to foster entrepreneurship at the community level. It assesses the potential for leveraging Emery and Flora's (2006) community capital framework to build entrepreneurship and innovation. The findings suggest that the success of firm-level entrepreneurship is often dependent upon leveraging the rural region's idiosyncratic natural capitals with human and social/entrepreneurial capitals to result in community-level entrepreneurial market development initiatives.

Keywords: entrepreneurship; agriculture; community development; Australia, regional branding; innovation

Introduction

Soon the world will face the need to feed over 9 billion increasingly urbanized souls (Bourne, 2015). Shell International's scenario planning group suggests that the ability to do so rest on three critical resources and their interrelationships, water, food, and energy (Bentham, 2014). Shell (2013) defines the relationship between these critical resources of water, food, and energy as the resource stress nexus (RSN), and in many rural communities globally it illustrates serious potential risks to their portfolio of community capitals, where water is often the critical resource, while both food and energy production are the primary sources of income.

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3 Shell's (2013) *New Lens Scenarios*, the most recent of Shell's published scenario
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5 planning projects, suggests that these next three decades will be shaped by the constraints
6
7 brought on by the RSN coupled with the increasing urbanization of emerging nations, geo-
8
9 political and social instability, and economic turbulence due to social-political changes and
10
11 transformative technologies (Bentham, 2014). These competing demands for food, water and
12
13 energy will only escalate as the global population increases towards 10 billion and the
14
15 incomes and consumption patterns of emerging economies shift towards including more and
16
17 new forms of animal proteins in their diets, coupled with rapidly escalating demands for
18
19 energy and water resources for infrastructure and home consumption. Unfortunately, many
20
21 rural communities are very vulnerable due to climate and place-based issues of water
22
23 shortages while also dependent on the income and jobs generated by food and energy
24
25 production.
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29 Innovation and entrepreneurship have become imperatives to help rural communities
30
31 dependent upon agriculture cope with these new demands (Chunhavuthiyanon &
32
33 Intarakumnerd, 2014). The value of entrepreneurship to the future prosperity of rural
34
35 communities is indicated in the findings of a recent survey of university deans and program
36
37 directors of Agriculture in Australia, New Zealand, and the United States, where over 85% of
38
39 the respondents believed that innovation and entrepreneurship were critically important to the
40
41 future of agriculture, agribusiness and rural development (Mehlhorn, Bonney, Fraser, &
42
43 Miles, 2015).
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46 47 **Purpose**

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50 The purpose of the present study is to report on a community development tool – the
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1
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3 community entrepreneurship development framework (CED) – that leverages the
4
5 entrepreneurial competencies of rural communities to understand the range of capitals
6
7 available to them and to help develop initiatives to advance the community towards a
8
9 preferred future. The paper then applies the CED to a case study of the Barossa Valley region
10
11 of South Australia. The CED framework draws upon Sarasvathy and Venkataraman’s (2011)
12
13 model of entrepreneurship as method and applies this insight to the specific opportunities
14
15 provided through Bonney, Castles, Eversole, Miles, and Woods’ (2013) use of
16
17 entrepreneurship as method in development projects. It employs Emery and Flora’s (2006)
18
19 Community Capitals Framework (CCF) to incorporate an audit of the facilitators and
20
21 inhibitors of innovation and entrepreneurship. An earlier version of this tool was developed
22
23 by Bonney et al. (2013) in an analysis of the North West region of Tasmania.
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28 **Community capitals and entrepreneurship**

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31 Community capitals in their various forms (human, built, natural, and social, etc.) are
32
33 associated with a rural community’s ability to remain viable (Emery & Flora, 2006; Flora &
34
35 Flora, 1990, 1993). The CCF includes seven forms of community capital that are relevant to
36
37 the assessment of community’s viability: (1) built; (2) cultural; (3) financial; (4) human; (5)
38
39 political; (6) social; and (7) natural capital. Emery and Flora (2006, p. 20) state that the CCF
40
41 “offers a way to analyse community and economic development efforts from a systems
42
43 perspective by identifying the assets in each capital (stock), the types of capital invested
44
45 (flow), the interaction among the capitals, and the resulting impact across the capitals.”
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48 Each of the capitals in the CCF are important, and six of the capitals tend to be less
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50 prevalent in rural communities than in urban communities. For example, the built
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3 infrastructure that supports business and entrepreneurship is typically much more developed,
4
5 the political capital of urban areas due to the concentration of political influencers tend to be
6
7 much greater than in rural communities. Likewise, financial capital, particularly venture
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9 capital, the cultural, human and social capital from the associated entrepreneurial ecosystems,
10
11 tend to concentrate in urban communities. Rural communities often have only one capital that
12
13 offers some form of comparative advantage relative to urban communities, that of natural
14
15 capital endowments (see Miles & Morrison, 2016).
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18 This study adopts Miles et al.'s (2015) modification of social capital to reflect
19
20 Audretsch and Keilbach's (2004) position that entrepreneurial capital is a specific form of
21
22 social capital that facilitates effectual logic, innovation, risk management, pro-active
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24 initiatives, resource sharing and leveraging, networking, and partnering.
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26
27 There are a number of theoretical framings that attempt to describe the relationship
28
29 between community characteristics and their ability to generate viable entrepreneurial
30
31 economic or social development outcomes; and most are place-based such as Cooke (2007),
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33 Isenberg (2010), and Audretsch (2015) that articulate the importance of community context
34
35 and characteristics to generating entrepreneurial outcomes. This "place" in rural communities
36
37 is largely defined by their natural capital endowments such as: (1) geographic proximity or
38
39 remoteness to markets and population centres; (2) sub-soil capital including energy, mineral,
40
41 and water resources; (3) soil/above-soil capital; and (4) protected natural and heritage areas
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43 (Hamilton, 2005; Emery & Flora, 2006; Darroch & Miles, 2016; Miles & Morrison, 2016).
44
45 These natural capital endowments and their utilization tend to vary significantly within and
46
47 between regions, and often have complex interrelationships. For example, in the Barossa, the
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49 soil, climate, and topography all combine to create a unique regional advantage for wine
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3 production. At the time when a plethora of brands dominate the global wine markets, the
4 place-based branding serves as a next level of branding, marketing and community
5 development strategies (Ryan & Mizerski, 2010; Famularo, Bruwer, & Li, 2010) for the wine
6 entrepreneurs and community developers alike.
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11 The CED uses Sarasvathy and Venkataraman's (2011) entrepreneurial method to
12 assess a regional community's capital, with the goal of identifying what actions could create
13 a preferable future for the community, while mitigating downside risks, exploiting attractive
14 contingencies, and generating additional community capital. Figure 1 illustrates this cycle of
15 community capital and entrepreneurship as framed by the CED.
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22 **Figure 1 about here**

23 **Developing community entrepreneurship in rural contexts**

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29 Sarasvathy and Venkataraman's (2011) entrepreneurial method suggests that the strategies of
30 entrepreneurship can be used as alternative approaches to begin to solve society's major
31 challenges: challenges such as creating viable rural communities or feeding an ever-
32 expanding and rapidly urbanizing global population. For example, Davidsson's (2015) work
33 on entrepreneurial opportunity can be applied to the interrelated problems of increasing the
34 global food supply at the same time as many regional agrarian communities are in decline,
35 and facing the RSN is the "external enabler" (Davidsson, 2015, p. 683); the circumstance that
36 elicits entrepreneurs to imagine a "new venture idea" that could in some part help meet these
37 emerging needs, and then have the "opportunity confidence" to pursue the idea. An
38 entrepreneur's level of opportunity confidence in a venture that somehow solves water
39 contamination that arises due to mining would likely be very high if it could be produced,
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3 marketed and used efficiently and effectively.
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6 **The CED framework** 7

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9 The CED framework also borrows from the work of Barrios and Barrios (2004) and the
10 Edward Lowe Foundation (2015) by supporting existing businesses as well as new initiatives
11 to help the economy grow and prosper. Others have found that a rural grassroots development
12 effort starting with the existing businesses and helping them develop is both effective and
13 efficient in rural economic development to stimulate entrepreneurship and small business
14 development (Chrisman, Nelson, Hoy, & Robinson, 1985; Chrisman, Hoy, & Robinson,
15 1987; Cumming & Fischer, 2012; Cumming, Fischer, & Peridis, 2015; The Edward Lowe
16 Foundation, 2015).
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27 The CED process starts with where the community is and where it hopes to go. It
28 looks at how community challenges might help identify economic opportunities that can be
29 exploited both internally and externally to the region, all the while focusing on the primary
30 capitals and existing organizations that hope to grow. It also explicitly considers the capitals,
31 both stocks, and flows and how economic development might impact them. Figure 2
32 illustrates the CED process.
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40 **Figure 2 about here** 41

42 The CED framework consists of four sequential questions:
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- 45 (1) What is the current value of agriculture and agribusiness (or whatever sector is the
46 community's primary industry) to the community?
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- 49 (2) What is the community's current portfolio of community capitals?
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3 (3) Which ones inhibit and facilitate the value of the foundation businesses such as
4 agriculture and agribusiness?
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7 (4) What are the policy implications?
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10 The present paper discusses the application of the CED framework in one rural
11 region, the Barossa Valley in South Australia. The CED framework was applied by: (1) the
12 compilation of secondary data on each community's current value of agriculture and
13 agribusiness; (2) data collection to identify each region's portfolio of community capitals; (3)
14 data collection to identify the inhibitors and facilitators to the value of agriculture and
15 agribusiness.
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24 **Application of the CED in the Barossa**

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27 This paper applies the CED to one agricultural region in Australia, the Barossa, as an
28 exemplar of how a community used their natural and cultural, entrepreneurial, political, and
29 human capital endowments to build a vibrant rural economy. The Barossa's success in
30 entrepreneurially leveraging its community capitals endowments to create new businesses
31 and drive the region's successful development is based on its natural capital endowments
32 such as its soil, climate, and human capital endowments such as the German immigrants who
33 brought their skills in viticulture and winemaking to the region in the mid-1800s and has
34 emerged as one of Australia's premier wine regions
35 (www.southaustralianhistory.com.au/barossa). Their ability to leverage natural endowments
36 with their human, cultural, built and social capital allowed these immigrants to create a
37 vibrant economy that has resulted in a more diverse and highly entrepreneurial region.
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Methods

This paper reports partial findings from a larger project commissioned by the Rural Industries Research and Development Corporation (RIRDC) Australia, now AgriFutures Australia, and explains the application of the CED's four question framework in one agricultural region, the Barossa. This is accomplished by compiling secondary data, assessing its portfolio of community capitals, and exploring the inhibitors and facilitators to value of agriculture and agribusiness through a series of interviews with the regional business and community leaders. Data for the analysis includes primary data derived from in-depth interviews of representatives from RDA Barossa, Barossa Council, Barossa Grape and Wine Association, Dairy South Australia and a Vineyard. Personal interviews ranged in length from 55 to 73 minutes and were recorded and then transcribed verbatim for analysis. Secondary data mainly includes reports from the state and local governments, RDAs and industries published since 2010 and were relevant to the Barossa grape and wine industry.

The interviews and the secondary data were analyzed using the NVivo program for Computer Assisted Qualitative Data Analysis (version 10). Theoretically derived categories for innovation types (product, process, marketing, supply chain and strategic innovations) (Bonney et al., 2013, derived from Schumpeter, 1934) and forms of community capitals (built, financial, natural, cultural social, political and human) were used to identify the innovation activities and types of capital present in the region. Categories reflecting the sources of innovations (innovations made by farmers and agri-businesses, and innovations by parties other than farmers and agri-businesses) were then developed inductively as the data analysis produced a final set of categories which depicted: (1) forms of community capital used; and (2) forms of innovation found. Based on those categories, interactions of

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3 innovation types with community capitals were identified inductively using an exploratory
4 approach to examine how and when specific forms of capital were used as inputs into or
5 outputs from agricultural innovations, and when agricultural activity and innovation had
6 increased or decreased specific forms of capital in the region. This was explored by using
7 coding matrices to identify where data had been concurrently coded into categories relating to
8 capitals and categories relating to innovation and then reviewing the relevant data to identify
9 how the two concepts interacted.
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19 **Findings**

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22 The Barossa is comprised of wineries integrated with other value-adding entrepreneurial
23 activities such as agro-tourism, boutique specialty food processing, wine education and
24 cultural heritage experiences. Its special agricultural characteristics have been preserved by
25 leveraging political community capital to obtain legal protection for its unique landscape
26 through the Barossa Character Preservation Act of 2012, and the establishment of the Barossa
27 Trust Mark (see www.barossatrustedmark.com.au) to create a quality standard label and
28 regional brand. The Barossa Trust Mark is used on not only wines, but other value-added
29 food products, entertainment, and even accommodation enhancing the region 's market
30 position. The place-based natural advantage of Barossa is converted into a more holistic
31 community development approach that includes food, wine and tourism as a part of a place-
32 based marketing strategy that features Barossa as a trusted regional brand. Both the
33 businesses and the community have leveraged the benefits of regional branding alike for the
34 growth of their businesses and the region.
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Value of agriculture and profile of community capitals in the region

Agriculture stands out as a primary industry in the Barossa Valley. It is the hub of 550 independent grape growers and about 180 wine brands (Respondent #3, personal communication, 2 December 2015).

Using the CED framework, the Barossa's community capital endowments were identified including natural, built, financial, human, social/entrepreneurial, cultural and political that measure the value of agriculture (Table 1). These elements remain the basic building blocks for the community economic and agricultural development and shape how both evolve.

But the reason why so many major [winemakers] have sought to have their base here, is because of all the things that generally drives a cluster. It's got the right natural assets. Certainly, the geology of the Barossa is why vines were first planted here, and they proved to be successful so it is grown from there. Then you get the global recognition, the intensification of research and expertise in the region and the networked community culture that underpins that. There is a fair degree of community stewardship of the environment. I think it is quite strong and that is tightly related to the, now in six and seventh generation Barossans here (Respondent #1, personal communication, 1 December 2015).

In addition, the stock and quality of the community capital endowments are themselves shaped by the contribution of agriculture.

It's [vine and wine] probably the dominant agricultural industry but there's a lot of complementary agricultural activity that extends to whether it's cereal cropping or animal husbandry through sheep is probably the more dominant, but cattle and chickens and ducks and then the affiliated industries with that or the support industries with that, but it's also agriculture. There's a lot of - not a great deal of value-add, but the complimentary aspect of that as a tourism hub is - I guess has

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3 an influence on agriculture in this area too (Respondent # 3, personal
4 communications, 2 December 2015).
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7 Where community capitals exert a positive effect on agricultural development,
8 agriculture affects community capital in two ways. Positively, agricultural output growth
9
10 agriculture affects community capital in two ways. Positively, agricultural output growth
11 could further the growth of community capitals, for example, development of clusters, the
12 growth of allied industries to agriculture, and increased employment and consumption.
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17 Look for me I'd probably throw a broad - the money to have road infrastructure to
18 support growth let alone current would be required for us (Respondent #4,
19 personal communication, 4 December 2015).
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23 However, there are also negative consequences of agricultural activities that can
24 undermine or decay the community capitals economically (example, overloading the
25 infrastructure), environmental impacts of agriculture on natural capital endowments (threat to
26 infrastructure), environmental impacts of agriculture on natural capital endowments (threat to
27 conservation practices or depleting the water quality and level), or social issues (road safety):
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33 You have got safety issues of farmers moving grain bins around. They'll take over
34 virtually three-quarters of a two-lane road.....So at least from our perspective
35 here, we do not have a lot of high-use roads (Respondent #5, personal
36 communication, 4 December 2015).
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41 The other measure of the value of agriculture is the relative contribution (ratio of
42 positive consequences to negative consequences) of agricultural outputs to the growth of
43 community capitals. This cycle of contribution between community capitals and agriculture is
44 the primary source of regional development in agricultural regions. Innovations in agriculture
45 are the factors that propel the community.
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51 **Table 1 about here**
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3 When seeking to grow the contribution of agriculture to regional development
4 through place-based branding and marketing, not only the community capitals need be
5 identified, they need to be leveraged entrepreneurially to create new sources of advantage
6 which require specific forms of human and social capital grounded on entrepreneurial
7 competencies. An inadequacy in or misuse of these capitals can act as an inhibitor to
8 agricultural entrepreneurship development. Likewise, the negative consequences of
9 agricultural activities ameliorate the stock of community capital. Opportunities can only be
10 fully exploited by optimally leveraging the mix of existing capital stocks with positive
11 outcomes and addressing the capital constraints that could have negative consequences. For
12 example, an underdeveloped road infrastructure creates flow-through constraints for other
13 entrepreneurial opportunities.
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27 The further west you go the less sealed road you will find, and there's a lot of
28 agricultural enterprises, and things that are a challenge for them is getting EPA
29 [Environment Protection Authority certification] because of dust coming off the road
30 outside (Respondent # 1, personal communication, 1 December 2015).
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35 As this example illustrates, shortcomings in built capital have undermined attempts by
36 agricultural entrepreneurs to obtain EPA certification as an indicator of product and
37 production quality, and by, extension, their capacity to leverage such certification to their
38 competitive advantage.
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43 Therefore, any future policy or development interventions should be directed towards
44 entrepreneurship development in the community as well as addressing the agricultural or
45 capital constraints that inhibit each other's growth. While supporting entrepreneurial growth
46 helps leverage community capitals, addressing the constraints helps leverage the capitals.
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3 Table 1 depicts a matrix of key examples of the community capitals currently
4 interplaying in the region. The profile of community capitals identified in the matrix provides
5 the basis to evaluate the value of agriculture in the region. The matrix shows that there exists
6 a favorable stock of community capitals (column 1), consequences of agricultural activities
7 are more positive than negative (column 2), and capital levers for further growth are available
8 (column 3). Based on this profile of community capital elements, the value of agriculture in
9 the region can be quite high in the Barossa which should attract additional investments in
10 agriculture. This investment could effectively be focussed in the areas where agricultural
11 activities have or may have negative consequences (column 2) such as solving transportation
12 constraints that inhibit agricultural growth and development (column 4). The presence of
13 natural capitals endowments offer attractive entrepreneurial opportunities, but to be often
14 realized requires leveraging other capitals such as political (as in the case of the Barossa
15 Character Preservation Act of 2012) or entrepreneurial (as in the case of the Barossa Trust
16 Mark).

Entrepreneurial community capital endowments: entrepreneurial competencies

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37 “Being entrepreneurially competent does not only refer to the know how to write a
38 business plan, but it also implies recognizing and acting on opportunities, taking the
39 initiative and action, for example by convincing investors to invest money in a project,
40 and relate to potential suppliers and buyers. It implies that the competent entrepreneur is
41 actually able to identify and further exploit an opportunity within a specific context”
42 (Lans, Hulsink, Baert, & Mulder (2008, p. 365).
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47 Entrepreneurial competencies embedded in social and human capitals are critical to a
48 community being able to discover, assess and exploit entrepreneurial opportunities (e.g.,
49 Shane & Venkataraman, 2000; Bonney, Collins, Verenne, & Miles, 2013). To be effective
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entrepreneurial competencies must be “integrated components of knowledge, skills, and attitudes... (that) are changeable, learnable and attainable through experience, training, or coaching,” (Kyndt & Baert, 2015, p, 14). Morris, Webb, Fu, and Singhal’s (2013) offer a portfolio of competencies based on opportunity creation, discovery, and exploitation that distinguish entrepreneurial competencies from management competencies. They include among others the capacity to: (1) create or recognize and assess opportunities; (2) convey a compelling vision; (3) understand tenacity and risk management/mitigation; (4) have a realistic level of self-efficacy; (5) deploy unconventional proactive “guerrilla” tactics; and (6) create value through innovation.

Barossa: evidence of entrepreneurially competent community

People of the Barossa have human and social/entrepreneurial community capital endowments that reflect many aspects of Morris et al.'s (2013) entrepreneurial competencies – many developed over one century of vineyard and winery development in the region. These competencies have been used to both develop and leverage regional brands which have helped to establish the Barossa’s international reputation as a wine-making region. Arguably the most-well known is the Barossa Trust Mark but this interrelationship between the region’s natural, political, social and cultural capital endowments and collective entrepreneurship has also been evident in other branding innovations by winemakers in Barossa such as the development of the collaborative brand – Artisans of Barossa. In the first instance, these regional brands have enabled place-of-origin branding and product differentiation for the Barossa’s winemakers and wine-related products. The brand associations with the region’s natural capitals, and quality of the region’s wine products,

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3 have, by extension, mean the Barossa brands also now serve as indicators of high product
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5 quality. This has made them ‘community assets’ in their own right which are now being
6
7 leveraged by entrepreneurs in other sectors, most notably food and tourism.
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- 10 • Opportunity recognition and assessment

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13 Entrepreneurial opportunities to further promote and leverage the Barossa’s regional
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15 brands have been rightly identified, assessed, and acted upon as reflected in discussion with
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17 one of the vine-growers:
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21 We think there’s a good chance that it should do more and that will actually help the
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23 wine industry, and it will strengthen also the – because of the clear connections between
24
25 food and wine and building the Barossa brand to be more than just a single type of
26
27 identity in the world stage, but ...it strengthens so much the tourist industry as well
28
29 (Respondent 2, personal communication, 2 December 2015).

- 30 • Conveying a compelling vision

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33 The ability to convey a compelling vision of the future is another element in Morris et
34
35 al.’s (2013) portfolio of the entrepreneurial competencies, and as the comments below from
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37 1) a grape producer and (2) a community development leader indicate, the Barossa’s regional
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39 brands are creating a focal point for visions of expanding the entrepreneurial focus of the
40
41 region:
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45 I think that definitely represents the future of the wine industry as we know it, that it is
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47 about creating that experience for whether it is the visitor or the purchaser of wine in a –
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49 you know, in a wine shop in Vancouver. If they have a vision of the Barossa or a concept
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51 or an emotional connection with the Barossa that is more than just – that it is about place,
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3 that to me is our responsibility to do that on a branding level (Respondent #2, personal
4 communication, 2 December 2015).

5
6 It is about our aspiration to create a regional experience rather than just wine as a product
7 (that) has seen us work together in that goal (Respondent #3, personal communication, 2
8 December 2015).
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11 • Resilience, tenacity and risk management/mitigation
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15 A measure of their tenacity and resilience is their willingness to confront the barriers
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17 and use the process of innovation as the instrument to tackle the barriers.
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20 They are up for any kind of innovative programs associated with agriculture, and
21 I think that is a real asset to the wider region, probably to the State in having them
22 drive that.To identify where the best opportunities for export, for food
23 products or farm products, might be found in those agreements. How to overcome
24 the barriers that remain but also what needs to happen before they are ready
25 before they are export-ready (Respondent #1, personal communication, 1
26 December 2015).
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33 Community's resilience and risk managing/mitigating competencies are also
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35 demonstrated in hard times. Importantly, the community has been able to channel the
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37 challenges into opportunities.
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40 We have tackled the climate change discussion because you know that is a pretty
41 unpopular thing.You minimize waste, cheapest power is the stuff you do not
42 use. You get more out of your water, pay less and drive efficiencies through your
43 back pocket. In terms of - and then it is about the opportunity in some of this. So
44 if you are minimizing waste and not using as much power and not using as much
45 energy, where are the opportunities to create a business in that space? Generally,
46 it's driven that way (Respondent #1, personal communication, 1 December 2015).
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3 The interview was conducted in the immediate aftermath (within a week) of the 2015
4 SA bushfires that took the toll of two lives and burnt down scores of properties
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7 (<http://www.abc.net.au/news/2015-11-25/two-dead-in-south-australian-bushfires/6974480>).
8

9 The overall sentiment of the respondents in the regions was found to have the tenacity and
10 resilience necessary to come out of the trauma and loss even stronger. Their preparedness to
11 manage and mitigate risks was hailed as the primary reason for the lower extent of the
12 damage compared to the intensity of the fire.
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19 But the farmer still had the wherewithal to get going. How many times you can
20 have those losses and still keep going, becomes an issue. So certainly some of the
21 more extreme weather patterns we are seeing. What's marvelous about these fires,
22 is what survived rather than what didn't. I spent seven hours driving through the
23 affected areas over the weekend and the number of houses you see intact,
24 everything burnt out around them except their little curtilage...Some of that is the
25 randomness of fires and a bit of luck, but I think largely it is the farmers' fire
26 readiness. Even here, where a fire was not seen as a big issue as it is in some
27 places, farmers are ready for that stuff. They have got a plan, and by March they
28 act on it. That farmer readiness is a big part of it (Respondent #1, personal
29 communication, 1 December 2015).
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- 38 • Self-efficacy
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41 Their resilience has helped to foster their self-efficacy, as echoed in their pride in the
42 community:
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46 So a combination of yeah, those – what makes the Barossa? It is the wine, it is the food,
47 it is the people, and it is the landscape. So you have got a pretty winning combination in
48 a lot of those... (Respondent #3, personal communication, 2 December 2015).
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3 Building on all these foundational competencies, the community's ability to leverage
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5 different forms of capitals, including the building upon and using the social networks, is
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7 critical:
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11 There are some food traditions here which have been lost in the home country
12 [but], are adapted here. One is a dish called Barossan Rote Grutze which is made
13 from Sago, traditionally with berries but here it has been adapted with grapes,
14 wine grapes. It is the only place in the world [laughs] you will find it, and it is
15 sold at all the local shows and things like that (Respondent #1, personal
16 communication, 1 December 2015).
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22 Coming back to that question of what's some of the positives about the Barossa
23 and the fact that you have from the very small to the very large co-existing. There
24 will always be certain challenges that go with that but fundamentally it is the
25 Barossa's - or the winemaking makeup has always had larger wine companies
26 alongside very small companies. So I think each complements each other, giving
27 that scale and access to skills and services that come with that whether that is
28 through Cooperages or electricians and trades, et cetera (Respondent #3, personal
29 communication, 2 December 2015).
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- 36 • Guerrilla skills and ability to focus yet adapt
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39 These leveraging capabilities are helped by the stakeholder's guerrilla skills and their
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41 ability to focus yet adapt:
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45 So it is not like we are immune to those challenges but, I mean from wine's
46 perspective, I'd certainly led I think an organizational change over the last few
47 years that has really given primacy to that collaborative culture or that has
48 certainly been my endeavor, to sort of bed that down really. Not only from our
49 members of grape and wine but definitely looking where we could get scale
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3 through partnerships with food and tourism and RDA and the benefit of
4 collaboration and scale that that confers to everyone (Respondent #3, personal
5 communication, 2 December 2015).
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9 Looking at these examples of the competencies, we can see that the Barossa possesses
10 various features of an entrepreneurial community. They look for the opportunities at both
11 ends of market and production. They have an assured focus on the wine industries, yet
12 complemented well with industries like food and tourism that diversify their opportunity
13 portfolios. They have a shared vision of expressing their Barossa identity at the world stage.
14 They appreciate that the problems and challenges are the part of the development process,
15 which provides an impetus for creativity and networking. Their tenacity, resilience, and skills
16 in managing the risk have been tested in hard times, and they emerged stronger in their
17 outlook. At the heart of all these competencies is their foundation of community capitals and
18 their ability to leverage these capitals; and at the pinnacle is their innovative programs,
19 products, processes, and strategies translated into opportunities.
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34 • Value creation through innovation
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37 Barossa is an innovative community as evident by various innovations that were
38 central to the translation of the community's competencies into opportunities (Table 3). Some
39 of these innovations include innovations by farmers and agri-business such as the
40 establishment of Barossa Trust Mark brandishing Barossa in the world stage, promoting
41 gaming industry with game birds including ducks, and share farming and leasing (strategic
42 innovation). They involve in product innovations such as developing new specialty food
43 products, an adaption of Barossan Rote Grutze dish from Sago, and Teusner Wines
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3 (exceptional yet affordable wine made from old, low yielding well-maintained vineyards).
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5 Their marketing innovations involve the use of online and social media and developing
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7 collaborative brand artisans of Barossa such as Bibu Barossa (established as cellar door outlet
8
9 for small-scale Barossa producers). Process-related innovations were focussed on
10
11 modernizing production and processing facilities such as Kangaroo processing facility, and
12
13 piggeries, use of automation, and winemakers using gravity flow wineries.
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16 Stakeholders other than farmers and agribusinesses were equally involved in
17
18 innovations related to the agricultural industry. Some notable innovations were integrating
19
20 wine with tourism experience (marketing innovation), Barossa Food Group collaborating
21
22 with the local education department and RDA to develop a wine based curricula in local
23
24 schools, innovation policy and business development workshops by R&D Barossa (strategic
25
26 innovation), and coordinated marketing and branding through the Barossa Trade Mark are
27
28 some of the initiatives that have been supported by the Barossa community.
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31 32 ***Interrelationships among community capital, entrepreneurship and innovation*** 33

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35 The presence and interactions of various forms of community capitals are recursive such that
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37 the financial, entrepreneurial, built, cultural, political and human capital in the region
38
39 complement the natural capital endowments and enable entrepreneurs to more effectively
40
41 discover, assess and exploit opportunities. Fertile soil and a favorable climate for viticulture
42
43 have fostered the development of the Barossa, but this would not have occurred without
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45 leveraging complementary entrepreneurial, human, social, financial and political capitals.
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48 **Table 2 about here**
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3 This interaction among the capitals results in a dynamic interrelationship between
4 community capital and innovation creating a cycle of impact. The innovation was not only
5 the outcome of the capital stock but in turn, adds to the community capital stock. Innovation
6 in the region grows from appropriate leveraging of community capital mixes such as
7 community infrastructure and favorable natural capital to drive product innovations. The
8 resulting innovations also impacted the existing capitals because the growth in production
9 and products attract specialty food tourists, create new employment opportunities, create
10 opportunities for new businesses and financial services and inspire intuitional investment in
11 infrastructure and other forms of community capital. Table 3 illustrates the linkages between
12 innovation types and impact on community capital.
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24 **Table 3 about here**
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28 **Conclusion and policy implications** 29

30 The findings and implications are limited due to the non-random sampling frame, and
31 exploratory nature of the study, and are not generalizable beyond the Barossa. This study
32 develops and applies the CED framework to a community and asks the four questions
33 outlined in the framework. The CED framework values the CCF as the foundation of
34 entrepreneurial community development to build on the stock of existing capital.
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41 The CED also demonstrates that the dynamic interrelationships between community
42 capital and agricultural innovation create a cycle of entrepreneurial impacts with
43 entrepreneurship leveraging community capitals to innovate and innovations adding to the
44 community capital stocks. It was the direct interaction of the Barossa's natural, social,
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3 political and cultural capitals endowments and the entrepreneurial competencies that resulted
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5 in useful innovation and high levels of entrepreneurial activity in the region.
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7 The CED framework offered in this study can be used by policymakers, development
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9 practitioners and enterprises to explore and leverage tangible and intangible community
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11 capitals to develop small business practices. The findings support Baumol's (1996)
12
13 contention that enabling factors such as community capitals are necessary to foster
14
15 entrepreneurship, and this is even more apparent in agricultural communities.
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18 The creation of additional community capitals endowments through leveraging
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20 innovation and entrepreneurship are positive factors driving the development of the Barossa
21
22 region. Barossa's position as a unique and nationally significant landscape has provided
23
24 economic opportunities that are leveraged through entrepreneurship. The presence of
25
26 entrepreneurially competent stakeholders was a salient feature of Barossa. The significant
27
28 value of agriculture in the region and the presence of entrepreneurial competencies among the
29
30 actors and stakeholders of the region offer compelling reasons to maintain agriculture as the
31
32 primary contributor to the regional development. The use of Barossa as a regional brand in
33
34 the marketing strategy of wine, food and tourism values the unique natural, cultural and
35
36 historical capitals of Barossa and adds to the financial capitals of the region. Moreover, it has
37
38 enabled the creation of valuable community brand assets which underpin additional
39
40 entrepreneurial activities.
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44 Since policy directly affects both the endowment of community capitals and their
45
46 utilization to a positive direction, any future policy interventions need to consider the
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48 complementary interrelationships between community capitals and entrepreneurship and role
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50 of entrepreneurship to leverage the capitals. Because the value of agriculture is found to be
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3 significant in the region, any policy and development intervention should aim at preserving
4 agricultural characteristics of the region to most effectively and efficiently leverage the
5 Barossa's rich mix of its capital endowments and entrepreneurial spirit to recognize and
6 create opportunities to create a more sustainable and prosperous region.
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16 primary industry competitiveness.
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Table 1. Community capital profile¹.

Capital as inputs into agricultural activities	Capital as outputs of agriculture activities: positive outputs (+) and negative outputs (-)	Capital to leverage	Capital as inhibitor
<p>Natural capital Agricultural activity suitable to land; Water; Favourable climate (sunshine) including topography, an environment suitable for complementary industries; Natural pest control; Geographical advantages</p>	<p>Level of agricultural production affecting forms and level of natural capital – sustainable practice – maintenance of previous state or improvement (+); Ecosystem services (+); Unsustainable practice - a threat to conservation practices and biodiversity loss in the region (-)</p>	<p>Adapting crop varieties appropriate to the natural capital; Use of agricultural outputs as inputs into other industries</p>	<p>Climate variability; Altered seasonal patterns; Declining water level and quality; Effects of drought; Impact of heat waves, wind, frost upon agriculture; Soil degradation/Salinity; Lack of available land for agricultural expansion; Pest infestation</p>
<p>Built capital Water management infrastructures (Desalination plant; Water-pipes; Water tanks; Irrigation; Treated water); Processing infrastructure (Wine processing; Other agriculture based processing); Grain export facilities (ports); Telecommunications infrastructure; Energy infrastructure (Solar power infrastructure; Wind turbines); Transport infrastructure (Ports; Road infrastructure; Railway infrastructure); Production infrastructure (Enclosed horticulture; Enclosed primary production; Dairy barns; Feedlots; Silos; Automated milking; Hydroponics); Machinery; Technology</p>	<p>The growth of processing infrastructure (+); Increased use of grain export facilities (+); Growth in other industries such as chicken farms, food industries (+); Impact upon road infrastructure (-); Need to upgrade road infrastructure (-)</p>	<p>Processing infrastructure; Transportation; Rail infrastructure; Air infrastructure; Wallaroo Port; Road infrastructure; Community Irrigation; Water reuse; Connected water systems; Telecommunication; Production infrastructure; Expansion of covered horticulture;</p>	<p>Insufficient serviced industrial land; Transport infrastructure (congested roads; dirt roads); Telecommunication black spots; Broadband access; Mobile phone coverage; Wind turbines hindering large machinery use and aerial applications</p>
<p>Cultural capital Resilience; Strong community connections, networks and culture (Winemaking culture); Community stewardship over the land; Modernised farming mindsets; History of farming and winemaking in the region; Families as part of the social fabric of communities; Regional pride</p>	<p>The rise of familial, social networks (+); Resistance to positive change (external investment) (-); Resilience (+); lifestyle choice (+) Geographic indication and Trust mark(+), Agriculture (winemaking and vine orchards) as a cultural institution; Strong community connections and culture (+)</p>	<p>Cultural events linked to agriculture; Family business branding; Push towards a food culture, Trust mark, Place-based recognition</p>	<p>Lack of agricultural training that appreciates the cultural crafts and skills</p>

¹ Community capitals as inputs, as outputs, as levers and as inhibitors (drawn from Nvivo coding of primary of secondary sources of data)

Capital as inputs into agricultural activities	Capital as outputs of agriculture activities: positive outputs (+) and negative outputs (-)	Capital to leverage	Capital as inhibitor
Financial capital	<p>Significant contribution to GVAP(+) and Gross regional product(+); Growth in number of input based and output based farm businesses (+); Profitability of agri-business resulting into spending in the community(+); Financial inflows into farming businesses(+); Rise in off-farm services (+); Diversified income portfolios (Farm lease income) (+); Export growth (+); Internal growth (tourism and food business) (+)</p>	<p>Outputs from agricultural activity for energy generation; Innovative financial services and investment opportunities; Export promotion; Support for the introduction of land conservation practices in farming; Funding support for agricultural activities; Promoting alternative income opportunities (from hosting wind turbines on agriculture land)</p>	<p>Limited outside connection with high value markets; Lack of easy access to finance; Access to grant funding difficult; Investment shortages; Limited access to banks; Lack of access to capital for investment in business; Employment training costs; High costs of doing business and sustainable land management; High business rates; Energy costs; Water costs; Machinery costs; High transport costs; Cost of land; Poor return on investment</p>
Human capital	<p>Employment growth (+); Seasonality of employment (-); Employment in value-adding industries(+); Employment in agricultural industry(+); Indigenous employment (+); Agricultural related knowledge to use in other industries(+); Intergenerational knowledge construction and transfer (+)</p>	<p>Access to institutional research & education; Expansion of agriculture-related employment; Shared agricultural knowledge; Investment in business and industry sectors; Education regarding conservation activities; collaborative education, research, and training</p>	<p>Ageing workforce; Specialised skill shortages and low turnover; Lack of knowledge about place-based agricultural practices; Shortage of educated workers; Shortage of full time labourers; Business related skills shortages; Lack of knowledge and development of value chains; Lack of HR skills; Lack of middle managers; Need for better understanding of food compliance regulations; Lack of entrepreneurship oriented training and education; Limited agriculture-related education</p>
Social capital	<p>Agriculture based conferences or events (+); Rise of business development networks(+);</p>	<p>Youth-based networks; Overseas networks and connections; Interest in cluster development</p>	<p>Limited connection with high-value markets; Lack of knowledge and development of value chains; Lack of connections facilitating</p>

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Capital as inputs into agricultural activities	Capital as outputs of agriculture activities: positive outputs (+) and negative outputs (-)	Capital to leverage	Capital as inhibitor
Established value chains/ supply chains; Business development networks; Young entrepreneurship program; Cooperative farming groups; Social media networks; Development of closer ties between rural and city communities; Food and agriculture-based conferences or events	Cooperative farming groups (+); Rise of farmers markets(+); Industry networks and collaborations(+); Supply chains (+); Growth of value chains(+); Young people in agricultural networks(+); Connections with international markets(+)		innovation; Lack of social events to build connections
Political capital Favourable policy; Business advice & funding from industry bodies; Government support for sustainable agricultural practices; Industry bodies' lobbying capabilities, Strong industry bodies –(SA Dairy farmers' Association; Barossa Grape and Wine Association; Winemakers federation); Government legislation to conserve the regional character; Water management regulations; Favourable planning; Support for small-scale processing; Protection of agricultural land; Politically active community; Political representation in region	Attraction of overseas investment(+); Support for industry growth(+)	Strong industry bodies' national and international linkages; Dynamic policy dialogues for disruptive, innovative policies	Rising fuel costs; Lack of funding; Foreign government impact upon Australian agriculture; Rates; Planning restrictions; Perceived lack of political engagement and acknowledgment of the region

Table 2. The Interrelationship of entrepreneurship and community capital.

Form of community capital ¹	Impact of entrepreneurship on forms of community capital	Impact of community capital on entrepreneurship
Natural	Potential positive effects if the entrepreneurship initiative is focusing on solutions to environmental or land use problems.	High levels of natural capital provide a higher quality of life and make the region more attractive for subsequent start-ups, accelerator programs and investors.
Cultural	Increased community-based entrepreneurial capabilities and entrepreneurial efficacy through the creation of cultural archetypes built around entrepreneurial success.	As entrepreneurship becomes more previous, social norms will be more tolerate of failure and see self-employment as a preferable alternative to a job.
Human	Enhanced entrepreneurial capabilities and entrepreneurial self-efficacy through the provision of organized educational programs, networking, and mentoring initiatives.	As entrepreneurial capabilities and efficacy increase in the community, it expands the number and quality of potential entrepreneurs and creates a more creative and innovative community. University or research institutions may seek to become more engaged with the ecosystem and support it. Jobs are created as start-ups expand.
Entrepreneurial - Social	Enhanced entrepreneurial - social capital within the community through networking that will create and develop stronger entrepreneurial - social capital and linkages.	The community will become more interlinked and see additional opportunities to partner as social capital is enhanced.
Political	Enhanced political capital within the community in the form of public and regulatory support for entrepreneurship initiatives, may be achieved if the entrepreneurial initiatives have positive outcomes.	As the relevance of the start-up and innovation communities become more apparent and impacts political capital the regulatory and institutional environment should become more favorable to entrepreneurship.

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Financial	Increased financial equity available for entrepreneurial firms. ²	Financial resources will become more assessable to entrepreneurs and will flow from less attractive investments to more profitable entrepreneurial ventures.
Built	Increased entrepreneurial activity may positively affect the stock of built capital within the community if accelerator has successful portfolio ventures who remain in the community and grow.	<p>Tech parks and innovation precincts help create tighter links and easier networking within the start-up community.</p> <p>The unused building will be redeveloped for expanding start-ups.</p>

1: Adapted from Emery and Flora (2006)

2: Fehder and Hochberg (2014); Hochberg (2015)

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Table 3. Innovation examples in the Barossa region by types and interaction effects on community capital

Type	Example	Interaction with Community Capital
Product	New crops, produce and tradable commodities such as grape, wine, dairy, meat, legumes, and game birds	Leverages natural capital
		Builds social, human and financial capital
	Diversification into value-added specialty products like baked and processed meat products, niche dairy processing	Leverages financial, social, political and human capital Builds human and financial capital
Process	Growth in the processor, and supply businesses due to diversification into and growth of farming and processing	Leverages financial, social, natural and human capital Builds built and financial capital
	Adoption of technology such as investment in larger equipment, use of automated systems for irrigation and monitoring wine production	Leverages built and financial capital Builds built, human and financial capital
	Process innovations such as better spray techniques and hydroponic propagation	Leverages human and built capital Builds natural, built, human and financial capital
	Collaborative marketing by farmers such as the establishment of Clare valley cuisine food group	Leverages human, natural, cultural and social capital Builds human and social capital
	Collaborative marketing by stakeholders such as an audit of demand for local produce	Leverages social and political capital Builds social and political capital
Marketing	Branding innovations by winemakers including the development of the collaborative brand, Artisans of Barossa, and adoption of the Barossa Trust Mark	Leverages human and social capital Builds social and financial capital
		Uses of new marketing channels such as online and social media
	Producers markets and farmers markets creating alternative direct distribution channels	
Supply chain	Innovations new inputs like using bio-waste from wineries and sourcing locally produced inputs	Leverages social, cultural and natural capital Builds financial and natural capital
Strategic	Expansions of wine-related activity establishment of community cellar door outlet for small-scale Barossa producers	Leverages financial, social, cultural, and natural capital Builds financial, built and natural capital
	Development of new support services such as information sessions and workshops, farm business management technical assistance, Infrastructure like a private telecommunications network, promotion and awareness of ag via regional experience tours for urban youth	Leverages human and political capital Builds financial, built and human capital

Developed by Woods et al. (In Press) based on Emery and Flora (2006).

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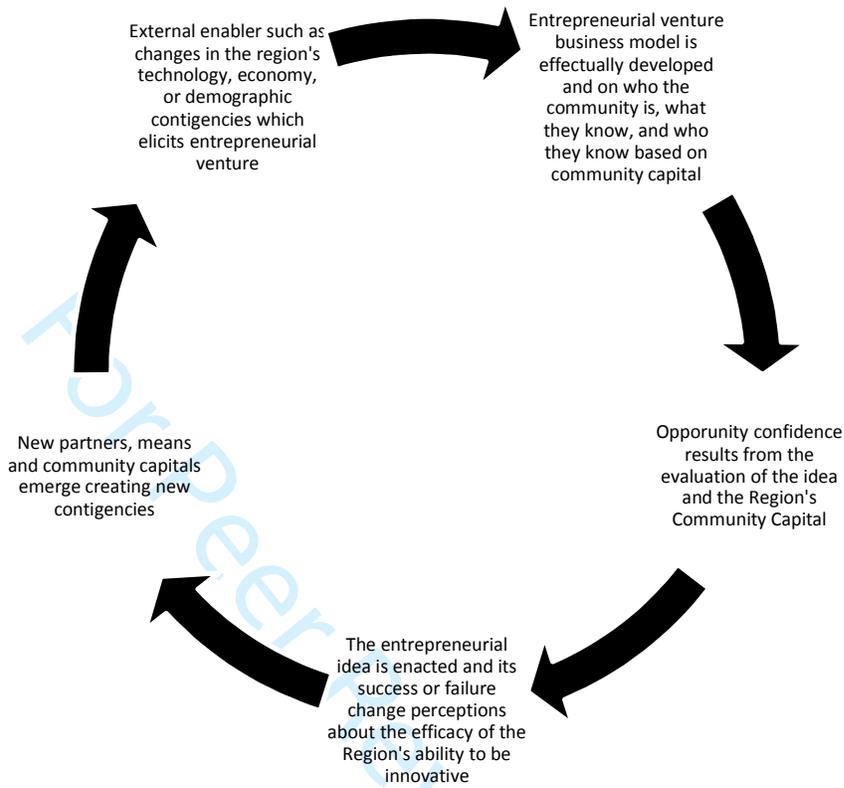


Figure 1. The CED cycle to facilitate innovation and entrepreneurship.

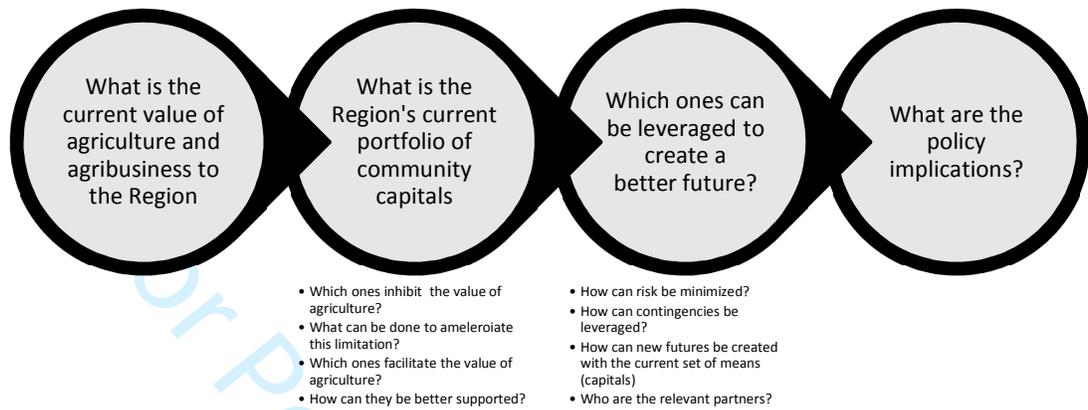


Figure 2. The four question CED framework.