An investigation into environmental coopetition in the South African wine industry

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Declaration

By submitting this dissertation electronically, I, Jakobus Wilhelm Volschenk, declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

J.W. Volschenk December 2016

Abstract

Environmental problems can often not be solved in isolation and need to be solved in a cooperative manner, sometimes even by collaborating with competitors. The coopetition body of literature would be ideal to address this need, but this body of literature has, historically, considered only a relatively narrow interpretation of what value is created and to whom such value is appropriated. Furthermore, multiple authors in the coopetition field have noted the need for research dealing with the dynamics of value creation and appropriation.

This dissertation addresses the need for understanding the dynamics of value in an expanded view of value creation and appropriation. It does so by introducing stakeholder theory into the coopetition field to create a typology of value creation and appropriation, referred to as the Coopetition Value Matrix (CVM).

The CVM serves as both a diagnostic tool and an instrument to better articulate and understand value creation, value appropriation, and the interaction of different types of value.

The dissertation applied the CVM to ten cases of environmental coopetition in the wine industry. Environmental coopetition can be defined as actions of competitors to cooperate to reduce environmental impact and/or create environmental value.

The methodology was based on qualitative interviews with partners and stakeholders in the cases of environmental coopetition.

Applying the CVM to the cases led to some interesting observations, including the identification of three generic dynamics in the creation and appropriation of value. The dissertation represents an extension and refinement of some elements of coopetition literature, while it also introduces new theory in other aspects.

Even though the ten cases in the study were from the wine industry, the findings are of much broader implication. Ultimately, the study calls for a broadening of the understanding of how value is created in coopetition and how it may be appropriated. The findings should therefore be of interest to a much broader group of researchers than those who are only interested in solving environmental problems.

Keywords:

Coopetition, environmental coopetition, socio-environmental value, Coopetition Value Matrix

Alternative search items:

Coopertition, co-opertition

Coalitions, collaboration

Opsomming

Omgewingsprobleme kan selde in isolasie opgelos word en kan gewoonlik net opgelos word op ‘n samewerkende wyse, partymaal selfs deur met mededingers saam te werk. Die samedinging (*coopetition*) literatuur sou ideaal wees om hierdie behoefte aan te spreek, maar hierdie literatuur het histories slegs ‘n eng interpretasie gehandhaaf van watter waarde geskep word, en aan wie hierdie waarde toegedeel word. Verder het verskeie skrywers in die samedinging-veld reeds die behoefte uitgewys vir navorsing wat handel oor die dinamika van waardeskepping en waardetoedeling.

Hierdie verhandeling fokus op die behoefte om die dinamika van waarde te begryp binne ‘n uitgebreide siening van waardeskepping en -toedeling. Die verhandeling doen dit deur belangehouer-teorie te betrek in die veld van samedinging om sodoende uit te kom by ‘n tipologie van waardeskepping en toedeling, waarna verwys word as die Samedinging Waarde Matriks (*Coopetition Value Matrix* of CVM).

Die CVM dien as beide ‘n diagnostiese instrument en ‘n instrument om waardeskepping en waardetoedeling, asook die interaksie tussen verskillende tipes waarde, beter te artikuleer.

In die verhandeling word die CVM toegepas op tien gevalle van omgewing-samedinging in die wynbedryf. Omgewing-samedinging kan gedefinieer word as die optrede van mededingers deur saam te werk om omgewingsimpak te verminder en/of omgewingswaarde te skep.

Die metodologie was gebaseer op kwalitatiewe onderhoude met vennote en belanghebbendes in die gevallestudies van omgewing-samedinging.

Die toepassing van die CVM op die gevallestudies het gelei tot 'n paar interessante waarnemings, insluitend die identifisering van drie generiese dinamika in die skepping en toedeling van waarde. Die verhandeling verteenwoordig 'n uitbreiding en verfyning van sommige elemente van die samedinging literatuur, terwyl dit ook nuwe teorie voorstel in ander opsigte.

Alhoewel die tien gevallestudies uit die wynindustrie kom, het die bevindinge van die studie veel groter implikasie. Uiteindelik is die studie ‘n oproep tot die verbreding van begrip oor hoe waarde geskep word wanneer samedinging plaasvind en hoe die waarde toegedeel word. Die bevindinge behoort dus van belang te wees vir 'n veel wyer groep navorsers as diegene wat slegs belangstel in die oplossing van omgewingsprobleme.

Sleutelwoorde:

Samedinging, omgewing-samedinging, sosio-omgewingswaarde, Samedinging Waarde Matriks

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If you want to go fast, go alone. If you want to go far, go together.

– African proverb

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List of acronyms and abbreviations

BWI	Biodiversity & Wine Initiative
CPR	common pool resources
CVM	coopetition value matrix
EMP	environmental management plan
ha	hectare
HCCP	heating, cooling and process piping
IPW	Integrated Production of Wine
ISO	International Organization for Standardization
NGO	non-governmental organisation
NPO	non-profit organisation
R&D	research and development
RBV	resource-based view
RSA	Republic of South Africa
SVF	Sustainable Value Framework
TGRC	The Glass Recycling Company
UNEP	United Nations Environment Programme
VEIs	Voluntary Environmental Initiatives
WBCSD	World Business Council for Sustainable Development
Winetech	Wine Industry Network for Expertise and Technology
WOSA	Wine Organisation of South Africa
WWF	World Wide Fund For Nature

CHAPTER 1
ORIENTATION

1.1 INTRODUCTION

The win-lose paradigm inherent to competitive strategies has been perpetuated by, and is dominant in, much of the management literature of the last few decades (Barney, 1986; Porter & Kramer, 2011: 66, Porritt, 2007: 103). This is mostly because to be uncompetitive is to fail (Porritt, 2007: 102). The position of firms that fail to innovate are eroded by competitors that offer innovations that appeal to the market (Lepak, Smith & Taylor, 2007: 186). But competition is also controversial in the sense that it contributes to the "tragedy of the commons" (Hardin, 1968). Within the competition paradigm, the only way for a firm to gain is for another to lose, i.e. competition is a zero-sum game (Orsato, 2009: 17). Furthermore, this "social Darwinism" has been adopted by modern business as mantra to justify irresponsible and uncaring corporate behaviour (Porritt, 2007), to the detriment of society.

An increasing body of knowledge is looking at cooperation as a source of prosperity. After all, as Meadows (2001) pointed out: "Some kinds of excellence rise out of competition; other kinds rise out of cooperation. You're not in a war, you're in a community". Under the assumption that competition drives economic activity past the global environment's ability to assimilate polluting consequences (Stebbing & Heath, 2003 in Porritt, 2007), coopetition – the practice of collaborating with your competitors – provides an attractive alternative to the tragedy of the commons as portrayed by Hardin (1968).

1.2 THE NATURE OF ENVIRONMENTAL PROBLEMS

The most recent Living Planet report of the World Wide Fund for Nature (2014) indicates the extent of the ecological crisis in which the world finds itself. The report shows that the number of individual animals have decreased by 52% between 1970 and 2010 (Ibid., 16), pointing to massive biodiversity losses globally. As a human species, we need 1.5 earths to sustain our population and current per capita living requirements. Agriculture, for instance, accounts for 92 per cent of global water consumption (Ibid., 12). At the same time, carbon emissions keep rising as a result of human activity, leading to increasing global temperatures. Climate change of two degree Celsius would have a vast impact on agriculture in sub-Saharan Africa (World Economic Forum, 2016: 50). These and other environmental problems need to be solved for human survival.

At the shallowest view of the interaction of human with the environment, environmental issues can broadly be classified in terms of two dimensions, namely over-exploitation and pollution (Rennings & Wiggering, 1997: 26; Naess, 1973: 95). This argument is succinctly worded by Marstrander (1996: 200):

> *In the 19th century, we allowed ourselves to run industry as if we had unlimited resources and we could produce unlimited waste without doing any harm. We are entering a period in which we want to base our industrialized society on a model which has limited energy and limited resources as inputs, and limited waste as its final output.*

Figure 1.1 portrays nature as the context within which society and the economy exist and resonates with the above quote from Marstrander (1996: 200). Such a perspective is regarded as a shallow view of the ecology as it values nature only for its ability to sustain society and the economy. Yang (2006: 33) argued that the ecological crisis we find ourselves in is partly due to this human-centred worldview.

Yang (2006: 33) regards the ecological crisis as an outcome of:

- The insensitivity of the modern economy to the vulnerability and limits of nature;
- The power struggle of modern politics;
- Society equating happiness with material satisfaction; and
- The overwhelming acceptance of a mechanical and dualist view of nature (i.e. nature and man are separate).

It is not industrialisation that should be blamed for our ecological crisis, but rather industrial civilisation.

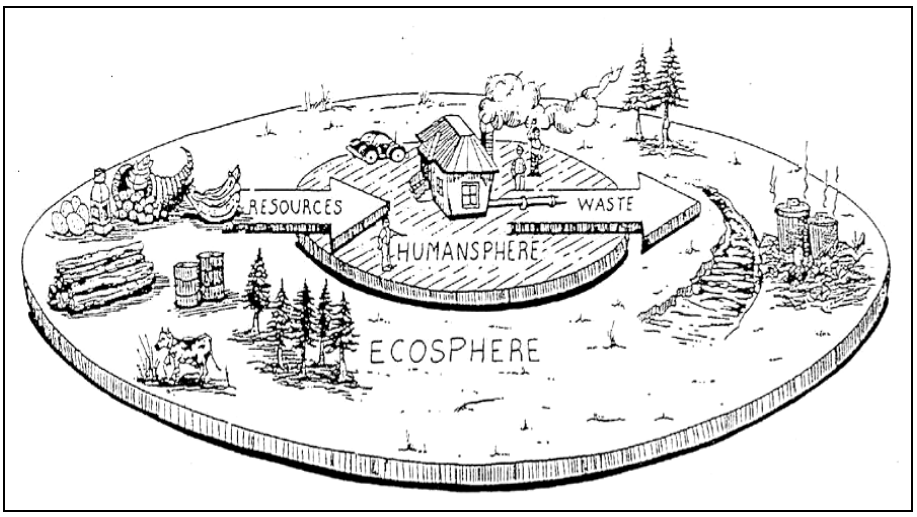


Figure 1.1: An eco-system view of human activity

One of the most central and evident problems with the industrial civilisation is that our view of value is constrained by a narrow focus of how nature and society relate to the creation of value. The five capitals model (Forum for the Future, 2005) shown in Figure 1.2, provides a useful framework to explore the relationship between different types of capital.

The five capitals model distinguishes between five forms of capital, namely:

i) Financial (e.g. cash, debtors, inventory);

ii) Manufactured capital (e.g. fixed assets such as factories);

iii) Social capital (e.g. trust, shared values, relationships);

iv) Human capital (e.g. knowledge, health, skills); and

v) Natural capital (resources, capacity to absorb waste).

In some representations of the model, intellectual capital is separated from human capital to form six capitals (International Integrated Reporting Council, 2013).

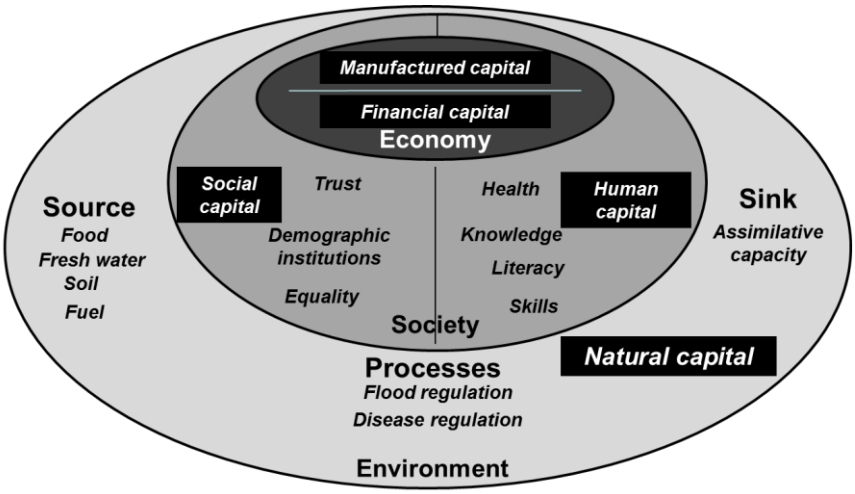


Figure 1.2: The five capitals model

Source: Forum for the Future, 2005.

The five (or six) capitals model allows us to articulate the destruction of total value. For instance, natural resources are provided by nature free of charge, but it does not mean that it has no value. As such, it would be possible for a firm to save expenses by dumping poisonous waste into a river, while the subsequent damage may destroy far more natural capital and social capital (in the form of trust of the community). Similarly, it is possible to sell a scarce natural resource (such as an endangered fish) at a much lower price than the real value because the seller only has to recover his own expenses.

The issue of substitutability of resources is a central debate in environmental economics. The two extremes are embodied in the weak and strong views of sustainability. Weak sustainability is based in neo-classical economic theory and assumes that one form of capital can be substituted for another, for instance manufactured for natural capital (Rennings & Wiggering, 1997: 25). In such instances, economics is concerned with the best allocation of resources (ibid: 27). Weak sustainability therefore means that the total capital stock should not decrease (Gutés, 1996: 147).

Strong sustainability is concerned with ecological carrying capacity and a requirement that economic activity should not jeopardize the functioning of ecosystems. That means sustainability is equated to non-decreasing natural capital (Ibid.).

Whether natural capital is viewed as substitutable with other forms of capital has no direct bearing on how one would view coopetition to address environmental issues. However, it may impact how value is perceived in such initiatives, an issue that is of relevance later in this study. The legitimacy of nature as a stakeholder is partly determined by which extreme of sustainability one adopts.

1.3 COMMON POOL RESOURCES AND COOPERATION

The problem of overexploitation is often discussed in literature, and is somewhat addressed by the literature around common pool resources or CPRs (Hardin, 1968; Ostrom, 1990; Wade, 1987). CPRs are public goods (i.e. no ownership is assigned to it) that are finite, and therefore, if one party uses some of it, it means there is less available for others (Wade, 1987: 96). It is therefore susceptible to depletion, erosion and deterioration when used beyond the carrying capacity (Blomquist & Ostrom, 1985: 383). Examples of overexploitation of resources are abundant in the fishing, forestry, water, and other industries (Wade, 1987: 95).

Arguably one of the most famous parables in environmental management literature is that of the "tragedy of the commons", i.e. the tale of how a fictional communal field in a town collapses under the pressure of overexploitation (Hardin, 1968). Individuals acting in self-interest receive short-term gain from their actions, but at an aggregated level the resources collapse. The view that humans are exclusively self-interested has also resonated in strategic management literature (Ghoshal, 2005). But while Hardin's (1968) tragedy of the commons was a bleak view of society's ability to limit overexploitation of natural resources, Ostrom (1990; 2000), Ostrom, Walker and Gardner (1992) and Wade (1987) provided ample evidence that communities can collectively and successfully govern the use of CPRs. In essence, the work by Ostrom and her peers can be seen as case studies of environmental coopetition at various grass-root levels. Although the coopetition body of literature is substantial, little attention has been given to coopetition to address environmental issues. Coopetition literature can thus gain from broadening its scope to CPR literature, but the CPR theory needs to be translated for intra-firm, inter-firm, inter-industry and other behaviour.

Much of the discussion in the CPR literature focuses on the validity of the "zero contribution thesis", which states that no self-interested person would contribute to the production of a public benefit:

> *Unless the number of individuals in a group is quite small, or unless there is coercion or some other special device to make individuals act in their common interest, rational, self-interested individuals will not act to achieve their common or group interests* (Olson, 1965: 2).

Extensive empirical evidence exists that portrays a more positive view of human behaviour (Ghoshal, 2005), but much remains unknown about the contexts and variables that make collective action more probable. (Ostrom, 2000: 154).

Prior to much of Ostrom's writing, the dominant view of commons was that, left to their own devices, communities would exploit common pool resources past its carrying capacity. Three such examples are those of:

i) Hardin (who coined the description of the tragedy of commons in 1968);
ii) Olson (1965) who argued that someone who cannot be excluded from the benefits of collective action, has little incentive to participate in the creation thereof; and
iii) The prisoner's dilemma from classic game theory (in which communication between players is forbidden) (Ostrom, 1990: 4).

Based on such thinking, it is not surprising that the dominant thinking around governing the commons relied on control from outside in the form of government-imposed control, converting the commons into private property (be aware that this is only an analogy), or creating institutions (for instance, third-party institutions) to govern the commons (Ostrom, 1990: 8-15).

However, empirical evidence suggests that individuals in social dilemmas can find solutions without the need for outside enforcement or governance (Ostrom, Walker & Gardner, 1992: 405). Using an experimental design, Ostrom et al. (1992: 414) showed, that when individuals are given the opportunity to self-organise, they often, but not always, make credible commitments that deliver better outcomes without an external enforcer. This is corroborated by extensive empirical studies in many different instances of Ostrom's work.

Ostrom et al. (1992: 414) also found that the presence of communication, covenants and penalties for transgressors have a bigger positive impact on the outcome of a social dilemma experiment than what the predicted theoretical game theory result suggests.

Much of the work by Ostrom and her colleagues focused on the logic of cooperation, antecedents of cooperation and governance of groups of stakeholders in CPR cases. An enduring contribution of Ostrom are the eight design principles of CPR institutions shown in Table 1.1.

Most of the design principles of Ostrom (1990: 90) relate to the structure of the design, strongly reminding one of Dostel's (2005: 313) adages that structure exerts passive governance for activities.

Ostrom and her linked body of work are associated with New Institutional Economics, a field of economics that focuses on social and legal norms and rules (referred to as the rules of the game) that underlie economic activity (Brue, 2000: 419). Although the work of Ostrom and her co-authors is relevant to understanding environmental coopetition, it is, for two reasons, of limited relevance to the particular research focus of this dissertation:

Table 1.1: Design principles illustrated by long-enduring CPR institutions

1. Clearly-defined boundaries Individuals or households who have rights to withdraw resource units from the CPR must be clearly defined, as must the boundaries of the CPR itself.
2. Congruence between appropriation and provision rules and local conditions Appropriation rules restricting time, place, technology and/or quantity of resource units are related to local conditions and to provision rules requiring labour, material and/or money.
3. Collective-choice arrangements Most individuals affected by the operational rules can participate in modifying the operational rules.
4. Monitoring Monitors, who actively audit CPR conditions and appropriator behaviour, are accountable to the appropriators or are the appropriators.
5. Graduated sanctions Appropriators who violate operational rules are likely to be assessed graduated sanctions (depending on the seriousness and context of the offense) by other appropriators, by officials accountable to these appropriators, or by both.
6. Conflict-resolution mechanisms Appropriators and their officials have rapid access to low-cost local arenas to resolve conflicts among appropriators or between appropriators and officials.
7. Minimal recognition of rights to organise The rights of appropriators to devise their own institutions are not challenged by external governmental authorities.
For CPRs that are parts of larger systems: **8. Nested enterprises** Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organised in multiple layers of nested enterprises.

Source: Ostrom, 1990: 90.

Firstly, New Institutional Economics is concerned with structures that drive behaviour, and is less concerned with the value that initiatives generate. Freeman and Reed (1983) criticised economics for not considering stakeholder theory. This study is concerned with the value that is created from coopetition initiatives, and less so with the structures that govern or drive such initiatives. As a result, the literature surrounding CPR institutions is not covered in depth in this dissertation.

Secondly, whereas some of the environmental issues in this dissertation can be considered CPR problems, not all the cases can be classified as such. Glass recycling, for instance, reduces reliance on natural resources, but the resources are sufficiently abundant not to be classified as a CPR problem.

1.4 ENVIRONMENTAL COOPETITION

Companies are responsible for environmental impacts in various contexts, for instance, water, air, land, and biodiversity. While there is a moral and ethical imperative for companies to act

environmentally responsible, it would naturally happen much faster if it can be shown that being environmentally responsible can generate value for the companies (Marcus & Fremeth, 2009: 19).

It is, however, extremely difficult for companies to differentiate themselves on environmental grounds (Bateman & Snell, 2007; Orsato, 2009). Despite indications from consumers that they would pay more for green products, the reality seems to show that consumers do not consistently act on the intention they exhibit in surveys. Environmental coopetition provides an attractive option to companies hoping to capture some value from environmental activities, even if competitors also gain in the process.

For example, when Swedish breweries collaborated to reduce the cost of collecting empty bottles (Bengtsson & Kock, 2000), it benefited all companies. The resulting reduction in carbon emissions and waste potentially makes this an example of environmental coopetition. What remains unclear though is whether the environmental benefit was merely the “invisible hand” of Adam Smith (1776), or whether it was an explicit choice in the minds of the coopeting parties. If the benefit was unintentional, assigning a carbon cap to this industry would potentially make the benefit explicit.

While the competitive paradigm may manifest in value for a single company, most environmental problems require collective action to solve (Seabright, 1997). At the same time, companies increasingly collaborate around environmental innovations.

Despite an extensive body of literature dealing with value creation and appropriation in coopetititive initiatives, not much is said about the public and environmental value that exists in such cases (Khanna, Gulati & Nohria, 1998; Dagnino & Padula, 2002; Dyer, Singh & Kale, 2008; Janssen, De Man & Quak, 2013). Other aspects of coopetition literature also seem at odds with empirical observations, such as the assertion that the collaboration component of coopetition should happen far from customers.

While some may argue that partnerships and collaboration favour incremental changes to the fundamental changes needed for sustainability (Levy, 1997: 142), it does provide an alternative to the belief that companies will only act if they can gain an opportunity to outperform the competition. In fact, there is a strong indication that sustainability leaders are far more willing than other companies to collaborate with a wide set of stakeholders, including competitors (Kiron, Kruschwitz, Haanaes & Von Streng Velken, 2012: 73).

Despite a significant growth in publications dealing with coopetition, the topic is still considered a relatively new and unexplored topic in management research (Bengtsson & Kock, 2014). It is therefore encouraging to see reports (Yami, Castaldo, Dagnino, Le Roy & Czakon, 2010: 6) that the phenomenon has become more mainstream in its dimensions and significance. Yet, from the absence of a coopetition-related discourse in sustainability literature, it is evident that a gap in knowledge exists around environmentally-orientated coopetition. This lack of discussion is also evident in other areas of environmental strategy. In a working paper about the construct validity of

environmental strategy measures by Walls, Phan and Berrone (2008), there was no measure provided for environmental collaboration, while it has already been pointed out that environmental issues often cannot be solved in isolation.

While a number of examples of environmental coopetition exist (such as environmental standards, fishing quotas, research and development (R&D) collaboration, and transport agreements), only a few authors in the area of coopetition have recently ventured towards discussing 'environmental coopetition' as it is defined in this dissertation (for example Steinmo & Jakobsen, 2013; Holmburg & Örne, 2013; De Marchi, 2012; Blanco, Lozano & Rey-Maquieira, 2009; Limoubpratum, Shee & Ahsan, 2014; Choi, Garcia, & Friedrich, 2010). While this seems to be a problem of theory, understanding the answers to questions like what, why and how, can inform private firms, public administration and society about how more such initiatives can be fostered. This dissertation therefore also aims to address a practical issue by exploring how firms and stakeholders perceive the creation and appropriation of value in environmental coopetition initiatives.

1.5 PROBLEM STATEMENT AND GAP

A well-used analogy in coopetition literature is that of the enlargement of the value-pie versus the slicing of the pie (Brandenburger & Nalebuff, 1996; Lado, Boyd & Hanlon, 1997; Walley, 2007; Lacomba, Lagos & Neugebauer, 2011; Chin, Chan & Lam, 2008; Rusko, 2011; Ritala & Tidström, 2014). While this analogy may be powerful at a very high level, it lacks the power to articulate value-related dynamics (Garcia-Castro & Aguilera, 2014) in coopetitive initiatives.

Furthermore, while there is sufficient literature about value appropriation in the coopetition and the collaboration bodies of literature, these typically do not consider a wider stakeholder view of value (see Dagnino & Padula, 2002; Dyer et al., 2008; Ritala & Hurmelinna-Laukkanen, 2009; Ritala & Tidström, 2014; Park, Srivastava & Gnyawali, 2014).

Research on the value aspect of coopetition is still limited, both at theoretical and empirical levels (Ritala & Tidström, 2014). As such, our understanding is constrained impeded by the "incomplete conceptualization and measurement of value and by scant characterization of the different patterns of stakeholder value appropriation" (Garcia-Castro & Aguilera, 2014).

One context in which the understanding of value creation and appropriation is poorly articulated, is environmental coopetition. Environmental coopetition refers to *initiatives through which companies collaborate with their competitors to reduce environmental impact or to create environmental value*.

While a few authors (Steinmo & Jakobsen, 2013; Holmburg & Örne, 2013; De Marchi, 2012; Blanco et al., 2009) have focused on coopetition to address environmental issues, it remains poorly described and analysed. And while examples of environmental coopetition are relatively abundant, not much is known about how value is created, how value is appropriated, and how the different types of value relate to each other in such a context.

This dissertation firstly addresses a gap in theory, namely the lack of articulation and understanding of value (i.e. content) and the different patterns of value creation and appropriation (i.e. process).

Secondly, this dissertation addresses an empirical gap by exploring coopetition in a context that has not been well studied in the body of knowledge related to coopetition.

Thirdly, not many studies of coopetition have focused on the wine industry, with the few examples being studies of:

- Australian, New Zealand and US coopetition for screwcap closures on bottles (Choi, Garcia, Friedrich, 2009),
- wine cluster coopetition in New Zealand (Dana, Granata, Lasch & Carnaby, 2013), and
- a longitudinal study of a French wine producers union (Granata, Geraudel, Gundolf, Gast & Marquès (2015).

This dissertation therefore contributes to the body of knowledge of coopetition in the wine industry.

1.6 RESEARCH QUESTIONS

Research questions provide direction and scope to all parts of a study (Robson, 2002: 82). This dissertation makes a conceptual contribution to the need for a better understanding and articulation of value creation and appropriation dynamics (Garcia-Castro & Aguilera, 2014; Ritala & Tidström, 2014; Park et al., 2014) by addressing two parallel research questions.

RQ1: What types of value do companies create and appropriate in environmental coopetition?

RQ2: How do the different types of value interact (i.e. value dynamics) in environmental coopetition?

1.7 THE IMPORTANCE AND CONTRIBUTION OF THE RESEARCH

Value creation and appropriation has two dimensions, namely content and process (Bowman & Ambrosini, 2000; Lepak, et al., 2007: 181). The two research questions directly address these two aspects of value by advancing the definition of value from the economics debate to the coopetition debate and by providing an analytical typology of value (referring to RQ1) that aids in the understanding of the dynamics between different types of value (referring to RQ2). In addressing these two questions, the dissertation contributes to the extant literature in five ways as described below.

1.7.1 The value creation view

Researchers in the coopetition and collaboration literature have thus far viewed the created value as either knowledge value or economic value. The researcher argues for the inclusion of socio-

environmental value in the value creation view of coopetition. This aspect extends and consolidates work done by Lado et al. (1997), Dagnino and Padula, (2002; 2007), Ritala and Hurmelinna-Laukkanen, (2009), Zhang and Frazier (2011) and Kenworthy (1995).

1.7.2 The value appropriation view

The main focus in extant coopetion literature has been on common and private benefits as value captured between and within coopeting firms (Ritala & Tidström 2014). This dissertation extends the concept of captured value by introducing a wider stakeholder view (Freeman, 1984; Harrison & Wicks; 2013; Hörisch, Freeman & Schaltegger, 2014) of value appropriation (Dyer et al. 2008, Lado et al. 1997, Ritala & Tidström 2014). Different stakeholders have different views about value because of unique goals, contexts and knowledge (Lepak et al., 2007: 185). By including public benefit in the view of value appropriation, the researcher brings an aspect of social embeddedness (Granovetter, 1985) into the rhetoric of value. Ultimately social embeddedness can be linked to a competitive advantage (Czakon & Lizak, 2013).

The dissertation further suggests a more precise articulation of the appropriation of the “common” component of the increased value pie (Dyer et al., 2008; Park et al., 2014; Ritala & Tidström, 2014). Privately-captured common benefit represents the component of common value captured by a focus firm.

1.7.3 A typology of coopetition value types

The coopetition value matrix (CVM) represents a third contribution by integrating the expanded perspectives of value. The CVM serves as a typology through which coopetition-related value can be mapped and through which value dynamics (Ritala & Tidström 2014, Garcia-Castro & Aguilera 2014) can be articulated. Such a value matrix can aid coopeting entities, firstly, to understand how more value may be *created*, and secondly, to understand how more value can be *captured*.

1.7.4 Value dynamics

The fourth contribution is a description of different value dynamics in the CVM. The results of the study show an extensive number of observed dynamics, but ultimately the researcher narrowed these down to three generic dynamics that may inform future studies.

1.7.5 The context

While the above theoretical contributions are potentially generic to most coopetition initiatives, this dissertation also addresses the call for new empirical contributions (Ritala & Tidström 2014) by focusing on ten cases of environmental coopetition. Given the scarcity of coopetition studies in an environmental context, the researcher believed the empirical setting offers an interesting addition to the literature while providing a rich setting to illustrate the proposed theory.

Secondly, very few studies of coopetition have been done in the wine industry, and none in the South African environment. The study therefore makes an empirical contribution in this regard.

Lastly, the cases described in this study are intricate, and often the companies would be involved in multiple and overlapping initiative. This is popularly referred to as networked coopetition (Czakon & Czernek, 2016). Even though the scope of the study did not include this view, it is important to note the context.

1.7.5 The CVM methodology

The dissertation followed a novel approach to analysing coopetition initiatives by mapping value in the CVM. This represents a novel methodology and can be applied further in other cases and contexts.

1.8 CLARIFICATION OF KEY CONCEPTS

In any field of study, it is likely to find similar concepts, constructs or phenomena, but which are referred to by different names. In addition, the terminology may not imply exactly the same meaning, in which case the words we use become even more important. It is important to define concepts up-front as it may require different explanations and approaches (Babbie, 2010: 132). A good definition has one explicit, clear and specific meaning. It should not be ambiguous or vague (Neuman, 2000: 158). This section provides conceptual clarity in some instances and in other cases, where there are irreconcilable definitions in the theory, indicates a preference for a particular definition. The concepts are listed in alphabetical order and not in order of relevance.

1.8.1 Cartel

A cartel is a formal or explicit agreement between producers to coordinate prices or production (Sullivan & Sheffrin, 2003: 171; Pindyck & Rubenfield,1995: 462; Levenstein & Suslow, 2006: 45). The degree of competition between competitors is higher in cartels than in alliances and coopetition relationships (Rusco, 2011: 313). A high level of competition makes it difficult for firms to work together.

Other definitions state that a cartel is a group of firms that collude. Colluding firms in comparison to competing firms, are able to charge higher prices, usually produce less, block new firms, and as a result earn higher profits (McEachern, 2013: 225).

Cartels are most prevalent in industries with ten or fewer sellers, or in industries where most sales are made by only a few sellers (Pressey, Vanharanta & Gilchrest, 2014: 4). The wine industry is highly fragmented between many small players, so it would be unlikely to find cartels in the industry.

1.8.2 Collusion

Collusion refers to the illegal actions of firms that divide the market, set prices, or limit production. (Sullivan & Sheffrin, 2003: 171; Pindyck & Rubenfield, 1995: 455; McEachern, 2013: 225). A deeper discussion of collusion follows in the literature review (See Section 2.8).

1.8.3 Common pool resources

Common pool resources (CPRs) can be seen as a subset of public goods. But where public goods can be used by many at the same time, or put differently, exclusion is difficult, some public goods provide infinite benefits. In contrast, common pool resources are finite and yield subtractive benefits (Wade, 1987: 96). Each person's consumption subtracts from the total common pool resources available to others (Blomquist & Ostrom, 1985: 383). The problem of pollution can be seen as a reversed problem of commons, in such instances it is not about taking out of a system, but putting into a system with a limited absorption capacity (Hardin, 1968: 1243). Carbon dioxide pollution, for instance, is a CPR problem. We made reference to glass waste earlier (see Section 1.3) to illustrate that not all pollution is a CPR problem.

1.8.4 Competitor

A number of different definitions exist of what a competitor is. Some authors define competitors as firms that operate in the same market and sell a similar product (Bengtsson & Kock, 2000: 413). As a result, your product or service becomes less attractive in the presence of your competitor's product (Brandenburger & Nalebuff, 1996).

Firms can also be regarded as competitors if the actions of one firm hinder or limit the actions of another (Dorn, Schweiger & Albers, 2016: 2).

1.8.5 Coopetition (also "co-opetition", "co-opertition", "coopertition" and "competitive collaboration")

There are a few alternative definitions of coopetition. The definition used in this study is that of Bengtsson and Kock (2000), stating that coopetition is when competitors simultaneously collaborate and compete with each other. Even though some others argue that collusion is a form of coopetition, we consider only instances where coopetition adds value for consumers and society through innovation and increases in efficiency (Walley, 2007; Czakon, Mucha-Kuś & Sołtysik, 2016).

1.8.6 Coopetitors

Coopetitors are the competitors who are collaborating in the coopetitive actions (Dagnino & Padula, 2002: 4). They can also be referred to as the collaborators, or simply, partners.

1.8.7 Environmental coopetition

We define environmental coopetition as the action of competitors to collaborate/cooperate to reduce environmental impact and/or create environmental value.

1.8.8 Impure public goods

Impure public goods are recognised by the joint provision of a private good and an environmental public good (Kotchen, 2006: 281). Coffee that is grown in the shade of rainforests represents both a private good (coffee) and an environmental public good (conservation of a rain forest).

1.8.9 Intangibles

Intangibles or intangible value is often defined narrowly as patents, licences, trademarks and the likes (Brennan & Connell, 2000: 2), but could also include company reputation, human capital, customer loyalty, or other such dimensions (Lev & Daum, 2004: 6). Knowledge value (or intellectual capital), is also seen as intangible value (Martin, 2004).

Intangibles are inert, meaning that they do not generate value on their own, but can generate value when combined with other factors of production (Lev & Daum, 2004: 6).

1.8.10 Knowledge

There are numerous classifications and typologies of knowledge. The literature makes a distinction between different kinds of knowledge, for instance explicit versus tacit knowledge; and individual knowledge versus group knowledge (Cook & Brown, 1999).

One could also make a distinction between *know-what* knowledge and *know-how* knowledge. Know-what knowledge can be associated with awareness and understanding, whereas skills and competencies are more readily associated with know-how or tacit knowledge (Winterton, Delamare-Le Deist & Stringfellow, 2005).

Explicit knowledge (or know-what) can be documented and conveyed easier, but is considered less important (e.g. Brown & Duguid 1998; Cook & Brown, 1999) than tacit knowledge (or know-how) as it cannot lead to a sustainable competitive advantage. Tacit knowledge is much harder to communicate or to gain, and Cook and Brown maintained that it can never be made explicit (1999: 397).

Knowledge is closely associated with learning. While conceptual learning is at the level of know-what and is associated with understanding and using new concepts, operational learning is associated with know-how, or the ability to act (Winterton et al., 2005). The idea of a learning curve illustrates that there is a feedback loop between understanding how something is done and doing it. Explicit and tacit knowledge are therefore mutually reinforcing and dependent (Alavi & Leidner, 2001: 112).

A further element to be aware of is that knowledge consists of content and process (Haas & Hansen, 2007). The aspect of content and process will also emerge in the discussion of value creation.

1.8.11 Private goods

When a product or service is a private good, the consumption of one unit excludes someone else from consuming the same unit. For instance, when a person consumes a loaf of bread, that unit of bread is no longer available to anyone else. Private goods stand opposite to public goods.

1.8.12 Public goods

Public goods are characterised by two characteristics namely non-rivalrous consumption and that it is non-excludable (Bannock, Baxter & Davis, 2003: 316):

- *Non-rivalrous* implies that the consumption of the good by one person does not deprive another of its use.
- *Non-excludable* means that it is impossible to exclude any person from using it. This characteristic often makes public goods susceptible to free riding.
- Public goods are often (<u>but not always</u>) *non-rejectable* in that individuals cannot abstain from using it, even if they wish to.

A country's defence is often quoted as an example that meets all three of the three criteria. Another example is ecosystem services such as the CO_2 sequestration of plants.

Public (analogue) television is an example of a public good that satisfies the first two characteristics, but not the third.

1.8.13 Stakeholder theory

A deeper discussion regarding stakeholder theory follows in the literature review of the dissertation. For the purpose of clarification, it is important to note that the definition in this dissertation is the wide definition of a stakeholder as defined by Freeman and Reed (1983: 51). This wide definition of a stakeholder includes any group or individual who can impact on or who may be impacted on by the achievement of the objectives of an organisation.

1.8.14 Value/Rent/Utility

Value is a central concept/construct in this dissertation. The concept of value has multiple meanings depending on the body of knowledge investigated. The term 'value' (or 'rent' as Dyer et al., 2008: 137 refer to it) in this dissertation refers to tangible value as well as intangible value (Integrated Reporting Council, 2013). In short, the researcher follows the definition of value as stated by Harrison and Wicks (2013: 100) as "anything that has the potential to be of worth to stakeholders", implying that value is embedded in stakeholder theory. The Integrated Reporting Council (2013) also acknowledges that the term value has different meaning for different people, thereby choosing not to give a definition of the term.

By placing the stakeholder in the centre of decision-making, the unit of analysis changed to a more relational view of business (Freeman, 2010). Logically, when the central focus of a study is on

cooperation between competitors, such a focus is desirable. (Also see value creation for a multi-stakeholder interpretation of value).

A central premise of stakeholder theory is that treating stakeholders well and considering their interests has value for the company in a number of dimensions (Freeman, 2010; Harrison & Wicks, 2013). These dimensions are discussed in the literature-review, and are elaborated on further in the empirical component of this dissertation. But the dissertation also explored manifestations of value for the environment and society albeit from the perspective of the respondents (refer Table 1.2).

Table 1.2: Types of value from economic literature

Value in Exchange	The idea that value is based on how much a given item is within a marketplace exchange (e.g., Adam Smith; neoclassical economics). Value here is negotiated and inter-subjective.
Value of Use	Value here is based on a subjective evaluation of how much an item is worth to a particular individual. It may not be visible to others and may vary from zero to nearly infinite value.
Value of Labour	Value is based on how much labour was required to create an item (e.g., David Ricardo; Karl Marx; classical economics). Value here is determined independent of individual preferences and set by a quality inherent to the object (i.e., by labour).
Value of Production	Value is based on the total costs involved to produce an item (e.g., like Value of Labour, but adding in other related costs to produce an item). As with Value of Labour, value is set independent of individual preferences.
Intrinsic vs. Extrinsic Value	One way to think about value is whether it is intrinsic, or an inherent feature of an item, or whether it is simply a vehicle or means to some other good (i.e., extrinsic). Most goods in the marketplace are "extrinsic." A sandwich is good for satisfying my hunger; money helps me feel important or secure – both are "extrinsic" goods. However, some things are good in and of themselves. Kant calls a good will an inherent good; virtues also would qualify as inherent goods.
Subjective vs. Objective Value	Related to the distinction between intrinsic and extrinsic good is the contrast between subjective and objective notions of value. While there are numerous ways of defining both terms, “subjective” typically refers to the assessment of an individual and what they happen to like, while “objective” typically refers to a norm that operates across individuals or at a higher level of analysis (e.g., a universal moral norm; a social value; a human right).

Source: Hausman & McPherson, 2006; Harrison & Wicks, 2013: 101.

‘Utility’ is a term related to value, and reflects the value a stakeholder receives that has merit in the eyes of the stakeholder. It is a function of the stakeholder’s utility function (Harrison & Wicks, 2013: 101).

1.8.15 Value appropriation

In this dissertation, value appropriation refers to the capturing of value by coopetition parties (Ritala & Tidström, 2014: 500; Dyer et al., 2008:146). Value appropriation could also be referred to as

value capturing, value allocation, or value distribution, but in this dissertation, value appropriation is the term used most often. Sections 1.9.5 and 2.10 deal with the topic in more depth.

1.8.16 Value creation

The International Integrated Reporting Council (2013) states that value is created through an organisation's business model, which takes inputs from the six capitals and transforms them through business activities and interactions to produce outputs and outcomes that create or destroy value for the organisation, its stakeholders, society and the environment".

In this dissertation, value creation refers to the increase in such value through activities by coopeting partners/players/parties (Ritala & Tidström, 2014: 500). Some other authors use the analogy of an increase in the value pie (Brandenburger & Nalebuff, 1996). Section 1.9.5 and 2.9 deal with the topic in more depth.

1.9 DELIMITATION

As with any study, it is necessary to show what the study includes and excludes. Figure 1.3 shows some of the boundaries that defined the limits of the study. The triangle represents narrowing the focus from broad to narrower limits. Each stepwise limitation forced the study into a more focused area.

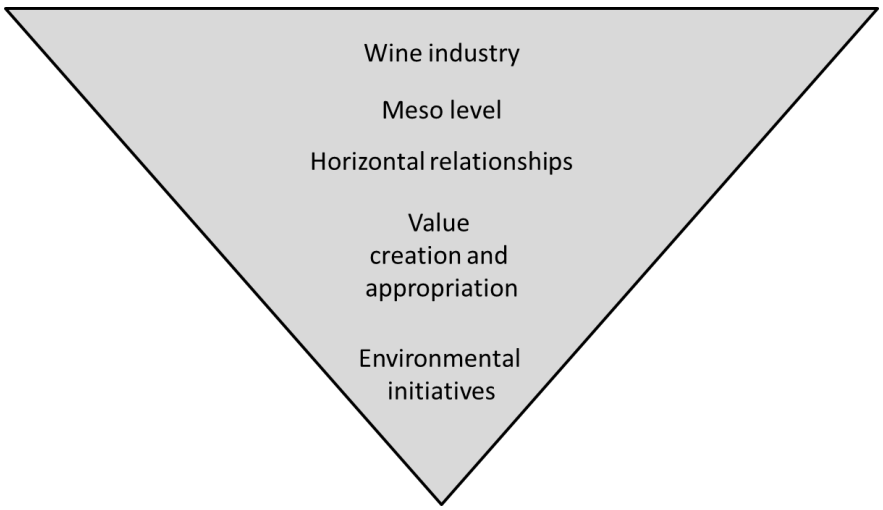


Figure 1.3: Delimitation of the study

Because the focus of the study derives from the two research questions, it is advisable to show these again as reminder:

RQ1: What types of value do companies create and appropriate in environmental coopetition?

RQ2: How do the different types of value interact (i.e. value dynamics) in environmental coopetition?

1.9.1 The South African wine industry

This study was executed in the empirical context of the wine industry. Initially the focus was broader and the study included more research questions. One of these was aimed at investigating the effect of dynamics in different industries on the characteristics of coopetition. However, after the initial surveys it was evident that there was merit in narrowing the study to the wine industry only. This was done for three reasons:

i) It was evident that there would be value in limiting the study to a single industry to at least control for one less variable.

ii) There would be sufficient cases in the wine industry, at least for a qualitative study of the kind of this dissertation.

iii) As the research progressed, the focus of the study narrowed to value creation and appropriation. The wine industry alone was considered sufficient to explore the research question.

This being said, the findings of this study would be equally valid in other industries, as well as at other levels (e.g. macro, meso and micro). For this reason, the research questions did not only refer to the wine industry.

1.9.2 Coopetition vs other approaches to solving environmental issues

It is important to acknowledge that coopetition is not the only solution to avoiding and rehabilitating environmental damage. There are currently many attempts from public, private and civil society to curb negative environmental impact. These actors acknowledge that solving environmental dilemmas exceed the capacity of individual actors (De Bruijn & Tukker, 2002: 7) Coopetition provides a particular view within this broader landscape of initiatives. Because business has a significant impact on the environment, coopetition provides companies with a way to collectively launch initiatives. Coopetition is also of particular interest when companies face the same environmental issues (Steinmo & Jakobson, 2013: 1).

1.9.3 Meso-level

Coopetition is often defined at three levels (Kenworthy, 1995; Dagnino & Padula, 2002; Zhang & Frazier, 2011), namely: (i) macro (between clusters of firms); (ii) meso (between firms); and (iii) micro (between divisions or workers in a firm).

Table 1.3 provides an overview of the three different levels: (i) the typical actors who cooperate; (ii) the institutions that promote coopetition; and (iii) the economic gains at the different levels.

This dissertation limited its scope to coopetition between wine producing entities that are competitors. This definition of coopetition is a sub-section of the meso-level, indicated in bold in the table.

Table 1.3: Coopetition at the macro-, meso- and micro-level

	Actors coopeting	Institutions(s) promoting cooperation	Economic benefits
Macro level	Firms across industries	Centralised business federation	Reduced rent seeking
	Unions	Centralised and/or concentrated labour movement	Wage restraint
	Government and interest groups	Centralised/concentration of authority in the state and interest groups	Coherent, productive government policy
Meso level	Purchasers and suppliers	Long-term commitment by purchasers	Heightened communication, greater willingness of suppliers to invest and raise productivity
	Investors and producers	Long-term commitment by investors – a product of investors having large ownership stakes and means of effectively influencing producer decision-making.	Extended time horizons for producers
	Competing firms	**Industry trade associations, government incentives**	**Quicker agreement on R&D standards, greater investment in R&D and employee training, assistance with financing, technology diffusion, design, accounting, marketing, etc.**
Micro level	Labour and management	Long-term commitment by employers (employment guarantee)	Greater willingness on the part of employees to share valuable knowledge, accept productivity-enhancing technology, and upgrade skills
	Workers	Employee participation in decision-making combined with team production and/or revenue sharing	Greater work effort
	Functional divisions within firms	Unified teams that link the various departments along the production chain	Quicker, more effective transition from R&D to production

Source: Kenworthy, 1995.

The focus shown in the table above resonates with the definition of coopetition as used in this dissertation, namely cooperation between competitors.

1.9.4 Coopetition as cooperation with competitors

There are two dominant views of coopetition, namely coopetition as a competition for the total value (Brandenburger & Nalebuff, 1996) versus a much narrower view, namely "a situation where competitors simultaneously cooperate and compete with each other" (Bengtsson & Kock, 2000; Walley, 2007; Gnyawali & Park, 2011). This dissertation uses the second definition.

A different way of explaining the focus of this dissertation is through the typology (Table 1.4) presented by Dowling, Roering, Carlin and Wisniewski (1996: 156). The study is focused on

horizontal relationships between firms that compete and cooperate simultaneously, i.e. the words in bold in Table 1.4.

Table 1.4: A typology of inter-organisational relationships

Direction of Relationship				
	Vertical	Arm's length exchange	Vertical multi-faceted relationships	Alliances between buyers and suppliers
	Horizontal	Traditional competitive markets	**Horizontal multi-faceted relationships**	Alliances between non-competitors
		Competition	**Coopetition**	**Cooperation**

Source: Dowling et al., 1996: 156.

The horizontal axis in Table 1.4 positions coopetition between collaboration and competition. The vertical axis allows the delimitation to exclude vertical coopetition, i.e. coopetition with suppliers and customers. Chapter 2 deals with this aspect in more depth.

1.9.5 Intentional collaboration

Earlier in this dissertation, *environmental coopetition* was defined as a situation where *competitors collaborate to reduce environmental impact and/or create environmental value*. Environmental coopetition is therefore a deliberate strategy, and involves a conscious decision to seek the creation of socio-environmental value.

Bengtsson and Kock (2000: 419) provided an example of coopetition in the Swedish brewery industry in which the socio-economic benefit is unintentional. The breweries coordinated the flow of empty bottles, which resulted in socio-environmental value, i.e. a reduction in waste and emissions. The initial objective was to save costs, and the socio-environmental value component was therefore an externality.

An example of a deliberate environmental value can be found in the work of Orsato (2009:14) around non-competitive sustainability strategies. Tetrapak collaborated with the rest of the plastics packaging industry in Brazil to establish a plastics recycling industry. The recycled plastic did not return directly to Tetrapak, meaning that there is very little direct economic benefit. In this case, the socio-environmental benefit was intentional, but provided a common economic benefit to the coopetitors in the form of reputation protection.

These two examples provide evidence that socio-environmental value may be intentional in some instances, but on the other hand, it may just be an unintended consequence. In cases where the socio-environmental value is an unintentional consequence, there is a benefit in making managers aware of it as it could lead to increased common, private and socio-environmental value. The

conceptual model and coopetition value matrix presented in this dissertation provide the necessary language and illustration to facilitate such awareness.

1.9.6 Value creation and appropriation

The initial focus of the study was much wider, but ultimately the study narrowed down to focus on the creation and appropriation of value, particularly in cases of environmental initiatives. Aspects that were excluded from the study were in-depth exploration of drivers, success factors and barriers (to name a few).

1.9.7 Dyadic vs. multi-actor

The study was not limited in terms of scope as far as the number of participants in environmental coopetition initiatives is concerned.

1.9.8 Centralised vs. decentralised

The study deliberately allowed flexibility in the forms of environmental coopetition and therefore did not discriminate against cases based on the locus of control. For instance, an initiative like the Biodiversity & Wine Initiative (BWI) is externally controlled, while the case of Reyneke Wines presented a coopetition initiative that is run by the coopetitors.

1.9.9 Collusion

This study avoided instances of collusive behaviour. The methodology does not lend itself to secret initiatives but rather relies on the willingness of partners to share their experiences.

1.9.10 Environmental initiatives

This study intentionally focused on coopetition with a deliberate environmental aspect to it. This was intentional for two reasons. Firstly, the researcher has a background in environmental projects and therefore wished to investigate such initiatives specifically. Secondly, the researcher believed that environmental coopetition initiatives would exhibit a richer range of value-types than generic coopetition or just projects focusing on, for instance, socio-economic upliftment.

1.9.11 Qualitative vs. quantitative

Although the study defines different types of value and describes such value, it made no attempt to quantify such value in monetary terms. As with any valuation of eco-services or environmental benefit, the public benefit component is very difficult to quantify (Kula & Evans, 2011). The valuation of ecosystem services is a whole field of study on its own, and would certainly not have been feasible as part of the current dissertation.

Instead the dissertation approached the concept of value and value dynamics from a qualitative perspective.

1.9.12 Game theory

Although many studies of coopetition make use of game theory, this dissertation did not put much focus on this aspect of coopetition. Once again, the study was less interested in a particular Nash-equilibrium than in what types of value had been created and what dynamics had led to the creation of value.

1.10 CONCLUSION

This chapter provided an orientation to the topic of environmental coopetition, the research questions and the significance of the study.

The researcher defined environmental coopetition in this dissertation as the action of competitors to cooperate to reduce environmental impact and/or create environmental value.

The chapter also provided an overview of the terminology used in the study. This consisted of providing the definitions to some terms, and in cases where there are multiple definitions, provided the preferred definition that was used in the study. One example is the definition of coopetition, for which the narrower definition was used, i.e. that coopetition refers to cooperation between competing firms.

Lastly, the chapter delimited the dissertation in terms of its empirical scope and its method. In essence, the study set out to investigate the types and dynamics of value that are created in environmental coopetition in the South African wine industry.

Figure 1.4 shows the key terms (shaded blocks) that were briefly introduced and defined in this chapter. The diagram also provides a visual delimitation of the broad topics that relate to the theory. The wine industry provided the context to study the empirical manifestation of the extant and the proposed theory.

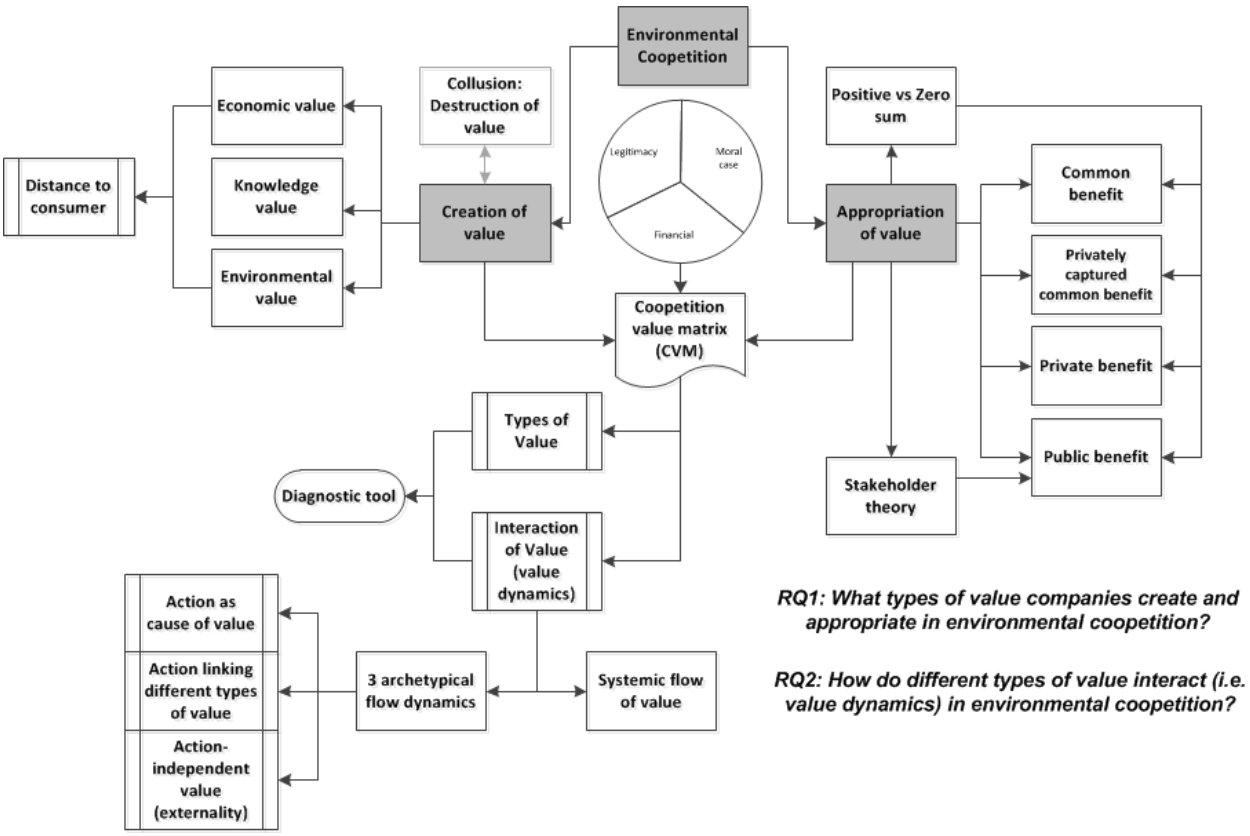


Figure 1.4: Key terms from Chapter 1

1.11 CHAPTER OUTLINE

Chapter 2 of this dissertation provides an overview of extant coopetition literature, particularly with regard to the creation and appropriation of value. The chapter suggests the refinement of the terminology that is used for the appropriation of value.

Chapter 3 provides an overview of some underlying theory that is relevant to a discussion of value creation and appropriation in environmental coopetition initiatives. Particularly, the introduction of stakeholder theory in the appropriation view, and socio-environmental value in the value creation view are of particular importance.

Chapter 4 introduces a conceptual model and the coopetition value matrix (CVM). The CVM provides a combined view of value creation and value appropriation.

Chapter 5 provides an overview of the underlying research philosophy and the research design. The discussion of the research design includes an overview of the data selection, collection and analysis methods. The study was aimed at shifting consensus rather than building consensus, and therefore could rely on a qualitative investigation of multiple case studies.

Chapter 6 focuses on the findings that relate to the first research question (RQ1), namely what types of value do companies create and appropriate in environmental coopetition. The chapter provides a case-by-case overview, and populates the CVM in each of the cases. The result is a rich overview of the types of value that can be created and appropriated in environmental coopetition cases.

Chapter 7 builds forth on Chapter 6 by investigating the dynamics that lead to the creation of value. The chapter hence identifies many different dynamics for each type of value, but also provides higher level generic types of dynamics; it therefore answers RQ2.

The last chapter, Chapter 8, provides the conclusion, an overview of the contribution, an overview of the theoretical and managerial implications, as well as some limitations of the study as precursor to suggestions for further research.

CHAPTER 2
A THEORETICAL OVERVIEW OF COOPETITION

2.1 INTRODUCTION

This chapter explores the existing literature surrounding coopetition. Amongst other themes, the chapter deals with the definition of coopetition, how value is created and appropriated in coopetition relationships, as well as antecedents for, and barriers preventing, successful coopetition. The author opted for a critical literature review rather than a systematic (Tranfield, Denyer, Smart, 2003) literature review. The literature review therefore focused its attention on concepts, gaps, controversies and blind spots.

2.2 THE ORIGINS OF COOPETITION

The term coopetition is a portmanteau of cooperation and competition and describes the practice of cooperative competition, i.e. when competitors cooperate. Although coopetition literature between 1995 and 2010 (Dowling et al., 1996, Bagshaw & Bagshaw, 2001; Dagnino & Padula, 2002; Luo, 2005) often report Raymond Noorda, CEO of Novell in the 1980s, as the source of the word, more recent literature traces the first official documentation to Cherington (1913: 144), who in turn referred to a sales manual from 1911 for a sales force of the *Sealshipt Oyster Company* by Kirk Pickett:

> *You are only one of several dealers selling our oysters in your city. But you are not in competition with one another. You are co-operating with one another to develop more business for each of you. You are in co-opetition, not in competition. What competition there is, is of the kind that you all can fight to common advantage. The oyster sold from the wooden tub is your only competition. Remember – co-opetition, not competition between Sealshipt dealers* (Pickett in Cherington, 1913: 144).

Although it may not have been called coopetition, collaboration between competitors is not a new phenomenon at all. In fact, evidence of coopetition can be found in early Roman maritime trading practices. Roman merchants collaborated with competing traders by dividing their cargo between the different ships sailing along particular routes. In this way, traders protected themselves against losing a whole cargo if one ship sunk or was attacked by pirates, without incurring any additional costs (Benjamin & Le Roy, 2014). The example illustrates coopetition as a risk management and cost reduction strategy in one industry. Coopetition does not only hold benefits for a single industry, but can hold benefits at the national economic level.

2.3 COOPETITION AND ECONOMIC PERFORMANCE

Economists and policymakers have traditionally viewed competition as the driver of economic success (Kenworthy, 1995: 154). Sceptics of this view have proposed alternative explanations for conditions for economic success, such as government intervention, financial systems, and culture. Yet, few of these provide robust evidence beyond a handful of cases (ibid.).

Kenworthy (1995: 186) provided an alternative hypothesis and presented evidence that economies that encourage cooperation perform better. Kenworthy (ibid.) considered cooperation at the three levels mentioned earlier, namely: (i) macro (inter-industry); (ii) meso (intra-industry or inter-company); and (iii) micro level (intra-company).

Examples of cooperation would include long term, close relationships between banks and the firms they finance, industry bodies, worker unions, as well as coordination between the latter two. Kenworthy's scores were based on the prevalence of such bodies and the extent of coordination. German businesses, for instance, are organised in strong trade associations that facilitate cooperative activities such as joint R&D and large-scale apprenticeship programmes (ibid.). Japan scores the highest on Kenworthy's measurement for its high levels of cooperation between and within various business institutions; a phenomenon that is also discussed in other bodies of literature (see for instance Dagnino & Padula, 2002; Dyer et al., 2008; Knoben & Oerlemans, 2006).

Of particular interest in Kenworthy's study is the link of coopetition with productivity growth (see Table 2.1). The meso-level variable represents inter-firm cooperation and is therefore of particular interest in this dissertation. Although the adjusted R^2 of the model is somewhat lower in the 1974-1990 period (0.66) than in the full period of his enquiry (i.e. an R^2 of 0.81 in the period 1960-1990), the meso-level coefficient is stronger in this (1974-1990) period, implying that growth in productivity can largely be explained by cooperation between firms.

Table 2.1: Regression results for macro, meso and micro-level cooperation (1974-1990)

	Productivity growth	Misery index
Macro-level cooperation	-0.41*	-0.62*
Meso-level cooperation (i.e. cooperation between purchasers and suppliers, between investors and producers, and between competing firms)	0.63**	0.76**
Micro-level cooperation	0.22	-0.74**
Adjusted R^2	0.66	0.50
N	17.00	16.00

(* 10% level; ** 5% level)

Source: Kenworthy, 1995: 186.

This implies that nations that create institutions to stimulate inter-company collaboration, experience stronger productivity growth, which in turn make an economy more competitive. What is interesting though and remains unexplained in Kenworthy's study is the positive link of meso-level coopetition with unemployment and inflation (commonly referred to as the misery index).

2.4 THE BROAD AND NARROW VIEWS OF COOPETITION

Kenworthy (1995) provided a convenient introduction to coopetition, although he did not use the term itself. In fact, coopetition is not universally accepted as a legitimate field of study, and most opponents question claims that coopetition requires different skills than the sum of the skills required for competition and collaboration. Using different definitions of coopetition may hamper coopetition research (Minà & Dagnino, 2016). It is therefore important to be clear about the definition used in this dissertation. The coopetition body of knowledge is currently dominated by two definitions.

2.4.1 The broad definition

The idea of meso-level cooperation as Kenworthy used it, is akin to the initial wide definition of coopetition as presented by by Brandenburger and Nalebuff (1996). Brandenburger and Nalebuff (1996) described coopetition in the context of game theory, putting forward that collaborating with stakeholders (rather than just competitors) could create more value for companies than if they were to work in isolation. In this wider view, they included customers, complementors (those companies that make your product more attractive), competitors, and suppliers. This was done because these stakeholders compete for value (see Figure 1.1). Some of the most important and influential works in the coopetition literature have taken similar views of coopetition (see for instance Dagnino & Padula, 2002: 5).

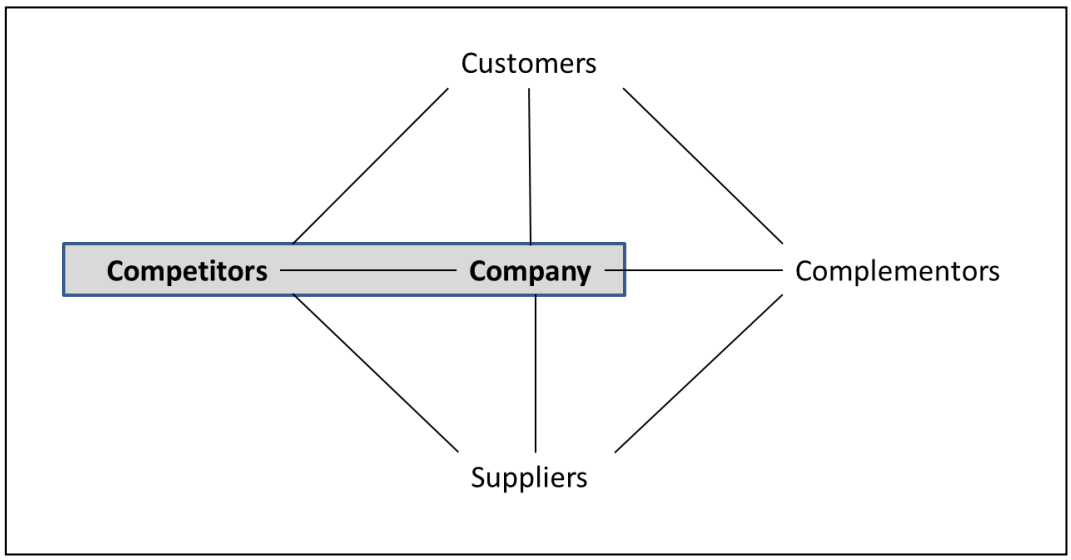


Figure 2.1: Brandenburger & Nalebuff's value net

Source: Brandenburger & Nalebuff, 1996: 17.

2.4.1 The narrow definition

Subsequent to the early and broader definition, some authors (Bengtsson & Kock, 2000; Walley, 2007: 11; Gnyawali & Park, 2011) have described coopetition as the practice among competing firms to cooperate and compete at the same time. This is a much narrower definition than the earlier definition proposed by Brandenburger and Nalebuff (1996). This dissertation subscribes to the narrower definition.

Ironically, the seminal proponents of the narrow definition, Bengtsson and Kock (1999; 2000), in recent years (2014) made a call to once again broaden the definition. Their defence of the older (and broader) definition rests on the view that the business world is becoming increasingly networked so that it is no longer strange that your competitor is also a supplier, a customer, or a partner in a joint venture.

2.5 DISAGGREGATING THE BROAD DEFINITION

At a methodological level, the narrower Bengtsson and Kock (1999; 2000) definition delimits this study to a phenomenon with different dynamics than the other relationships mentioned in the broader definition of Brandenburger and Nalebuff (1996).

Brandenburger and Nalebuff (1996) used game theory to show how companies can increase the value pie by collaborating with the various stakeholders shown in Figure 2.1. From such a perspective, these stakeholders represent a homogeneous group. As strategy literature shifted, however, the focus shifted to the heterogeneous nature of the different players and to the resultant differences in the relationships.

2.5.1 Collaboration with competitors

Collaboration with competitors is very much different to collaborating with other stakeholders (Ritala, 2009). Competitors face similar problems in the market, while they are likely to depend on similar resources to address such problems (Ritala & Hurmelinna-Laukkanen, 2009; Pellegrin-Boucher, Le Roy & Gurau, 2013). When competitors collaborate, they gain a lot from learning from each other, while the knowledge they gain is highly relevant for each other (Park et al., 2014).

The resource-based view (RBV) of the firm provides some insight as to why coopetition may benefit competitors. Under the RBV, it is assumed that firms are heterogeneous in terms of their respective resource profiles and that such resources are not perfectly mobile between firms (Barney, 1991). When competing firms cooperate, firms are able to combine idiosyncratic, as well as complementary strengths to gain strategic value (Ritala & Tidström, 2014). Such value can stem from many sources, including, access to an expanded sales team, greater investment in R&D, greater employee training, quicker agreement on standards, reduced costs and reduced risk, assistance with financing, and technology diffusion (Lavie, 2007: 1192; Kenworthy, 1995;

Bengtsson & Kock, 2000; Pellegrin-Boucher et al., 2013). This dynamic is very different from the value creation taking place with customers, with suppliers and with complementors.

2.5.2 Collaboration with customers

Authors such as Hart (2007) and Prahalad and Ramaswamy (2004) described collaboration with customers as the "co-creation of value". Where customers may previously have been considered only as the "target" of a product or service, firms increasingly realise the value that can be created by collaborating with customers. Simultaneously, social media has enabled a level of interaction between firms and customers that would previously have been impossible. Further, more informed consumers that are unhappy with the choice in the market are increasingly exerting pressure on all aspects of business to co-create what they want. However, what should be clear is that the dynamics of the relationship is somewhat different.

2.5.3 Collaboration with suppliers

Collaboration with suppliers (vertical collaboration) is often described as "supply chain collaboration". An extensive body of literature exists to address the dynamics and benefits of supply chain collaboration (see for example Donada, 2002). Strong relationships with suppliers can be a sustainable source of a competitive advantage (Dyer & Singh, 1998), but competitors can learn more from each other when they cooperate than what they can learn from their suppliers.

2.5.4 Collaboration with complementors

Collaboration with complementors in turn has developed into a separate field of study (Habets, 2008), but seems to have lost claim to the term coopetition. Firms often collaborate with complementors in alliances. Alliances are closer to cooperation than to competition (Rusko, 2011: 312), but is not considered synonymous with coopetition due to the presence of competition in coopetitive relationships (ibid.).

2.6 INTERACTION OF COOPERATION AND COMPETITION

Coopetition is a dynamic interaction (Bengtsson, Eriksson & Wincent, 2010). Different combinations of strong and weak cooperation and competition are possible. Lindström and Polsa (2015: 3) distinguished between intercompany relationships as cooperation dominated, competition dominated, or as balanced coopetition. It is important to understand how value is created and distributed, as this impacts on the stability of the coopetition relationship (Das & Teng, 2000: 94; Inkpen & Beamish, 1997; Janssen et al., 2013).

2.6.1 Dynamics of competition and power

The dynamics of competition are important for firms at two levels. Firstly, the value aspect of competition often involves the negotiation (Kim, Pinkley & Fragale, 2005) for the biggest share of the common benefits that may emanate from a coopetition initiative. It is important for firms to

understand how they can capture the most value from coopetition (Dyer et al., 2008). Negotiation power is ultimately one of the biggest determinants of the gain a company can make in negotiation dynamics (Kim, et al., 2005: 799). Power is classically defined as the probability that a person can carry out their will despite resistance (Weber, 1947).

Kim et al. (2005) decouples power into four components, i.e.

i) **Potential power** as the capacity of a partner to obtain benefits,
ii) **Perceived power** as the assessment of partners of the other parties' potential power,
iii) **Power tactics**, i.e. behaviours aimed at changing the power relationship, and lastly
iv) **Realized power**, i.e. the extent to which a party has claimed benefits.

French and Raven (1959) suggest that there are five bases of power. The argue that A's power over B is determine by:

i) **Reward power**: how much B can be rewarded and to what extent B believes A controls these rewards,
ii) **Coercive power**: A can punish B, and the extent to which B believes the punishment can be avoided by complying with the wishes of A,
iii) **Expert power**: A function of B's perception that B possesses some special knowledge or expertise,
iv) **Legitimate power**: A function of how mush B believes that A has lawful authority to influence B, and lastly
v) **Referent power**: A function of how attracted B is to A and, thus, how much A can influence B's feelings of personal acceptance, approval and self-esteem.

The points made by French and Raven resonates with coopetition and alliance literature. For instance, firms that bring more resources to an initiative is able to realise more gains (Dyer et al., 2008). Bringing more resources of any kind to an cooperative agreement provides power to such a partner in the form of expert power (if the currency is knowledge) or legitimate power.

Some of the heterogeneous factors that may impact the ability of firms to compete include technical know-how, reputation brand awareness and the ability of managers to cooperate (Chamberlin, 1933).

The literature surrounding competition is vast, and much of it falls outside of the scope of this dissertation (see Table 4.1). This area has, however, been flagged for further research at the end of the study.

2.6.2 Weak versus strong coopetition

Secondly, the intensity of the competition in the market may determine whether companies are willing to collaborate with their competitors at all (Ritala, 2009; 2012).

By classifying cooperation and competition as either strong or weak, Czakon, Mucha-Kus and Rogalski (2014: 131) distinguished between four different mixes of the opposing forces. Effectively these authors split balanced coopetition into four separate classifications based on how strong the two actions are (Figure 2.2). Park et al. (2014: 214) used a similar table to the Czakon et al. (2014) study when elaborating on the importance of balance in coopetition relationships. Park et al. (2014) maintained that a balance of strong competition and cooperation (also referred to as high-intensity coopetition or as syncretic[1] rent-seeking behaviour (Lado et al., 1997), allows for maximum common benefits (i.e. available to all partners), while maintaining the possibility to capture private benefits (i.e. the benefits captured by a specific firm).

The relevance of this typology is to provide a theoretical focus to the context of this study. The South African wine industry is highly fragmented. A theme that emerges often is that wine producers do not perceive one another as competitors (more will be said about this in the findings section). It is therefore likely that the coopetition would either be cooperation dominated (in cases where the cooperation is strong) or of low intensity (if the cooperation is weak). The grey area in Figure 2.2 illustrates the two likely positions.

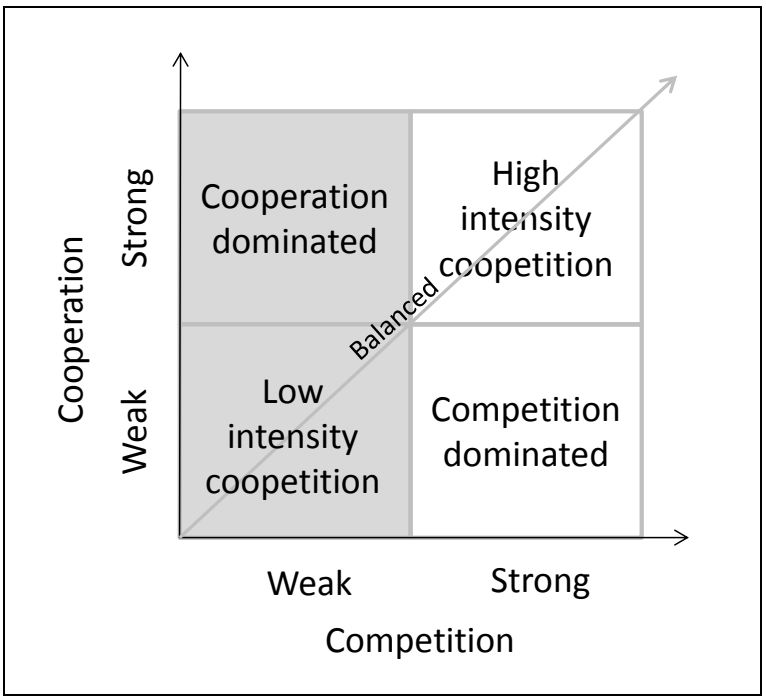


Figure 2.2: Matrix showing relationships between cooperation and competition

Lindström and Polsa, 2015: 3; Czakon et al., 2014: 131.

It is important to note that coopetition may develop or deteriorate over time. As companies collaborate, they build trust and a skill for cooperation, which in turn may lead to more cooperation.

[1] The word 'syncretic' refers to an attempt to reconcile different systems of belief or philosophy. In the case of coopetition, companies need to reconcile competitive and collaborative strategies. The first instance of the use of the word in coopetition literature was in Lado, et al. (1997: 110).

A loss of trust, on the other hand can lead to reduced productivity, cooperation and performance and therefore destroy value creation efforts (Abosag, Yen, & Barnes. 2016: 3). Coopetition relationships can therefore be viewed as longitudinally dynamic over the long term (as illustrated by Ritala & Tidström, 2014: 500).

2.7 THE CONTINUUM OF COOPETITION ACTIVITIES

2.7.1 Common activities for cooperation

Kenworthy (1995: 164) identified three key areas in which competitors often collaborate, namely: (i) standard setting; (ii) R&D; and (iii) worker training.

Although one can identify a much broader spectrum of activities (see Dagnino & Padula, 2002: 32; Zhang & Frazier, 2011; Kenworthy, 1995; Dorn et al., 2016: 2; Dagnino & Padula, 2002: 32; Zhang & Frazier, 2011; Kenworthy, 1995; Dorn et al., 2016: 2.), Kenworthy's discussion provides valuable insights into the contextual differences and subsequent drivers.

2.7.1.1 Standard setting

Industries typically collaborate in terms of standard setting, an activity which can be classified as an upstream activity (Walley, 2007). 'Upstream' implies that the activity is far from the end-consumer, and that the end consumer may not be aware of the activity.

Standards level the playing field by setting a lowest common denominator of expectations, for instance the performance of a product. Without it, an industry can remain disjointed and haphazard, causing a reduction in productivity and lower consumer satisfaction. Of course there is the chance that one firm may win the standard at the expense of competitors, but the potential upside often does not justify the risk (Kenworthy, 1995: 164; Ritala, 2012: 318)).

2.7.1.2 Research and development

There are a number of reasons why R&D is a popular aspect for competitors to collaborate on. Firstly, companies often have to invest substantial capital in R&D, with little guarantee that it would yield results in terms of sales or profits Ritala, 2012: 318).

Secondly, two companies may be duplicating similar research, leading to a waste of resources.

Thirdly, the products of research can often be copied by competitors without the associated time and cost (i.e. free riders). There is therefore a disincentive to do R&D, and an incentive to rather copy ideas from competitors once they have done the investment in R&D. This generally leads to an industry-wide underinvestment in innovation (Kenworthy, 1995: 164).

The issues raised above increase the risk associated with R&D substantially. By collaborating with competitors, companies share the cost of R&D, and also somewhat reduce the risk of free riders. Joint R&D can correct the underinvestment, lead to further knowledge sharing, a reduction in wasteful duplication, and decrease the cost of duplication by competitors (ibid.: 164).

2.7.1.3 Worker training

Worker training provides a third example of an instance where it is beneficial for companies to invest collectively in upstream activities in order to reduce risk. When companies invest in training employees, they inevitably run the risk of the employees leaving the company or that they may be poached. The benefits of training are also difficult to predict.

A training consortium can help industries to pool resources and upskill employees for the industry. Another strategy is to levy a training tax, which employers can spend on training, or allocate it to a public training fund (ibid.: 165).

2.7.1.4 Other

In addition to the above three areas of cooperation, consortiums of firms can also collaborate with regards to financing, technology diffusion, design, accounting, marketing, and export promotion. Such collaboration is particularly beneficial for smaller firms (ibid.: 166).

2.7.2 The distance of activities from the consumer

Distance of activities to the customer is a concept that comes up repeatedly in coopetition theory (Putnam, 1993; Morgan & Hunt, 1994). When one considers the variety of activities that competitors can cooperate on, it makes sense to consider these as activities on a continuum representing the distance from the consumer. Distance to the consumer refers to how visible the cooperative activity is to consumers, and therefore how much that activity can be used to differentiate the entity. Another way of thinking about distance from consumers is in terms of upstream (Walley, 2007: 17) or input (Lindström & Polsa, 2015: 1) activities that are far from consumers, as opposed to downstream (Walley, 2007: 17) or output (Lindström & Polsa, 2015: 1) activities that are more visible to customers. Table 2.2 provides a perspective on opportunities for coopetition in firms.

Coopetition can happen at any distance from consumers (Lindström & Polsa, 2015; Rusko, 2011). Yet, historically a dominant view in coopetition literature is that, while competition happens close to consumers, collaboration happens far from consumers on aspects that clients are indifferent about (Bengtsson & Kock, 2000: 418; Koza & Lewin, 1998; Orsato, 2009: 16). Some authors have moved further than observing a pattern, and have lifted distance from consumers as a pre-condition for collaboration (Steinmo & Jakobsen, 2013: 2). The reason for avoiding cooperation close to consumers is that these activities provide the most opportunity for differentiation from competitors.

Table 2.2: Activities categorised according to the input/output continuum

	Interaction continuum		
Activities	**Cooperation dominated**	**Balanced**	**Competition dominated**
Input (far from the customer)	Wholesale arrangements [a] Access to products and licences [a] Planning meetings (formal & informal) a R&D [b, c] Training of staff [b] Standards [b, d] Design [d] Manufacturing [d] Raw materials procurement [e]		
Output (close to the customer)	Marketing campaigns [a] Branding [a, e] Joint customers [a] Delivery service [a] Distribution [d, e]	Sales activities [a]	Local services [a] Delivery of marketing campaigns [a] Pricing [a] Distribution [c]

Source: [a]Lindström & Polsa, 2015: 6; [b]Kenworthy, 1995; [c]Walley, 2007, [d]Dagnino & Padula, 2002: 19; [e] Rusko, 2011.

More recent literature (specifically Lindström & Polsa, 2015: 6) presents instances of cooperation closer to consumers, for instance in joint marketing campaigns, branding, joint customers and delivery services. Where activities happen in the supply chain is of particular interest in this study as the distance to the consumer seems to play an important role in the creation and appropriation of value.

2.8 COLLUSION

There is a general lack in research dealing with the distinction between coopetition and collusion (Czakon et al., 2016). Collusion is an agreement between two or more parties, sometimes illegal and therefore secretive, to limit open competition by deceiving, misleading, or defrauding others of their legal rights, or to obtain an objective forbidden by law, typically by defrauding or gaining an unfair market advantage. Generally, collusion limits competition, and hence would limit innovation and the positive aspects of competition.

Collusion is an agreement among firms or individuals to divide a market, set prices, limit production or limit opportunities (Sullivan & Sheffrin, 2003: 171). Typically, collusion involves lesser collaboration than coopetition (Rusko, 2011: 312). Collusion happens at a superficial level of

cooperation; it involves exchange of information, but involves very little knowledge exchange between cartel members.

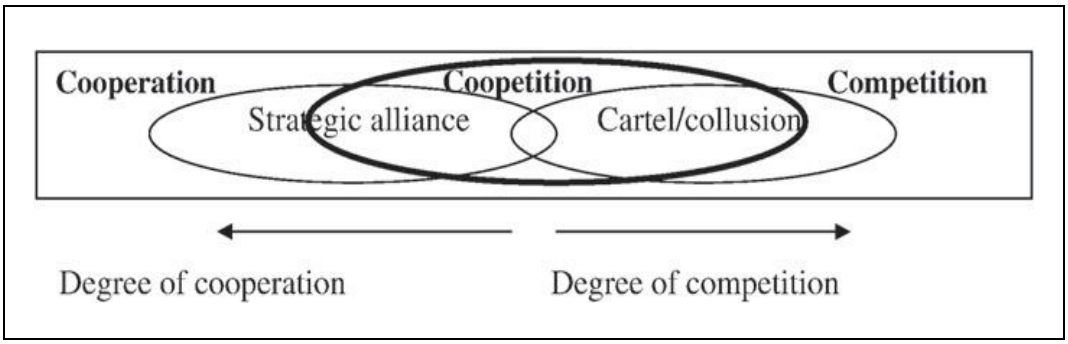


Figure 2.3: Typical relationships between the strategic alliance, coopetition and collusion

Source: Rusko, 2011: 312.

Collusion often happens downstream (as firms compete close to consumers) and violates legislation governing competition (Walley, 2007: 16). Notwithstanding, companies can also collude in upstream activities (Rusko, 2011: 312).

Pressey et al. (2014) argued that collusion should be included in the definition of coopetition, hinting that one should not see the two as separate. As long as cartels do not completely eliminate competition, it should be seen as coopetition (Pressey & Vanharanta, 2016: 4).

Practically one can view the coopetition and collusion as respectively the virtuous and non-virtuous sides of the same phenomenon. Walley (2007: 16) argued that the two should be considered separate and that coopetition implies that companies collaborate for not only for their own benefit, but also for the benefit of the consumer. Such collaboration creates 'win-win-win' situations. On the other hand, when the consumer is penalised in any way, then collusion is occurring (Walley, 2007: 16). Lado et al. (1997) argued that such syncretic rent-seeking behaviour (i.e. coopetition) is far from competition destroying collusion, but instead enhances competitiveness in a market through innovation and cost reductions beyond what competition can provide.

Pressey et al. (2014) made a further distinction between shadow and dark collusive networks. They identified a number of continuums along which the characteristics of collusive networks can be distributed (Figure 2.3).

In the case of collusion, there is a need for concealment. Members of cartels often have a trade-off between secrecy and efficiency of the cartel (Pressey et al., 2014: 10). Although there is often the call for distance from the consumer in the case of coopetition, concealment and distance from the consumer is not synonymous. Table 2.3 provides some clarity of how collusion differs from generic coopetition and environmental coopetition.

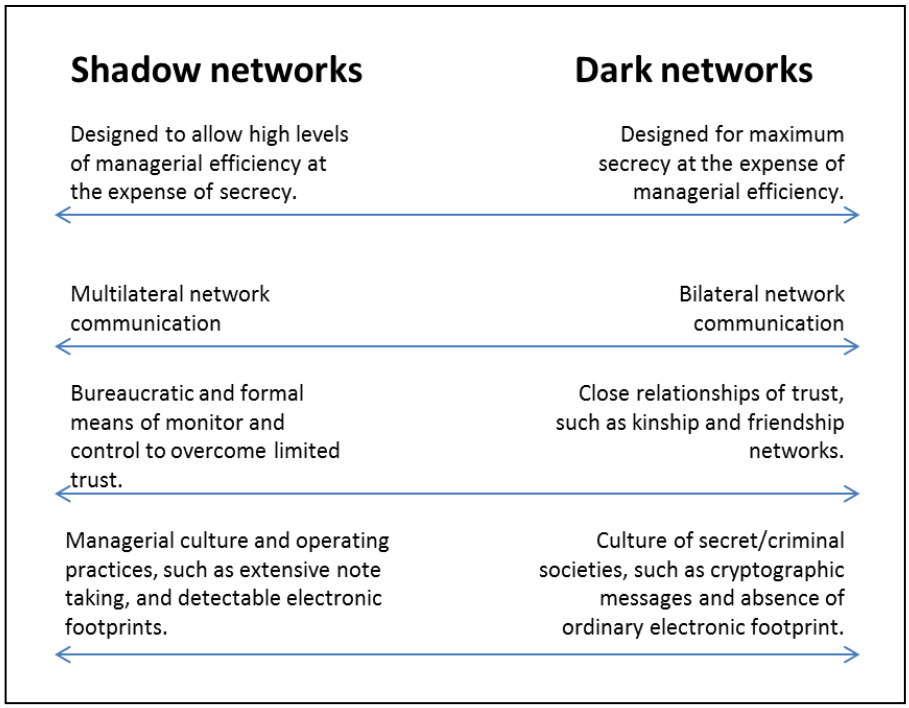


Figure 2.4: Shadow vs. dark networks

Source: Pressey et al., 2014: 11.

The form of cooperation may dictate the kind of knowledge that is transferred. In the case of collusion, the form of knowledge is often of the explicit kind, for instance data (or information) about prices, production numbers or market share. In contrast, virtuous coopetition like joint R&D programmes may lead to a considerable transfer of tacit knowledge. This provides some credence to Rusko's (2011: 312) view that collusion lies closer to competition than to collaboration. Due to intense competition, companies in collusion do not wish to transfer any tacit knowledge, but in the process forfeit the opportunity to gain such knowledge. It is evident that trust is low in such cases.

In collusion, the underlying paradigm is win-lose as reflected in the fact that competitors operate from an assumption that they would lose sales or money if the market is allowed to operate freely. Instead, the members of the cartel agree to limit competition in order to protect their market.

Table 2.3: Contrasting collusion with coopetition

	Collusion (Non-virtuous coopetition)	Coopetition (Virtuous)	Environmental coopetition
Visibility	Information sharing about prices, production, market share etc. (Pressey et al., 2014) Deliberately concealed, typically upstream (i.e. removed from customer), but can also be downstream (Rusko, 2011: 311)	Cooperate in product design, manufacturing or distribution and the definition of new standards (Dagnino & Padula, 2002: 19) Removed from customer, although not necessarily deliberately so. Often upstream (Bengtsson & Kock, 2000; Walley, 2007: 16-17), but can be upstream, midstream and downstream (Rusko, 2011)	Sometimes removed from customer, but often deliberately close to customer
Impact on competition	Competition is completely absent (Pressey & Vanharanta, 2016) or reduced (Walley, 2007: 16)	Increases competition, or at least does not reduce competition.	Increases competition, or at least does not reduce competition.
Impact on the consumer	Consumer is penalised (Walley, 2007: 16; Dima, 2010: 218; McEachern, 2013: 225)	Benefits the consumer (Walley, 2007: 16)	Benefits the consumer
Legal status	Illegal	Legal	Legal
Value creation	Creates value for cartel members by manipulating prices through limited production, fixing prices and controlling market share. However, cartels destroy value for larger society. (Walley, 2007: 16; Dima, 2010: 218; McEachern, 2013: 225)	Creates value for partners Creates value for consumers (Walley, 2007) The aim is not necessarily to create value for society.	Deliberate attempt to create value for society The aim is not necessarily to create value for the collaborating parties.
Nature of knowledge sharing	Explicit	Explicit or tacit	Explicit or tacit
Trust	Low	Medium to high	Medium to high

Source: Researcher.

Cartels are more likely to be formed in industries with few sellers (ten or fewer firms), or in industries where most of the sales are accounted for by only a few sellers (Pressey et al., 2014: 4). This dissertation was conducted in the wine industry of South Africa, an industry that is highly fragmented between a large number of players. The dissertation intentionally only studied examples of coopetition that created socio-environmental value, which by definition excluded collusion. In this sense the wine industry was a sensible choice.

2.9 VALUE CREATION FROM COMPETITION AND COOPERATION

The practice of coopetition creates more value than competition or collaboration on its own could (Lado et al., 1997: 118; Ritala & Tidström, 2014). Competition, in the absence of collaboration, generates economic efficiency through the efficient allocation of resources (Lado et al., 1997: 110; Kenworthy, 1995), by encouraging innovation (Walley, 2007; Schumpeter, 1934), and by providing price signals that reduce transaction costs (Jones & Hill, 1988; Williamson, 1985).

Yet, Kenworthy (1995) challenged the traditional view of competition as the sole driver of economic growth and innovation. Instead, he argued that the key to economic success lies in combining competition and cooperation. Lado et al. (1997) also argued that there is value in moving beyond competition as a zero-sum game towards cooperation.

But the movement should not be too far towards cooperation. Cooperation without competition has been criticised for only providing incremental progress (De Bruijn & Tukker, 2002). It is the threat of conflict that encourages dialogue and engagement (Hartman, Hofman & Stafford, 2002) and thus enhances performance (Raza-Ullah, Bengtsson & Kock, 2014). Paradoxically, a big driver for cooperation between competitors is competition itself, an argument that is closely related to the earlier argument about high-intensity coopetition. Increased competition forces companies to improve their performance and market attractiveness (Pellegrin-Boucher et al., 2013).

In essence, the *value* or *benefit* created in collaboration relationships has been described as *relational rent* (Dyer & Singh, 1998: 662) or relational value, i.e.:

> *a supernormal profit jointly generated in an exchange relationship that cannot be generated by a firm in isolation and can only be generated through the joint idiosyncratic contributions of the specific alliance partners.*

As with this quote, most literature dealing with value creation in the strategic management field seems to deal with economic value only (Harrison & Wicks, 2013: 98). Sometimes the economic benefit may be referred to as financial value (Dorn et al., 2016: 2). The narrowing of the construct of value to economic/financial value has been criticised (Hausman & McPherson, 2006) as it could obscure aspects of value that extend beyond profit and economic return (Harrison & Wicks, 2013).

In addition to economic value, Dagnino and Padula (2002: 32) elaborated on the work of Kenworthy (1995) to show that coopetitive relationships also generate knowledge value (see Table 2.4). Knowledge value is arguably less tangible than economic value. Dagnino and Padula (2002: 18) described knowledge value as the growth in inter-firm knowledge, while they defined economic value as the added value due to “inter-firm cost reduction or revenue increase that the coopetitive framework may confer” (ibid, 2002: 19). A number of authors (Bowman & Ambrosini, 2000; Brandenburger & Stuart, 1996) defined economic value as the willingness to pay (of a firm’s consumers) minus opportunity cost (of its suppliers). The firm may not charge the full amount that

a consumer is willing to pay, so some of the created economic value is not realised for the firm, but is rather captured by the consumer as consumer surplus.

Lower risk translates to lower costs (Kendall & Willard, 2015: 11) and is therefore considered as an economic benefit. Table 2.4 illustrates the view of Dagnino and Padula (2002: 18) of coopetition as value-creation at different levels and with different intentions, i.e. to create knowledge or economic value. As pointed out before, this dissertation follows in the example of a number of authors (Bengtsson & Kock, 2000; Walley, 2007; Gnyawali & Park, 2011) by focusing on the meso-level (the darker shaded area in Table 2.4) only, and further on the relationship between competing firms only (shown in bold).

Table 2.4: A matrix representation of coopetition levels for value creation

		Coopeting actors	**Knowledge value**	**Economic value**
Levels of coopetition strategy	**Macro**	Clusters of firms Firms across industries	Communication and information flows Inter-industry new knowledge creation and transfer	Reduced aggressive and suboptimal rent-seeking Profit and fund sharing arrangements
	Meso	**Firms in an industry** **(horizontal relations)** Purchasers and suppliers (vertical relations)	**Intra-industry new knowledge creation and transfer** **Enhanced capabilities** **Communication and information flows** **Co-design** **Co-development**	**R&D investment** **Workforce training investment** **Quicker agreement on standards** **Reduced time-to-market** **Joint R&D joint production** **Supply chain coopetition*** **Enhanced products**
	Micro	Functions and divisions within a firm Workers in a firm	Communication and information flows Intra-firm new knowledge creation and transfer Greater incentive and commitment to work (hard) and create knowledge	Quicker and more effective transition from R&D to production (e.g., from 60 to 46 months) Heightened productivity through commitment

Source: Dagnino & Padula, 2002: 32; Zhang & Frazier, 2011; Kenworthy, 1995; Dorn et al., 2016: 2.

Knowledge value is particularly pronounced in innovation-related coopetition such as R&D initiatives (Ritala & Hurmalinna-Laukkanen, 2009: 820). In this respect, the common knowledge regarding markets and technologies shared by competitors increases the value creation potential of coopetition compared to collaboration with non-competitors (Ritala & Hurmalinna-Laukkanen, 2009: 823). However, the common knowledge base is of more value for incremental innovation than for radical innovation (Ritala & Hurmalinna-Laukkanen, 2009: 824).

Knowledge value would ultimately translate to economic value as the knowledge becomes applied. For this to happen, firms require "know-what" to recognize the value of external knowledge, the "know-how" to assimilate the knowledge and the "know-why" in order to apply the knowledge for commercial ends (Dagnino & Padula, 2007: 42). The transfer of knowledge value into economic value is an example of value dynamics, a phenomenon that will be discussed in more depth in the empirical part of the dissertation.

2.10 VALUE APPROPRIATION IN COOPETITIVE ACTIVITIES

2.10.1 The paradox of creating and protecting value

While the resource-based view (RBV) or strategy (Barney, 1991) helps to understand the benefits of coopetition, it also hints at one of the biggest risks of coopetition. The RBV states that a sustained competitive advantage is only possible if the resources that create the advantage are not easily duplicated by competitors (Hart, 1995). But it is likely that a competitor can obtain strategic resources (such as knowledge or skills) from the coopetitive interaction (Ritala, 2009; Zhang, Shu, Jiang & Malter, 2010). Firms in coopetition therefore have to contend with partners with opposing objectives and who also want to win at the other's expense (Hart, 1995; Raza-Ullah et al., 2014; Ritala, 2009; Ritala & Tidström, 2014; Zhang et al., 2010; Soekijad, 2006). The RBV therefore is very relevant to both how the pie is baked and how it is distributed.

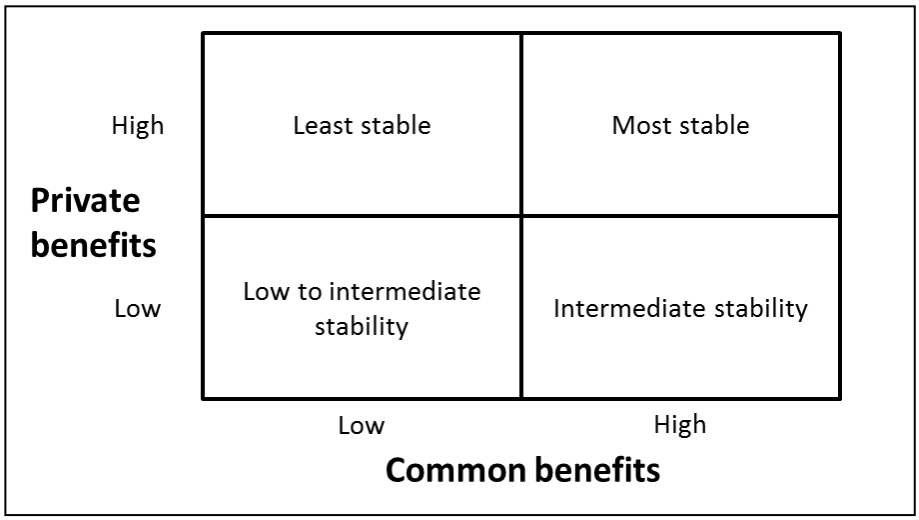


Figure 2.5: Private and common benefits and alliance stability

Source: Dyer et al., 2008:146.

It is important to understand value appropriation in coopetition relationships as it can influence the stability of the relationship. Relationships with a high level of common benefits and high level of private benefits are regarded as the most stable (see Figure 2.5). Cases where private benefits are high, but common benefits are low, are regarded as the least stable (Dyer et al., 2008:146).

2.10.2 Semantic clarity of the value appropriation language

2.10.2.1 Value created equals value appropriated

The existing literature about value appropriation suffers from at least two points of confusion. The first point of confusion stems from the fact that the creation and appropriation of value are inseparable from each other (Garcia-Castro & Aguilera, 2014): the increase in the pie is equal to the pie that can be divided. For instance, it has been argued that the total benefit that can be generated through an alliance can be defined as *the sum of common benefits and private benefits* (Ritala & Tidström, 2014; Dyer et al., 2008). Whereas this definition refers to the *generation* of benefits, *common* and *private* benefits denote the appropriation of benefits.

2.10.2.2 Common benefits

The second point of confusion relates to the semantic clarity of the definition used for common benefits. *Common benefits* refer to the collective value generated by the collaborating parties (Khanna et al., 1998: 194; Janssen et al., 2013: 2; Dyer et al., 2008: 138; Ritala & Tidström, 2014). In line with this view Khanna et al. (1998: 194), in one instance, defined common benefits as benefits that accrue "*collectively to all participants in the alliance (from activities in markets that are governed by the alliance)"*. But elsewhere Khanna et al. (1998) described common benefits as those benefits "*that accrue to each partner in an alliance from the collective application of the learning that both firms go through as a consequence of being part of the alliance".*

The term *common benefit* is therefore used to describe both the total value available to coopetitors (the total value created), as well as the individual component that may accrue to a particular firm (a component of the appropriated value).

The ambiguity implied by the points above creates confusion and hampers the accurate description of the appropriation of common value.

2.10.2.3 Private benefits

There is less uncertainty about the definition of private benefits. *Private benefits* are those that a firm can capture unilaterally through acquiring knowledge or resources from its partner and applying them elsewhere (Khanna et al., 1998; Dyer et al., 2008: 138; Ritala & Tidström, 2014; Dagnino & Padula, 2007: 42; Park et al., 2014, Kumar 2010: 32). Private benefits can be generated by using either a positive-sum or zero-sum logic (Rai, 2013).

2.10.2.4 Privately captured common benefits

Not much is known about why certain firms manage to capture more of the common value (Dyer et al., 2008: 137), and the language of value lacks a handle with which to grip such value (to paraphrase Ritala & Tidström, 2014 and Garcia-Castro & Aguilera, 2014).

In the interest of semantic clarity in the theory above, one can define three levels of benefits appropriation between coopetitors, namely: (i) common benefits; (ii) privately captured common benefits; and (iii) private benefits.

Table 2.5 provides definitions of the three levels of benefits and provide examples of each. The three examples were chosen to illustrate the different types of benefits in different contexts and also indicate that different value-related dynamics are possible.

Table 2.5: A typology of value appropriation

	Positive-sum	**Zero-sum**
Common benefit: Value that is generated as a result of the coopetition relationship in positive-sum logic (Ritala & Tidström, 2014; Park et al., 2014; Rai, 2013), and accrues collectively to the coopetitors in relation to some level of contribution in the initiative (Janssen et al., 2013: 2). When such value is captured by one coopetitor, it leads to the second classification, namely privately captured common benefits.	**1a)** The aggregate increase in revenue generated by competing luxury hotels from joint destination marketing (see Wang, 2008) aimed at attracting more tourists to Cape Town. **2a)** The total cost saving generated from a joint logistics network in which competing furniture companies use the same distribution channel (see Janssen et al., 2013). **3a)** The total intellectual capital generated from joint R&D by auto-manufacturers (e.g. Toyota & PSA Peugeot Citroen in their research around city transport).	
Privately captured common benefit: Value that accrues to a particular coopetitor from the collective value generated in the coopetition relationship. The process of appropriation of value can happen in positive-sum or zero-sum logic (Ritala & Tidström, 2014).	**2b)** The cost reduction enjoyed by a furniture company as a result of a joint logistics network. The fact that it may experience a cost reduction does not prevent its competitor(s) from enjoying a similar cost reduction. **3b)** The increase in intellectual capital of a particular auto manufacturer (e.g. PSA Peugeot Citroen) generated from joint R&D. What it learns from the initiative does not prevent Toyota from also gaining knowledge and both may gain the same knowledge.	**1b)** The revenue accruing to a particular luxury hotel in Cape Town as a result of joint destination marketing (with other luxury hotels). Each tourist it attracts means one less customer for other hotels in Cape Town.
Private benefit: Value that a firm can capture unilaterally through acquiring knowledge or resources from its partners and applying it outside the boundaries of the coopetition initiative (Khanna et al., 1998; Dyer et al., 2008: 138; Ritala & Tidström, 2014; Dagnino & Padula, 2007: 42; Park et al., 2014). Such value can be captured in differentiating (positive-sum) logic (Ritala & Tidström, 2014) or zero-sum logic (Rai, 2013).	**2c)** The revenue generated by a company that sells both furniture and interior design products when it uses a joint distribution channel with other furniture companies that do not sell interior design products. **3c)** The value of intellectual capital that an auto company (PSA Peugeot Citroen) can apply in its motorcycle plant, while its competitor (Toyota) does not operate in that market (and is not able to capture such value).	**1c)** The revenue generated by a luxury hotel group that is present in Cape Town when it is able to refer a guest to its branch in Paris while at least one of its competitors has a branch there

Source: Researcher.

The first example shows the application of the theory in the luxury hotel industry (1a-c), the second is that of a shared logistics network between furniture companies (2a-c), and the third relates to joint R&D in the auto industry (3a-c).

The first two examples illustrate economic value (from respectively increased revenues and reduced costs), while the third illustrates knowledge value. How the value is appropriated to the different partners indicates different dynamics based on different contexts.

The common value (1a-3a) generated can be appropriated in positive-sum logic (2b & 3b) or zero-sum logic (1b). But in all three examples, it is also possible for private value to be generated outside of the coopetition boundaries. In the case of destination marketing, the private value can happen through either positive-sum (1ci) or zero-sum logic (1cii). Companies can generate positive-sum benefits by generating value outside of the coopetition boundaries. In the case of the joint logistics and joint R&D examples, the private benefits (2c & 3c) are based on product-related boundaries, while the positive-sum benefit in the case of the luxury hotel group (1ci) is based on geographic boundaries.

The introduction of privately captured common benefits into the terminology of value avoids the ambiguity mentioned previously. The sum of *privately captured common benefits* would add up to the *total common benefit*. However, this classification also becomes useful as a measure of *total benefit* captured by a firm, i.e. the sum of *privately captured common benefit* and *private benefit* for a particular firm.

2.10.3 Capturing common value

When competing firms collaborate in the conventional paradigm of coopetition, one can postulate that the majority, or some of the resultant benefit, can be captured by the collaborating parties. The pie therefore increases in size, and most/some of the increase can be captured. For instance, when two mobile phone companies share network towers as many are doing in Africa (Font, Datta, Reddy & Ghosh, 2009), the required number of towers is halved (assuming the two networks each own half of the towers). In this case, both firms know the cost of building a tower, so each can calculate the total saving in capex and opex (shared by the collaborators), as well as the individual saving. Furthermore, both firms are able to sign up new clients much faster than they would have if they were limited to their own towers only. What part of the market each one captures is a function of the effort they put in.

The total savings and revenue in this example is mostly captured in its totality by the collaborating parties. The collaboration initiative does, however, create value for consumers. The value for consumers could potentially be in lower network charges, or in the form of increased network access.

One could argue that the above is an oversimplified example. For instance, when firms collaborate in order to drive innovation, the increase in knowledge and market value may be more difficult to

quantify, and even more difficult to allocate to the different collaborating parties. However, the created benefit is still mostly captured by the parties.

As discussed earlier in the dissertation, there is more value in collaborating with competitors than with non-competitors (Ritala & Hurmelinna-Laukkanen, 2009: 823). According to the resource dependence perspective (Pfeffer & Salancik, 1978), companies are often dependent on external resources (such as financial or physical resources) to compete (ibid.: 46). And while a lack of such resources could hamper competitiveness, collaboration with different stakeholders can allow companies to pursue its interests (ibid.: 144).

According to Pfeffer and Salancik (1978: 53) organisations are controlled by those that control the resources they require. Therefore, the company that provided the bigger component of inputs into the coopetition initiative has more power and should therefore also reap the proportional benefit (Barney, 1991). But this view is based on the assumption that each partner can determine the extent of the resources provided by other parties, which is seldom, if ever, the case (Dyer et al., 2008: 138). It is therefore in each partner's interest to convince coopetitors that the resources they bring to the relationship is valuable, rare and non-substitutable.

The ability of a firm to extract and imitate knowledge and expertise from a coopetitive relationship can be a source of major competitive advantage (Ritala & Hurmalinna-Laukkanen, 2009: 825). On the other hand, the extent to which a company's competitors can do the same should be a source of concern.

The resource dependency theory is important to explain the distribution of common (direct) benefits, but does not assist in explaining how private value is distributed (Dyer et al., 2008: 138).

2.10.4 Capturing private value

Private value was described earlier in this dissertation as value that a firm can capture unilaterally through acquiring knowledge or resources from its partners and applying it outside the boundaries of the coopetition initiative (Khanna et al., 1998; Dyer et al., 2008: 138; Ritala & Tidström, 2014; Dagnino & Padula, 2007: 42; Park et al., 2014). Such value can be captured in differentiating (positive-sum) logic (Ritala & Tidström, 2014) or zero-sum logic (Rai, 2013).

The size of such private benefits are often not known to the alliance partner, and can be explained by three theoretical approaches, namely:

i) Related resources perspective;
ii) Structural holes perspective (Burt, 1992);
iii) Resource development perspective (ibid.: 138).

2.10.4.1 Related resource perspective

Companies can generate private value when they have related resources and can apply the resources and knowledge acquired in the alliance or coopetition relationship outside of the coopetition relationship (Dyer et al., 2008: 141).

Strategically related resources could include any of the following (Markides & Williamson, 1996: 348):

- Customer assets (similar demographics, brand recognition);
- Channels (distributors, channel access);
- Inputs and suppliers;
- Processes (similar product development, manufacturing of service processes); and
- Technological knowledge base (similar intellectual property, technological know-how, market knowledge).

Coopetition suggests (as elsewhere reiterated) that collaborators would have similar customers (being competitors), share suppliers, follow similar methods, etc. The related resource perspective therefore shows good fit with coopetition cases.

Another requirement for capturing more value under the related resources perspective is the absorptive capacity of a company (Dyer et al., 2008: 141). The better the absorptive capacity, the better the ability to not only appropriate more resources or knowledge, but also to apply an increased amount of resources elsewhere *vis-á-vis* its competitor.

2.10.4.2 Structural holes perspective

Structural holes refer to the gaps between a company's non-redundant contacts in a network. What this means is that the two contacts are separated by a buffer and therefore do not overlap in terms of the other resources it would give you access to (Burt, 1992: 65). Structural holes therefore represent entrepreneurial opportunities for resource access and control (ibid.: 66). The centrality of a company in a network, and the number of structural holes should both be positively correlated with returns (ibid.: 81). Access to unconnected clusters in a network provides more information to organisations. Simon (1947) emphasised how limits in awareness lead to bounded rationality, and that decisions, once made, tend to persist in a particular direction. When time is limited for decision-making, access to more and relevant information is of much importance. Apple managed to dominate the MP3 player market by introducing the Apple iPod. The iPod was not as much a technological advance as it represented an advancement in the integration of existing hardware, software content and services (Abel, 2008). Apple was able to accomplish this integration because of various networks that were not connected with each other, but to which they had access. This enabled them to be first to market and enjoy a substantial advantage in the market (Ibid.)

Information benefits appear in three forms namely: (i) access; (ii) timing; and (iii) referrals (Burt, 1992: 62). Access refers to receiving valuable information and knowing who can use it. The more companies are connected with other companies, the better their chances they will have access to such information. Secondly, timing refers to the fact that a bigger network of contacts increases the chances that companies will receive valuable information before the rest of its competitors. Thirdly, it is impossible for a company to be present in every possible meeting. It is therefore beneficial if other entities in the network mentions your name, bringing you referrals.

2.10.4.3 Resource development perspective

The benefits to a firm of having a large network or being central in a network goes beyond the ability to broker information and resources. Access to timely and reliable non-public information provides a company with considerable foresight when considering future investment in capabilities and resources. Through its network, a company may have access to information about market trends, opportunities and directions that could provide insight into necessary resources to take advantage of future scenarios (Dyer et al., 2008: 144).

In order to benefit from the information in its network, a company requires a sense-making ability to understand, organise and make sense of incoming information. Provided a company possesses the necessary sense-making ability, firms that receive more non-public information would be able to make better decisions and would be aware of more opportunities. As a result, companies with more network connections would receive more information than companies with fewer connections (Dyer et al., 2008: 144).

2.10.4.4 Summary

In summary, the resource dependence perspective, structural holes perspective, and related resources perspective, highlight the private ‘exploitation’ opportunities, while the resource development perspective highlights the private ‘exploration’ opportunities (Dyer et al., 2008: 145). Firms are therefore able to capture more value from coopetition initiatives if they have a stronger position in a social network, if they have better relations with certain partners with scarce skills, and if they possess specialised expertise or knowledge, particularly tacit knowledge obtained from the coopetition initiative (Lepak, et al., 2007:188).

2.11 ENABLERS OF COOPETITION

2.11.1 General enablers

Enablers are contextual variables that have a positive impact on the success of coopetitive initiatives. Often these are the positive factors that could be associated with overcoming barriers to coopetition. Barriers and enablers therefore represent opposite sides of the same coin. Enablers and barriers are not the core focus of this dissertation. However, one should still consider the

enablers of successful coopetition as the same enablers and barriers may be present in the cases that were explored in this study.

Table 2.6 shows a summary of factors from the literature that could affect the success of coopetition.

Table 2.6: Enablers of coopetition

Factors	Examples
Interpersonal characteristics*	The need of partners for each other [c] Level of negotiation skills [c] Clarity of objectives and new ideas [c] Vision [c] Knowledge [c] Mutual benefits [d] Strategic fit [d, g] Trust – honest and forthcoming [d] Return on investment [d] Integrity [d] Power [k]
Organisational characteristics*	Available capital [c] Company culture [c] Previous experience [d] Relative strength/position of firms in industry [e] Acceptance of responsibility for environmental consequences [d] Commitment to cooperation [g, j] Activeness [g] Personnel resources [g] Organisational proximity (including cognitive proximity, cultural proximity and social proximity) [h] Technological alignment [m] Strategic alignment [m]
Individual characteristics*	Personal traits [a] Motivation [a] Attitudes [a] Employee's position [f] Employee's responsibilities [f] Loyalty [d] Persistence [d] Consistency [d] Forgiveness [d] Detail oriented [d] Leadership [d] Open-mindedness [d]
Industry level	Length of the product cycle at industry level [m] Technological convergence of the industry[m]
External	Geographical distance / proximity [b, g, h] Policy [i]

Source: [a] Selin and Myers (1995) ; [b] Selin & Chavez, 1995; [c] Fyall & Garrod, 2005; [d] Kubickova & Wang, 2011; [e] Bleeke & Erns, 1991; [f] Moreau & Leathwood, 2006; [g] Lindstrom & Polsa, 2015: 7; [h] Knoben & Oerlemans, 2006: 73; [i] Kenworthy, 1995, [j] Wang, 2008, [k] Kim, et al., 2015; [m]Gnyawali & Park, 2009

Organisational theory identifies a number of elements that need to be present to lead to change in organisations (Simon, 1947; March & Simon, 1958; March, 1991). According to Simon (1947), the actions of individuals, and therefore of an organisation is determined by the information/knowledge

that such employees are exposed to. This body of theory relates well to the earlier structural holes perspective of Burt (1992). Cooperating with competitors can provide a company with valuable knowledge about issues of mutual interest, but in this instance, awareness also acts as driver to coopetition.

2.11.2 Proximity

One of the most often mentioned enablers of coopetition is proximity. Proximity not only relates to geographical separation, but also to other forms of space between entities that cooperate. One can distinguish between three broad classifications of proximity, namely: (i) organisational proximity; (ii) technological proximity; and (iii) geographic proximity (Steinmo & Jakobsen, 2013: 4-5; Knoben & Oerlemans, 2006: 73). However, proximity is a context-sensitive enabler, meaning that one type of proximity may be an important enabler in some instance, while in others it has no impact. Figure 2.6 provides a comprehensive view of proximity-related enablers.

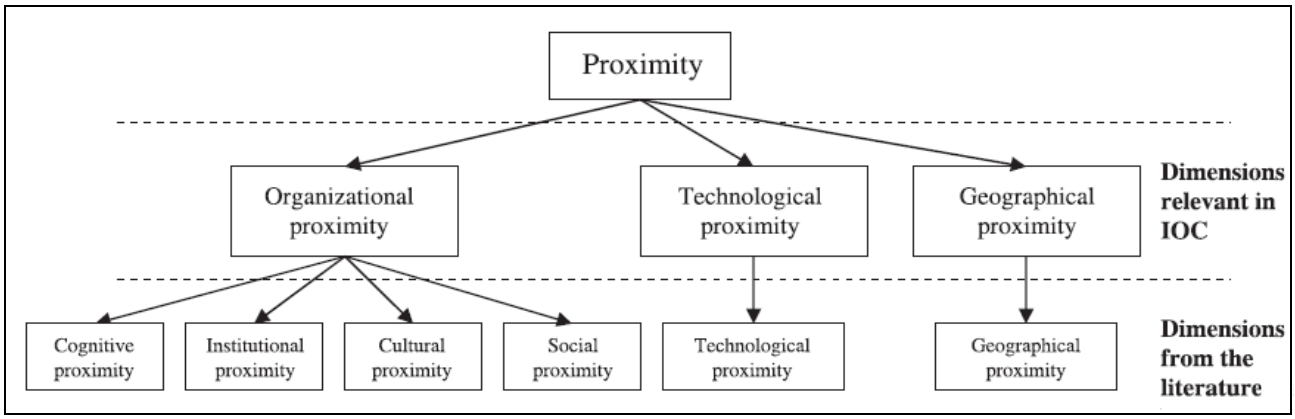


Figure 2.6: Dimensions of proximity at the dyadic level

Source: Knoben & Oerlemans, 2006: 73.

Defining *organisational proximity* is somewhat problematic as many different views of it exist (Knoben & Oerlemans, 2006: 73). Organisational proximity refers to organisations that share (implicitly or explicitly) similar rules and routines of behaviour, as well as similar beliefs (Brown & Duguid, 1991). According to Knoben and Oerlemans (2006: 73), organisational proximity can further be broken down into other related concepts (see Figure 2.6).

Cognitive proximity describes intellectual distance (or closeness) between entities, i.e. the cognitive base of a firm must be close enough to the new knowledge that is created in order to communicate, understand and process it successfully (Boschma, 2005: 63). Cognitive proximity is considered a key success factor in innovation initiatives between organisations (Knoben & Oerlemans, 2006: 73; Lindgren & Holgersson, 2012: 1224). Referring back to the body of literature on knowledge, explicit and tacit knowledge are a tag-team (Cook & Brown, 1999: 397), the two cannot exist in isolation and the one can be a useful tool in the generation of the other. It is therefore important for collaborators to have similar understanding of problems and knowledge (i.e.

cognitive proximity), in order to create new knowledge or to transfer competencies (Steinmo & Jakobson, 2013: 1).

Another aspect of proximity that could be included is social proximity, which enhances trust through social relationships (Steinmo & Jakobson, 2013: 2). Social proximity originates from the embeddedness literature and indicates that economic relationships are often embedded in social context.

Cultural proximity, as used in this study, relates more to organisational culture than national (country-level) culture. When organisational cultures are similar, it is easier for organisations to interact as they attach similar meaning to events and interpret actions in the same way. The interpretation of cultural proximity is therefore very close to the way that organisational proximity is viewed. Both make the interaction between entities smoother without needing to go through the difficult process of making implicit actions and knowledge explicit (Knoben & Oerlemans, 2006: 73). Cultural proximity also shows large overlap with institutional proximity and is difficult to untangle (ibid.). Because there is not a very big focus on enablers in this study, the researcher will not explore proximity in more depth. As will be seen later in the study, wine producers operate at high levels of geographical, cognitive and social proximity.

Geographic proximity simply refers to the physical distance between entities (Knoben & Oerlemans, 2006: 73). Geographic proximity facilitates close, rich interactions and aids in the transfer of tacit knowledge (Torre & Gilly, 2000).

2.11.3 The contextual nature of enablers

Enablers may be contextual as illustrated by Lindstrom and Polsa (2015: 7). For instance, while these authors (ibid) consider activeness, commitment to coopetition, strategic fit and geographical distance as enablers for coopetition in general, they identify particular enablers for particular activities. For instance, for joint marketing campaigns, personnel resources and strategic fit are important enablers (see Table 2.7). The table further provides a summarised overview of types of coopetition and the enablers that increase the effectiveness of these particular types.

Also note that Table 2.7 takes the conversation back to how close an activity is to the final consumer. The examples in the table are all in close proximity to customers.

2.12 CONCLUSION

Competition is a big driver for cooperation between competitors as it forces companies to improve their performance and market attractiveness. It is therefore not surprising that countries that encourage cooperation between competitors show higher levels of innovation. Collaborating with competitors provide firms with access to resources such as market access and knowledge that

non-competitors cannot provide. Chapter 2 focused on cooperation between competitors, or what this dissertation refers to as generic coopetition (as opposed to environmental coopetition.)

Table 2.7: Summary of most mentioned factors for successful coopetition close to customers

	Personnel resources	Strategic fit	Commitment to cooperation	Activeness	Involvement	Participation	Active role
Sales activity	x						
Marketing campaigns	x	x					
Branding			x	x			
Joint customer					x	x	x
Delivery of service					x	x	x

Source: Adapted from Lindstrom & Polsa, 2015: 7.

Companies can collaborate on a wide spectrum of activities. Such activities can be close or far from customers. A pervasive view in the coopetition literature is that cooperation happens far from customers (i.e. high up in the value chain), while competition happens near the customer as firms attempt to differentiate themselves. More recent studies indicate that there are instances where firms do cooperate nearer to customers.

In Chapter 2 the researcher elaborated on the topics that were introduced previously (the black blocks in Figure 2.7 were covered in Chapter 1). The chapter provided a deeper view of different definitions of coopetition, and argued for the narrow definition by showing how much of the other relationships are captured in other bodies of literature.

The areas in grey in Figure 2.7 show the main topics that were added to the conversation. On the value creation side, the dissertation provided an overview of how extant literature categorises the value that is created. The chapter also dealt with collusion, which stands opposite coopetition as it destroys rather than creates value.

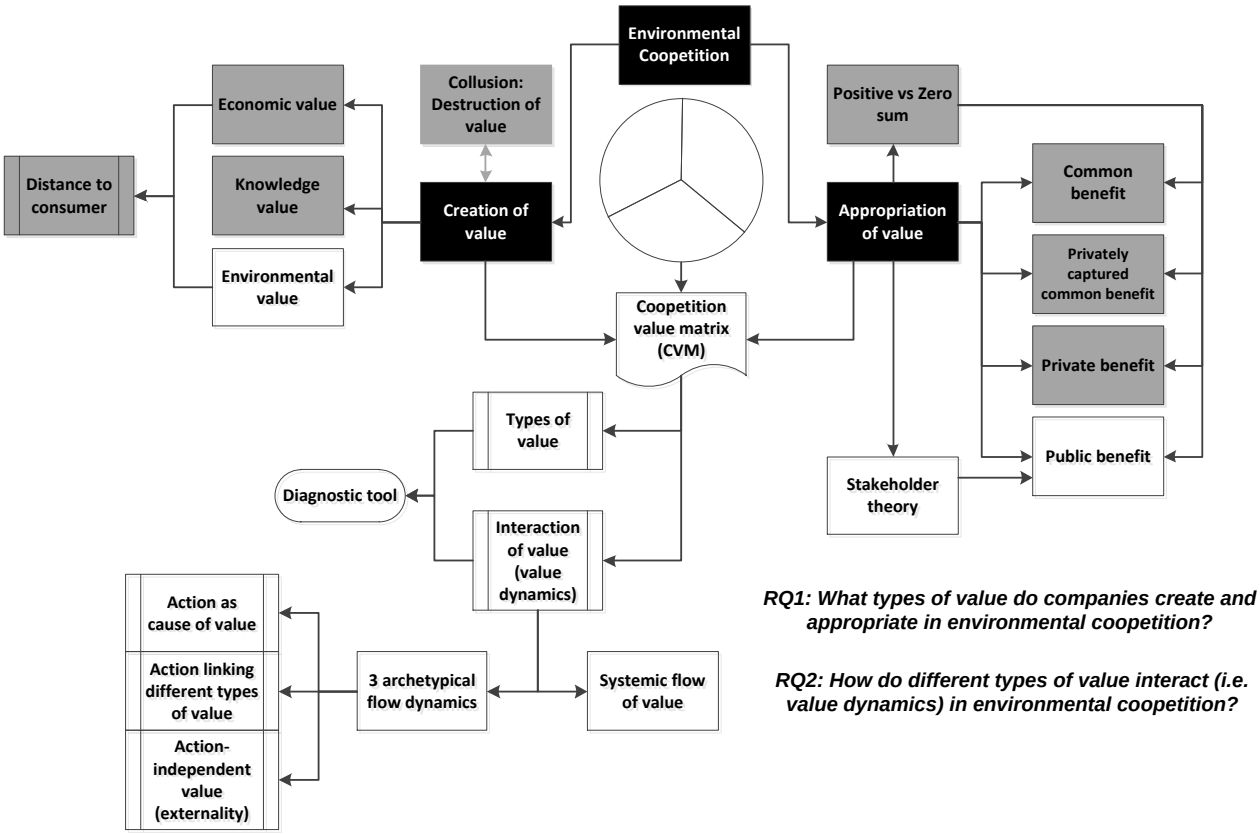


Figure 2.7: An overview of topics dealt with in Chapter 2

This chapter also introduced a more detailed view of the appropriation of value. In order to provide a better view of the total private benefit captured by a firm, the terminology surrounding value appropriation needed refinement. The researcher therefore argued that the term *privately captured common benefits* should be introduced to describe the component of the common value that is captured by a particular firm. The chapter also touched on the idea that value can be appropriated in either positive-sum or zero-sum logic.

Chapter 2 provides the theoretical foundation for the next chapter, which deals with environmental coopetition. While the literature that was reviewed in this chapter is valid, it is inadequate to describe the value that is created in cases of environmental coopetition.

CHAPTER 3
A THEORETICAL OVERVIEW OF ENVIRONMENTAL COOPETITION

3.1 INTRODUCTION

This chapter provides a theoretical extension of the literature that was covered in Chapter 2 and is aimed at addressing the first gap (the theoretical gap) that was identified earlier, namely the articulation of value and value dynamics in coopetition initiatives.

In order to address this gap, the chapter borrows from fields such as environmental strategy, environmental ethics, stakeholder theory and public value in order to extend on the existing coopetition body of literature. Much of this literature has not featured in a coopetition context before and this study therefore attempts to reconcile many of the different bodies of literature to form the basis for a theoretical model in the next chapter.

3.2 VALUE FROM A SUSTAINABLE DEVELOPMENT PERSPECTIVE

3.2.1 The Sustainable Value Framework

It is sensible to firstly define what we mean with environmental coopetition and to create some context in which to view the activities. One of the strongest lenses to view environmental coopetition activities through, would be the Sustainable Value Framework (SVF) of Hart and Milstein (2003). The SVF (Hart & Milstein, 2003) provides a holistic view of how companies can create value from sustainability-related initiatives (see Figure 3.1). The framework views actions along two axes.

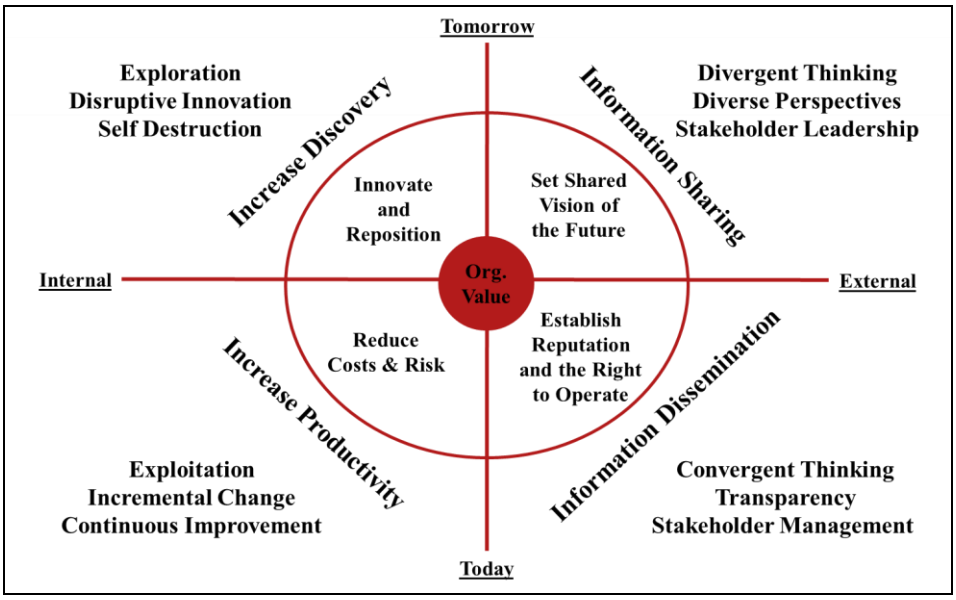


Figure 3.1: The Sustainable Value Framework

Source: Hart & Milstein, 2003.

The vertical axis separates actions as either orientated towards today or orientated towards tomorrow. The horizontal axis separates actions into those actions that are internally focused or externally focused. By positioning the two continuums as the two axes of a two-by-two matrix, the researcher provided a framework that helps companies to understand the value that can be created for the firm.

The two quadrants on the left in the matrix focus on internally focused actions. The lower quadrant on the left focuses on initiatives that can be done today, and has an internal focus. This could typically include initiatives to reduce costs or risk. The upper quadrant is still focused on internal actions, but is focused on the future. It is the space within which companies can look towards different ways of doing the same, i.e. to innovate and reposition itself.

The right side of the matrix is externally focused. The bottom quadrant on the right focuses on actions that are externally focused with a focus on the present. Typically, these actions would include communication with stakeholders to disseminate information. The company can increase value by building its reputation and securing its licence to operate.

The top-right quadrant is aimed at engaging stakeholders in order to create future value for the firm. Actions in this quadrant include initiatives that encourage information sharing with stakeholders, and stakeholders with the firm. The creation of societal value through collaboration has been described in strategic management literature as *shared value*. Shared value refers to increasing the competitiveness of a firm while *simultaneously advancing the economic and social conditions in the communities in which it operates* (Porter & Kramer, 2011: 66).

According to Hart and Milstein (2003), companies should at all times be focused on all four quadrants. Disregarding any of the areas will lead to failure to create the maximum value for a business. In essence, the model suggests that firms should balance current actions in the business with future actions, and similarly, balance an internal focus of optimisation with communicating and engaging with stakeholders.

Coopetition and environmental coopetition is not limited to any of the four quadrants of the Sustainable Value Framework. One could potentially argue that the top right-hand corner is of particular interest in the context of coopetition because it promotes the idea of engagement with competitors to create shared value in the future. But coopetition on sustainability issues can also assist in managing the reputation of an industry or of partners in a coopetitive relationship (see the later discussion surrounding the work of Peloza and Falkenberg, 2009). Such initiatives would be representative of the bottom-right quadrant of the SVF.

Previous mention was made of studies that did touch on examples of environmental coopetition. In order to relate these back to theory, the examples from the literature were placed into the SVF (Figure 3.2). It is insightful that examples of environmental coopetition can be found in each of the four quadrants.

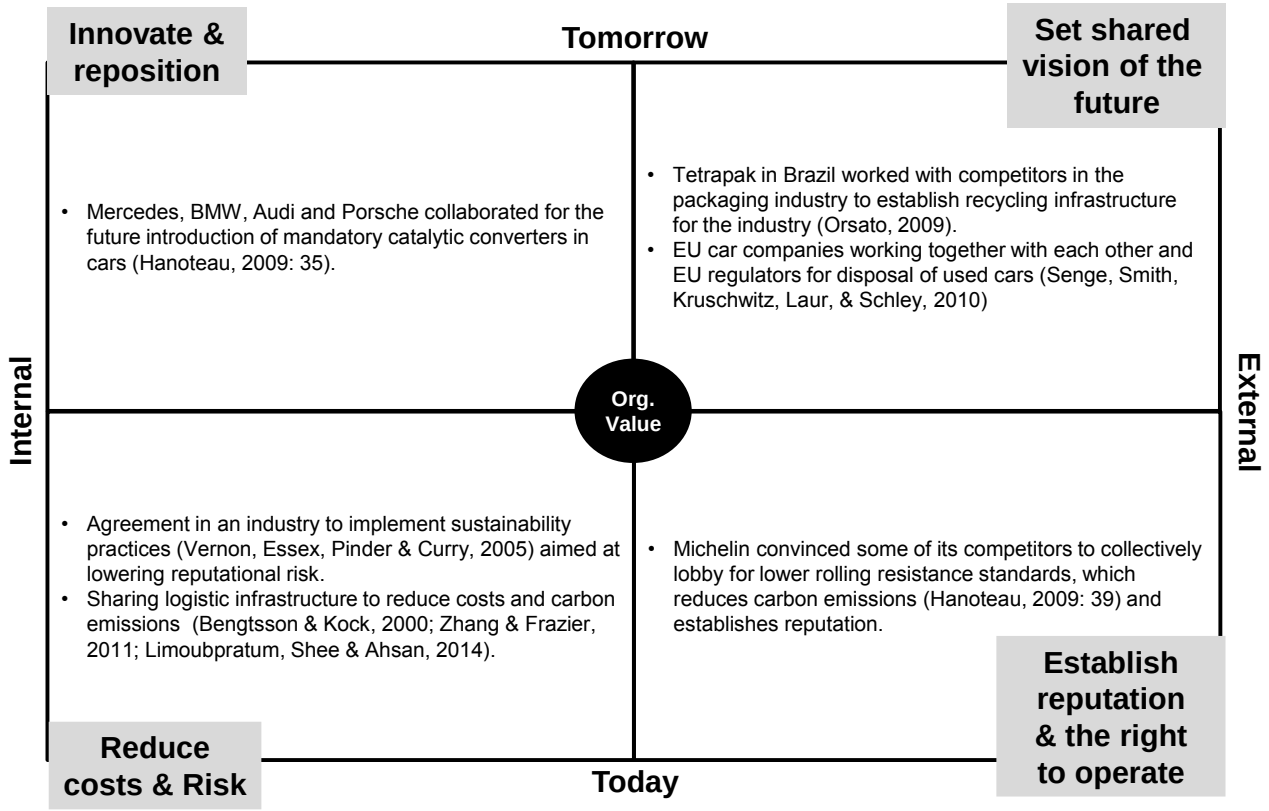


Figure 3.2: A SVF view of environmental coopetition

Source: Researcher

The SVF hints at the fact that a conversation of environmental strategy and environmental coopetitive strategy should start at the broadest level with the motivation for environmental action.

3.2.2 Integrated reporting guidelines

The International Integrated Reporting Council (2013) or IIRC provides some valuable insight into the description of value with regards to sustainable development. According to the IIRC (Ibid.: 10), whether a company creates or destroys value relies to some extent is based on how stakeholders such as competitors, local communities and regulators perceive the activities of the company, as well as the impact of the company on the environment.

What eminates very clearly from the IIRC's (Ibid.) position is that gains in company value should be measured against the extent to which it relies on inputs from the natural enivironment.

The work of the IIRC (ibid.) overlaps to some extent with the SVF (Hart & Milstein, 2003) in that the IIRC also relates to value creation in the short, medium and longer term,

3.3 DRIVERS OF ENVIRONMENTAL COOPETITIVE STRATEGIES

3.3.1 Broad drivers of environmental behaviour

Understanding the motivation for environmental action (and by extension, for environmental coopetition) is important in order to predict environmental behaviour of companies, and to

understand the efficacy of command-and-control, market-based or information-based policies (Bansal & Roth, 2000: 717).

Reyers (2009) indicated three high-level drivers of corporate environmental action in South Africa, namely: (i) legitimacy; (ii) the financial business case; and (iii) moral responsibility (ibid.: 154). These are very similar to the "firm motivations" proposed by Bansal and Roth (2000: 729), namely legitimacy, competitiveness and environmental responsibility. Table 3.1 provides a view of drivers of environmental action, loosely based on the classification of Reyers (2009). The categories are not mutually exclusive. For instance, reputation protection could also be seen as providing access to new markets, while stakeholder pressure and stakeholder expectations are closely related.

Table 3.1: Drivers of environmental action

Driver	Sub-drivers
Legitimacy	• Legislation, regulation & legal compliance • Stakeholder expectations • Brand/ Reputation protection • Licence to operate
Financial business case	• Cost reduction • Access to new markets • Brand/Reputation building • Customer attraction (increased sales) • Increased profit margin • Managing business risk • Innovation
Moral responsibility	• Stakeholder pressure • Corporate values & culture • Mitigating impact • Exerting pressure on stakeholders

Source: Bansal & Roth, 2000; Bansal & Clelland, 2004; Reyers, 2009, Orsato, 2009; Castro & Chousa, 2006: 327.

Although based on only six case companies, Reyers (2009:164) stated that South African companies did not necessarily respond to specific stakeholder pressures or requirements, but instead focused on the strategic linkages between the environment and the company. They therefore drove the financial business case from the perspective of profitability, competitiveness and risk management benefits. It seems that most companies are not driven by moral principles when making decisions regarding climate change, but are either trying to increase profits or to reduce their risk.

Orsato (2009) asserted that managers do not necessarily expect to create economic value when they create environmental value. Environmental coopetition could also be driven by a moral

principle. Such behaviour is in agreement with the social embeddedness argument of Granovetter (1985), i.e. that economic activity is embedded in the social networks, relationships and activities of people.

3.3.2 Moral responsibility & environmental ethics

3.3.2.1 Overview

For a very long time, companies could ignore the limits set by nature. Companies could extract resources without needing to consider the potential depletion of that resource (think of fishing for instance). Companies could rely on nature as a free "sink" for pollution, relying on nature's ability to absorb pollution. For a number of reasons this is no longer the case. From a moral and normative paradigm, environmental action is not negotiable, and whether it is profitable is irrelevant (Marcus & Fremeth, 2009: 19). However, whether it pays is important, as progress will be more rapid (ibid.: 19).

The definition of sustainability as used in the often quoted Brundtland report (also known as *Our common future*) is an illustration of generational justice. According to the report, sustainable development means meeting the needs of the present, without compromising the ability of future generations to meet their own needs (Brundtland, 1987). By implication, this definition implies that sustainable development only requires nature to be conserved for its extrinsic value: if it has no value for current or future generations, it has no value at all (Hattingh, 2009).

A defining characteristic of environmental ethics is the distrust of the valuation of natural resources in terms of the use value for humans (Hattingh, 2009; Yang, 2006: 24). Instead, environmental ethicists often argue for the conservation of nature for the sake of the intrinsic value (see earlier discussion about intrinsic value) and not for the sake of human beings (Hattingh, 2009; Velasquez, 2006: 271). This view is called the deep ecological view. The deep ecological view can be taken to an extreme, claiming intrinsic value not just for animals and plants, but also for lakes, mountains, hills, etc. (Velasquez, 2006: 273).

Environmental ethics is considered a sub-discipline of philosophy and there are a number of different underlying dynamics that influence exactly how it is interpreted. Yang (2006: 28) made reference to four schools of thought namely:

i) Enlightened or weak anthropocentrism;
ii) Animal liberation/rights theory;
iii) Biocentrism; and
iv) Ecocentrism (which includes the land ethic, deep ecology and the theory of nature's value).

These four schools of thought deal with the position of nature in relation to man and range from man at the centre (anthropocentrism) to the environment as the centre (ecocentrism) of the relationship (Figure 3.3). A fifth view (Rolston, 1991) represents ecological value as completely independent of humans.

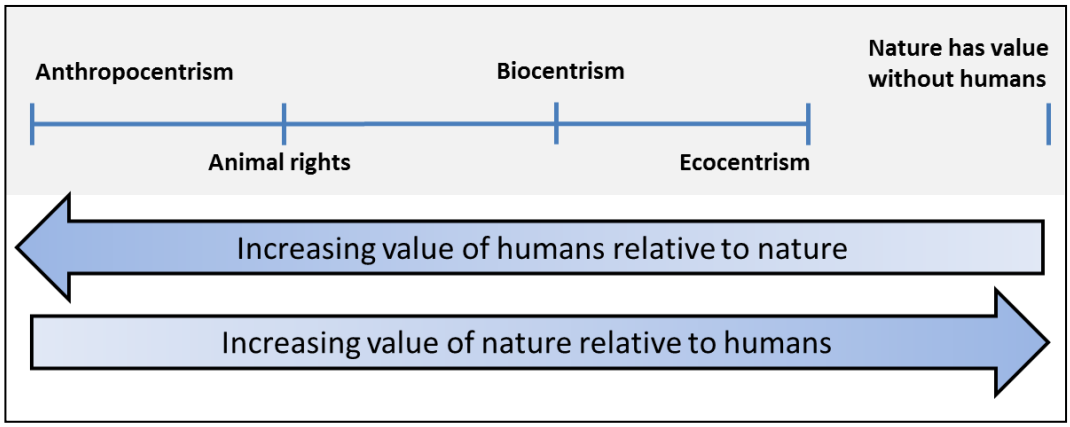


Figure 3.3: Nature *vis-à-vis* human beings

Source: Researcher's interpretation of Yang, 2006: 28 and Rolston, 1991: 96.

3.3.2.2 Anthropocentrism

At the one extreme (see Figure 3.3), humans are not required to have any regard for nature. In this anthropocentric view, humans only have an obligation to each other. However, enlightened anthropocentrists do acknowledge the intrinsic value of nature (Yang, 2006: 28). One could argue that this position is very close to the utilitarian position as defined by Pearce and Moran (1994:17). Under utilitarianism, one would typically use financial discounting to decide whether to develop a piece of land or to conserve it. It would then also be important to note that the benefits of nature often accrue to society, and not to the private individual, meaning that development often happens at the expense of nature.

Blackstone (1974) argued that a liveable environment is not just a desirable state of affairs, but is a basic human right, thereby aligning with the anthropocentric view of ecology. A person has a right to something if that thing allows him to fulfil his capacities as a rational and free being (Blackstone, 1974). The South African constitution (RSA, 1996), for instance, contains a number of references to the rights of citizens as it pertains to a healthy environment. Section 24 of Chapter 2 (The bill of rights) specifically refers to environmental rights in terms of human health, stating: "Everyone has the right to an environment that is not harmful to their health or well-being".

The constitution (RSA, 1996) also recognises the rights of future generations by stating:

> *…and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that*
>
> 1. *prevent pollution and ecological degradation;*
> 2. *promote conservation; and*
> 3. *secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.*

3.3.2.3 Animal liberation/rights

Animal liberation/rights theorists expand the object of duty to include animals, especially sentient ones. Pleasure and pain that animals experience become relevant, and sentience becomes a sufficient condition for moral consideration (Singer, 1975).

3.3.2.4 Biocentrism

Biocentrism expands this even further to state that humans are inherently not superior to nature (Taylor, 1986: 99). All living beings have the will to live, and the will to live makes them sacred and equal (Schweitzer, 1923). Biocentrism further states that nature does not simply exist to be consumed or used by humans, and that humans are just one of many species (Bari, 1995).

3.3.2.5 Ecocentrism

In the ecocentric view, humans are not the conqueror of nature, but purely just citizens therein (Yang, 2006: 30). Ecocentrism goes beyong biocentrism in its fixation on organisms and the view that humans are inseperable from the inorganic/organic nature that surrounds them (Rowe, 1994). In a seminal and often-quoted essay, Leopold (1949) captured the essence of ecocentrism: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise" (ibid.: 125).

Two notable principles underlie deep ecology (Naess, 1973), namely: (i) egalitarianism; and (ii) self-realisation.

The egalitarianism principle, as the name suggests, considers everything in the ecosphere to be part of the interconnected whole and are therefore equal in intrinsic value. Everything therefore has a right to live and self-realisation.

In turn, the principle of self-realisation holds that for the morally mature person, the authentic self is at one with nature, not the self that focuses on needs of the ego. To harm nature is to harm oneself, and defending nature is self-defence (Naess, 1973).

3.3.2.6 Nature has value without humans

Rolston (1991: 96) removed the value of nature completely from a human construct, maintaining that nature has value without humans. He (ibid.) pointed out the oddity of one species, supposedly the only moral species, taking itself as absolute and that judges all other species relative to its utility. "There is something overspecialized about an ethic, held by the dominant class of Homo sapiens, that regards the welfare of only one of several million species as an object and beneficiary of duty" (ibid.: 84).

3.3.2.7 Points of agreement

Despite the seeming differences in the different ethical views of nature, there are some points of agreement (Yang, 2006: 28):

i) The first common principle is that of *environmental justice*, referring to both distributive environmental justice (the equal distribution of environmental benefits) and participatory environmental justice (equal opportunity in decision-making).

ii) The principle of *intergenerational justice* is an extension of the first principle and is captured in the Brundtland report, as described earlier. The right to life, liberty and happiness are considered as basic human rights across current and future generations.

iii) The principle of *respect for nature* is common among the different views of environmental ethics. No one disagrees that human beings depend on the health of the natural environment. As a result, humans have a duty to protect the integrity of the ecosystem and its biodiversity.

The three points above represent the lowest common denominator in the different ethical views of the natural environment.

3.3.3 Legitimacy

Legitimacy loosely translates to the socially accepted and expected structures or behaviour within relationships (Mitchell, Agle & Wood, 1997: 866). Legitimacy refers to reputation protection rather than reputation building (Bansal & Clelland, 2004).

Legitimacy, however, is not a mono-dimensional construct, and different stakeholders may have different expectations (Barney & Hansen, 1994). Shah (2011) defined a number of forms of legitimacy. Of importance to this study, is the perceived legitimacy of the individual firms, as well as the legitimacy of the coopetition alliance.

Partner legitimacy refers to the legitimacy that the coopetition partners bring to an alliance. A partner with a positive reputation will enhance the reputation of the alliance, while a partner with a negative reputation will do the opposite (ibid.).

Social legitimacy refers to the acceptance of the alliance by the community of stakeholders in the same field (Zukin & DiMaggio, 1990). Increased social legitimacy can lead to reduced public opposition to the operations of a firm and less antagonistic relations with stakeholders. It is therefore of particular relevance in environments associated with close monitoring and watchful communities (Dacin, Oliver & Roy, 2007).

Bansal and Clelland (2004: 92) defined corporate *environmental legitimacy* as the general perception that the environmental performance of a company is desirable, proper or appropriate. According to these authors (ibid.), firms with low legitimacy should manage the firm's

environmental performance in order to minimise negative media reports and the need to disclose environmental liabilities.

Alternatively, firms with low legitimacy should (i) invest in impression management efforts that tout their firm's commitment to the natural environment and (ii) initiate low-cost environmental initiatives (for instance, participation in community recycling). However, firms with low legitimacy must be cautious of being perceived to be greenwashing through unauthentic efforts to manage public perception (Bansal & Clelland, 2004: 101).

Firms with high environmental legitimacy have no need for impression management. Such firms can invest in low-cost legitimacy management initiatives to maintain the stability of stakeholder perceptions (Bansal & Clelland, 2004: 102).

Coopetition initiatives can serve as reputation protection for a firm, a few coopetition partners, or for an industry (as was shown in the lower left quadrant of Figure 3.2). The setting of industry environmental standards is a common example of intra-industry collaboration. Such standards are often aimed at avoiding the ratcheting up of capital investments in improving environmental performance (ibid.: 94). Such Voluntary Environmental Initiatives (Orsato, 2006; 2009) or VEIs are also vehicles to share best practice about reducing environmental impact in cases where environmental accidents would impact the reputation of the whole industry (Bansal & Clelland, 2004: 94). Figure 3.2 provided the example of Michelin tyres in Europe. Michelin experienced increased legitimacy through the implied fuel efficiency-enhancing characteristics of their tyres (Hanoteau, 2009: 39).

3.3.4 Business opportunity and the environment

Not all companies can gain a competitive advantage from environmental actions (Palmer, Oates, Portney, 1995; Batemen & Snell, 2007; Orsato, 2009). Environmental coopetition provides an attractive option to companies hoping to capture some value from environmental activities, even if competitors also gain in the process. Orsato (2009) provided a useful visualisation of how "non-rival" strategies relate to competitive strategies. Orsato (ibid) represented the universe of strategies on two continuums representing private benefits (or profits) for firms on the horizontal axis, versus public benefit on the vertical axis (See Figure 3.4). According to Orsato, the business as usual view lies along the horizontal axis, i.e. the business of business is to generate profits for shareholders (Friedman, 1970). At the other extreme lies the non-profit sector that arguably attempts to generate value for society only.

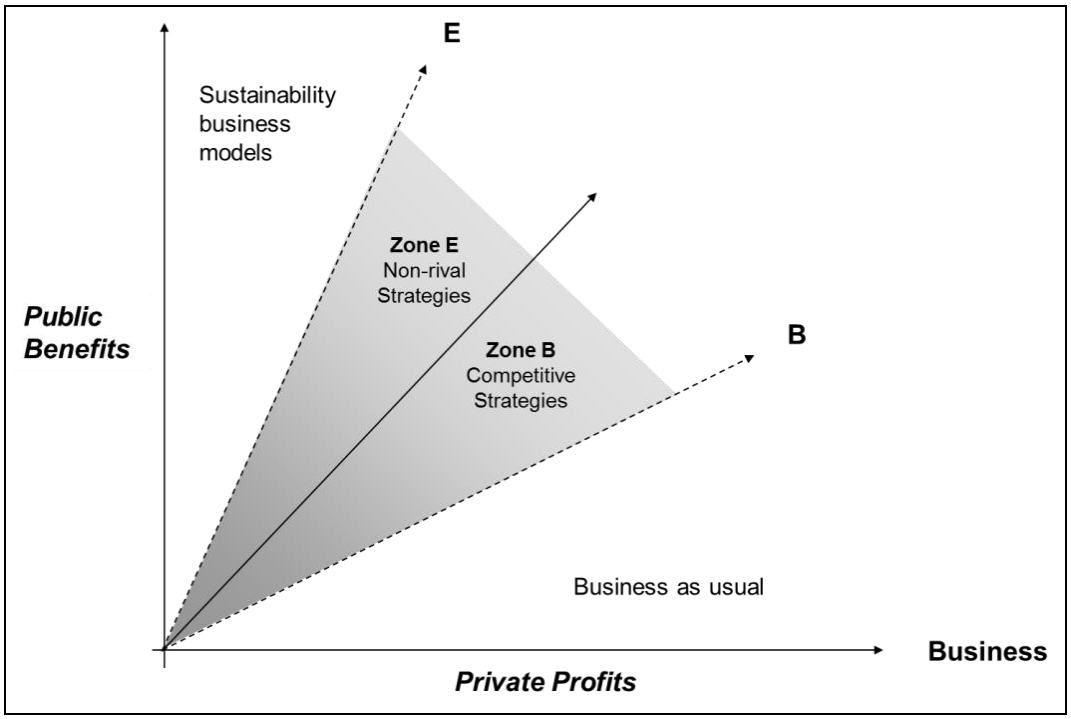
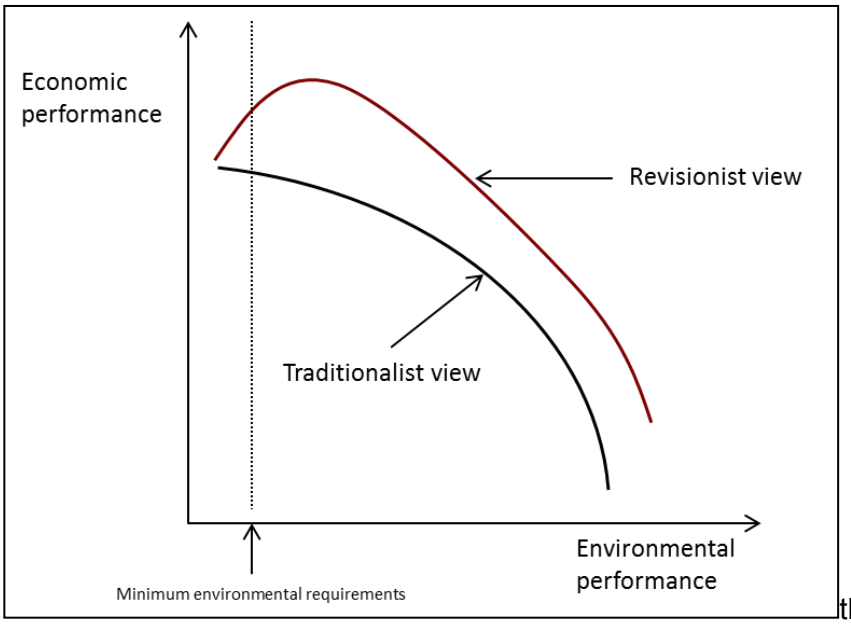


Figure 3.4: Win-win strategies balance private and public benefits

Source: Orsato, 2009.

But of course private and public benefits are not mutually exclusive. Orsato portrayed the area where both companies and society benefit as the win-win space, i.e. the shaded area between line B and line E in Figure 3.4. Within the win-win space, Orsato further distinguished between strategies that allow companies to generate or isolate a competitive advantage for itself (zone B), and non-rival (i.e. coopetition) strategies (zone E).

Just as some businesses engage with environmental action to protect their reputation, so there are companies that see a clear financial benefit to environmental projects. For many years it seemed that the dominant view was that environmental performance had to be at the expense of economic/financial performance (Wagner & Schaltegger, 2004: 558). This is illustrated by the solid black line (traditionalist view) in Figure 3.5. However, a number of recent studies and cases profess that environmental proactivity may yield a “double dividend” or “win-win outcome” , meaning a gain for the business as well as the environment (Beckman, Hielscher, & Pies, 2014: 23).



the

Figure 3.5: Economic and environmental performance

Source: Wagner & Schaltegger, 2004: 558

The financial dividend of environmental projects come in many forms. Figure 3.6 shows some of the sources of value for businesses that invest in sustainability (Kendall & Willard, 2015: 11). These benefits can have impacts at operational, investment and financing activities (Castro & Chousa, 2006: 327). Lower risk translates to lower costs (Kendall & Willard, 2015: 11) and is therefore considered as an economic driver (See Figure 3.6).

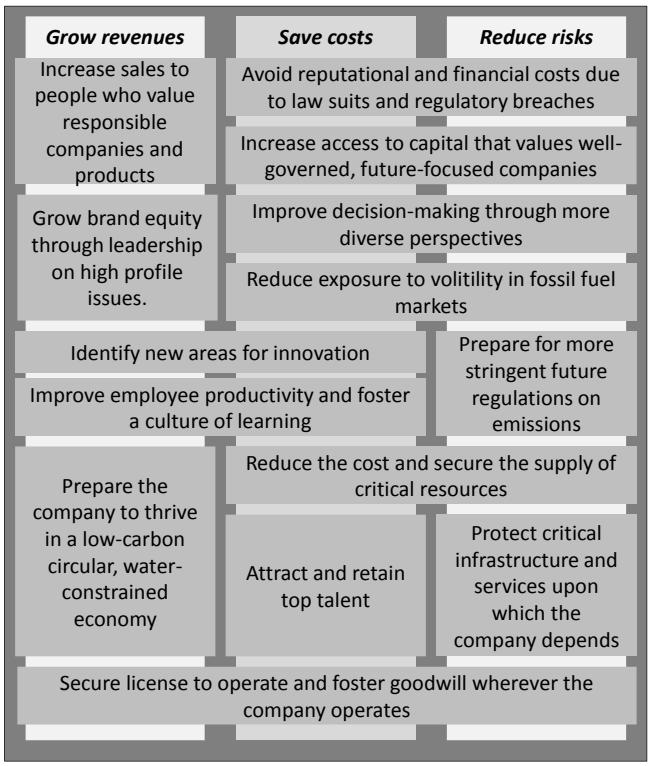


Figure 3.6: Benefits of pro-environmental behaviour

Source: Kendall & Willard, 2015: 11.

Both competitive and cooperative strategies could yield better environmental benefits while also increasing economic performance. For each of the categories in Figure 3.6, it would be possible to identify the relevance of coopetition. As a start, any of these categories can be elevated to industry level, in which case coopetition in the industry can achieve common value for all companies.

3.4 SUSTAINABILITY STRATEGIES AND VALUE CREATION

Apart from the SVF shown earlier, there are a few frameworks one can refer to that may be relevant in explaining common value and private value created for companies who engage in environmental initiatives. These models, such as the SVF, usually take a wider view of sustainability, but for the sake of relevance, this study only considered environmental initiatives.

Orsato (2006; 2009) provided a framework that focuses on competitive strategies, but which can inform coopetition strategies as well, just like the SVF.

3.4.1 Sustainability strategies

According to Orsato (2006), competitive sustainability strategies can broadly be divided into four categories (See Figure 3.7). Broadly, sustainability strategies can be aimed at:

i) Lowering processing costs (eco-efficiency);
ii) Reputation protection (beyond compliance leadership);
iii) Reputation building (eco-branding), or
iv) Providing a low cost solution in the market that is also environmentally a leader (environmental cost leadership).

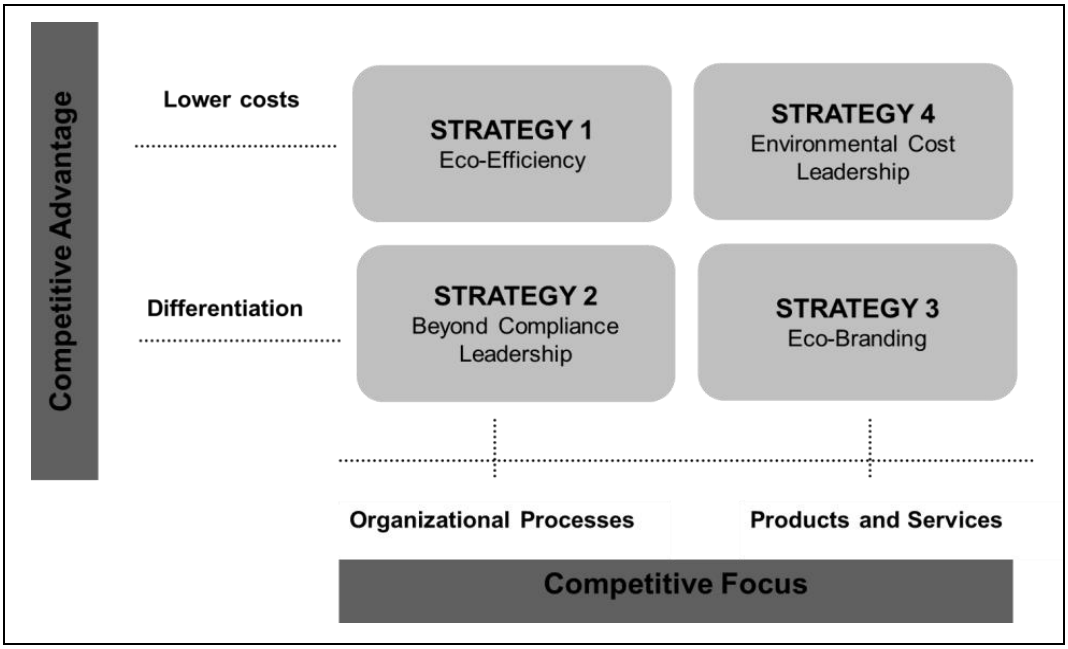


Figure 3.7: Sustainability strategies

Source: Orsato, 2009.

Each of these strategies have certain benefits, requirements and payoffs. It is important to understand these aspects when thinking about an appropriate strategy for a business. Even though these are competitive strategies, it should not imply that a business would embark on these strategies without interacting or collaborating with competitors. It does imply that companies should be able to generate a competitive advantage from the strategies they pursue. The basis for the competitive advantage is different in each strategy presented by Orsato (2006).

3.4.2 Eco-efficiency

Eco-efficiency implies an internal drive in a company to reduce the cost of processes. The term *eco-efficiency* dates back to 1991 when defined by the World Business Council for Sustainable Development (WBCSD):

> *…eco-efficiency is achieved by the delivery of competitively priced goods and services that satisfy human needs and bring quality of life, while progressively reducing ecological impacts and resource intensity throughout the life-cycle to a level at least in line with the Earth's estimated carrying capacity* (WBCSD, 2016).

Typical examples of eco-efficiency can be found in environments where there is waste that can be reused or become an input for other processes. Interface floors, one of the world's largest carpet tile producers, saved more than $200 million from 1996 to 2002 through various sustainability-related initiatives (ibid.).

It is possible that firms can optimise their processes as a result of coopetition. While the objective of coopetition may be to create common value in the form of economic or knowledge value, it is possible for competitors to learn from each other. Knowledge obtained in the coopetition relationship can potentially be applied back into the business and have both environmental and economic benefits.

3.4.3 Beyond compliance leadership

Beyond compliance leadership focuses on reputation protection and is strongly associated with legitimacy. The strategy is well suited for firms that have already implemented eco-efficiency, but are vulnerable in terms of their reputation. Examples of such firms would include firms in extractive industries (such as mining), industries that are associated with environmental damage (such as fishing), and industries that affect the natural habitat (such as the wine industry).

Such firms often protect their reputation by signing up to Voluntary Environmental Initiatives (VEIs) (Orsato, 2006). In this regard it is evident that cooperation with competitors in supporting and endorsing the VEI both allow for the protection of the VEI's brand, and the protection of the reputation of the firms belonging to it. Figure 3.8 shows a certificate of a member of the Biodiversity and Wine Initiative (BWI) in the South African wine industry. The BWI is one of the case studies discussed later in this dissertation. Beyond compliance leadership is associated with stakeholder

management, as reputation relies on public perception. Companies that excel at this strategy must therefore have a competence in stakeholder engagement.

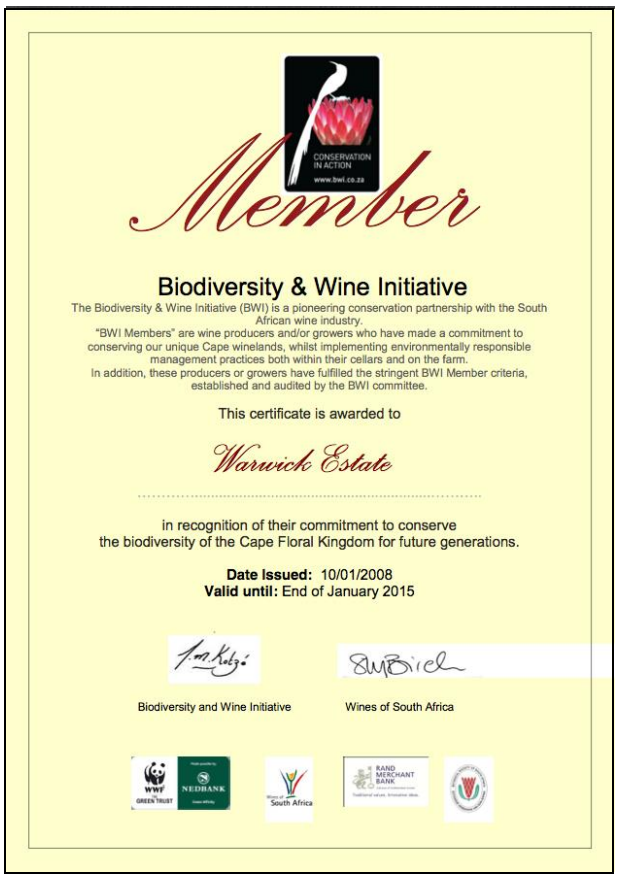


Figure 3.8: Biodiversity & Wine Initiative as VEI

Firms have choices about how to approach environmental collaboration. Peloza and Falkenberg (2009: 98) presented four permutations of strategies that firms can follow when collaborating with non-governmental organisations (NGOs). Table 3.2 shows a scaled-down version of the four strategies they presented in their paper (ibid). The upper left and right strategies (shaded area) would not be regarded as coopetition in terms of the definition used in this dissertation, as it only involves one firm. However, comparing the top row with the lower row allows for interesting insights.

As Orsato (2006; 2009) and Hart and Milstein (2003) mentioned, collaboration by firms with NGOs allow for reputation management. By involving more firms and/or more NGOs in the collaboration, it is easier to address complex issues. It is also easier to establish legitimacy for the initiative.

In this regard, single company/single NGO (top left cell) collaboration is susceptible to be seen as less legitimate structures because it may be seen as if the company is buying its reputation (Peloza & Falkenberg, 2009: 98). On the other hand, multiple companies collaborating with multiple NGOs can be weakened by free-riding (ibid.).

BWI, and some of the other case studies presented in this dissertation would fall into the bottom left strategy, namely shared contribution. As the strategy implies, BWI creates legitimacy for the

South African wine industry. The case of the Simonsberg conservancy would be an example of creating a shared infrastructure.

Table 3.2: Collaboration with NGOs and competitors

	Single NGO	Multi-NGO
Single firm	**Focused Contribution** **Collaboration examples:** Unilever/Rainforest Alliance **Examples of Objectives Achieved**: • Differentiate brand from competitors • Focused, local social impacts • Respond to NGO activism specific to firm **Key Contextual Considerations:** • Ease of management/limited resource requirements • Protects intellectual property of the firm • Susceptible to personal influence/diversion away from core business of the firm • Firm is susceptible to charges of "buying" reputation • Temptation to focus only on PR aspects • Criticisms of undue influence over NGO	**Diffused Contribution** **Collaboration examples:** Starbucks/Global Exchange/Oxfam/Oaxacan State Coffee Producers Network/Ford Foundation **Examples of Objectives Achieved:** • Address threats to firm legitimacy from multiple sources/contexts • Differentiate brand from competitors • Access new markets **Key Contextual Considerations:** • Broader/complex social and environmental goals met simultaneously • Encourage NGO investment in firm innovation • Increased management resources to coordinate disparate NGOs • Slippery slope of involvement and responsibility
Multi-firm	**Shared Contribution** **Collaboration examples:** Chemical firms/Fundación Natura **Examples of Objectives Achieved:** • Protection/promotion of industry legitimacy • Address infrastructure voids **Key Contextual Considerations:** • Promotes innovative culture of the firm • Potential for broader social impact on a focused issue • Reputational benefits accrue to competitors equally • Requires trusted competitors • Potential for loss of intellectual property of the firm • Increased management resources and attention required • Potential for loss of NGO objectivity	**Communal Contribution** **Collaboration examples:** Nike/Eddie Bauer/Nordstrom/Fair Labour Association/Human Rights First/Federation of Workers in Philippines/Cambodian Labour Association **Examples of Objectives Achieved:** • Address complex threat to industries • Consensus of priorities among numerous powerful social actors • Geographically dispersed social impacts **Key Contextual Considerations:** • Integrate perspectives from multiple powerful stakeholders • Significant management resources and expertise required • Requires the ability to negotiate priorities • Potential for free-riding

Source: Peloza & Falkenberg, 2009: 98.

Creating quality or performance standards can be regarded as cooperation initiatives aimed at creating a competitive advantage for the collaborators, especially in relation to the other competitors that are not able to meet the standards. Michelin tyres is for instance known for lobbying for lower standards of rolling resistance which would eliminate some of its competitors from the market (Hanoteau, 2009: 39). However, beyond compliance tends to deliver only a short-lived competitive advantage as competitors tend to copy the actions of leaders. Eventually the competitive advantage is eroded, and the best practice of today becomes the minimum requirement to be present in a market tomorrow. For that reason, one should not regard beyond compliance as a strategy that generates long-term brand-differentiation, but rather brand or reputation protection.

3.4.4 Eco-branding

In contrast to beyond compliance leadership, eco-branding is aimed at long-term brand differentiation. It is sometimes possible for firms to generate a premium for their products due to environmentally-friendly attributes. Eco-branding is better suited for business-to-consumer products, as business-to-business markets are less susceptible to environmental messages (Orsato, 2006: 34-35).

There are generally three prerequisites for a successful eco-branding strategy:

i) The information about the product or service should be clearly communicated, credible and not controversial. For instance, a company cannot create its own eco-label and expect the market to believe the product is environmentally superior to others. A company can also not make green claims about a product or service when other aspects of the product may be detrimental to the environment or society.

ii) The consumer must be willing to pay for the environmental benefits. For this reason, Orsato (2006: 35) maintained that it is beneficial if the environmental benefit is also associated with a private benefit for the consumer. Studies on willingness to pay have shown that consumers are typically willing to pay a higher price when they are convinced of the legitimacy and the impact of a product or service. For instance, buying green electricity creates a public benefit for society, but no private value for the consumer. In contrast, organically produced vegetables arguably create a public benefit (increased biodiversity), as well as a private benefit (a healthier diet). Attitude and perceived knowledge about the environmental issues also has an effect on the decision to pay a premium for environmentally friendly wines (Barber, 2012: 42).

iii) Competitors should not be able to replicate the green attributes. A competitive advantage from green attributes is only sustainable if competitors are unable to copy the actions of the focus company.

The third prerequisite is of particular importance to this study seeing that it implies a condition under which one company can capture common value from its competitors, or capture private benefits that its competitors have no access to.

Research in the South African context indicates that wine awards (which would be a form of eco-branding) and certifications (which can be regarded as beyond compliance leadership) play a minor role in the decision-making process of South African consumers (See Table 3.3). Herbst and Von Arnim (2009: 95) surveyed 285 South African wine consumers and concluded that awards were the second least important factor in the decision of consumers to buy wine. A second study by Raad (2014) came to a similar conclusion, but measured "social responsibility" as a variable instead of "awards".

Table 3.3: Importance of marketing cues

Cue	Mean Likert value (5 = extremely important, 1 = not important) N = 285	Mean Likert value (5 = extremely important, 1 = not important) N = 112
Variety	4.14	4.31
Recommendations		4.03
Vintage	3.75	3.52
Producer/Brand	3.58	3.81
Production method	3.33	
Attractive packaging	3.19	3.30
Region	3.03	3.26
Awards	2.97	
Social responsibility		2.81
Price	2.48	4.00
Advertising		2.93
Source	Herbst & Von Arnim, 2009: 95	Raad, 2014: 43

Source: Adapted from Herbst & Von Arnim, 2009: 95 and Raad, 2014: 43.

The two studies interestingly came to very similar overall conclusions but showed a big difference in "price" as a decision variable.

Producers can make short-term decisions about a few of the variables (such as price, packaging and advertising), but in most cases can only respond to variables in the long run (such as which varieties of grapes to plant). Social responsibility is one antecedent of the decision to buy that producers do have some decision-making freedom about. The decision for wine producers would then be whether to approach social responsibility issues as an industry or as individual wine producers. The second option may have more opportunity for private benefits, but industry issues such as loss of biodiversity are best approached as an industry.

3.4.5 Low-cost environmental leadership

Low-cost environmental leadership implies that a product or service has both the lowest cost and the lowest environmental impact. The strategy is well suited for business-to-business environments where the buyer often does not wish to pay a premium for a product and would rather buy the product or service on price than on green attributes. Orsato (2006: 136) gave the example of Ecolean packaging, which holds multiple environmental benefits as a packaging material, but also sells for less than what competitors charge for their packaging.

A recent example from the car-industry is the collaborative development efforts by PSA Peugeot Citroën and Toyota to develop a small van for the European market (Autoblog, 2015). Previously these companies had also worked on a small car that provided fuel-efficient transport at an affordable price.

3.4.6 Conclusion

The competitive strategies discussed in the previous sections are, by implication, viewed as instruments to create private value. It is easier to see the value of coopetition for eco-efficiency and beyond compliance leadership. In the case of eco-efficiency, firms are able to explicitly exchange best practice, or could learn from each other indirectly.

In the case of beyond compliance leadership, it is evident that initiatives like industry standards and VEIs require cooperation between competitors. Such initiatives require awareness from consumers and would therefore be closer to consumers. In the case of eco-branding and low cost environmental leadership, there is less opportunity for cooperation close to the consumer.

3.5 HOW VALUE IS APPROPRIATED UNDER A WIDER STAKEHOLDER LENS

3.5.1 Background

One of the core principles of coopetition is that it requires a mutual benefit for the coopeting parties (Czakon et al., 2014: 127). Particularly, coopetition initiatives are most stable when common benefits and private benefits are high (Dyer et al., 2008:146).

Lado et al. (1997) suggested that managers do not make decisions based on their own interests only, but also consider the wider socio-economic impacts. Socio-economists have argued that the decisions of managers are embedded in social systems (Granovetter, 1985), implying that a broader stakeholder view (Freeman, 2010) of value is not only warranted, but also desirable. In fact, not considering the wider implications of coopetitive actions is sub-optimal (Freeman, 2010; Hart & Milstein, 2003; Bosse, Phillips & Harrison, 2009; Harrison & Wicks, 2013) as it could potentially destroy or create value for society, and for the companies. Collusive relationships are good examples of collaboration that destroys socio-economic value (Walley, 2007).

Environmental coopetition potentially creates value for the collaborating parties, but also for the environment and for society (see earlier sections dealing with Hart & Milstein, 2003). Yet the existing body of coopetition literature seems sparse in its discussion of public value that is created through coopetition. While a number of examples of environmental coopetition exist (such as environmental standards, fishing quotas, R&D collaboration and transport agreements) only a few authors in the area of coopetition have recently ventured towards discussing *environmental coopetition* as it is defined in this dissertation (for example Steinmo & Jakobsen, 2013; Holmburg & Örne, 2013; De Marchi, 2012; Blanco et al., 2009; Limoubpratum et al., 2014). In order to understand a broader view of value appropriation, it is first necessary to briefly introduce stakeholder theory.

A stakeholder view of coopetition would not only require a different view of the value created. The question of *how much* value is created should therefore be accompanied by *for whom* value is created.

3.5.2 Stakeholder theory and the natural environment

It is well known that the same value proposition could hold different value for different parties, and that such parties would have different willingness levels to pay for the benefit (Lepak et al., 2007: 185). This is also true for environmental coopetition initiative (Berman, Wicks, Kotha, & Jones, 1999: 502); as different stakeholders would benefit in different ways from the same activity.

This study links aspects of stakeholder theory with environmental coopetition. Ironically, neither the natural environment, nor competitors are considered extremely prominent in the stakeholder literature (Driscoll & Starik, 2004; Whysall, 2000: 307; Ambler & Wilson, 1995: 4). Furthermore, the position of civil society is unclear and ill defined (Lépineux, 2005: 100).

For a long time, the interests of shareholders have been considered to be the most important obligation for companies (Freeman & Reed, 1983: 48). The poster child of this view is Milton Friedman (1970), who's infamous article in The New York Times claimed that the only responsibility for companies was to make money for its shareholders.

However, there is also a long history of authors (Berle & Means, 1932; Barnard, 1938) who were critical of the view of shareholder interest as the most important consideration for companies. Barnard (1938: 89) maintained that the role of companies is to serve society, and that the executive's role is to instil a sense of moral purpose in the company. The more modern manifestation of this view is that of stakeholder theory. The seminal work in stakeholder theory is the 1984 book of R. Edward Freeman (2010).

3.5.3 The narrow and wide views of stakeholders

Freeman and Reed (1983: 51) defined both a wide and narrow view of what a stakeholder is.

The *wide* sense of stakeholder is any group or individual who can impact or who may be impacted by the achievement of the objectives of an organisation. This could include public interest groups, the government, competitors, employees, customers, as well as the natural (or ecological) environment (ibid: 51). This definition of stakeholders most closely matches the original view of Freeman (2010: 55). The absence of civil society is notable in the definition, which appears to be an optional stakeholder in the stakeholder literature (Lépineux, 2005: 101).

The *narrow* definition of a stakeholder is any group or individual on which the organisation is dependent for its survival. This would include employees, customers, certain suppliers and shareholders.

3.5.4 Judging the importance of stakeholders

Stakeholders can be classified in a myriad of ways, none of which assists managers to identify which stakeholders are more important. Mitchell et al. (1997:845) attempted to address this issue of judging the importance of categories of stakeholders by suggesting three attributes, namely:

i) The stakeholder's *power* to influence policy;

ii) The *legitimacy* of the stakeholder's relationship with the company; and

iii) The *urgency* of the stakeholder's claim on the firm.

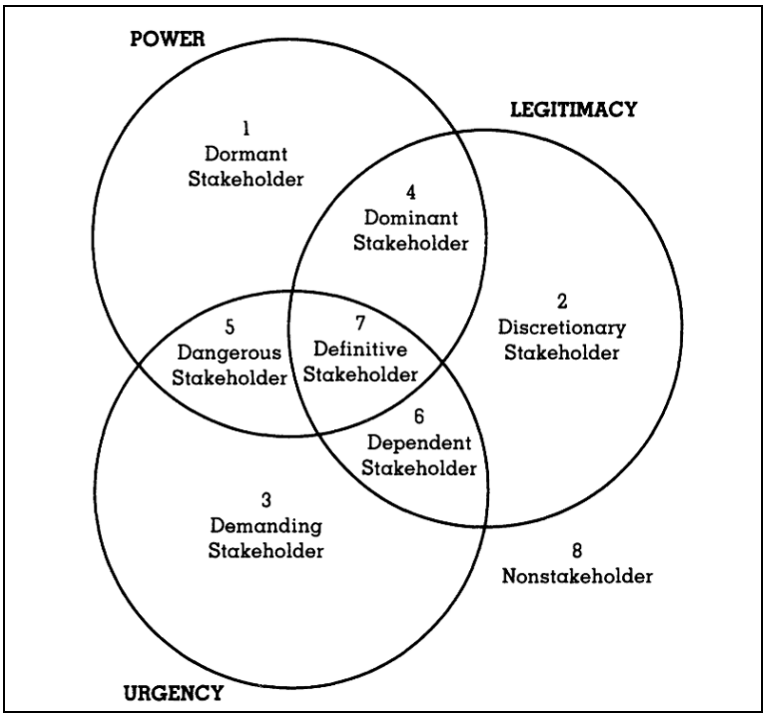


Figure 3.9: Stakeholder typology: One, two or three attributes present

Mitchell et al., 1997:845.

In addition to the three criteria suggested by Mitchell et al. (1997) in Figure 3.9, Driscoll and Starik (2004) suggested a fourth criterion, namely *proximity*.

3.5.4.1 Power

A stakeholder has power if it can exert a direct influence on the survival of the firm (Freeman, 2010). Mitchell et al. (1997) described power as the ability of a stakeholder to use coercive (force/threat), utilitarian (material/incentives) or normative power to exert its will in the relationship. This definition is not so far removed from the definition of power as stated by Weber (1947) in Section 2.6.1.

In this respect it is undeniable that the natural environment has power over many firms, both at the coercive (think about the impact of natural disasters like storms, floods and droughts on the agricultural industry) and utilitarian (consider the impact of the loss of fish stock levels on the fishing industry). Yet the power of nature is often overlooked due to the long-term and subtle impacts (Driscoll & Starik, 2004: 58), especially if one requires of stakeholders to exhibit their ability to influence the company (Savage, Nix, Whitehead & Blair, 1991). Because environmental resources are often not supplied as an economic exchange, it is frequently not considered by companies. The importance of nature as a stakeholder is also related to the weak or strong view of sustainability (Rennings & Wiggering, 1997). In the weak form of sustainability, natural capital can be replaced by other forms of capital (Gutés, 1996: 147). In such a case, nature is awarded less consideration as a stakeholder in favour of shareholders. In strong sustainability, natural capital must be sustained at the expense of other forms of capital (Ibid). It therefore recognises nature as the primary stakeholder.

Civil society is increasingly able to exert pressure on companies (Lépineux, 2005: 102) and is increasingly seen as a stakeholder with power. Public perception of the role of business is changing and more people are seeking coherence between their roles as citizens, consumers and employees (Lépineux, 2005: 102).

3.5.4.2 Legitimacy

Legitimacy has been discussed earlier (see for instance Section 1.2), but is again reviewed through a stakeholder lens. Legitimacy refers to the validity or appropriateness of a stakeholder's claim to a stake (Carroll & Buchholtz, 2012: 67) but remains a rather vague construct (Mitchell et al., 1997: 866). The basis for legitimacy could be underpinned by a contract, a moral claim, property rights, or in something 'at risk' (ibid.).

In the narrow definition of stakeholders (i.e. any group or individual on which the organisation is dependent for its survival), some scholars associate legitimate claims with stakeholders with power, or stakeholders that provide important resources to the firm (Hill & Jones, 1992: 133). In a more inclusive view, the environment has legitimacy because of being at risk because of the

activities of the firm (Clarkson, 1995: 99). In the same way a company can be at risk due to the depletion of critical resources (Driscoll & Starik, 2004: 58).

Despite the legitimacy of nature's claim on the firm, Freeman's wide stakeholder map (Figure 3.10) does not show the environment explicitly, but shows activist groups instead (portrayed in grey on top right of Figure 3.10). Whysall (2000: 308) questioned how the value of landscape quality would be incorporated into considering a new development in a green belt. Without the voice of activist groups, nature has very little presence in the conversation about stakeholder interests.

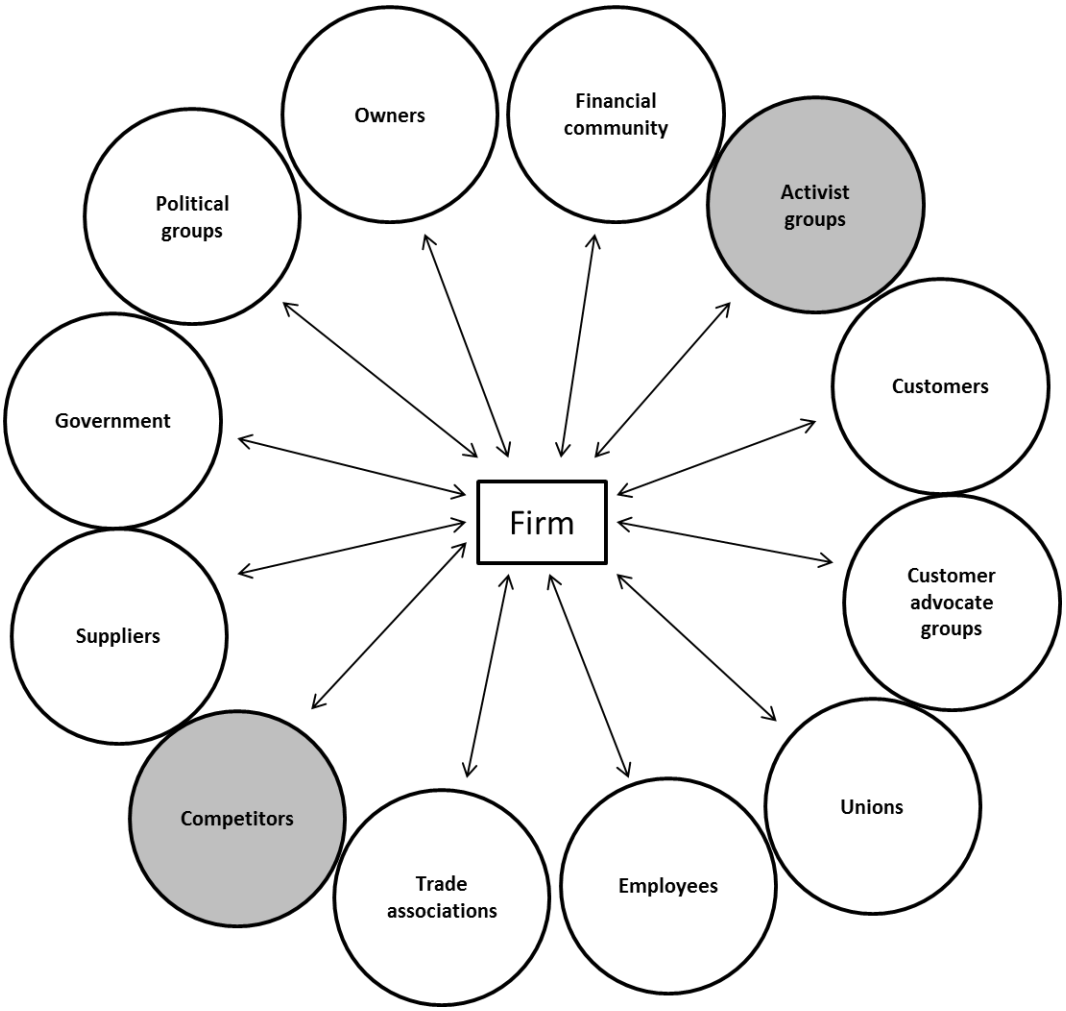


Figure 3.10: Stakeholder map of a very large organisation

Source: Freeman, 2010: 55.

Figure 3.10 is significant for another reason in the context of this dissertation. Competitors (portrayed in grey on bottom left of Figure 3.10) are not often mentioned as stakeholders (Ambler & Wilson, 1995: 4) despite the fact that they would qualify as stakeholders under both the broad and narrow definitions. Ambler and Wilson (ibid.) argued that there is little practical use to acknowledge competitors as stakeholders of each other. Notwithstanding, in the context of coopetition (and environmental coopetition) competitors co-create value and should therefore be regarded as stakeholders.

A last observation about Figure 3.10 is that it does not list the community or society as a stakeholder. Since the original 1984 version of this diagram, some authors (such as Carroll & Buchholtz, 2012: 87) have included the general public and civic groups in the map. Due to the increased pressure from civil society on firms, societal issues are appearing higher on the business agenda (Lépineux, 2005: 102).

3.5.4.3 Urgency

Urgency refers to the importance of a stakeholder's claim for immediate attention or the degree to which delay in response would be unacceptable to the stakeholder. Because environmental problems such as biodiversity loss are often slow to emerge, they are often not considered as urgent as environmental catastrophes. In contrast to environmental issues, societal issues are enjoying more urgency. Environmental issues, however, are becoming more prominent in management literature and the urgency of environmental issues are enjoying more airspace than in previous decades. The discourse around the Paris agreement on climate change in 2015 (United Nations Framework Convention on Climate Change, 2016) and plastic in the ocean (McAuly, 2016) are two recent examples.

Urgency also has an economic interpretation that is particularly evident in short-termism of business decisions (Driscoll & Starik, 2004: 205). In such cases the long-term environmental impacts of a business could be outweighed by the short-term costs of avoiding it.

3.5.4.4 Proximity

As mentioned, in addition to the three criteria mentioned by Mitchell et al. (1997:845), Driscoll and Starik (2004) suggested that the proximity of stakeholders should be considered in determining the saliency of stakeholders, i.e. which stakeholders should be taken seriously and which ones are less important.

The first instance of proximity is that of geographical or spatial proximity (ibid., 209). Stakeholders that are closer to a company naturally have a stronger voice. Furthermore, because firms operate within a specific ecological space, Driscoll and Starik (2004) argued that this additional criterion gives more saliency to the natural environment. The same argument also raises the importance of the community as a representation of the larger society.

Driscoll and Starik (2004: 209) also made reference to firms that may think in a similar way (implying cognitive proximity), as well as firms that operate in the same product market. This view of proximity brings stakeholder theory into the folds of coopetition and collaboration literature.

3.5.4.5 The importance of the environment, competitors and society as stakeholders

For a discussion about environmental coopetition, one needs to consider the importance of competitors, society and the environment as stakeholders. Neither of these three are extensively covered or acknowledged in the stakeholder literature, apart from the literature pointing at the

omission of these (Lépineux, 2005). This has also been true in coopetition research. The focus has historically been on the cooperating parties, and not environmental value. Dagnino and Padula's (2002) view of value was only focused on the company and excluded the potential of value for customers or other stakeholders. A framework that was covered earlier (Section 3.2) in this dissertation (Hart & Milstein, 2003) provides some insight about the nexus between environmental value, stakeholder engagement and organizational value. The SVF suggests that organizational value is maximized when firms engage with stakeholders and protect natural capital.

In the subsequent chapter dealing with the conceptual model, public benefit and the socio-environmental value are key components of the conceptual model.

3.6 SOCIO-ENVIRONMENTAL VALUE

3.6.1 Public good

The idea of public benefit is well established in welfare economics. In fact, Pigou already in the early twentieth century (1937: 184) described situations in which positive externalities exist and, in doing so, he provided some of the first examples of public benefit or public goods (the two terms are not synonymous) that are created through private actions:

> *It is true, in like manner, of resources devoted to afforestation, since the beneficial effect on climate often extends beyond the borders of the estates owned by the person responsible for the forest (ibid.).*

Public goods, like a better climate described by Pigou (1937), are characterised by non-rivalrous consumption and non-excludability (Bannock et al., 2003).

But environmental goods are often common goods, meaning that it is rivalrous (unlike public goods) but non-excludable (like public goods). The best example would be fish stock. No-one can be excluded from fishing, but catching a fish means that it is unavailable to the next person, i.e. it is rivalrous (Ostrom, 1990; Hardin, 1968).

3.6.2 Socio-environmental value

Narrowing the construct of value to only economic value has been criticised on the grounds that it could obscure aspects of value that extend beyond profit and economic return (Harrison & Wicks, 2013: 98; Hausman & McPherson, 2006). The researcher suggests that environmental coopetition creates *socio-environmental* value in addition to the potential for economic and knowledge value (Dagnino & Padula, 2002).

The term socio-environmental value is closely comparable, <u>but not limited</u>, to the value provided through *eco-system services* as defined by Alcamo and Bennett (2003) and *Total Economic Value* as defined by Pearce and Moran (1994). Table 3.4 provides a comparison of different classifications of value.

From Table 3.4 it follows that socio-environmental value includes both anthropocentric value (Hattingh, 2009) and intrinsic value (Rolston, 1986), and excludes value that is rivalrous, i.e. value that can be captured by companies as common or private benefit. *Socio-environmental benefits* as used in this dissertation are thus best described as *the sum of intrinsic ecological value and benefits that accrue to society because of environmental improvements*.

By implication, all socio-environmental value is public, but not all public goods are socio-environmental in nature. For instance, in the joint logistics example used earlier (see Table 2.5), there is a potential reduction in carbon dioxide emissions. The benefit to society is an improved environment and reduced climate change. Such a benefit would be a socio-environmental value and a public good. On the other hand, it may be that the initiative leads to lower maintenance costs of roads, which is a public good but not a socio-environmental benefit.

Table 3.4: Comparison of value-related terminology

	Categories of value	Description	Total economic value	Common goods	Socio-environmental value (a public good)
Use value	**Direct use value**	Value of provisioning services such as the actual use of the produce of nature (fish, timber, etc.).	✓	✓	
	Indirect use value	Ecosystem functions that provide value in the form of regulating services (flood control, disease control) and supporting services (nutrient cycling and habitat provision).	✓		✓
	Option value	The willingness of an individual to pay to safeguard an environmental resource for using it in the future.	✓		
Non-use value	**Bequest value**	The benefit accruing to any individual from the knowledge that others might benefit from a resource in future. This may include the value of spiritual, recreational, aesthetic benefits (cultural services).	✓		✓
	Existence value	Value deriving from a person's concern for simply the existence of any particular environmental asset, for instance the African Rhino, although they have never seen one.	✓		✓
	Intrinsic value	The value of a species or nature when there is no one to do the counting (Rolston, 1986).			✓

Public goods are non-rivalrous (the consumption of the good by one person does not deprive another of its use), non-excludable (it is impossible to exclude a person from using it) and are often (but not always) also non-rejectable in that individuals cannot abstain from using it, even if they wish to. (Bannock, Baxter & Davis, 2003)

Common goods are non-excludable but rivalrous. (Ostrom, 1990; Hardin, 1968)

Source: Adapted from Pearce & Moran, 1994; Alcamo & Bennett, 2003; Hattingh, 2009; Ostrom 1990; Hardin, 1968; Bannock et al., 2003.

3.7 CONCLUSION

This chapter reconciled different bodies of knowledge with that of coopetition literature in order to form the foundations for the theoretical model to follow in the next chapter.

The chapter introduced the three broad drivers of environmental activities, namely: legitimacy, the financial business case and the moral responsibility argument (see the grey pie-chart area at the centre of Figure 3.11). Legitimacy translates to value through secondary mechanisms like lower interest rates on loans and reduced reputational risk. Because the dissertation explores value, the chapter therefore continued to explore legitimacy and the financial case more than the moral case.

This chapter introduced the idea that companies create value through the strategies that they choose, albeit to lower costs, to protect their reputation, or to build reputation. Through collaboration with competitors it is possible for companies to increase the efficacy of their strategies, particularly strategies that rely on industry standards.

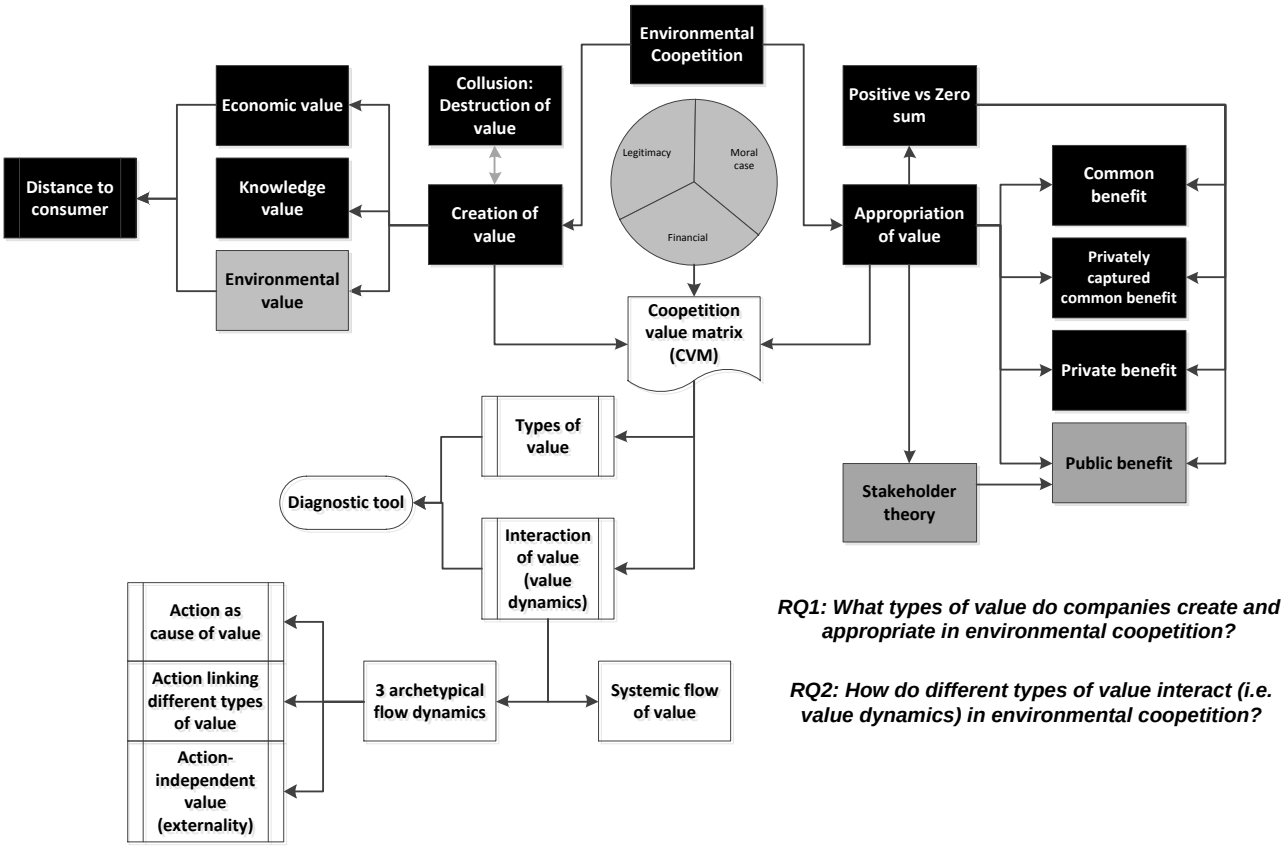


Figure 3.11: An overview of topics dealt with in Chapter 3

The chapter also introduced stakeholder theory as an expanded lens to assess the impact of environmental (and generic) coopetition. A wider view of coopetition could therefore easily incorporate stakeholder theory. In stakeholder theory, one would also consider public goods that accrue to society (see the grey areas on the right in Figure 3.11).

The chapter lastly introduced the concept of socio-environmental value (see the grey area on the left in Figure 3.11). Socio-environmental value is created when companies collaborate to address environmental issues, but which is a public good, meaning that the benefits are non-rivalrous, non-excludable and sometimes non-rejectable. Socio-environmental value could also include intrinsic value.

The following chapter explores the coopetition value matrix as conceptual model.

CHAPTER 4
THE COOPETITION VALUE MATRIX

4.1 EXTRAPOLATING FROM EXISTING THEORY

This chapter represents the culmination of the two previous theory-based chapters. Conceptually the chapter extrapolates from the existing coopetition body of knowledge by incorporating some of the theory around stakeholder theory and environmental value.

Instead of limiting the concept of value creation to benefits that exclusively accrue to the coopeting parties, the researcher suggests that it is beneficial to accept a broader definition of benefits – one that includes public benefits.

Similarly, the extant literature recognises that coopetition can create economic and knowledge value. This dissertation suggests that the value creation view should also recognise socio-environmental value.

The incorporation of these two extensions on the coopetition body of knowledge gives rise to the conceptual model introduced in this chapter.

4.2 INCREASING AND SPLITTING THE PIE

Conceptually, the dissertation relies on the analogy of a pie (Brandenburger & Nalebuff, 1996; Lado et al., 1997; Walley, 2007; Lacomba et al., 2011; Chin et al., 2008; Rusko, 2011; Ritala & Tidström, 2014) to graphically portray the creation (Figure 4.1) and appropriation of benefits/value (Figure 4.2).

4.2.1 Value creation

In order to understand the analogy, one should imagine the pie of value. When more value is created (Figure 4.1) through cooperation, it consists either of economic value, knowledge value, or socio-environmental value (Dagnino & Padula, 2002: 32; Orsato, 2009: 14; Porter & Kramer, 2011: 6). These are represented by increasing rings around the centre pie (the centre pie represents the value available without collaboration).

As the rings in Figure 4.1 move further away from the centre, the value becomes more difficult to measure and to appropriate to the coopeting parties. For instance, knowledge value is somewhat more difficult to determine accurately than economic value, while socio-economic value is non-excludable and notoriously difficult to determine.

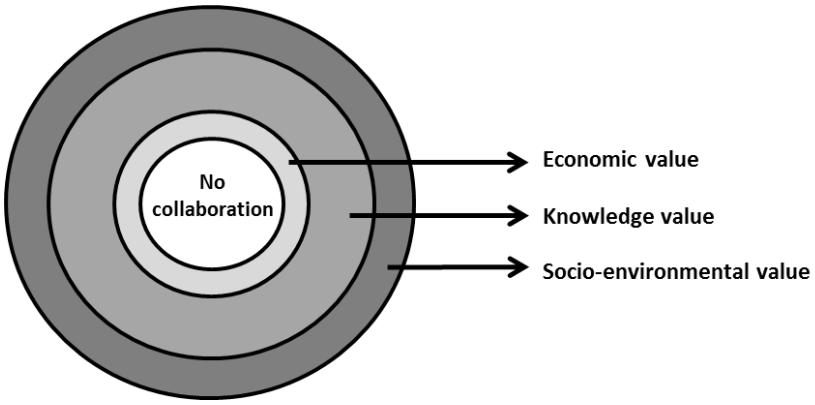


Figure 4.1: Creation of value in environmental coopetition

Source: Researcher.

In some cases of coopetition, the socio-environmental benefit may be an externality. As stated earlier in the delimitation of the dissertation, the cases that were explored in this study were chosen specifically for the deliberate socio-environmental value they create.

4.2.2 Value appropriation

Figure 4.2 provides an illustration of how the total benefits created (shown in Figure 4.1) are appropriated to coopetitors and society. For convenience of the discussion, the sections of the pie were numbered. Once again, the centre of the pie represents the situation in the market with no collaboration. The value that is created in addition to this value, is appropriated to different stakeholders.

Section 1 of the pie represents the *common benefit*. This component is as a result of the collective effort of the partners, and is accessible to all partners (one can use a hypothetical coopetitive relationship between two firms, A and B). This could for instance refer to an increase in the knowledge stock of firms based on the co-design of a product (Dagnino & Padula, 2002). Alternatively, it could be a cost saving (i.e. an economic) benefit accruing to all competitors that invest in a more efficient logistics network (Limoubpratum et al., 2014).

Section 2 portrays the common benefit captured by Firm A. In the absence of a better term, this component was labelled (as suggested before) as *privately captured common benefit*. Logically, the remainder of the common benefit is captured by Firm B. In relation to the examples above, *privately captured common benefit* in this case may represent the component of the increase in knowledge for Firm A. Or in the case of a logistics cost saving, *privately captured common benefit* represents the costs saved by Firm A due to the coopetition initiative.

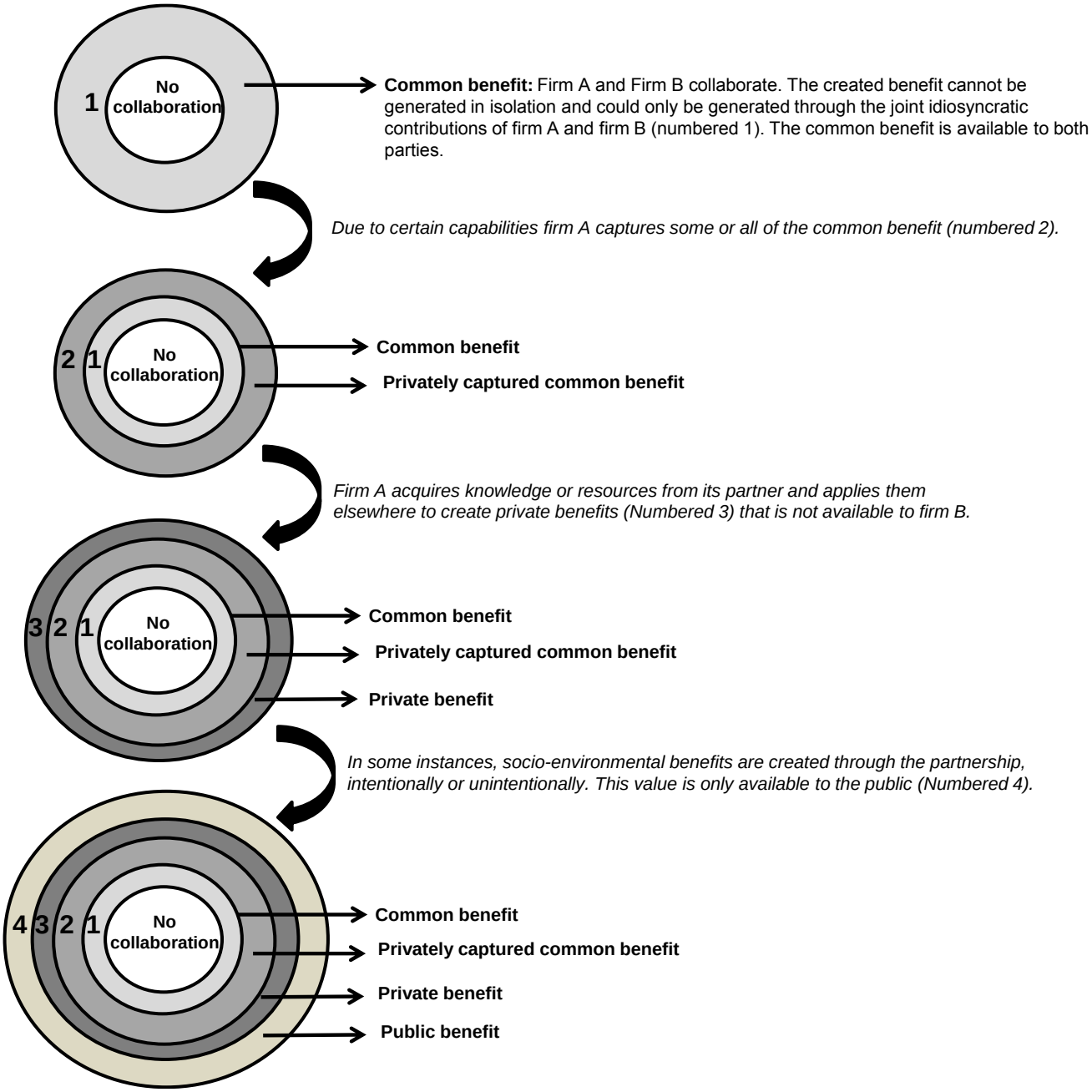


Figure 4.2: Appropriation of benefit (value) in coopetition relationships

Source: Researcher.

Section 3 illustrates the *private benefit* as defined by Dyer et al. (2008) as well as Dagnino and Padula (2002: 12; 2007: 41). Private benefits are only available to one partner by virtue of its ability to apply knowledge and resources in markets outside of the coopetitive relationship. For instance, if Firm A gains knowledge about a particular design-method from the co-design initiative, it is able to apply such knowledge to other designs. In fact, the mere availability of knowledge represents a private benefit. Firm A may also gain skills or resources from the logistics initiative that it can apply into other initiatives.

Section 4 portrays the *public benefit* (Orsato, 2009: 14). This value could consist of economic (socio-economic) knowledge or socio-environmental value but is non-excludable. By implication, all socio-environmental value is public, but not all public value is socio-environmental in nature. For instance, in the efficient logistics example used to illustrate sections one to three above, there is a potential reduction in carbon dioxide emissions. The benefit to society is an improved environment and reduced climate change. Such a benefit would be a socio-environmental value and a public good. On the other hand, it may be that the initiative creates many jobs, which would be a public benefit, but it would not be considered socio-environmental value.

4.2.3 The value creation and appropriation

The total value created equals the total value appropriated (illustrated for effect in Figure 4.3). To illustrate, one can use a thought experiment using knowledge in Firm A and Firm B. If an increase in knowledge stock takes place in both Firm A and Firm B (Δknowledge_value$_A$ and Δknowledge_value$_B$), the pie on the left (Figure 3.4) increases by the sum of the increase, specifically in the knowledge value ring, i.e.

$$\Delta value\_created_{Total} = \Delta knowledge\_value_{Total} = \Delta knowledge\_value_A + \Delta knowledge\_value_B \quad \ldots(4.1)$$

Knowledge increases by positive-sum logic, so the common benefit increases by the same amount.

$$\Delta value\_appropriated_{Total} = \Delta common\_benefit = \Delta privately\_captured\_common\_benefit_A + privately\_captured\_common\_benefit_B \quad \ldots(4.2)$$

and we know that

$$\Delta knowledge\_value_A + \Delta knowledge\_value_B = \Delta privately\_captured\_common\_benefit_A + privately\_captured\_common\_benefit_B \quad \ldots(4.3)$$

which then leads us to

$$\Delta value\_created_{Total} = \Delta value\_appropriated_{Total} \quad \ldots(4.4)$$

The total value that is created is therefore only created if it is captured. The implication is that the two pies in Figure 4.3 increase by the same amount.

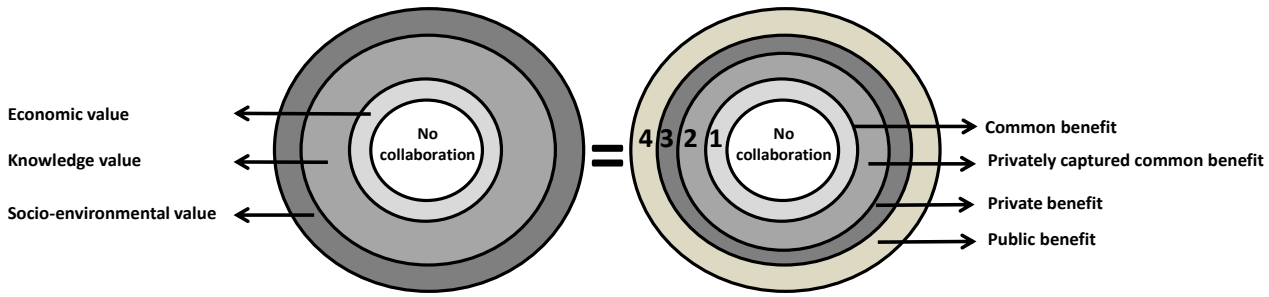


Figure 4.3: Created value is equal to appropriated value

Source: Researcher.

This argument would also hold for cost savings (an economic benefit) or for an increase in biodiversity (an increase in socio-economic value that is a public good/benefit.)

4.3 THE COOPETITION VALUE MATRIX

The previous section portrayed value creation and appropriation as two independent constructs. Combining the views of value creation and appropriation into a single typology (see Figure 4.4) enables the conceptual disaggregation of value to illustrate how the total created value is appropriated to coopetitors and other stakeholders.

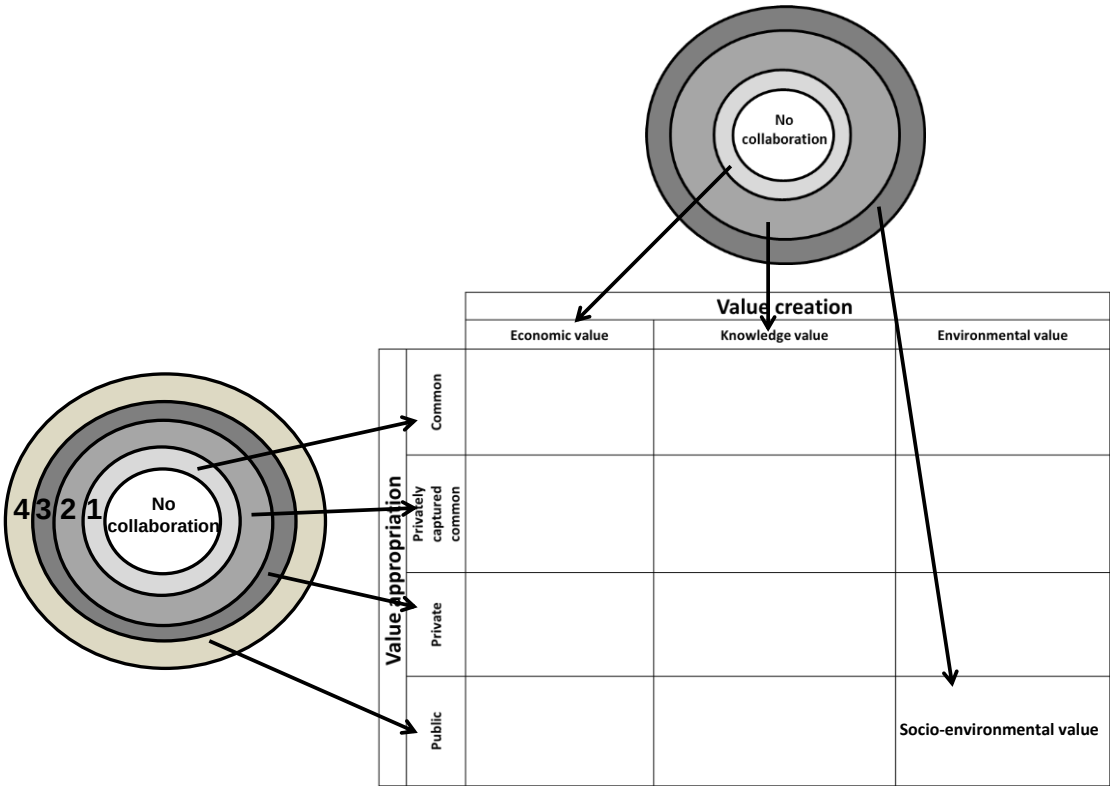


Figure 4.4: Combining the value creation and value appropriation views

Source: Researcher

The coopetition value matrix (CVM) (Table 4.1) is a typology of value that addresses the gap in the literature as identified by Garcia-Castro and Aguilera (2014) and Ritala and Tidström (2014) by:

- Improving the articulation of value creation;
- Improving the articulation of value appropriation;
- Allowing a better understanding of the dynamics of the two processes;
- Allowing a better understanding of how different manifestations of value interact;
- Allowing the articulation of potential opportunities for increased value creation or appropriation.

The CVM illustrates extensions of the existing literature by suggesting the addition of *privately captured common benefit* and *public benefit* to the nomenclature of value appropriation (left-hand

vertical column), while also incorporating *socio-environmental value* into the value creation view (lower right-hand cell in the CVM).

As the rows proceed downwards in the matrix, the benefit moves further away from the coopetition relationship. Also, as the rows proceed from left to right, the value becomes more abstract/ indirect in nature. By implication the CVM suggests that socio-environmental value is the most abstract and indirect in nature. The empirical component of this dissertation further illustrates the dynamic interaction between different types of value.

Table 4.1: Coopetition value matrix

		Value creation		
		Economic	**Knowledge**	**Environmental**
Value appropriation	**Common**	Economic value-generated as a result of the coopetition relationship in positive-sum logic (Ritala & Tidström, 2014; Park et al., 2014; Rai, 2013) - in the form of tangible (increased revenue, lower expenses) or intangible (increased brand, lower risk) value. Examples could include: • Joint R&D investment (Kenworthy, 1995) • Workforce training investment (Kenworthy, 1995) • Quicker agreement on standards (Dagnino & Padula, 2002) • Reduced Time-to-Market • Joint production	A positive-sum logic increase in the collective knowledge stock of the coopetitors as a result of the coopetition relationship. This could be aspects related to: • Industry new knowledge creation and transfer (Steinmo & Jakobsen, 2013) • Communication and information flows • Co-design (Dagnino & Padula, 2002) • Co-development	A benefit accrues to society because of environmental improvements, but this value is non-excludable (i.e. it cannot be captured by any of the coopetitors exclusively) and therefore cannot be considered as a common or private benefit. For this reason this cell is empty in the CVM.
	Privately captured common	The component of economic value captured by any particular firm of the benefit created within the coopetition initiative. By implication, the remainder of the common value is appropriated to the other participants. The appropriation can follow either positive or zero-sum logic (Ritala & Tidström, 2014).	A positive-sum logic increase in the knowledge stock of any particular firm (Steinmo & Jakobsen, 2013) that relates to the objectives of the coopetitive initiatives.	
	Private	The economic value generated by a firm outside of the coopetition relationship from skills or resources acquired inside the coopetitive relationship (Khanna et al., 1998; Dyer et al., 2008: 138; Ritala & Tidström, 2014; Dagnino & Padula, 2007: 42; Park et al., 2014). The appropriation can follow either a positive (Ritala & Tidström, 2014) or zero-sum logic (Rai, 2013).	A positive-sum logic increase in the knowledge stock of a firm that has value outside of the coopetitive relationship, but based on knowledge that was acquired inside the coopetitive relationship. Based on different backgrounds and different experiences, firms may learn different things (Steinmo & Jakobsen, 2013: 3).	
	Public	**Socio-economic value** Economic value (or socio-economic value) accruing to society as a result of the coopetitive relationship. The appropriation follows positive-sum logic.	**Public knowledge** An increase in the knowledge stock in society (i.e. public knowledge) as a result of the coopetitive activities or relationship. The appropriation follows positive-sum logic.	**Socio-environmental value** An increase in environmental value expressed as the utility for society, or as intrinsic value. Such value can derive from: • Protecting a species of fauna or flora • Reducing resource intensity • Reducing waste The appropriation follows positive-sum logic.

Source: Researcher

There is no environmental value available to the coopetitors. This aspect flows from the definition of socio-environmental value as a public good, meaning that companies cannot exclude society from access to the benefits, and therefore cannot capture value exclusively for the partnership

(common benefit) or for themselves (private benefit). However, common or private value can be generated in addition to socio-environmental value without diminishing it (i.e. it is a positive-sum).

4.4 DYNAMIC ASPECTS OF COOPETITION

One aspect which has not been discussed in much depth in this dissertation is how different types of value interact. This aspect eludes to specifically to the second research question of the dissertation. However, apart from the dynamics of value, there are also other dynamic aspects of coopetition.

4.4.1 Longitudinal shifts in relationships

The collaboration process does not remain static over time. Collaborative relationships are socially contrived and are therefore shaped and restructured by actions and the interpretation of the actions of the parties involved (Bailey & Koney, 2000). Cooperation consists of a repetitive sequence of cooperation, conflict and compromise, with each dependent on the objectives of each of the parties (Augustyn & Knowles, 2000). Wang (2008: 155) defines five stages of collaboration in destination marketing, namely

i. assembling (issue identification,partner selection),
ii. ordering (establish goals, develop programs),
iii. implementation (assign roles, exectitive programs),
iv. evaluation (assess against goals and expectations), and
v. transformation.

In the transformation stage the outcome can range from evolving into a stronger relationship to ending the relationship completely (Ibid.).

4.4.2 Value dynamics

Apart from dynamics in the relationship, value that is created and appropriated can interact with other classifications of value. Garcia-Castro and Aguilera (2014) bemoans the lack of characterization of the patterns of value dynamics, while Ritala and Tidström (2014) points towards this need at both theoretical and empirical levels. From previous sections of this dissertation, examples can be drawn of how different types of value interact.

Coopetition literature provides some anecdotal examples of how economic investments in coopetition (time, money and other resources) can lead to other forms of value:

- Joint R& D initiatives can lead to environmental knowledge (Steinmo & Jakobsen, 2013; Holmburg & Örne, 2013, De Marchi, 2012),
- Participation in voluntary environmental programs can postpone or avoid regulatory behaviour of public agencies (Blanco et al., 2009),
- Joint investment in freight solutions can lead to economic, social and environmental value (Limoubpratum, et al., 2014),

- Joint lobbying for reduced rolling resistance for tires leads to lower emissions for cars as well as increased market share for the leaders in an industry (Hanoteau, 2009: 39).

Similarly, the literature around environmental strategy provides evidence of how environmental value can lead to economic value for firms.

- Orsato's (2009) win-win strategies (see Figure 3.4) are such examples. Firms create socio-environmental value for society, while simultaneously creating value for shareholders in the form of cost savings, risk reduction or eco-branding (Orsato, 2006: 132-135; Peloza & Falkenberg, 2009: 98). As also illlustrated earlier in Figure 3.6, Kendall and Willard (2015: 11) points to a number of benefits for companies that engage in pro-environmental behaviour.
- While the traditionalist view was that environmental performance would have to reduce economic performance (Wagner & Schaltegger, 2004: 558), this is questioned by the revisionist view (see Figure 3.5).
- Previous mention was made of shared value, i.e. increasing value for both a company and economic and social conditions in the communities (Porter & Kramer, 2011: 66).
- Lastly, the sustainable value framework (SVF) of Hart and Milstein (2003) illustrates how firms create value through environmental and social initiatives internally and externally, today and in the future (See Figure 3.2).

As the examples above indicate, and as has been pointed out before, it is sub-optimal for managers not to think of the wider environmental and societal implications of their decisions, either in terms of value creation or value destruction (Freeman, 2010; Hart & Milstein, 2003; Bosse, Phillips & Harrison, 2009; Harrison & Wicks, 2013).

These examples allows us to look at the CVM as a tool to investigate, not only the classification of value, but also the dynamic interaction of creation and appropriation of value. The references provided above are mostly related to environmental and societal value and how it relates back to economic value. This and aspects will empirically be investigated further in Chapter 7.

4.5 SUMMARY

This chapter introduced the conceptual model that is applied in the rest of the dissertation. The CVM builds on extant theory (Chapter 2) by introducing concepts from stakeholder theory and environmental economics (Chapter 3). In this way the study follows a typical structure of theory building research by drawing from theory beyond the study's original theoretical domain (Ridder, Hoon & Baluch, 2014: 381). The resultant framework (the CVM) integrates the value creation and appropriation views (see grey aspects in Figure 4.5). The CVM maps nine types of value based on permutations of creation and appropriation aspects (grey areas in Figure 4.5).

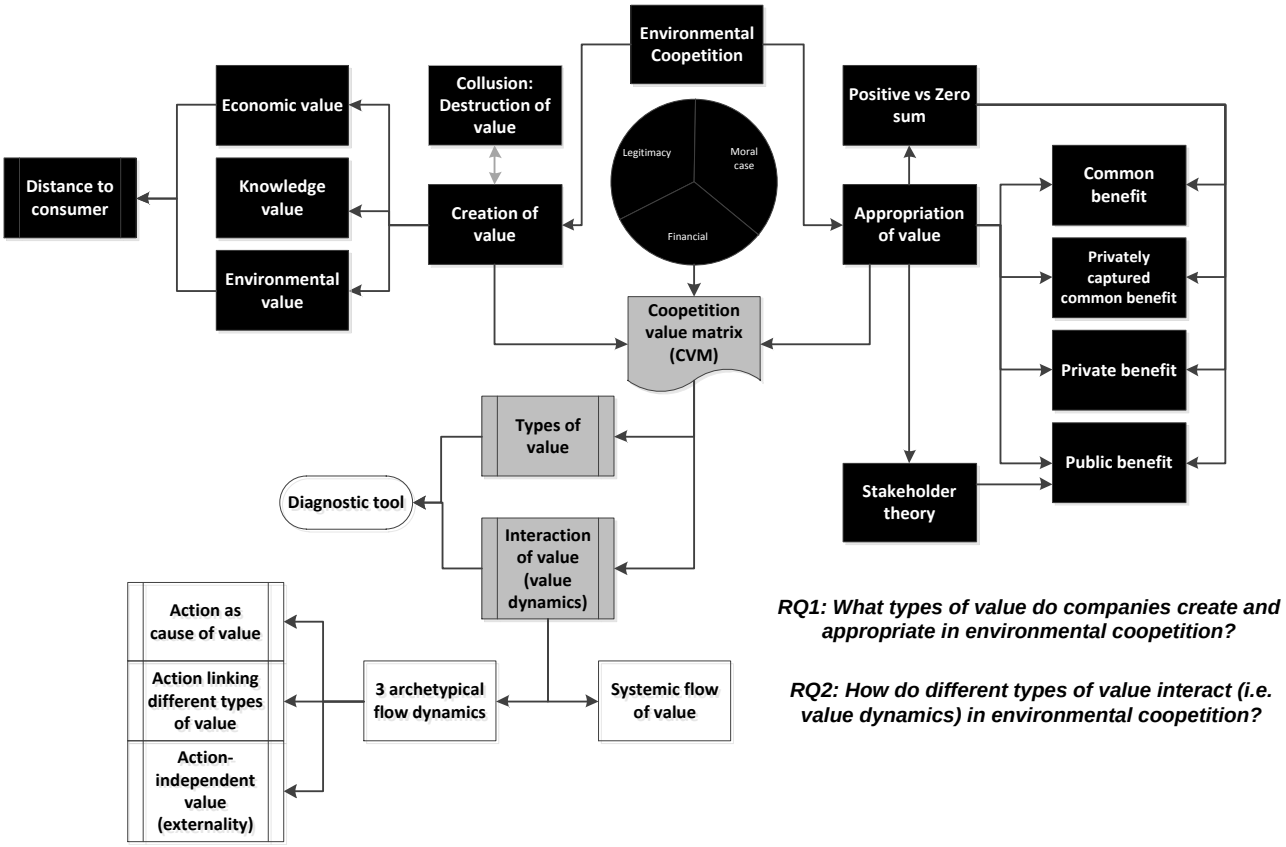


Figure 4.5: Aspects introduced in Chapter 4 (in grey)

Source: Researcher.

The next chapter (Chapter 5) provides an overview of the research design.

Chapter 6 applies the CVM to ten cases of environmental coopetition to further extend the understanding of value that is created in such cases (as reflected in RQ1 shown in Figure 4.5).

Chapter 7 applies the CVM in order to identify how different types of value may interact (as reflected in RQ2 shown in Figure 4.5).

CHAPTER 5
RESEARCH METHODOLOGY

It is said that a Chinese philosopher, upon being asked whether it is possible to cross the same river twice, replied that it is not possible to cross the same river even once! Constant flux militates against conclusions that are always and forever true. (Erlandson, Harris, Skipper & Allen, 1993: 60)

5.1 INTRODUCTION

This chapter introduces the research methodology. TerreBlanche and Durrheim (1999: 33) stated that researchers need a series of decisions, based on four dimensions, namely:

i) Purpose of the research;
ii) Theoretical paradigm informing the research;
iii) Context in which the research is carried out; and
iv) The research techniques employed to collect and analyse data.

The above points can be described as the design of a study, while the fourth point specifically refers to the methodology. This chapter provides insight of the last three points above as the purpose has already been discussed in Chapter 1.

Conceptually this chapter also provides reflection on the nature of the contribution and how the contribution was arrived at. This PhD aims to be shifting consensus rather than building consensus (Hollenbeck, 2008). It does so through building theory from case study research.

5.2 MAKING A CONTRIBUTION

Theoretical contributions, regardless of the method or type of data used, involve findings that change, challenge, or fundamentally advance our understanding of a phenomenon. In other words, it should make us think differently to what past research suggested (Bansal & Corley, 2011: 235). Furthermore, such new knowledge must be arrived at in a scientific way, i.e. in an orderly investigative way (Eisenhardt, 1989: 532; Glaser & Strauss, 1967; Ridder, Hoon & McCandless, 2015).

According to Money (2009), a contribution can be thought of at three different levels, namely: whether it contributes to (i) theory; (ii) context or (iii) method. This study's contributions at each of these levels are discussed below.

5.2.1 Contributions to theory

Ridder et al. (2014: 381) provided a map for case study researchers to allow researchers to position their research findings *vis-à-vis* existing theory (see Figure 5.1).

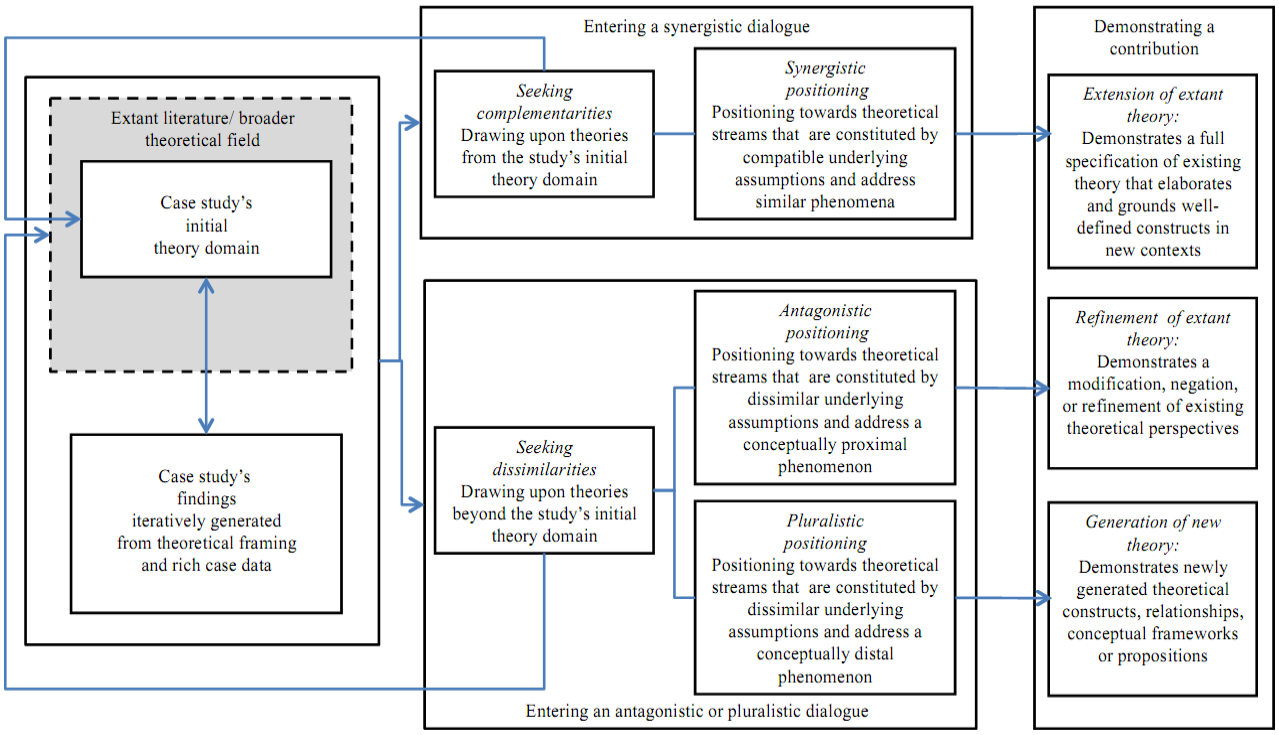


Figure 5.1: Entering a dialogue with theory to demonstrate a contribution

Source: Ridder et al., 2014: 381.

Figure 5.1 in essence implies that the outcomes of a study can extend, refine or generate theory (Snow, 2004; Ridder et al., 2014: 381). Using this typology, the theoretical contribution of this dissertation can broadly be positioned as follows:

i) *Theory extension:* The study first extended theory (Snow, 2004; Ridder et al., 2015) by showing that the extant literature of coopetition is equally applicable to the context of sustainability, or in the case of this dissertation, environmental projects.

ii) *Theory refinement:* This dissertation refined the theory (Ridder et al., 2015; Burawoy, 1991; Snow, 2004) surrounding coopetition theory through a number of refinements to the articulation of value creation and appropriation. Theory refinement entails the modification or even rejection of theoretical statements through the close investigation of new cases. New thinking about a topic can be launched by identifying a new construct, or refining existing constructs.

iii) *Theory generation:* The study lastly built new theory by identifying new constructs (Ridder et al., 2015), generating novel conceptual frameworks and developing mid-range theory by drawing on existing bodies of knowledge. PhD research can also lead to new and novel questions, an outcome that is completely acceptable as an outcome for a PhD (Remenyi & Money, 2002: 113).

Whetten (1989) stated that a complete theory must contain four elements:

i) *What:* Theories should state what variables are included. Theory should strive for balance between comprehensiveness and parsimony (only show variables that add to our understanding).

ii) *How:* The researcher should show how variables are interrelated. Typically this aspect would be portrayed by "arrows connecting boxes" (Whetten, 1989: 491). The *What* and *How* elements constitute the domain of the theory. The more complex the relationships, the more useful it becomes to graphically depict them.

iii) The *Why* question addresses the underlying psychological, economic, or social dynamics that justify the causal relationships. During a study, logic replaces data as a basis for evaluation.

iv) Theory development aims to challenge and extend existing knowledge. Hollenbeck (2008) refers to consensus shifting as opposed to consensus forming. In order to shift consensus, authors should provide compelling and logical justification for altered views (Whetten, 1989: 491).

The fourth element of Whetten's (1989) requirements of theory falls under context.

5.2.2 Contributions to context

Whetten's (1989) fourth requirement for a theory states that theoretical contributions should be framed in a *context of Who, Where and When*. Researchers need to consider if and how their findings would translate beyond the current temporal and contextual boundaries (Whetten, 1989: 491). A study can make a contribution to context by showing how the theory translates into a different context (Ridder et al., 2015). Such a contribution, however, only has merit if something in the new context suggests that the theory should not work under such conditions (Whetten, 1989: 491; Bansal & Corley, 2011: 235; Ridder et al., 2015: 162). Again, this study chose a fairly narrow but important context, i.e. environmental coopetition that has not been studied much in the coopetition literature.

The setting in the South African wine industry is also a context that has not been studied in the context of coopetition before. However, the theory that was developed in this dissertation is generic in nature and should be of much wider significance.

5.2.3 Contributions to method

A study can thirdly make a contribution by applying a new methodology in an existing field and context. The field of coopetition has been studied through multiple methods including game theoretical, experimental and case-based inquiries (Dagnino & Rocco, 2009). This dissertation makes use of a novel methodology through the mapping of value in the CVM.

The study followed a multiple case study design aimed at an iterative theory building method as typically described by Robinson (1951) and Eisenhardt (1989). In broader terms, the study followed a very typical sequence for qualitative analysis (Miles & Huberman, 1994: 9):

- The initial transcribed interviews and documents were coded using ATLAS.ti, a qualitative data analysis tool.
- From this flowed comments, reflections, etc. (often referred to as memos), that were captured.
- The researcher went through the material to identify similar phrases, patterns, themes, relationships, sequences, differences and similarities between interviews and cases, etc.
- These patterns and emergent themes informed subsequent data collection. For instance, the focus on the value aspect of coopetition emerged gradually from the data.
- The researcher gradually elaborated on a small set of generalisations that emerged from the data.
- Lastly, these generalisations were linked back to the formalised body of knowledge regarding coopetition in the form of constructs or theories.

5.2.4 The extent of a contribution

Money (2009) further stated that a contribution in only one of the three aspects (theory, context and method) may not be a big enough contribution for a PhD, but also warned that a study that attempts to make a contribution along all three axes (of Figure 5.1) may be too risky. This dissertation makes a contribution at three levels, namely at the theoretical, contextual and methodological levels. The contributions were discussed in Chapter 1, Section 1.7.

5.3 PARADIGMS, DESIGNS AND METHODS

Saunders, Lewis and Thornhill (2007: 108) used a research onion (see Figure 5.2) to explain some of the choices available to researchers regarding their research. This study can be captured by the following key terms (in red blocks in Figure 5.2):

- Case study;
- Inductive;
- Interprevist;
- Longitudinal;
- Mono method.

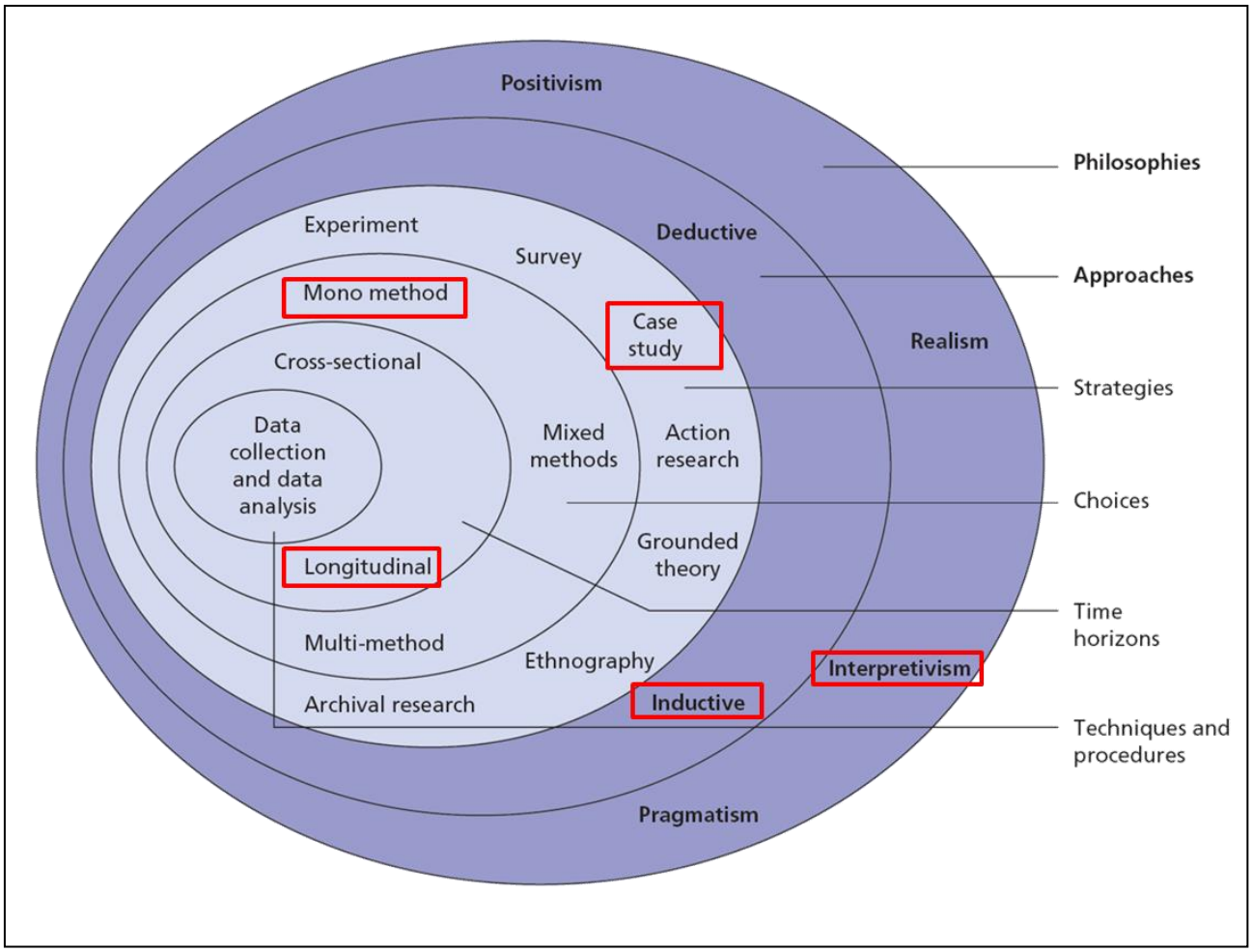


Figure 5.2: Mapping this dissertation in the research onion

Source: Adapted from Saunders, Lewis & Thornhill, 2007: 132.

This dissertation is based in the interpretivist philosophy (or paradigm) of research (see the darker grey column in Table 5.1). Ontologically, this dissertation studies the phenomenon of environmental coopetition through the perceptions of the people who are involved in the cases of environmental coopetition (Corbetta, 2003: 15).

Epistemologically the interpretivist paradigm implies that there is interdependence between the researcher and the object of study in that the researcher searches for meaning in order to create comprehension of the phenomenon (Corbetta, 2003: 15).

Qualitative researchers seek illumination and understanding (Guba & Lincoln, 1994: 113) of phenomena that may otherwise seem enigmatic or confusing (Eisner, 1991: 58). It extrapolates to other similar situations, unlike quantitative research that searches for causal determination, prediction and generalisation of findings (Hoepfl, 1997: 48).

Table 5.1: Characteristics of the basic paradigms of social research

	Positivism	Post-positivism	Interpretivism
Ontology	Naïve realism: social reality is 'real' and knowable (as if it were a 'thing')	Critical realism: social reality is 'real' but knowable only in an imperfect and probabilistic manner	Constructivism: the knowable world is that of meanings attributed by individuals. Relativism (multiple realities): these constructed realities vary in form and content among individuals, groups and cultures.
Epistemology	Dualism-objectivity	Modified dualism-objectivity	Non-dualism: non-objectivity.
	True results	Results probabilistically true	Researcher and object of study are not separate, but interdependent
	Experimental science in search of laws	Experimental science in search of laws Multiplicity of theories for the same fact	Interpretive science in search of meaning
	Goal: explanation	Goal: explanation	Goal: comprehension
	Generalisations: 'natural immutable laws'	Generalisations: provisional laws, open to revision	Generalisations: opportunity structures; ideal types
Methodology	Experimental manipulative	Modified experimental-manipulative	Empathic interaction between scholar and object studied
	Observation	Observation	Interpretation
	Observation-observed detachment	Observer-observed detachment	Observer-observed interaction
	Mostly induction	Mostly deduction (disproof of hypotheses)	Induction (knowledge emerges from the reality studied)
	Quantitative techniques	Quantitative techniques with some qualitative	Qualitative techniques
	Analysis 'by variables'	Analysis 'by variables'	Analysis 'by cases'

Source: Adapted by Corbetta (2003: 15) from Guba & Lincoln (1994: 109).

In alignment with Corbetta's view (2003: 15) of interpretivism, this dissertation made use of multiple case studies to study environmental coopetition. In this regard, Parkhe (1993: 228) argued in favour of inductive research to make advances in theory, and most particularly so in emergent fields.

In essence, as stated before, this PhD study set out to shift consensus rather than build consensus (Hollenbeck, 2008). For instance, the study questions previous coopetition research that limits the idea of value to value that is created for the coopetitors. Instead, this study incorporates stakeholder theory to show how value is created for society, for the environment, and ultimately also for coopetitors.

One of the strengths of case studies over other designs is the ability to bring the reader very close to the phenomenon and its context. Case studies are particularly useful where phenomena are influenced by, or influence, the context (Hartley, 2004: 323; Ridder et al., 2015).

By studying coopetition in the context of environmental problems, allowed the researcher to show how value is dynamic, and that the dynamics of value are different even though the classifications of value are similar.

The findings of qualitative research should generalise to theory rather than to a population (Rudden, 2006: 8.3; Mitchell, 1983: 207), and this is evident from the theory that emerged during this study.

Because of the closeness phenomenon to the context in case study research, one should note that case studies proliferate rather than narrow. It attends more to the idiosyncratic than to the pervasive (Stake, 2009). For this reason, there are always too many 'variables' for the number of observations.

5.4 RELIABILITY AND VALIDITY VS. TRUSTWORTHINESS AND AUTHENTICITY

5.4.1 Reliability and validity

The case method as a qualitative approach has certain implications for what is described as external validity or "the degree to which findings can be generalised across social settings" (Bryman & Bell, 2007: 410), as well as the external reliability of the dissertation, i.e. "the degree to which a study can be replicated" (ibid.).

Hartley (2004: 324) argued that the criteria for quantitative research, i.e. reliability, validity and generalisability can be addressed, but with different logics and evidence. Quite a large number of authors have discussed this issue, but the strongest voices belong to Guba and Lincoln (1994).

According to these authors, criteria for quantitative research are based in the realist ontological position (Guba & Lincoln, 1994: 114), or differently put, it presupposes "that a single absolute account of social reality is feasible" (Bryman & Bell, 2007: 410). Under such an assumption, research is measured against the criteria of internal validity, external validity, reliability and objectivity (Guba & Lincoln, 1994: 114) as shown in Table 5.2. Indeed, these two authors stated that:

> *These criteria depend on the realist ontological position; without the assumption, isomorphism of findings with reality can have no meaning, strict generalizability to a parent population is impossible, stability cannot be assessed for enquiry into a phenomenon if the phenomenon itself can change, and objectivity cannot be achieved because there is nothing from which one can be "distant"* (ibid.).

However, Guba and Lincoln (ibid.) proposed an alternative to reliability and validity, namely trustworthiness and authenticity.

5.4.2 Trustworthiness

Trustworthiness can be described through four sub criteria, namely: (i) credibility; (ii) transferability; (iii) dependability; and (iv) objectivity. These four criteria of trustworthiness can be matched to the requirements for quantitative research, but in a qualitative context.

Table 5.2: Trustworthiness criteria vs. Quantitative criteria

Criteria in quantitative research	Trustworthiness criteria in qualitative research	Clarification	Application in this dissertation
Internal validity (Is there a match between observations and the ideas the researcher develops?)	Credibility	"...entails both ensuring that research is carried out according to the canons of good practice" **and** confirming findings with the members of the social world that was studied.	As the study progressed, the developing theory was used to introduce the topic to interviewees. Also, at the end of a number of the interviews, the researcher would discuss aspects like the coopetition value matrix with interviewees. In many of these cases, the interviewees were excited about the conceptual development, and often would request that the final findings should be presented back to the coopetition partners. A paper that was published from the dissertation was presented to some of the interviewees who were mentioned for input and response. The responses were supportive and in agreement with the paper's findings.
External validity (generalisability)	Transferability	Providing a rich description of the social world so that other researchers can judge the transferability of the findings to other environments.	The researcher tried to maintain a balance between superfluous information about the cases, and providing a rich enough description for the reader to understand how the contexts may affect the theory.
Reliability (a sense of stability)	Dependability	The researcher should keep an audit trail to allow others to test whether inferences can be justified.	Meticulous management of the process allows for a clear audit trail. Interviews were recorded, transcribed, translated and coded. All of these steps are completely auditable and confirmable.
Objectivity (distanced and neutral observer)	Confirmability	While acknowledging that complete objectivity is impossible, it should be apparent that the researcher has not overtly allowed personal values or theoretical inclinations to influence the conduct of the research or the findings flowing from it.	While I would acknowledge that I am passionate about solving environmental issues, the focus on how value is created and appropriated in environmental coopetition cases is not impacted by my values. Providing direct quotes in many instances, allows the data to speak for itself and for the reader to judge my objectivity. Regular interaction with my supervisor and peers also provided valuable testing grounds for my own paradigms.

Source: Guba & Lincoln, 1994: 114; Bryman & Bell, 2007: 410; Miles & Huberman, 1994: 278-280.

The first three columns of Table 5.2 provide a synthesis of Guba and Lincoln (1994: 114), Bryman and Bell (2007: 410), and Miles and Huberman (1994: 278-280). The right-hand column provides insight of how the criteria for qualitative research by Guba and Lincoln (1994) were met in this dissertation.

5.4.3 Authenticity

Authenticity as described by Guba and Lincoln (1994) extends the criteria to measure qualitative research to include also fairness, ontological authenticity, educative authenticity, catalytic authenticity and tactical authenticity (See Table 5.3).

Table 5.3: Clarification of Guba & Lincoln's authenticity criteria

Guba & Lincoln's authenticity criteria in qualitative research	Clarification	Application in this dissertation
Fairness	Does the research reflect the opinions of all the members in a social setting?	Interviews included participants of coopetition initiatives, industry bodies, environmental activists, as well as other stakeholders. Interviews were also triangulated with other types of data such as academic journal findings, websites and company reports.
Ontological authenticity	Does the research assist members to gain a better understanding of their social environment?	The coopetition value matrix assists stakeholders of environmental coopetition initiatives to better understand how and for whom value is created.
Educative authenticity	Does the research assist members to better appreciate the views of other members of the social setting?	The coopetition value matrix allows the disaggregation of value, which in turn helps members to understand why and how different stakeholders benefit from environmental coopetition initiatives.
Catalytic authenticity	Does the research stimulate to action?	Not a particular aim of the study, although a request from some respondents indicates that the findings would act as catalyst to action.
Tactical authenticity	Does the research empower action?	A better understanding of how socio-environmental value facilitates the creation of common and private value can increase the likelihood of action. Yet this aspect was not a particular objective of the study.

Source: Reworked from Bryman & Bell (2007: 414) and Guba & Lincoln (1994: 114).

The authenticity criteria for qualitative research has not made much impact on qualitative research, and are sometimes regarded as controversial (Bryman & Bell, 2007: 414). For instance, for the purpose of this PhD study, it was not envisioned that the study would attempt to strictly meet the criteria for catalytic or tactical authenticity.

5.5 THE RESEARCH QUESTION(S)

Although the "coopetition" body of literature could be considered as intermediate (in most respects) or even mature (in fewer respects), there is little discussion in coopetition theory about environmental coopetition as a phenomenon. Instead, theory dealing with environmental coopetition would be considered emergent. Emergent theory "proposes tentative answers to novel questions of how and why, often merely suggesting new connections among phenomena" (Edmondson & McManus, 2007: 1158).

This dissertation makes a conceptual contribution to the need for a better understanding and articulation of value creation and appropriation dynamics (Garcia-Castro & Aguilera, 2014; Ritala & Tidström, 2014; Park et al., 2014) by addressing two parallel research questions.

RQ1: What types of value do companies create and appropriate in environmental coopetition?

RQ2: How do the different types of value interact (i.e. value dynamics) in environmental coopetition?

The research questions narrowed considerably during the process of research (See Appendix A for a view of the original scope and Appendix B for the original interview guide).

Early in the research process (specifically during interviews for the case dealing with conservation of the riverine rabbit; the case was eventually excluded from the study), it became evident that there was little economic or knowledge benefit for some participants in the coopetition initiatives under investigation, while other partners comparatively reaped more of the benefits. Thus, the question of value creation and appropriation emerged, and it soon became the primary focus. As stated by Eisenhardt (1989), the crisper question allowed more focus in other parts of the research process, such as the literature review and the interviews. (This aspect reiterates the refinement of research questions, the focus and the cases as implied by steps 4, 5, 5a and 5b in Figure 5.3.)

Because the theory underpinning both RQ1 and RQ2 is emergent, it required a qualitative approach. Large sample quantitative studies would have been inappropriate in this dissertation. A number of reasons can be given to support this statement:

i) Firstly, there is no sampling frame of coopetition cases in the wine industry of South Africa. And because the phenomenon is unknown to most respondents, one would not be able to perform an industry-wide survey to arrive at such a list.

ii) Related to this point, because there is so little known about the forms of environmental coopetition and how the concept should be described, a quantitative study would have been inappropriate.

iii) Thirdly, there simply is not enough known about environmental coopetition and the dynamics of value creation and appropriation in such cases to warrant deductive approaches. Deductive research tends to aggregate a phenomenon without considering different contexts. Clearly, such an approach could not have worked for this study.

Lastly, the *How* research question hints at an inductive process (Edmondson & McManus, 2007: 1158; Yin, 1981).

5.6 BUILDING THEORY FROM CASES

5.6.1 Motivation for the case method

Case study theory-building tends to be inductive (Hartley, 2004: 324). Yin (2009) compared the method to that of a detective sifting through evidence (some relevant and others not) to determine what happened, why and under what circumstances. But such work is not just undertaken to understand the features of the particular case, but also draw out findings that are applicable to a wider base (Hartley, 2004: 324). While quantitative studies rely on statistical inference, case study research relies on 'logical' inference. Yin (2009) distinguished, in a similar way, between 'empirical' and 'analytical' generalisation.

Not all inductive studies require a disregard for *a priori* knowledge as is sometimes required of grounded theory (Remenyi, 2013a: 29; Yin, 1981; Ridder et al., 2014: 381). Without a strong link to a theoretical framework, case study research may deliver results that are fascinating in a particular context, but is of no further significance (Hartley, 2004: 324). The research focus of this dissertation did not evolve independently of the relevant theory, and was therefore much closer to analytic induction (Manning, 1982) than grounded theory (Glaser & Strauss, 1967).

In essence, Figure 5.3 provides a good overview of the way in which the study evolved. The study originated from a practical problem in the wine industry relating to environmental coopetition. A preliminary investigation of the coopetition body of literature identified that:

- The field lacked sufficient depth in the context of environmental coopetition;
- There was no literature available about the public benefit that was created in such cases;
- The existing nomenclature of coopetition lacked the semantic clarity to describe the value constructs effectively.

The study therefore originated from an apparent gap in the literature, and because so little was written about environmental coopetition, an inductive approach was chosen.

Figure 5.3 illustrates the broad structure of the methodology that was followed. The structure resembles the outline suggested by Bryman and Bell (2007: 406), but the process is very similar to that put forward by Kathleen Eisenhardt's seminal paper on how to build theory from case studies.

Eisenhardt's (1989) paper made an important contribution to the field of case study research and has already been cited more than 25 000 times. The paper combined a number of previous views on qualitative methods, design of case study research (Yin, 1981) and grounded theory (Glaser & Strauss, 1967) and extended the work further to include areas such as *a priori* specification of constructs, triangulation of multiple investigators, within-case and across-case analyses and the role of existing theory (Eisenhardt, 1989: 533).

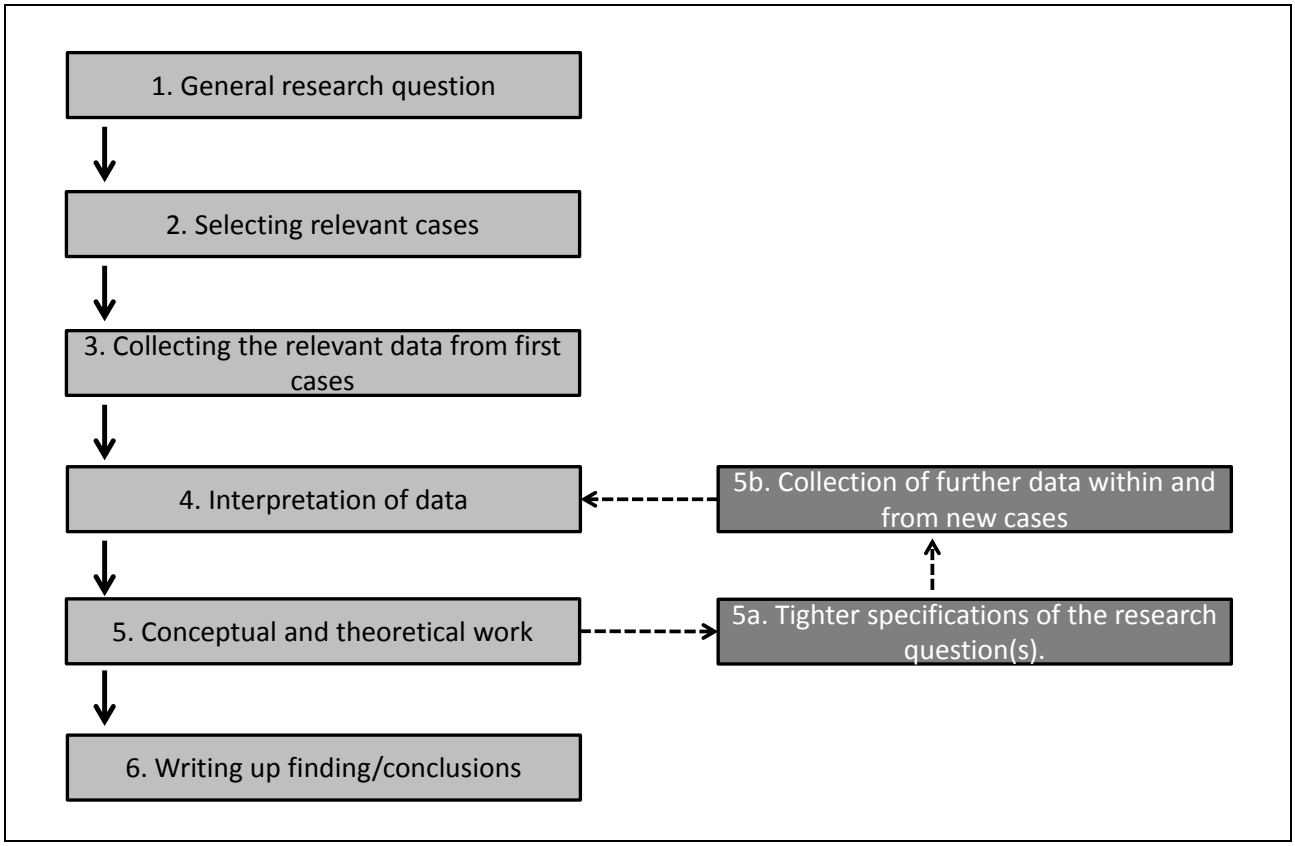


Figure 5.3: An outline of the main steps in the research methodology

Source: Constructed from Eisenhardt (1989: 533) and Bryman & Bell (2007: 406).

Yet it is important to note that case study research does not aim to generalise to a population, but rather to generalise to similar cases (or to theory). For this to happen, enough context must be provided to allow the reader to generalise as they identify essential similarities. For this reason, the demands for typicality and representativeness require a proper description of the target case (Stake, 2009: 23).

Yin (1981) listed three reasons for using case studies in building theory, i.e.:

i) It is essential in the early development stage of knowledge (when the existing literature is not developed enough to allow for explicit hypotheses (Ridder et al., 2015: 142));
ii) It is required to understand the phenomenon in its real-life context; and
iii) When the boundaries between the phenomenon and the context are not clear.

Case study research is therefore ideally suited for an emerging (or poorly described) phenomenon such as environmental coopetition.

5.6.2 Selecting cases

Due to a lack of examples and discussion in the literature around environmental coopetition (as also pointed out by Steinmo & Jakobsen, 2013: 5), this dissertation should be seen as an exploration of the intricacies of the phenomenon of environmental coopetition through selected purpose-chosen case studies (i.e. using judgemental sampling).

The higher the level of heterogeneity of the cases used, the more problematic it becomes to generalise from a single case or few cases (Gomm, Hammersley & Foster, 2009: 104). Heterogeneity itself is not the problem as much as heterogeneity that will impact on the nature of the phenomenon under study. Case researchers can overcome much of this limitation by using theoretical ideas and information about cases in their analyses, and by selecting cases based on such ideas and insights (Gomm et al., 2009: 105).

There are different strategies in case selection. Cases can be selected for the fact that they are typical in some respect. Cases, however, can also be selected to reflect extremes within the expected heterogeneity (Gomm et al., 2009: 107). This dissertation only made use of cases in which the environmental coopetition phenomenon occurs, and not cases in which it does not (ibid.). "Qualitative sampling often begins by recruiting participants solely based on whether they have experienced the research topic in question" (Bryant & Charmaz, 2007: 232). Case-studies that do not contribute to society's understanding or the ability to explain, cannot be regarded as knowledge (Remenyi, Money, Price, & Bannister, 2002: 15). The selections were further based on certain characteristics, such as the type of environmental problem the company experienced, size, position as sustainability pioneer, reputation in the industry.

There is no sampling frame for coopetition initiatives, hence the initial interviewees were purposefully selected (Neuman, 2000: 198) because of the wine companies' position in the industry, either through prominence or reputation for sustainability. During the interviews, the focus shifted to cases, and cases were identified through snowball sampling (Neuman, 2000: 199). At the end of the interviews, participants were asked whether they were aware of other examples of environmental coopetition.

One of the problems with snowball sampling is that respondents know each other because they are similar or are friends, and therefore hold similar views and paradigms. The researcher therefore often approached bodies that stand removed from specific case studies, such as Conservation at Work, World Wide Fund for Nature (WWF), the Biodiversity & Wine Initiative (BWI) and Wine Organisation of South Africa (WOSA).

The objective of interviewing people in organisations such as WOSA and WWF was twofold: They firstly provided access to other cases that may not be similar to previous cases, and secondly, provided different perspective on cases than the coopeting parties (informant triangulation). (This approach should remind the reader of the structural holes theory discussed earlier, specifically because connecting with unconnected networks allows for better insight.)

All in all, cases were heterogeneous in the sense that all cases focused on environmental coopetition. However, cases were pursued based on differences rather than similarities in order to gain as much insight into how aspects such as the number of partners, the nature of the environmental problems, and proximity impact these initiatives.

Another difficulty experienced in this study was the lack of distinction between sustainability activities that happen within case companies, but have no relation to the coopetition activities, and those activities that happen in or between participants of the coopetition initiative. Often respondents would refer to value of environmental initiatives, but under closer investigation, the activity would not be related to coopetition.

In an extreme example, one case company (associated with interviewee W10) is widely recognised for its proactive environmental initiatives, but had very little interaction with other wine producers regarding joint sustainability initiatives apart from industry initiatives such as the Biodiversity & Wine Initiative (BWI). The reason was that it was isolated and had no wine-producing neighbours. It hence belonged to industry initiatives such as the BWI, but had no other interaction with competitors.

A key question in case study research revolves around the number of cases that should be studied to make a robust conclusion (Remenyi, 2013b: 23). A single case may suffice to falsify a theory, as with Popper's (1968) famous example of a black swan. Such a strong case can, in itself, be regarded as a contribution to theory (Ridder et al., 2014: 378). But falsifying a theory is seldom considered enough of a contribution (Whetten, 1989: 492). After all, most theory can be considered an approximation of real life; so finding an exception may not be considered sufficient to shift consensus. It is also important to provide a better explanation of phenomena in the place of the original theory. Without a better explanation, it is hard to tell whether the original explanation is really flawed, or just the best explanation at the time of a complex world (ibid.).

Because one case is often not sufficient, most authors who write about building theory from cases (Eisenhardt, 1989; Ridder et al., 2015; Remenyi, 2013b; Snow, 2004) recommend multiple case studies for theory-building. Two cases often are not considered sufficient for PhD research. For PhD research Remenyi (2013b: 23) recommended three to four cases, sometimes perhaps even five. Because academic research requires cases in depth, most supervisors would consider more than five cases more than enough work for a PhD study (Remenyi, 2013b: 23). This dissertation considered more than double this number of cases in line with Eisenhardt's suggestion of five to ten cases (1989: 545). More than ten cases is considered unwieldly (Miles, Huberman & Saldaña, 2014: 34).

Not all cases were studied at the same depth. Gomm et al. (2009: 107) maintained that it is not necessary to study all cases in the same depth. While one or two cases may be investigated in depth, others may be examined more superficially to check the generalisability of findings from earlier cases. This resonates well with the iterative approach that Eisenhardt (1989: 533) described for building theory from cases. Another aspect to depth is that some cases just plainly does not have as much 'meat' as others do. Particularly, one case in this dissertation could only be described superficially, but it also represented a rather shallow level of coopetition.

5.7 THE CONTEXT OF THE STUDY

5.7.1 The initial wider context

The nature of the dissertation is such that the conclusions of the study are likely to be generalisable to other industries and contexts. What is more important is to point out why the wine industry was an ideal context to investigate.

At the outset of this study, one of the objectives was to explore how the industry context would impact the types, methods, motivations and barriers of environmental coopetition (RQ6 in Appendix A). As a result, three industries were considered, namely the fishing, the wine and the forestry industries. Because there is no central database of coopetition or environmental coopetition initiatives, early interviews were less focused on specific examples of environmental coopetition, and more on understanding the prevalence of such cases in the three industries.

The following emerged from this broad overview:

i) The fishing industry has been plagued by cases of collusion in the past. The industry is dominated by only four large players, and it is an industry that already suffers under controversy due to the pressure on fish stocks. Companies in the fishing industry therefore do not want to work directly with one another, but rather choose to work through government departments to agree on quotas, and via organisations like the Marine Stewardship Council for industry standards. Apart from these examples, most interviewees stated that cooperation was extremely limited. For instance, fishing companies cannot collectively manage the waste of two adjacent canning plants because this could potentially allow the companies to estimate the size of their competitor's production. Knowing the extent of a competitor's production could potentially be considered collusion, even in cases where it constitutes an authentic effort for eco-efficiency. As a result, companies are extremely weary of talking to each other about synergies, and are even more weary of speaking to a researcher who studies cooperation with competitors.

ii) The forestry industry is even smaller in terms of the number of large players, and there was also a practical issue that these companies were not geographically close to the researcher. No interviews were conducted in this industry.

5.7.2 The wine industry as context for environmental coopetition

The wine industry turned out to be an ideal context for this dissertation. The industry is highly fragmented, with the number of wine producers estimated to be close to 500, while grape farmers are estimated at 3 800 (South African Waste Information System, 2014). Historically the wine estates did not compete with one another and were highly regulated until 1994. Remnants of the absence of competition are still visible in the ease with which some of the bigger players seem to cooperate. Given the fragmented nature of the wine industry, the industry experiences little discomfort with competitors interacting. For this reason, and other reasons that will become more

visible later in the study, the industry has ample examples of environmental coopetition. By focusing only on one industry, much of the variability in context was removed.

The wine industry in South Africa is vulnerable to climate change, mostly in terms of water sensitivity. While the industry in itself does not have a major carbon footprint, it is considered vulnerable to the impact of climatic changes and water scarcity.

But vulnerability also pushed in the opposite direction. One of the major impacts of the wine industry is that it affects negatively on the floral biodiversity of the region. Nearly 95 percent of wine growing in South Africa happens in the Cape Floral Kingdom (Fairbanks, Hughes & Turpie, 2004: 1075), known for its *fynbos* – the most diverse flora in the world.

The above context is sufficient for the understanding of the ten cases to follow in the next chapter. Each of the cases elaborates further on the wine industry and its dynamics.

5.8 INTERVIEWS

Section 5.6.2 provided an overview of how the cases were selected. Depending on the case, between two and five people were interviewed with the specific objective of gaining an understanding of the interviewee's perspective of the case. In some instances, interviewees were sufficiently informed to provide perspectives on more than one case.

The duration of the interviews ranged between twenty minutes and almost two hours (see Table 5.4). On average, the interviews were one hour and four minutes in length. All but one of the interviews were subsequently transcribed.

Thirty-two (32) qualitative interviews were conducted, after which thirty-one (31) interviews were transcribed. Thirty (30) of the interviews dealt with the wine industry. Ten cases were selected from the interviews for further analysis.

Cases were disqualified when:

- It was not from the wine industry (e.g. Oceana fisheries, part of the original scope of the study);
- It was too similar to another case (e.g. the Groenberg Conservancy);
- There was insufficient data on the case (e.g. the Orange river/KWV waste treatment plant); or
- There were insufficient interviewees who could speak with confidence on the case (e.g. the riverine rabbit conservation case).

All three the cases from the wine industry mentioned above were very similar to other cases, so the researcher believed that not much was lost by disqualifying these cases.

Table 5.4: Interviewees case matrix

#	Inter-viewee	Description	Position	Date of interview	Duration of interview	Cape Leopard	TGRC	BWI	Greater Simonsberg Conservancy	Mealybug	Organic Farmers Association	Reyneke Wines	Winetech	Eerste River	Solamoyo
1	W1	Wine producer. Premium brand, known as a sustainability leader, more than one wine farm in different regions operating under the same brand, medium sized in bottling capacity	Marketing manager	8 Jul 2011	Not recorded										
2	W2	Wine producer. Diversified liquor company, medium sized in bottling capacity.	Communi-cations executive	8 Jul 2011	1:27		x						x		x
3	W3	Wine producer. Diversified liquor company, medium sized in bottling capacity.	Manager: Strategic initiatives				x						x		x
4	W4/W15	Wine producer. Diversified liquor company, large sized in bottling capacity.	Sustainability manager	13 Jul 2011	1:23		x	x	x				x		x
5	W5	Wine producer. Known as a sustainability leader, medium sized in bottling capacity.	CEO	16 Jul 2012	1:17		x	x						x	
6	W6	Robertson area wine producer. Premium brand. Known as a sustainability leader, more than one wine farm in different regions operating under the same brand, medium sized in bottling capacity.	Sustainability manager	29 Aug 2013	2:04	x		x							
7	W7	Robertson area wine producer. Provider of grapes to the cooperative. Diversified farm (olives, aromatic oils, accommodation).	Wine grape farmer	3 Oct 2013	1:30	x									
8	W8	Robertson area wine producer. Cooperative	CEO	3 Oct 2013	1:24	x		x							

Table 5.4: Interviewees case matrix (continued)

#	Inter-viewee	Description	Position	Date of interview	Duration of interview	Cape Leopard	TGRC	BWI	Greater Simonsberg Conservancy	Mealybug	Organic Farmers Association	Reyneke Wines	Winetech	Eerste River	Solamoyo
9	W9	Wine producer. Diversified liquor company, large sized in bottling capacity. Has board representation on glass recycling company board	General manager	11 Mar 2014	0:45		x								
10	W10	Wine producer. Stellenbosch area, known for pro-active environmental initiatives, does not cooperate much apart from BWI.	Wine maker	21 Jan 2015	0:34		x	x				x			
11	W11	Wine producer, part of Greater Simonsberg Conservancy, BWI Champion. Is a farm under the control of Distell.	Wine maker	29 Jan 2015	0:46			x	x	x			x		
12	W12 / N5	Wine producer, part of Greater Simonsberg Conservancy, BWI Champion Person interviewed is a coordinator of the conservancy and therefore plays a dual role.	Conservancy manager	12 Feb 2015	1:18			x	x	x					
13	W13	Wine producer. Known as a sustainability leader, medium sized in bottling capacity.	Sustainability manager	18 Feb 2015	1:13			x						x	
14	W14	Wine grower/producer	CEO/Owner & Conservancy manager	10 Mar 2015	1:08				x	x					
14	W15	Wine producer. Diversified liquor company, large sized in bottling capacity.	Sustainability manager	13 Apr 2015	0:54	x		x					x	x	x
16	W16	Wine grower/producer. Elgin region. Known for sustainability initiatives.	CEO/Owner	20 Apr 2015	1:36	x		x							
17	W17	Organic wine farm. Stellenbosch region.	Managing director	29 Apr 2015	0:38			x	x	x	x				
18	W18	Biodynamic wine farm. Stellenbosch region.	Owner	12 May 2015	1:06			x			x	x			

Table 5.4: Interviewees case matrix (continued)

#	Inter-viewee	Description	Position	Date of interview	Duration of interview	Cape Leopard	TGRC	BWI	Greater Simonsberg Conservancy	Mealybug	Organic Farmers Association	Reyneke Wines	Winetech	Eerste River	Solamoyo
19	W19	Ultra-premium wine producer, small bottling capacity, Stellenbosch region.	Owner	11 Sep 2015	0:39			x				x			
20	W20	Organic farmer, supplier of grapes to organic wine producer W18.	Owner	15 Sep 2015	0:41					x	x	x			
21	N1	Environmental NGO operating in Robertson and other areas.	Activist	27 Feb 2014	1:00	x									
24	N3	Environmental multinational NGO	Manager	1 Aug 2012	1:14										
25	N4	Environmental organisation	Project manager	24 Jun 2014	1:18	x		x	x						
26	N5 / W12	See W12	Manager												
27	N6	Environmental multinational NGO. Local initiative in the wine industry.	Project manager	16 Feb 2015	0:48			x	x						
28	N7	South African NGO working with conservancies.	Chairperson	10 Apr 2015	0:43	x		x	x						
29	J1	Journalist working in the wine industry.	Journalist	23 Apr 2015	0:30	x		x	x						
30	T1	Industry body	CEO	31 Mar 2015	0:52		x								
31	F1	Farmer	Owner	24 Apr 2015	0:54	x									
32	N8	Wine body	Communica-tions Manager	13 May 2015 19 May 2015	0:48				x						

5.9 INFORMED CONSENT AND ETHICAL CLEARANCE

5.9.1 Anonymity of respondents vs. anonymity of case companies

The study and the way it proceeded provides an interesting perspective on the ethical aspects. For a start, while it was easy to ensure the anonymity of the respondents, it was never a consideration to make the case companies anonymous, as the discussion of value for different stakeholders would be impossible to convey without providing contextual information, such as pictures of labels or other physical pieces of evidence. Any attempt to make the cases anonymous would undermine any claim of intrinsic value of the cases (Gomm et al., 2009: 99).

On the other hand, because the environmental coopetition initiatives are generally in the public domain, none of the respondents expressed any sensitivity around the discussion of this in the dissertation. At the writing up stage of the study, it was deemed necessary to obtain permission from respondents to use the names of case companies. It is not uncommon in case study research to use the names of case companies. See for instance Ritala and Tidström (2014) and Bengtsson and Kock (1999).

5.9.2 Expressing views on behalf of companies

Another important aspect revolved around the ability of respondents to talk on behalf of the companies they may work for. In this regard it is important to note that respondents were not required to talk as official representatives of any organisation. Respondents were chosen based on their involvement in, or knowledge of, environmental coopetition initiatives. Such people were best equipped to provide insight in the perceived value that is created by environmental coopetition initiatives. However, this was also clarified by requesting respondents to provide a declaration that they were entitled to respond on behalf of their organisations.

The nature of the study is such that it falls in a low-risk category. The information required for the study is not confidential, and the focus is on the motivation, value, and mechanism that lead to the particular instance of environmental coopetition. Respondents were usually requested for an interview by email and had the right to decline. During the interview itself respondents were again given the background and focus of the study, and had the option to decline. None of the interviewees who agreed to an interview declined the interview once it had commenced.

5.10 TRIANGULATION

One of the ways to increase the robustness (or grounding) of qualitative research is through triangulation (Miles & Huberman, 1994: 266; Bloor & Wood, 2006; Eisenhardt, 1989). Denzin (1989) distinguished between four kinds of triangulation. Table 5.5 below shows the four methods of triangulation that were applied in this study.

Table 5.5: Triangulation in this study

Type of triangulation	Description	How the principle was applied in this dissertation
Data triangulation	Using different data sources to study the same phenomenon	Data triangulation was interpreted in a number of different ways. First, environmental coopetition was studied through a number of different cases. Secondly, most of the cases relied on a number of different views of the same case. This can be regarded as informant triangulation (Stake, 1995). Thirdly, not only were coopetition partners interviewed, but in a number of cases, other stakeholders were included as sources. Lastly, in many of the cases, other sources such as websites, brochures, meeting documents and emails were included as sources or at least consulted.
Investigator triangulation	Using different investigators in the same study	In the absence of multiple interviewers, the researcher strived for regular discussions with supervisors, colleagues and peers to discuss the study.
Theoretical triangulation	Using different theoretical models in the study	The study relied on theory from multiple theoretical models that ultimately formed part of the new theoretical framework. For instance, the study relied both on the theories surrounding value creation and value appropriation, and further incorporated theory from stakeholder theory and environmental economics.
Methodological triangulation	Using more than one method to study the phenomenon	The study did not make use of methodological triangulation. Section 5.5 provides a motivation why a qualitative approach was most suitable to this study.

Source: Adapted from Denzin, 1989; Stake, 1995.

To benefit from triangulation, one should select triangulation sources that represent different biases (Miles & Huberman, 1994: 267). Interviews for this dissertation were conducted with a broad range of stakeholders in order to triangulate the results (termed informant triangulation by Stake, 1995). Some of the interviewees included persons working with the NGO and non-profit organisation (NPO) environment in order to corroborate or contrast the views of coopeting entities, but also to identify further cases. Interviewees included neighbours to the coopetition initiatives, people no longer involved, the dissidents, the renegades and the eccentrics (Miles, Huberman & Saldaña, 2014: 36).

Table 5.4 provides an overview of the interviewees. In some instances, supporting material from websites, founding documents, annual reports and marketing material served as further sources of evidence (data triangulation).

Triangulation is not without its critics. Some believe that triangulation is too positivist (Remenyi, 2013b: 98). Bloor and Wood (2006:171) argued that there is always “one best method” to address a research topic. Triangulation therefore requires one to address a research topic with a

supplementary method that could be inferior to the main one. This is not problematic when the inferior method corroborates the result. Nevertheless, triangulation seldom provides confirmation (Bloor & Wood, 2006:171) or access to the 'truth' (Remenyi, 2013b: 98). Such contradictory results may just be because the second method is inappropriate (Bloor & Wood, 2006:171), leaving the researcher in the predicament of deciding which result is the truth (Miles & Huberman, 1994: 266). There is no easy way of resolving contradictions in evidence. Instead, such contradictions should be seen as an opportunity to see a much richer picture and have a better understanding of the issues involved (Remenyi, 2013b: 98). Of course, in qualitative research, such contradictories add to the tapestry of the case, while quantitative research may battle to incorporate contradictory information from multiple sources.

Respondents were typically asked a number of open-ended questions, including giving examples of environmental coopetition based on a short explanation of the phenomenon.

A number of semi-structured interviews (see Appendix B for the initial discussion guide) had been conducted in the wine and fishing industries. See Table 5.4 for a list of the interviewees and which cases were discussed. Since the start of the interviews, the focus had narrowed to the wine industry only, but the interviews in the fishing industry provided valuable insight. For instance, due to the small number of large players in the fishing industry, the threat of collusion accusations poses a significant barrier to address environmental issues collectively.

5.11 UNIT OF ANALYSIS

The units of analysis of the study were the various instances (or cases) of environmental coopetition (Section 5.6.2 provided insight into the selection of cases). In order to find examples of such initiatives and therefore study the phenomenon, the researcher chose specific case companies in the wine industry. In order to understand the collaboration initiative and the appropriation of value, it was necessary to interview more than one participant in the particular initiative (at least two, as would be the case with dyadic initiatives). Each of the cases in itself is a 'whole' or stand-alone study (Parkhe, 1993: 251).

The way in which the study was structured also allowed the cases to be revisited, and even to interview the same respondents again (See Table 5.4). Such interviews provided an interesting longitudinal perspective. Overlapping collection and analysis also allowed the freedom to collect data from different sources as it became available. Such additions of new data would be completely inappropriate in most quantitative studies that aim to summarise a situation at a particular time (Eisenhardt, 1989: 539).

It is important for the researcher to be intimately familiar with the details of each case. Within-case analysis is therefore very important. This approach allows the researcher to understand and to document the unique features of each case, and also to allow readers the ability to identify commonalities with cases they may wish to generalise (Eisenhardt, 1989: 540).

It is common feature in case study research aimed at building theory for data collection and data analysis to overlap (Eisenhardt, 1989: 538). This is reflected in Figure 5.3 as the cycle of theorising and collection of further data (see step 4, 5, 5a and 5b). Field notes and reflection is an important component of qualitative and case study research. It is often difficult to anticipate what will be important in the future. Typical reflection would include "what did I find different in this case from previous cases", "what am I learning" or "how does this case corroborate or contradict previous cases".

But more importantly, overlapping data analysis and collection allows for flexibility in the data collection methods or the cases that are pursued (Eisenhardt, 1989: 539). For instance, as mentioned before, the researcher started with an elaborate and extensive interview guide (Appendix B). As the focus of the study narrowed, many of the questions became less important or even irrelevant.

5.12 DATA ANALYSIS

The most important requirement for qualitative analysis is clear thinking on the part of the analyst (Robson, 2002: 459). Miles and Huberman (1994) viewed analysis as three concurrent flows of activities, namely:

i) Data reduction;
ii) Data display; and
iii) Conclusion/verification.

5.12.1 Data reduction

Qualitative data can be overwhelming in its volume. For instance, the interviews for this study altogether consisted of approximately 850 pages of transcriptions. Data reduction already starts by choosing cases for the additional contribution it can make. Cases are selected, either because they are similar to previous cases, or because they are different to previous cases (Gomm et al., 2009: 107). When saturation occurs, one stops. After data collection, data is typically reduced through summaries and abstracts, coding, writing memos etc. (Robson, 2002: 459).

Coding of data is a key activity in the reduction of data. First cycle coding refers to the assignment of labels to quotations in the text (Saldaña, 2010: 45). Similar parts of texts that may refer to a particular construct, relationship, theory or some other common theme are in this way collected. Assigning labels to pieces of text is known as descriptive coding or topic coding and is often the first stage of qualitative data analysis (Saldaña, 2010: 70).

Codes may emerge from the data itself as is the case with grounded theory (Glaser & Strauss, 1967) studies, but could also be defined based on the literature. In this study, the codes were allowed to emerge from the text, but in many cases the iterative comparison with available literature assisted in aligning codes with the extant literature.

Most of the interviews for this dissertation were conducted in Afrikaans to accommodate the interviewees. As a result, the majority of the transcriptions were in Afrikaans.

First coding in ATLAS.ti was also done using the original Afrikaans text to acknowledge as much of the original meaning as possible. Only once particular segments of interviews were identified as important to use in the dissertation, these segments were translated to English. The translation was done in two parts. The segment was translated using Google translate, and then reviewed by the researcher (see Table 5.6 for an example). Care was taken to preserve the original meaning of the text. In some instances, a language expert verified the accuracy of the translations.

Table 5.6: Example of translation in stages

Original transcription of interview in Afrikaans	Ja, maar kyk, ons organiese – ons is sê nou maar 15, 16 plase saam, en dan sê nou maar ons gaan na ŉ wynskou toe, dan boek ons as ŉ organiese liggaam, so dan staan al ons organiese plase bymekaar. So met ander woorde, as die ou organies soek, dan hoef hy nie vir jou uit te soek tussen al die ander en waar jy wegraak nie. So dan is jy basies apart saam met hulle, en dit is ook tog direkte kompetisie.
Google translation of interview	Yes, but look, our organic - we are , say, 15 , 16 farms together , and let's say we go to a wine show when , then book us as an organic body , so then we are all organic farms together . So in other words , as the old organic search , he need look out for you among all the other and you get lost. So then you basically separately with them, and that is yet direct competition.
Revised translation	Yes, but look, our organic group - we are, say, 15, 16 farms together, and let's say we go to a wine show, then we book as an organic body. So then all the organic farms stand together. So in other words, if someone is looking for organic wine, he doesn't need to search for you among all the other where you would have disappeared. Thus we form a group that is differentiated from the rest of the market, but compete with each other directly.

The interviews were analysed and coded (Saldaña 2010) using ATLAS.ti, a computer-aided qualitative data analysis software package. Initial coding was based on themes from the literature, but new codes emerged when the existing constructs were insufficient to describe the data.

Most of the interviews were coded more than once as the focus of the study progressed. As Figure 5.1 at the start of this chapter indicated, the analysis of the data oscillated between working with theory, working with data, and reviewing the conceptual model. Data collection, coding and theorising (Edmondson & McManus, 2007: 1158) thus happened concurrently. This aspect also aligns with steps 4, 5, 5a and 5b in Figure 5.3. As the analysis and interpretation of data progressed, the researcher was able to put tighter specifications (step 5a) on the initial research questions (Appendix A) and the interview questions (Appendix B). Based on a clearer focus, later interviews were generally much more focused. This was also the reason for repeating some interviews to gather further and new data.

Second level coding categorises the initial codes into fewer groups or families of codes (Robson, 2002: 477; Friese, 2012: 184). Saldaña (2010: 159) referred to this as axial coding, meaning you define an axis that draws together a group of codes. Typical code families identified text addressed

the research questions, such as the benefits of environmental coopetition (e.g. economic value, common benefits, etc.). However, the coding also identified peripheral themes such as the drivers of coopetition, e.g. consumer pressure, reputation building, and altruistic behaviour.

5.12.2 Data display

Qualitative data is often in the form of large volumes of text. Displaying data in figures, tables, matrices, etc. provides a way to reduce data, but also a way of making sense of data (Miles & Huberman, 1994). Doing so allows one to get a feel of what the data is telling you, what conclusions can be drawn, and what further analysis needs to be done. This was indeed the case with the CVM, which allowed the data to tell its own story once it was mapped into the CVM. Table 5.7 (on the next page) shows how quotations were used to populate the CVM for one of the cases. From the quotations, the CVM was populated with more generic descriptions.

5.12.3 Conclusion drawing and verification

Already at the start of data collection one starts to draw conclusions, noting patterns, relationships, structures, etc. (Robson, 2002: 459; Miles & Huberman, 1994: 245). While case study researchers search for convergent evidence regarding the conclusion for each case, these conclusions should inform the choice of new cases and the information that needs replication by other cases (Yin, 2009; Miles & Huberman, 1994; Ridder et al., 2014: 378). If subsequent cases provide support for the propositions that were shaped from earlier cases, it provides compelling support for the theoretical model, which in turn allows for the generalisation to new cases (Parkhe, 1993: 251; Ridder et al., 2014: 375). However, if these cases are contradictory in some way, the early propositions must be revised and retested with yet more cases (ibid; Manning, 1982: 280).

The power of case study research lies in its power to build theory beyond the specific case at hand, not through statistical generalisation, but through analytical generalisation in which researchers attempt to generalise a particular set of results to broader theory through induction (Robinson, 1951; Yin, 2009).

On the one hand, the data analysis in the dissertation looked for complementary arguments from the interviews regarding value creation and appropriation, and on the other hand, the analysis looked for dissimilarities. While looking for similarities helped to understand how the extant theory could be applied in environmental coopetition, the search for dissimilarities was aimed at refining and generating theory to help understand what value is created and how it is created.

A large part of the analysis relied on reflection, and two instances serve to show the power of reflection. Firstly, the CVM came to exist when the researcher was asked at a conference in Sweden to provide examples of different types of value. The resultant table did not seem significant until the researcher reflected on the conference with a supervisor. During the reflection, the value of the CVM as a diagnostic tool became evident.

Table 5.7: Coopetition value matrix for the Rooiberg Breederiver conservancy

		Value creation		
		Economic value	**Knowledge value**	**Environmental value**
Value appropriation	**Common benefit**	The leopard also, if you kill them, then all that will happen is that the jackal will come and Caracal will come, and then you have bigger problems. There are only four Leopards; if these things come, it will be hundreds of them. And then your chickens are gone, because everybody keeps chickens, everyone is keeping a pig or a sheep or something, you know.	So, (name removed) is our main source [of information] for everyone here. There is a guy who is always willing to assist- (name removed) has only one problem, and that is to get hold of him. Because he is busy. But if you get hold of him, that guy will have all the information you need.	
	Privately captured common benefit	…um… you know I'm sure that Graham Beck didn't put the leopard on their label for...for just pretty picture sake. I think they intend to sell more wine.	So how the hell will I get to him? How can I just drive to (name removed) and say I want to see (name removed) and now he maybe would not want to see me because he has things to do. Now you build those personal relationship with people you normally would not build, different reasons, it's not every guy who comes your way and be your friend.	
	Private benefit	Our conservation practices, farming initiatives and drive to reduce our resource use, reusing and recycling where we can, have seen us achieve champion conservation status BWI and recognition at major greening awards. (Graham Beck website)	We make cosmetic products from our olive oil, and the chemist who designed this thing, spoke of putting fynbos in it. He wants us to identify the fynbos … which one is poisonous and which one is not. Which one is a skin irritant? … And a member told me I should speak to Susan. … The next day, there she was. And we walked through the field and she says "that thing and this thing and this thing. That one you use, you leave that one, that one". ... So, a spin-off I'll say she should be there.	
	Public benefit	The leopard also, if you kill them, then all that will happen is that the jackal will come and Caracal will come, and then you have bigger problems. There are only four Leopards; if these things come, it will be hundreds of them. And then your chickens are gone, because everybody keeps chickens, everyone is keeping a pig or a sheep or something, you know.	The net benefit has been such that the wider community are now aware that they actually living amongst these animals [leopards] and they have done for generations."	You know there's an intrinsic value, there's an ecosystems value, there's a biological value in maintaining your trophic pyramids…But how do you assign value to...to all those virtues. … you know that's part of what I call the intrinsic value. It certainly has an aesthetic` value, a tourism value, there's a brand value

A second example of the power of reflection is the conversation about value dynamics (which became Chapter 7). At the outset of the study, it was not envisioned that there would be any potential to study the dynamics of value. However, once the CVMs were populated for a number of

cases, it became clear that there were definite patterns in how different types of value affected each other. Presenting these preliminary flows at a PhD colloquium helped in refining them further.

Furthermore, once the different flows were identified, it turned out that there were too many to really make sense of them. A further extraction led to the identification of the three generic patterns of value dynamics at the end of Chapter 7.

5.13 SHAPING THEORY

An important component of building theory from cases is building definitions and understanding constructs. Themes, concepts and relationships between variables emerge as the within and cross-site analysis proceed (Eisenhardt, 1989: 541).

Miles and Huberman (1994: 245-246) suggested thirteen tactics (arranged roughly from descriptive to explanatory) of generating meaning from your data:

i) Noting patterns, themes and trends;
ii) Seeing plausibility (do the trends, patterns and conclusions make sense);
iii) Clustering;
iv) Making metaphors;
v) Counting;
vi) Making contrasts & comparisons/sharpens understanding;
vii) Partitioning variables (when one variable is, in fact, two or three) (ibid., 254);
viii) Subsuming particulars to the general;
ix) Factoring;
x) Noting relationships between variables;
xi) Finding intervening variables;
xii) Building a logical chain of evidence;
xiii) Making conceptual/theoretical coherence.

This process of making meaning from data consists of two components, namely: (i) refining the definitions of constructs; and (ii) building evidence that exhibits or measures the construct in each case (ibid., Manning, 1982: 281).

A good example of this process in this dissertation is the development of the construct of *privately captured common benefit*. In the starting phase of the research, the theory only allowed for common and private benefit (Khanna et al., 1998; Dyer et al., 2008: 138). As the interviews proceeded, however, it became clear that the language of value lacked the clarity to describe the component of common value that is captured by a particular partner. The concept of privately captured private benefit was accordingly introduced. This is what Miles and Huberman (1994) referred to as partitioning, while Ridder et al. (2014) broadly referred to theory refinement.

Once the concept was created, the researcher went back to the interviews to find instances where privately captured common benefit appeared. As more cases were added to the analysis, a distinction was made between *privately captured common benefit* that relate to knowledge value and economic value specifically. The term therefore increased in nuance. Further investigation led to establishing a causal link between knowledge-related *privately captured common benefit, and economic value, either at the common or private level.*

The process described above is not that different from developing a single construct measure in hypothesis testing (i.e. quantitative) studies. Using multiple pieces of evidence, the researcher builds up construct measures that define and measure the construct (Eisenhardt, 1989: 542). One difference is that the construct and its measurement emerges from the evidence, rather than defining it in advance. A second difference is that there is no technique like factor analysis to collapse multiple indicators into a single construct measure. The reason is that the indicators may vary across cases as not all may have the same measures. Furthermore, qualitative measures are often difficult to collapse (ibid.).

Theory that is developed from the iterative case study method described above is by definition high in construct validity.

Part of building internal validity in case study research is building the *Why* behind relationships. Qualitative data is particularly good for understanding *Why* relationships (Yin, 1981). Just as with hypothesis testing research, relationships between variables may be by chance, or could reflect the impact of another variable. It is therefore important to discover the underlying reasons and plausibility for relationships (Miles & Huberman, 1994: 246; Eisenhardt, 1989: 542).

5.14 ENFOLDING LITERATURE

As stated before, this study attempts to shift consensus. A central component of the study therefore revolved around the comparison of the emergent findings with extant literature to determine points of similarity and conflict (Ridder et al., 2014: 372).

While comparison with conflicting literature assists in building internal validity (i.e. the validity of causal reasoning), a comparison with similar literature can assist in generalisability. Comparison with both conflicting literature and similar literature aids in raising the theoretical level, and improving construct definitions (Ridder et al., 2014: 375; Miles & Huberman, 1994: 9; Eisenhardt, 1989: 542).

Particularly around the principle of *distance to consumer*, this dissertation found a contrarian voice in the cases compared to the dominant view in extant literature. Ridder et al. (2014: 372) referred to such discussions as antagonistic positioning. Such conversation led to refinement of theory, meaning a modification, negation or refinement of existing theoretical perspectives (ibid.: 381).

Another example of antagonistic positioning entailed refinement of the terminology. The dissertation found much agreement with the traditional views of value in coopetition, but sharpened the constructs where the existing literature was lacking in clarity. This is in line with theory building guidelines as set out by Ridder et al. (2014: 375) and Eisenhardt (1989: 542). These aspects will be discussed in more depth in Chapter 6 and Chapter 7.

Comparison with complementary theory does not imply only referring to theory with similar core logic, but also sharing the same phenomena of interest. Ridder et al. (2014: 381) referred to this as synergistic positioning.

5.15 REACHING CLOSURE

Two key decisions regarding closure in qualitative research revolve around when to stop adding new cases to the study, and when to stop iterating between theory and data (Eisenhardt, 1989: 545).

It is good practice to stop adding cases when additional cases and interviews no longer lead to noteworthy marginal improvements in what is known about the topic (Eisenhardt, 1989: 533). There is no fixed way of determining beforehand when such saturation will be reached. The researcher believes that saturation already took place earlier in the interviews, but additional interviews were conducted to confirm the belief.

The end result of case study research as presented in this dissertation can be concepts, a conceptual framework, or propositions (Eisenhardt, 1989: 545). This dissertation provided a conceptual model, i.e. the Coopetition Value Matrix, as well as propositions in the form of three proposed value dynamics.

5.16 SUMMARY

This chapter provided an overview of the design and research methodology of the study. Coopetition has been studied using a multitude of methodologies, including game theoretical, experimental and case based. This dissertation used a multiple case study approach and contributes to the coopetition body of knowledge at the theoretical and contextual level.

In order to explore an expanded understanding of value creation and appropriation, it was necessary to study cases that could inform the research questions. The ten cases of environmental coopetition were subsequently identified through judgemental sampling. Approximately thirty qualitative interviews were conducted, after which the interviews were transcribed and coded in order to answer the research questions.

A number of strategies exist to ensure that case study research leads to generalisable results and a significant part of this chapter focused on the validity of qualitative research to build theory. The dissertation's contribution lies at the level of shifting consensus rather than building consensus because environmental coopetition is an emerging field.

The findings of qualitative research should generalise to theory rather than to a population (Mitchell, 1983: 207), and this is evident from the theory that emerged during the study. Nonetheless, researchers need to consider if and how their findings would translate beyond the current temporal and contextual boundaries.

Chapter 6 and Chapter 7 present the findings of the research.

CHAPTER 6
TYPES OF VALUE

6.1 INTRODUCTION

This chapter of the dissertation provides insight into the value that is created in cases of environmental coopetition. It presents the intra-case analysis and illustrates what value is created in environmental coopetition by using the coopetition value matrix (CVM). In this regard the current chapter builds on:

- Chapter 2: Existing coopetition literature;
- Chapter 3: Literature that can assist in understanding what value is created in environmental coopetition and how that value is appropriated (this includes literature from environmental economics and stakeholder theory); as well as
- Chapter 4: The conceptual model (the coopetition value matrix).

6.2 THE CASE STUDIES

6.2.1 Individual cases

The chapter presents the findings from ten cases of environmental coopetition. These cases represented diverse environmental issues, ranging from water availability, biodiversity, pollution prevention, recycling and organic farming practices. The ten cases were :

i) The Rooiberg Breederiver Conservancy/Cape Leopard conservation project;
ii) The Glass Recycling Company (TGRC);
iii) The Biodiversity in Wine initiative (BWI);
iv) Greater Simonsberg Conservancy;
v) Mealybug;
vi) Organic Farmers Association;
vii) Reyneke organic wines;
viii) Winetech;
ix) Eerste River Collaboratory; and
x) Solamoyo.

Figure 6.1 provides a network diagram to illustrate how the cases, the wine or grape producing entities, and the interviewees related to each other. The diagram is best understood in combination with Table 5.4:

- The dotted lines indicate the boundaries of cases that were also the units of analysis. The Glass Recycling Company (TGRC) and the Wine Industry Network for Expertise and Technology (Winetech) are respectively supra-industry and industry-wide initiatives. All wine bottlers contribute to Winetech, while all glass-users are requested to contribute to TGRC. The majority of the focal wine and grape producers were also members of the Biodiversity & Wine Initiative (BWI).
- The bigger spheres indicate wine or grape producing entities, while the smaller spheres represent the presence of other wine or grape producers in the initiatives (who did not participate in the study).
- The codes inside the bigger circles represent the different interviewees. In some instances, more than one person were interviewed per entity, sometimes in the same interview, and sometimes in separate interviews.
- Some interviewees were involved with more than one case, but are indicated in the diagram in terms of their employer. Interviewees were also only connected with arrows if they had an active relationship with the entity. For instance, W16 was informed about the Cape leopard conservation project (and is hence listed as an interviewee for the Cape leopard case), but does not have any coopetition relationship in that network.
- The arrows between circles represent the relationships between entities that cooperate in some way.

Figure 6.1 provides insight into the difficulty of viewing networks as completely separate. As such Figure 6.1 portrays an example of networked coopetition, i.e. when multiple companies are engaged in multiple coopetition initiatives (Czakon & Czernek, 2016). In an interview with any of the networked entities, conversations regarding value are entwined in the different links between entities and between focal cases. The units of analysis were the different cases, but often quotes would overlap between different cases, especially where cases are embedded within each other.

For instance, when interviewee W17 and interviewee W12 were interviewed, it could be in the context of the Greater Simonsberg Conservancy, the collaboration to control mealybugs with natural predators, or even related to the BWI.

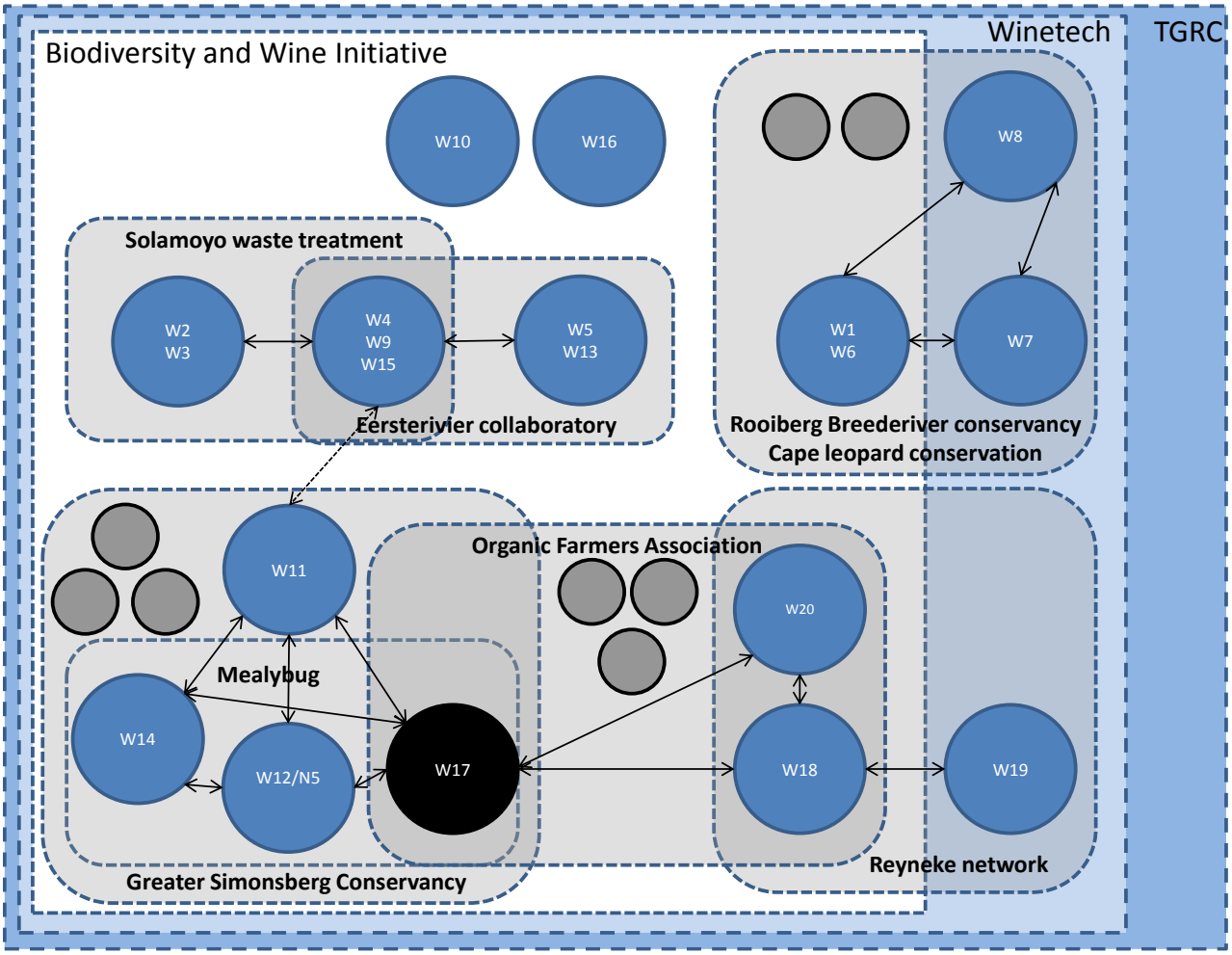


Figure 6.1: A network diagram of the case companies discussed in this dissertation

Some wine producers are more central in the networks than their peers, while others have more links into other networks that are separated by "structural holes" (for instance Laibach wines (W17), represented in black) is central in a number of networks/ cases. Laibach wine is part of the Greater Simonsberg Conservancy, the mealybug project, and also has ties with organic farmers who are outside of the Greater Simonsberg Conservancy. Because of Laibach's embeddedness in numerous networks, it is well suited to illustrate the benefits of coopetition in multiple networks.

6.2.2 Structural holes as a source of value

Laibach (indicated in black in Figure 6.1 for the purpose of illustration) participates in three environmentally-focused coopetition networks, namely the Greater Simonsberg Conservancy, collaboration with its direct neighbours in using natural predators to control mealybug numbers, and the Organic Wine Association. Through its cooperation with Reyneke (for example), it has further exposure to other networks (like the Reyneke network).

Some initiatives are conceptually and geographically quite removed from each other; hence it reminds strongly of the structural holes perspective of Burt (1992). The distinct networks provide Laibach with access to resources and knowledge that are not accessible to the respective networks.

This places Laibach in a stronger position than its partners as it has an information advantage (Burt 1992: 62) in terms of:

- Access (receiving valuable information it otherwise would not know of);
- Timing (receiving information before its competitors); and
- Referrals (having "agents" in every meeting that can bring you referals).

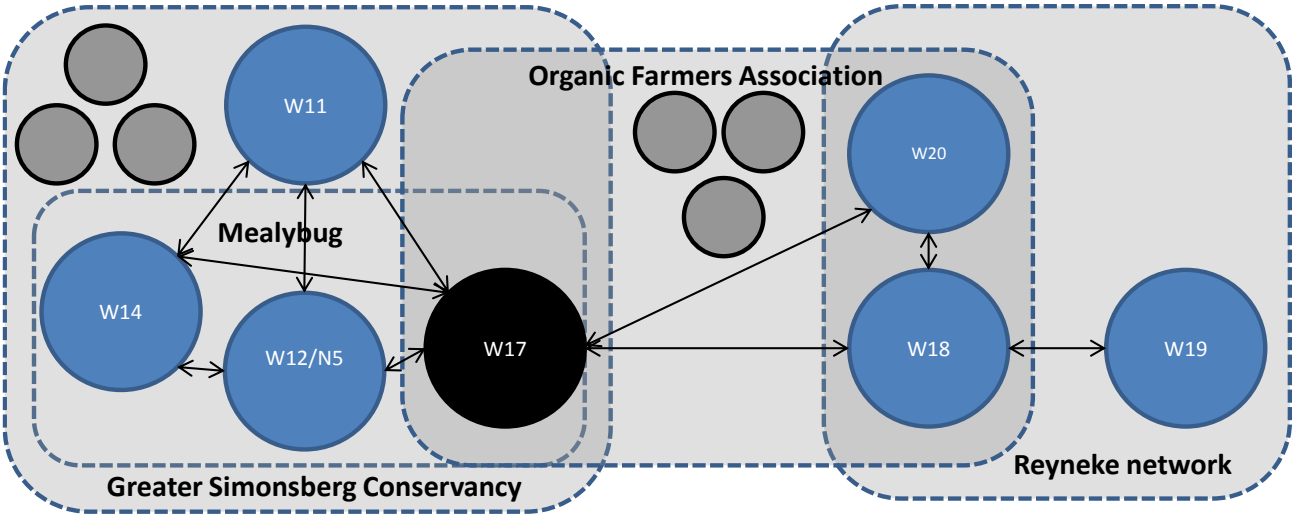


Figure 6.2: Network embeddedness of Laibach

Figure 6.2 provides a visual representation of Laibach's network position in different networks:

- Laibach is firstly part of the Greater Simonsberg Conservancy. It joined the conservancy late as it has little to offer to the conventional farmers of the conservancy. The farm shows a plaque at the tasting room to indicate that they are part of the conservancy. Laibach also benefits from fire-prevention, funding garnered by the conservancy for alien tree clearing, and training for various environmental aspects, such as fire-fighting and snake awareness.
- Laibach has a fairly passive collaboration with its immediate neighbours, meaning that neighbouring farms observe farming practices from Laibach and *vice versa*. These farms are also members of the Greater Simonsberg Conservancy and therefore Laibach would not benefit much more from the neighbours in terms of access, timing and referrals (ala Burt 1992: 62) than what it already has access to through the conservancy.
- Laibach has an active knowledge network with other organic farmers. None of the other members of the Greater Simonsberg Conservancy are members.
- Laibach is a BWI member, but not a champion. It does not show the BWI sign on any of its Laibach or Ladybird wines, except for the Woolies Ladybird Chardonnay.

6.3 THE ROOIBERG BREEDERIVER CONSERVANCY

6.3.1 Introduction

The first empirical application of the coopetition value matrix focused on a case of conservation of the Cape leopard in the wine industry, particularly in the Rooiberg Breederiver Conservancy.

Ten of the interviewees (see Table 6.1) touched on this case. Two of the interviews were with stakeholders of an agricultural cooperative (Rooiberg Winery), but both could be considered competitors of the third firm (Graham Beck Wines). Further interviews were conducted with members of environmental pressure groups that work in the area, as well as other stakeholders.

6.3.2 Background

The Rooiberg Breederiver Conservancy lies near Robertson in the Small Karoo in South Africa. Geographically it is quite small and consists of 28 neighbouring farms. The area is well known for a number of scarce species of fauna and flora, amongst other the riverine rabbit, and a number of critically scarce *fynbos* (or fine bush) species.

A major impetus behind the existence of the conservancy is the significance of the area to a dwindling Cape leopard population. The remaining few territorial leopards in the area are increasingly fragmented and isolated by urbanisation and cultural activities. The conservancy area acts as a corridor for the leopards to move between two mountain ranges, ensuring continued survival of the species through a healthy gene pool. Cape leopards live off small animals in the wild (Rautenbach, 2009), but have been known to catch farm animals, such as chickens, sheep, cattle and commercially-farmed game such as zebra. Even though most of the farmers in the area farm with grapes, many of the farms host smaller livestock, which means potential conflict with the leopards in the region.

In the past, leopards were often killed on farms in the area out of fear and a lack of awareness. Awareness campaigns by the Landmark Foundation (an NGO) did much to raise understanding and tolerance for the species among farmers and the community. Before the campaign, awareness levels about the existence and habits of the Cape leopards in the region were low.

In 2012, the Landmark Foundation installed fifteen cameras on the conservancy to monitor the movement, numbers and prey availability. Some of the funding came from one of the conservancy members. The members of the conservancy, by mutual agreement, subsequently agreed to conserve the endangered Cape leopard.

Many of the wine producers in the area sell red and white wines, and often at the similar price points. For instance, Rooiberg Winery's upper-end wines sell at the same price point as Graham Beck's lower-end wines. It was therefore surprising that none of the respondents in the conservancy regard one another as competition. Table 6.1 summarises the interviewees in the Rooiberg Breederiver Conservancy.

Table 6.1: Interviewees: The Rooiberg Breederiver Conservancy

Interviewee	Description of organisation or person	Position	Date of interview	Duration of interview (hours)
W6	Robertson area wine producer. Premium brand. Known as a sustainability leader, more than one wine farm in different regions operating under the same brand, medium sized in bottling capacity.	Sustainability manager	29 Aug 2013	2:04
W7	Robertson area wine producer. Member of cooperative. Diversified farm.	Wine grape farmer	3 Oct 2013	1:30
W8	Robertson area wine producer, Cooperative.	CEO	3 Oct 2013	1:24
W15	Wine producer. Diversified liquor company, large sized in bottling capacity.	Sustainability manager	13 Apr 2015	0:54
W16	Wine grower/producer Elgin region/ known for sustainability initiatives.	CEO/Owner	20 Apr 2015	1:36
N1	Environmental NGO operating in Robertson and other areas.	Environmentalist	27 Feb 2014	1:00
N4	Environmental organisation.	Project manager	24 Jun 2014	1:18
N7	South African NGO working with conservancies.	Chairperson	10 Apr 2015	0:43
J1	Journalist working in the wine industry.	Journalist	23 Apr 2015	0:30
F1	Farm owner, no active farming activities.	Farm owner	24 Apr 2015	0:54

Geographically the two wine cellars (Rooiberg Winery and Graham Beck Wines) are a few kilometres apart, meaning that they would firstly compete for physical visitors that wish to buy wine. However, this is only a small component of the revenue of the farms.

At a product level, both wine producers sell a broad range of white and red wines, but Rooiberg Winery maintains that it serves the lower to medium-priced wine market, while Graham Beck serves a medium to premium-priced market. The two farms would be considered competitors if one purely considers a competitor as a firm that sells the same product (Bengtsson & Kock, 2000). If one would expand the definition to require an overlap in market segments (Pellegrin-Boucher et al., 2013), there is sufficient overlap in the markets of the two competitors to qualify as competitors. Higher-priced Rooiberg Winery wines overlap with lower-end Graham Beck wines.

At a third level of the definition of a competitor, Bengtsson and Kock (2000) require that the one firm's product makes the other firm's product less attractive. Ironically, one of the managers, in his explanation of why he does not regard his coopetitors as competitors, provided a strong argument that they do indeed impact on one another's revenue:

> *Yes. It's like seven cafes next to each other and everyone goes there because that is where you will find everything. If you cannot find what you want, you can now quickly run next door and get it. So I think that's the whole concept. We are a wine café area here and you love my Shiraz and you like his Pinotage. And you may like the wine of*

> *van Loveren [a wine producer in the Robertson area]. So I do not think we operate in competition with them. (Interviewee W6)*

The reference to the substitutability (consider Porter's (2008) five forces) of wines in the quote is an implied acknowledgement that the wine producers do impact on the demand for each other's wines. However, the quote also emphasises positive-sum competition (i.e. there is more choice for consumers in the market).

A strong enabler of the coopetition efforts in the region is the social proximity. Wine farmers in the area are part of a small rural community, belong to the same church, buy wine from each other and often invite "competitors" to taste the newest vintage wines.

6.3.3 Common benefit and privately captured common benefit

The conservation efforts of the farms in the Rooiberg Breederiver Conservancy afford the collaborators an opportunity to market their efforts, providing them with a potential *common benefit*. Yet, Graham Beck wines market its own conservation effort through the Graham Beck "*The Game Reserve*" range of wines (as shown in Figure 6.3). Graham Beck, however, would not be able to conserve leopards through its own actions only; it needs the cooperation of other wine cellars and growers.

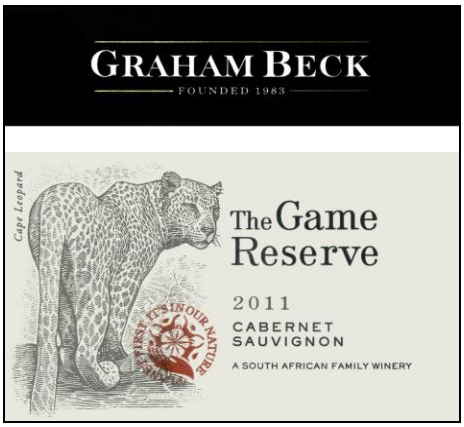


Figure 6.3: Privately captured common benefit from conservation

Since launching the range of wines in April 2014, Graham Beck reports easier access to shelf-space, more shelf space and higher sales figures than before (Interviewee W6). Although such benefits are available to the other cellars in the region, they intentionally grant Graham Beck Wines this right:

> *As I said, I have no problem that the game reserve resides with them, because they are the guys who have the money – I cannot foresee that I will counter the effort, and it's not my target market. They put a lot of money and marketing money and a message in what they do. …They have plowed more back into the community than anyone else does or says. So, they – if there is anyone who deserves to have a game reserve and to see excellent results from it – it is Graham Beck. [Translation from Afrikaans] (Interviewee W8)*

As a result of this license from its partners, Graham Beck Wines generates value from the coopetitive relationship, and does so to a much greater extent than its partners. This value is an example of *privately captured common benefit*. The ability to put a name on this component of the value enables one to better describe how value is appropriated. One should also note that, in this particular case, the value is captured by Graham Beck Wines in positive-sum logic. Other wine producers would also be able to leverage from the brand value, but do not exploit the opportunity.

The Landmark Foundation puts up signs (see Figure 6.4) at farms that participate in the conservation efforts of the Cape leopard. The common benefit to all participants is the brand exposure and brand association offered (like the voluntary environmental initiatives mentioned by Orsato (2006; 2009) in the literature component of this study), and every participant in the leopard conservation project has the right to these benefits.

Figure 6.4: Landmark Foundation and conservancy sign at a wine cellar

No farmer has more exposure from the project based on the signs as shown in Figure 6.4. However, one respondent expressed a strong opinion about the lack of value of the sign compared to the label as used by Graham Beck:

> *Landmark Foundation asked me why I don't wish to put up a board. I say the thing is bloody ugly, it does not fit with what I do. I say, everyone is aware of the leopard, you cannot put that ugly thing here. I told them that for me the best thing is exactly what Graham Beck is doing where you put the logo on your product. But I do not have a product, because I sell bulk. They [Rooiberg] should – why they do not, I do not know. [Translation from Afrikaans] (Interviewee W7)*

It is important to point out that the signs at farms should possibly be seen as reputation protection rather than reputation building, i.e. it is an example of a beyond compliance strategy. In contrast, Graham Beck is following an eco-branding strategy, and it seems to be successful.

There are however, also other (common) economic benefits of the leopard conservation project, such as a reduction in smaller predators as reported by a member of the Rooiberg Winery:

> *And that we also taught them, you know, if you – you complain, you have too many mice in your house; one of the reasons is because it is not clean. The second reason is you killed the snake that eats mice. So the more snakes you kill, the more mice you have. So that is how they start to learn how things work. The leopard also, if you kill them, then all that will happen is that the jackal will come and caracal will come, and then you have bigger problems. There are only four leopards; if these things come, it will be hundreds of them. And then your chickens are gone, because everybody keeps chickens, everyone is keeping a pig or a sheep or something, you know. That's how it is on the farm. Now they understand. Protect here and you have benefits, not only where you cannot see, you have advantages where it will affect you. [Translation from Afrikaans] (Interviewee W7)*

In this particular instance, the value is non-rival and non-excludable, meaning it is a public good of which the farmers share in the public benefit.

6.3.4 Public benefit: economic, knowledge and socio-environmental

The previous quote made reference of economic benefits to the community, as well as to indigenous knowledge within the community regarding the benefits of biodiversity. The matter of knowledge in the community was also observed in other interviews:

> *The net benefit has been such that the wider community are now aware that they actually are living amongst these animals [leopards] and that they have done for generations. (Interviewee N7)*

Awareness in the community is key to the survival of the leopard by improving the efficacy of the broader conservation effort. A member of Rooiberg Winery referred to the socio-environmental value of the leopard. More specifically, the respondent described the bequest value and the existence value of having the leopard on his farm. Such value is a public good and part of the socio-environmental value:

> *For me it has a lot of value because it's a personal thing because I love nature, and I agree with what they do because the leopard should not be disturbed. He should go where he wants and have to eat what he wants. He caught one of my zebras – and it did not even come into my head to look for him and kill him. It's a loss, but so it is. And I still think that it is unfortunate that I did not see when he caught the zebra. But then I decided that those are too expensive food for him. So I took the zebras off the field for now and I put them in an enclosure. [Translation from Afrikaans] (Interviewee W7)*

A representative of an environmental pressure group that operates in the Robertson area described the intrinsic value (also a component of socio-environmental value) as follows:

> *You know there's an intrinsic value, there's an ecosystems value, there's an …um …you know… a direct biological value in maintaining your trophic pyramids. (Interviewee N7)*

Later in the same interview the same representative drew a link between the socio-environmental value and an economic benefit for one partner:

> *It certainly has an aesthetic value, a tourism value, there's a brand value …um… you know I'm sure that Graham Beck didn't put the leopard on their label for...for just pretty picture sake. I think they intend to sell more wine. (Interviewee N7)*

The intrinsic value of a species that does not go extinct (i.e. socio-environmental value and a public benefit) cannot be captured by any coopetitor (i.e. it is non-excludable). However, it can generate other forms of value such as brand value, as the quote illustrates. This aspect of dynamic interaction between different types of value is discussed in Chapter 7.

6.3.5 Private benefit

Private benefits can causally be associated with a coopetitive relationship, but the value is only available to the particular partner. Different partners may generate different private benefits without eroding value for other partners. One farmer related how his involvement in the conservancy allowed him to reap private benefits:

> *We make cosmetic products from our olive oil, and the chemist who designed this thing, spoke of putting fynbos in it. He wants us to identify the fynbos … which one is poisonous and which one is not. Which one is a skin irritant? … And a [conservancy] member told me I should speak to Susan [a neighbour's wife]. … The next day, there she was. And we walked through the field and she says "that thing and this thing and this thing. That one you use, you leave that one, that one". (Interviewee W7)*

Because none of the other farmers farm with olives or produce olive oil, the benefit described here is in addition to other common benefits that are created (i.e. it is a positive-sum logic), but it is only available to the one farm.

6.3.6 An opposing view

Not all stakeholders in the Cape leopard conservation project were equally convinced of the value that is created for the environment:

> *Because it [the leopard] isn't in direct land use competition with them. Uhm, I think that's expedient because they're exploiting it because there's public interest and that's because they are, you know, trying to market their brand or brands... to be environmentally friendly. Which frankly it isn't close to that. But that's what they try and do.*

I think that will be incorrect of them to state that their co-operation resulted in the leopard being able to freely move over their landscapes. Absolutely not… uhm… There were no...no pro-active steps to affect that.

The skepticism about the biodiversity gain is clear from the quote, but the respondent acknowledges the marketing value of the initiative.

6.3.7 The coopetition value matrix: Cape leopard

Mapping the case of the Cape leopard in the coopetition value matrix (Table 6.2) provides a more holistic, structured and robust view of the initiative in terms of the creation and appropriation of value as described by the managers and other stakeholders. This aspect of data reduction and display (Miles & Huberman, 1994) was discussed in the methodology chapter.

Table 6.2: CVM for the Cape leopard case

		Value creation		
		Economic value	**Knowledge value**	**Environmental value**
Value appropriation	**Common benefit**	The presence of the leopard (an apex predator) reduces the losses due to smaller predators such as jackal and caracal. Farmers therefore experience fewer losses of small livestock. (Interviewee W7, N7) The Cape leopard conservation effort affords coopetition partners a collective brand value. (Interviewees F1, N7)	Being part of the conservancy affords all the partners access to the knowledge of a knowledgeable sustainability manager. (Interviewee W7)	Socio-environmental value is per definition value that accrues to society. It therefore implies that it cannot be captured by the coopetition parties.
	Privately captured common benefit	Graham Beck is the only farm that leverages from the brand value of the leopard. This affords them more shelf space and higher revenues. (Interviewees W6, W7, W8, F1)	One of the farmers reports the ability to access more of the time of the knowledgeable person, and thus captures more conservation-related and other knowledge value for himself. (Interviewee W7)	
	Private benefit	A farmer (Interviewee W7) used knowledge captured about different plant species in his olive oil business to create innovative new products. This economic benefit is outside of the coopetition initiative and not available to other wine farmers.	One of the farmers is able to tap into the collective knowledge of the coopetition partners about health benefits of different plants to use in a secondary business. (Interviewee W7)	
	Public benefit	The community benefits economically from fewer losses from small predators due to the presence of an apex predator. (Interviewee W7, N7) Bed and breakfast businesses leverage from the increased popularity of the region. (Interviewee W7, F1)	The community becomes aware of the existence of the leopard and the benefits of having it around. Also about how to conserve the leopard. (Interviewee N7)	There is intrinsic value (ecosystems value, biological value) in maintaining the trophic pyramid by having an apex predator present. The leopard holds aesthetic value. (Interviewee W6, W7, W8, N7)

All but one of the elements of value is present in the table. As mentioned earlier, the CVM can be a useful diagnostic tool. Mapping the value in the CVM provides a high-level view for managers to understand where value was created, where the value was appropriated, and where there is an opportunity. The private knowledge value in Table 6.2 will eventually translate to economic value, but this was not the case at the time of the interview.

The table also allows the investigation of the dynamic flow of value (Ritala & Tidström, 2014) in a coopetition relationship, as is illustrated in the points below:

- Exactly how central knowledge should be considered in coopetition initiatives was evident when the flow of value in the CVM was considered. Knowledge captured in the central column can facilitate value in the left hand (economic value) column. This is true at the common level, the private level, as well as the public level.
- knowledge at the three levels (common, private and public), however, can also enhance value in the right bottom corner. By increasing awareness of the Cape leopard, it leads to increased conservation impact (at least from the view of the wine producers), meaning more socio-environmental value.
- In the case of an eco-brand based on environmental coopetition, the brand value is gained in a positive-sum manner with no erosion of the socio-environmental value. Therefore, value in one category (for instance below right) can be leveraged in order to create value upwards and leftwards (common or private benefit). In doing so, the value is pulled closer into the coopetition relationship.

It is important to note, that the brand value can only be created closer to the coopetition relationship by marketing the initiative to consumers (as can be seen from Graham Beck's label), meaning that the cooperation between competitors is much closer to customers than the historic view in coopetition literature (see for instance Bengtsson & Kock, 2000; Walley, 2007; Steinmo & Jakobsen, 2013; Ritala & Tidström, 2014).

A much deeper but more generic discussion of value dynamics follows in Chapter 7.

One last aspect that relates back to the literature is that of power (Kim, et al., 2005: 799; French & Raven, 1959; Dyer et al., 2008). Graham Beck enjoys several forms of power, enabling it to capture more value than its partners. The wine company firstly enjoys legitimate power through its investments in the environment and the subsequent belief by its competitors that it should legitimately claim the bigger benefit. Secondly, the sustainability manager holds knowledge that other farmers see as valuable, giving the company some expert power too.

6.4 THE GLASS RECYCLING COMPANY

6.4.1 Background to TGRC case

The Glass Recycling Company (TGRC) served as a second empirical illustration of environmental coopetition.

The company was established in 2006 and operates as a national NPO with a mandate to promote the recycling and reuse of glass. The company therefore does not recycle glass itself, but acts as a promoter of glass recycling and reuse (TGRC, 2012). To some extent, TGRC came into existence because the glass industry realised it had to regulate itself or face government regulation. Government regulation potentially meant that member-contributions would disappear into a black hole (Interviewee W9). TGRC was discussed in six of the interviews (Table 6.3).

Table 6.3: Interviewees: The Glass Recycling Company

Label	Description	Position	Date of interview	Duration of interview (hrs)
W2	Wine producer, diversified liquor company, medium sized in bottling capacity.	Executive	8 Jul 2011	1:27
W3	Wine producer, diversified liquor company, medium sized in bottling capacity.	Executive	8 Jul 2011	1:27
W4	Wine producer, diversified liquor company, large sized in bottling capacity.	Executive	13 Jul 2011	1:23
W5	Wine producer, known as a sustainability leader, medium sized in bottling capacity	Executive	16 Jul 2012	1:17
W9	Wine producer, diversified liquor company, large sized in bottling capacity. Has board representation on TGRC board	Executive	11 Mar 2014	0:45
T1	Industry body	Executive	31 Mar 2015	0:52

For two of the coopeting companies, respectively two individuals were interviewed (W2, W3 were from one company and W4, W9 from another). The remaining two interviews were with an executive member of TGRC (T1), and a manager at a much smaller participating company (W5).

The example of TGRC reminds strongly of the discussion by Bengtsson and Kock (2000) of the Swedish beer industry because both represent a form of reversed logistics. There are, however, two key differences:

i) The TGRC initiative is happening closer to consumers, and Distell and KWV (two wine producers with TGRC board membership) are openly acknowledged as partners on the TGRC website (see Figure 6.5). A television advertisement (and Youtube clip) from 2016 also features the logos of Distell and KWV near the end of the advertisement (see Figure 6.6). The advertisement is meant to raise awareness of the benefits of glass recycling. However, such exposure also provides significant brand exposure to these two firms, and more so than for other 'ordinary' members from the wine industry.

ii) Unlike the example from the Swedish beer industry, the TGRC example describes an initiative with a deliberate environmental benefit.

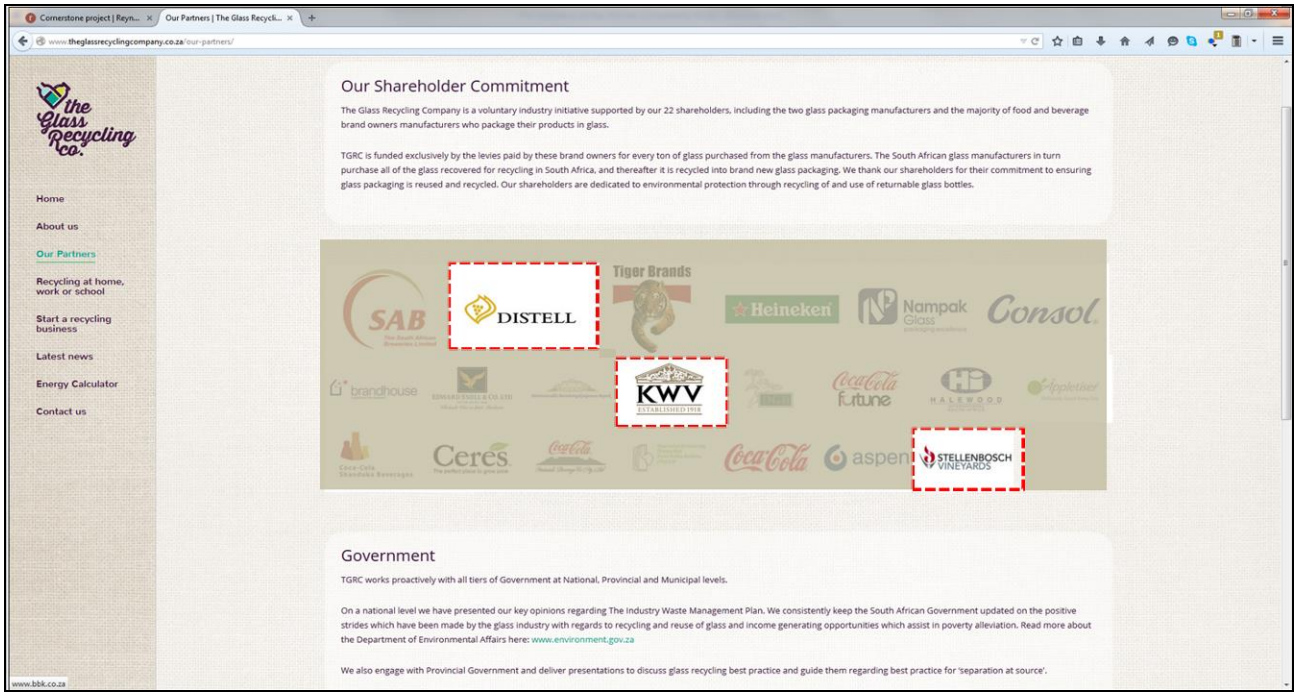


Figure 6.5: Wine companies acknowledged on TGRC's website

Source: TGRC, 2016a.

Figure 6.6: Wine companies (and other partners) acknowledged on TGRC TV advertisement and social media

Source: TGRC, 2016b.

TGRC is an example of collaboration between multiple players, including government, glass manufacturers and fillers/bottlers (who use glass to package their products). All major stakeholders of glass in the South African beverage industry (wine, beer, spirits and non-alcoholic) are requested to contribute financially to the activities of the TGRC in proportion to the tons of glass they use. Most big players contribute, but payment remains voluntary.

A few large users of glass, including a few wine production and bottling companies, have seats on the board of TGRC. Smaller wine producers are represented by rotating seats on the board. Collaboration therefore happens via an industry body to which all players contribute financially, and which is jointly governed by stakeholders.

Distell, one of the bigger partners in TGRC, was a particular focal point for this specific case. Distell operates in a number of alcoholic beverage markets, including the spirits (brandy, whiskey, etc.), wine and 'ready-to-drink' markets. None of the other companies in the wine industry is as diversified. It is also the only company operating in the wine industry that makes use of reusable bottles, albeit in its 'ready-to-drink' and to a lesser extent its spirit and wine divisions. To re-use their own glass bottles, Distell encourages consumers to return the glass containers to retailers in return for a deposit.

> *All returned bottles must then meet stringent criteria while undergoing scrupulous quality checks during the wash, sterilise, rinse and dry process before they are deemed suitable for reuse.*
>
> *Three of our plants: Ecowash, Green Park and Port Elizabeth are equipped to handle recycled bottles. During the year under review, the three facilities combined were able to re-use a total of 111.3 million bottles (2013: 139.9 million). In doing so, we reduced the amount of glass we purchased by 64 168 tons (2013: 77 802 tons). This equates to a saving of 101 007 tons (2013: 116 212) of CO2e emissions that would have been emitted if new bottles had been produced. (Distell, 2014: 54)*

Distell therefore manages to benefit disproportionately more from the activities of the TGRC than other companies who do not reuse bottles.

6.4.2 Common, private and privately captured common benefit

Respondents were able to clearly identify common and private benefits in the case of the TGRC. Cullet (recycled broken glass) historically provided a *common* cost saving in two ways. Firstly, cullet used to be cheaper per ton than silica, which is no longer the case (interviewee W9). Secondly, every ten percent of cullet that is added into the smelter reduces the temperature by six percent (Consol, 2012). The reduced energy use is a common benefit (that is available to all users of glass). Economic value, as stated earlier in this dissertation, can also be articulated in terms of reputational gains:

> *We all have… the benefit that everyone has is a good-news story….we contribute money to a Glass Recycling Company that does something for the environment and it can be measured in tons per year that is recycled ... and so on. That does not end up in a landfill...so everyone, in that respect, gets the same benefit ...but your benefit is again in relation to the glass you buy. It's in relation to what that you have paid. So no one can really be advantaged ahead of another. Um, or benefit directly. Um, naturally there is a little advertising value for a company. So Distell can now say we are one of*

> *the major shareholders, we are making a significant contribution …um …just like Breweries [SABMiller] like to play it because they... it's their social awareness and social responsibility. So the bigger guys who are shareholders, actually all shareholders, may now claim the benefit. Naturally the bigger guys gain more exposure in the Glass Recycling Company's promotional stuff. [Translation from Afrikaans] (Interviewee W9)*

This quote illustrates contextual advantages that some firms may have in capturing common benefit. Due to the size of its financial contributions, Distell gains more from the TGRC's public relations activities. Distell enjoys *privately captured common benefits* in relation to the glass it buys, but further also because it is a bigger partner.

TGRC also acts as industry body for users of glass and provides knowledge about best practices to its shareholders:

> *If we were not there…over the nine years, we generated significant expertise in the field, it would leave a big hole that in the industry and the cost to fund us is cheap… (Interviewee T1)*

Yet the level of learning for the wine producers seems relatively superficial and the initiative does not encourage knowledge sharing between industry players. Compared to the Cape leopard initiative, the knowledge value has less potential for common and private economic value.

An interesting example of *private benefit* in the case of TGRC relates to its mandate to promote both recycling and reuse of glass. Distell is the only wine and spirits producer in South Africa that makes use of reusable bottles. Given that the mandate of TGRC requires it to also promote reuse of glass, Distell is able to capture a *private benefit* (economic) from the coopetition initiative that is by definition out of grasp for other contributors. The underlying logic to this value is differentiating (positive-sum) in nature.

> *Um, but as I say I have not pushed that agenda too hard, because then ... what about the KWV who's stuff lies there but who does not re-use it. But they also contributed to it ... we are not past that debate ... They [TGRC] should promote re-use because it would increase the cullet as well. ...But especially the last few years they just focused on cullet ... the Glass Recycling Company is not keen on the other one ... they are afraid it might benefit only a few of the ... players that benefit from re-use and therefore don't want to be too obvious in the promotion thereof. [Translation from Afrikaans] (Interviewee W9)*

The addition of *privately captured common benefit* allows one to describe the total benefit that Distell captures through the TGRC as the sum of the *privately captured common benefit* (in markets governed by the coopetition initiative) and the *private benefit* (in markets outside of the coopetition initiative).

6.4.3 Public benefit: Economic, knowledge and socio-environmental

The primary mandate of the TGRC is to "*educate, enable, encourage and inspire individuals to separate their glass for recycling"* but it does not physically collect or recycle the glass (TGRC, 2012). The awareness function (as illustrated earlier in Figures 6.5 and 6.6, as well as in Figure 6.7 below) is intended to increase the efficacy of glass recycling, and therefore illustrates a typical dynamic between public knowledge value and socio-environmental value. Figure 6.7 was posted on the TGRC Twitter page and was originally posted by Friends of Glass, which is the European equivalent of the TGRC. It is therefore an apt opportunity to point out that, although this dissertation was focused on the South African wine industry, the case studies are indicative of initiatives happening in other industries and countries.

Figure 6.7: Public awareness of benefits of glass recycling through social media

Source: TGRC, 2016c

The reduced cost of less glass-related waste is a public benefit and an example of both socio-environmental and economic value (socio-economic value):

> *We contribute money to a Glass Recycling Company that does something for the environment and it can be measured in tons per year that is recycled ... and so on. That does not end up in a landfill... [Translation from Afrikaans] (Interviewee W9)*

Apart from the amount of glass that is kept out of landfills, recycling glass also has other environmental benefits (as is illustrated in Figure 6.6). According to Consol (2012) every ten percent increase in recycled glass content equates to reductions of:

- *one percent in electricity and natural gas consumption,*
- *ten percent in sulphur dioxide emissions,*
- *six percent in nitrogen oxide emissions,*
- *seventeen percent in carbon dioxide emissions,*
- *8.5 percent in the use of in raw materials*.

6.4.4 The coopetition value matrix: TGRC

Table 6.4 represents the value matrix of TGRC as reflected in the interviews and other evidence. The CVM allows the visual disaggregation of value in terms of the kind of value, and to whom the value is appropriated. The TGRC matrix shows stronger evidence of economic value and less of knowledge value. As such one could argue that the economic value is the main driver for coopeting parties. At the same time, based on the lack of evidence of knowledge value at the firm level, coopeting parties can consider how more knowledge value could be created in the initiative.

Distell captures more of the value generated from the initiative than other members. It firstly captures a bigger share of savings than many other players (*privately captured common economic value)* because of the quantity of glass it buys. Because of the size of its financial contribution to TGRC, Distell enjoys board membership. Board membership allows Distell greater reputation protection through its logo on the TGRC website (*privately captured common economic value)*, and easier access to information and knowledge (*privately captured common knowledge value)*.

Table 6.4: CVM for The Glass Recycling Company

		Value creation		
		Economic value	**Knowledge value**	**Environmental value**
Value appropriation	**Common benefit**	Cullet (broken glass) melts at a lower temperature, meaning an energy saving in the glass manufacturing process. Some of this saving may be passed on to wine bottlers (Interviewee W4). TGRC provides reputation protection to member firms (Interviewee W9).	TGRC serves as knowledge hub to the glass industry (Interviewee T1).	Socio-environmental value is per definition value that accrues to society and a public good. It therefore implies that it cannot be captured by the coopetition parties.
	Privately captured common benefit	The "reduced cost" benefit captured by any of the partners is proportional to the amount of glass they buy (Interviewee W9). Larger firms benefit more by having more representation on the board and having their brands associated with TGRC (Interviewee W9).	Representation on the board provides some players with a higher level of access to information and knowledge. (Interviewee T1, W9).	
	Private benefit	TGRC receives contributions from all glass users. Many glass users contribute funds. The funds are used to promote both recycling and reuse of glass, but only one firm reuses glass in its "spirits" division (Interviewee W4, W9).	Distell adopts knowledge that it gained in its involvement with the TGRC into areas that its competitors do not operate.	
	Public benefit	Glass is recycled and reused, meaning reduced cost to society for waste disposal and landfills (Interviewee W9, T1). The bulk of glass recycling is driven by the lower end of the market who earns a living from recycling (Interviewee T1). The lower cost to the glass manufacturer could potentially translate to lower cost of bottled wine.	The primary mandate of TGRC is to raise public awareness regarding glass recycling, glass reuse, and the benefits thereof (Interviewee T1, TGRC website).	Recycling glass has numerous benefits for the environment in terms of a reduction in pollution and resource dependency (Glass producer website).

6.5 THE BIODIVERSITY & WINE INITIATIVE (BWI)

6.5.1 Introduction

As stated in the previous chapter, nearly 95 percent of wine growing in South Africa happens in the Cape Floral Kingdom (Fairbanks et al., 2004: 1075). Unfortunately, the best soil for *fynbos* is also the best soil for growing wine (Interviewee *W3*). Consumers of wine tend to be middle to high-income individuals who can afford and may be willing to pay for an environmentally-branded product (Interviewee W4).

The Biodiversity & Wine Initiative (BWI) attempts to protect South African flora. Interestingly, this industry-wide initiative with the Cape Botanical Society and the WWF-South Africa, has enabled the wine industry to both protect biodiversity, and also generate a common benefit by differentiating the South African wine industry through the “biodiversity is in our nature” tagline (Interviewee W3).

The Biodiversity & Wine Initiative was established in 2004 as a conservation partnership between the wine industry, the Botanical Society of South Africa, Conservation International and The Green Trust (WWF, 2015). The BWI can be classified as a Voluntary Environmental Initiative (VEI) (Orsato, 2009).

Its mandate is to protect natural habitat by encouraging sustainable practices in the wine industry and to promote the interests of BWI members through raising awareness of the conservation efforts of BWI members. In September 2015, the BWI had 175 members and 29 champions. The area under conservation by BWI members was 141 199 ha. (WWF, 2015).

Table 6.5 below provides an overview of the interviewees who discussed aspects of BWI. The fact that so many interviewees touched on the BWI is evidence of its presence in the South African wine industry.

Table 6.5: Interviewees: BWI

Interviewee	Description of organisation or person	Position	Date of interview	Duration of interview (hours)
W4/W15	Wine producer. Diversified liquor company, large sized in bottling capacity.	Sustainability manager	13 Jul 2011 13 Apr 2015	1.23 0:54
W5	Wine producer. Known as a sustainability leader, medium sized in bottling capacity	CEO	16 Jul 2012	1:17
W6	Robertson area wine producer, Premium brand. Known as a sustainability leader, more than one wine farm in different regions operating under the same brand, medium sized in bottling capacity	Sustainability manager	29 Aug 2013	2:04
W10	Wine producer, Stellenbosch area, known for pro-active environmental initiatives, does not cooperate much apart from BWI.	Wine maker	21 Jan 2015	0:34
W11	Wine producer, part of Greater Simonsberg conservancy, BWI Champion. Is a farm under the control of Distell.	Wine maker	29 Jan 2015	0:46
W12/N5	Wine producer, part of Greater Simonsberg Conservancy, BWI Champion Person interviewed is a coordinator of the conservancy and therefore plays a dual role.	Conservancy manager	12 Feb 2015	1:18
W14	Wine grower/producer	CEO/Owner & Conservancy manager	10 Mar 2015	1:08
W17	Organic wine farm/ Stellenbosch region	Managing director	29 Apr 2015	0:38
W18	Biodynamic wine farm/ Stellenbosch region	Owner	12 May 2015	1:06
W19	Ultra-premium wine producer, small bottling capacity, Stellenbosch region	Owner	11 Sep 2015	0:39
N4	Environmental organisation	Project manager	24 Jun 2014	1:18
N6	Environmental multinational NGO. Local initiative in the wine industry	Project manager	16 Feb 2015	0:48
N7	South African NGO working with conservancies	Chairperson	10 Apr 2015	0:43
N8	Wine body	Communications Manager	13 May 2015 19 May 2015	unrecorded 0:48
J1	Journalist working in the wine industry	Journalist	23 Apr 2015	0:30

The BWI has two tiers of membership, namely BWI members and BWI champions. BWI champions are exemplary producers that make a significant commitment towards conserving critically endangered biodiversity and practicing environmentally-responsible farming and cellar management principles. Champions must also show annual progress against a comprehensive environmental management plan (EMP) and at least ten percent of the total farm must comprise of undeveloped natural area that must be set aside for conservation. The minimum amount of land that must be set aside to qualify for entry-level BWI membership is two hectares (ha). Depending on the level of compliance with BWI requirements, wine producers are allowed to show the relevant logo on their wine bottles (see Figure 6.8). One of the problems of the BWI eco-labels as shown in Figure 6.8, is that the two labels are very similar, and if the wine label is printed in black and white, the two labels are even more similar. The market is also not informed enough that wine consumers are necessarily aware of the differences between the two tiers.

Figure 6.8: The two BWI eco-labels indicating different tiers of membership

Not being a member of BWI does not imply that a wine producer makes itself guilty of environmentally-damaging practices. It may purely mean that there is too little indigenous flora to qualify for BWI status (Interviewee N6).

A major driver for BWI seems to be a moral argument (W11, W14). A number of interviewees questioned whether BWI makes financial sense, but still comply because they believe it is important for the existence of the farms in the future. Even farms that do not have BWI membership, or those members who are not champions, express a moral argument in striving for higher certification (Interviewee W18, W19). Even without seeing a marketable difference in BWI certification, farmers still view the underlying actions as sensible actions as expressed by Interviewee W11:

> *But we're doing all of this purely for the sustainability of the farm; it needs to continue functioning. That said, it costs you a lot of money; so somewhere you have to make money to do good.*

The above quote makes reference to economic value as a requirement, if not a driver, of environmental action. The main drivers of the BWI for farmers are free extension services (access to explicit knowledge and people with skills, i.e. tacit knowledge) and the potential for eco-labelling that potentially could create market access (Honig, Petersen, Shearing, Pintér & Kotze, 2015: 390).

6.5.2 Drivers of BWI

Table 6.6 links the findings in this study with the drivers for joining BWI as identified by Honig et al. (ibid.). In order to link these findings back to the literature, the drivers were categorised into the three high-level drivers identified in Table 6.6.

Table 6.6: Drivers for joining BWI

See Table 3.1	Driver [a]	Brief description [a]	Interviewees who mentioned such aspects
Moral	Connection with nature	Satisfaction in seeing how nature recovers.	W11, N8
	Social/Eco-responsibility	Awareness of one's impact on future generations.	W11, W8, N8
	Shared vision	Alignment in the industry regarding the ethics and importance of conservation.	W11, N8
	Peer pressure	Actions by some farmers motivate other wine producers to follow suit.	
Legitimacy	Environmental risk mitigation	Environmental action reduces risks associated with climate change, invasive species, future water scarcity, hotter and dryer summers, etc.	W11, W13
	Recognition and credibility	BWI membership is seen as a reward for doing the right thing.	W10, W13
	Voluntary contract	Because BWI is voluntary and not a long-term conservation contract, wine producers are more willing to participate.	W11
	Physical farm characteristics	Parts of a farm are undeveloped and are thus available for this purpose.	W12
Financial business case	Easy-win	Some farms were already on par with BWI requirements and could therefore receive membership with little additional effort.	N6, W6, N8
	Market advantage	An economic benefit in selling more wine.	W17, J1, W13, N6, N7
	Farm value	Environmental actions can increase the value of the property, for instance alien vegetation clearing.	W11

Source: [a] Honig, Petersen, Shearing, Pintér & Kotze, 2015: 390.

6.5.3 Knowledge value

BWI extension services include support for wine producers to implement sound biodiversity practices on their farm, including alien invasive plant clearing programmes, fire management initiatives, botanical surveys, water and energy-efficiency interventions, environmental education and assistance in establishing private nature reserves (Honig et al., 2015: 390). A key outcome of the extension services is the production of an environmental management plan (EMP). Despite this aspect being pointed out by Honig et al. (ibid), extension services were never mentioned in the interviews with farmers in this study.

Opinions differed about the creation and dissemination of knowledge within and by the BWI. One interviewee commented on the common benefit created through the documentation of experience and information in the industry.

> *Now, on the BWI level and the IPW [Integrated Production of Wine] level, obviously those are industry efforts, you know, which we participate in, and there's obviously collaboration with the industry bodies and you know, through that we're collaborating with other producers in the country really, because the information that they pick up here goes to a source that's available to everybody, and if there's new ideas and so on, you know, everybody can access them, and the auditors themselves will tell people, you know, how to improve based on what they've seen in other places. (Interviewee W10)*

However, this was not a view that was strongly supported by other interviewees. Some interviewees felt that there was little to learn from BWI.

> *No, there is no knowledge. No look, it's a number of guidelines to be met and you are audited against it. So, there is no knowledge. I mean, they say to you "listen, it should look like this, it works like this, it should be so and so and so. You meet the criteria or you do not meet them." It's more of a regulation thing than a learning thing. (Interviewee W11)*

Interestingly, Interviewee W11 felt strongly about the fact that conserving nature is the right thing to do and was evidently more intrinsically motivated to participate in the BWI.

6.5.4 Market access

Although BWI as a body has not done much promotion of the BWI brand, there is evidence that members and champions of the BWI enjoy access to markets (see Table 6.7) that non-members do not (Interviewee N6, W17). Such a strategy entails an element of beyond compliance leadership or eco-branding.

Eco-branding, as stated in the literature review (Orsato, 2006 & 2009) requires:

- Uncontroversial and clear information;
- That it must be hard for competitors to copy; and
- That consumers must be willing to pay a premium for the environmental benefit.

Although the first requirement is potentially true through the support of the WWF, more than one interviewee referred to the complexity of the BWI certification and difficulty in trying to explain that to consumers.

Table 6.7: Access to markets

Element of market access	Illustrative quote
Better access to retailers	*Yes, I think some of the people will not accept your product if it is not BWI certified. In other words, if we deliver for Woolworths, and you are not BWI certified, they can tell you to become certified by them. At this stage they still don't do that, but they can do it. […] You can say they prefer it. If there are two wines, but the one is BWI-certified and the other not, they would go with the BWI certified wine the BWI. (Interviewee W17)*
Better access to export markets	*There is a great deal of sensitivity in most of our off-shore markets, northern hemisphere off-shore markets to the manner in which wine is produced, from an agricultural perspective, from a labour perspective and so on and so forth. (Interviewee J1)*
Access to premium segment of the market	*And in the ecological sense or the environmental sense, the presence of the BWI label or some indication on the label that the producer is a BWI champion or participated in the BWI programme, is going to have traction. The extent of the traction, I have to tell you, I don't know and I don't understand, but I know that it is clearly an intrinsic factor, and it has to do with the business of the story of how wine is made and produced, which is perceived to be a significant metric in the marketing context. And particularly when your wine price starts to climb into the middle of a heading towards the premium sector of the market. That's where consumers want to know the story of how the wine is produced, and they're interested and they're also going to base their decisions on what they hear and see. And in that context, I think BWI is going to – have been an intrinsic factor. To what extent, I can't quantify. (Interviewee J1)*
More buyers at the cellar	*I think it brings more feet in the cellar door. (Interviewee N6)*

The second and third requirements are even more easily challenged. There are more than 200 wine producers with BWI membership (including champions), so it would be hard to argue that the strategy is difficult to copy. As for the willingness to pay for the ecological benefit, there is some doubt from the interviewees.

> *The person does not buy your wine because you are green; he buys your wine because he likes it and maybe because he likes the label, the look, the packaging, and therefore he likes it. (Interviewee W14)*

The above quote supports the research shown earlier in this study that consumers do not consider awards or certification as an important source of differentiation. Cultivar, region and producer are more important to consumers than what BWI certification would be (see Table 3.3).

More than one interviewee expressed scepticism about the ability of BWI certification to swing the decision of wine-consumers.

> *There is no such thing as buyers who insist, it is not ISO like [International Organization for Standardization] and ISO 2000 and HCCP [heating, cooling and process piping] and all this kind of stuff we now have in farming. There are markets that ask for this Wine Initiative for Ethical Trading, and things like fair trade, you know. There is definitely markets that ask for it. But not yet for BWI. We have not yet come to a situation where a person says "listen here, I will not buy your wine because you are not BWI certified" or something similar. So the fact that we are linked to the World Wildlife Fund and that kind of stuff, I think, counts for something – people like it and that's a plus. I think if there are two wines that are the same and you go to the person and say "listen, we do this" then you will have the edge. But whether it really swings the buyer's head to the extent that you sell more wine, I do not know. (Interviewee W11)*

Yet, without any doubt, it is evident that BWI certification provides access to markets, or more accurately, a license to access certain markets (see Table 6.7). BWI can be seen as a reputation protection strategy rather than a reputation building strategy. One interviewee elegantly illustrates BWI as a beyond compliance leadership strategy:

> *On the one level side, IPW – BWI, and I mean, so without a doubt there's business value, but it's all entry level stuff, I think, it's not – it's what you need to just stay on the playing field, as opposed to a differentiator... I think, you know, the one thing is that we've also always taken the view at [company name] that in this accreditation space, it's so much better to have external accreditations come in and review your practices than you going and writing stories about what you're doing, because that's just PR speak. (Interviewee W13)*

Table 6.7 further elaborates on different levels of access which BWI certification grants it members.

Retailers are one of the most important channels for wine producers in South Africa. The relationship of one South African retailer, i.e. Woolworths, with BWI and other environmental initiatives featured strongly in the interviews. Woolworths is recognised in the South African market as an environmentally-responsible retailer. Although not all the wine suppliers of Woolworths are BWI members (see Figure 6.9), most of the wine suppliers are BWI members.

Still, it is clear from the writing on the wall shown in Figure 6.9 that BWI wines enjoy a higher regard with Woolworths. BWI affords its members a common benefit in the form of broader market access, and a minor source of differentiation in its stores.

Despite the availability of the BWI stickers to members and champions, many farms do not take advantage of it as described by one interviewee.

> *But there is a small sticker that they can put on their wine, that looks like this [shows sticker similar to Figure 6.8] … it's just a sticker. So it's about the marketing advantage that it entails. … There's not been great buy-in on the stickers. I think the people really do these things because they feel passionate about conservation. Many of these farms had already been conserving their areas, and BWI just gave them recognition. So, if BWI is one day no longer there, I think the project will still – it will still continue (Interviewee N6).*

Figure 6.9: BWI exposure in Woolworths store

A number of reasons emerged from the interviews that explain why the sticker is not used so much. These are listed in Table 6.8.

Table 6.8: Why wine bottlers do not display the BWI logo

Generic reason	Illustrative quote
The BWI label, together with other labels and information make the label too cluttered.	*It is only our Woolworths label which has the BWI logo, so we don't put it onto our other labels, because, as I said, it becomes too crowded. (Interviewee W17).*
The BWI label does not impact on the buyer's decision	*The guy does not buy your wine because you are green, he buys your wine because he likes it and maybe because he likes the label, the look, the packaging, and therefore he likes it. (Interviewee W14)* *Exactly because the BWI seal actually means nothing to most people. Even the producers say that they cannot actually see how that little effort made any effort to sales or awareness. (Interviewee N8)*
They believe it is the right thing to do despite not having the benefit of reputational gain.	*Many of these farms had already been conserving their areas, and BWI just gave them recognition. (Interviewee N6)*
Farmers believe a different certification provides a bigger benefit.	Laibach already has organic certification. As a result, it gives them sufficient differentiation from their competitors. Laibach only has the BWI sticker on its Woolworths branded products.

6.5.5 Innovation

The last aspect of business value is the innovation that comes from IPW/BWI audit reports:

> *And so we've been in that space and say how can we rather work with the accreditation agencies who will push us, because I think there is also something in that space around – okay, so we've done an audit and it's not just BWI, it's fair trading and tourism, it's – you know, in these spaces, much prefer to have an auditor come in and look at all of our processes and say guys, interesting, but you know, there's an opportunity here and how are you going to push this part of what you do, and so for us in all of those auditing spaces, personally for my role, I value them enormously, because they're our pushing space. Or our space just say so what. So you're doing that, so what. What's next? You know, rather than a tick-tick, you do these things. It might not differentiate us, but it's about at least staying where we should be, because I think if we didn't do that, or others didn't do that, things could deteriorate quickly in the spaces that really need focus. Not necessarily at [company name], but you know, just in general. I don't see it as a huge differentiator, but I think it also depends on how you use it, and we use it very strongly internally. Like we pore over our audit reports and we really look at where there are opportunities, what else can we do. (Interviewee W13)*

6.5.6 Socio-environmental value

The BWI promotes biodiversity in a sector that historically has had a major impact on the Cape Floral Kingdom. The protection of the biodiversity in the wine industry has a number of socio-environmentally-related benefits. The first benefit stems from the resilience that biodiversity provides in an ecosystem (Interviewee W4, N8).

> *More natural – indigenous flora, it's no longer a mono-culture, it's much more that – since the fynbos has returned, several animals are back. You have more snakes, more owls, the whole ecosystem is recovering. You let go under controlled conditions so that you can stimulate the natural environment. And now they see a lot more predators because of an increase in prey, and it's in balance. And the vineyards benefit, because there is a natural environment that protects itself, in other words you spray less. That's the big advantage. It costs you less, you spray less, so you get healthier grapes and healthier wine. (Interviewee N8)*

Fynbos forms an intricate part of the attraction of the region. A small forest of silver trees was discovered on one of the farms when they removed alien (invasive species) trees. The protection of such areas has aesthetic value and many local and foreign visitors to the wine region are attracted to the aesthetics of the wine route.

6.5.7 The coopetition value matrix of BWI

The CVM for BWI is relatively densely populated in terms of common economic benefits, but the benefits can mostly be classified as reputational protection for the wine industry. As with the TGRC, the BWI is not strongly associated with knowledge value that filters down to members, although some farms seem to capture value through a pro-active attitude. There was no evidence of private benefit from the interviews, which raises an interesting argument about the stability of coopetition initiatives. From the literature review it was stated that coopetition initiatives with low private benefits experience low or intermediate stability (Dyer et al., 2008:146). In the case of the BWI, both private and common benefits are low, but the initiative has remained stable for the last ten years. The answer potentially lies in the fact that many farms were doing what BWI required even before BWI existed.

The purpose of this dissertation was not to study the stability of coopetition initiatives, but the anecdotal evidence provides an interesting counter-argument. This area of research would be an interesting field for future research.

Table 6.9: CVM for the Biodiversity & Wine Initiative

		Value creation		
		Economic value	**Knowledge value**	**Environmental value**
Value appropriation	**Common benefit**	BWI provides a differentiator for South African wines that are exported. (Interviewee W5) BWI provides preferential access for members in some cases. (Interviewee N6) Attention is drawn to BWI wines in some retailers such as Woolworths. This provides free marketing value and raises awareness about BWI wines. BWI serves as requirement for a licence to operate. (Interviewee W13)	BWI serves as knowledge hub about biodiversity conservation. Audit reports provide members with areas for improvement. (Interviewee W13)	A benefit accrues to society because of environmental improvements, but this value is non-excludable (i.e. it cannot be captured by any of the coopetitors exclusively) and therefore cannot be considered as a common or private benefit. For this reason this cell is empty in the CVM.
	Privately captured common benefit	BWI Champions members can potentially gain more exposure than ordinary members can, although this is not the case it seems. Wine producers capture value from BWI when they use it to access markets they otherwise may not have had access to. Exporting wine producers capture the available benefit overseas while those that do not export lose the potential benefit.	Members capture knowledge by using the knowledge resource and gaining insight into areas for improvement from audit reports.	
	Private benefit			
	Public benefit	Socio-economic benefit in BWI stems from protection of eco-systems and the promotion of biodiversity on wine and grape producing farms	BWI raises awareness about biodiversity and informs consumers about BWI wines.	Biodiversity gains mean more natural resilience in the eco-system. Increase in ecological services such as pest control, fire control, support of indigenous fauna. Aesthetic value of indigenous fauna and flora

6.5.8 The end of BWI

At the time of this study it was announced that the BWI would cease to exist in its current form. This brings the BWI to an end ten years after it started. Some interviewees (Interviewee N6, N8) felt that the BWI had succeeded in its mandate and that there was no longer a need for a formal body.

> *The first points on their agenda was naturally to create awareness about the conservation of our Cape Floral Kingdom, and secondly to implement it, to physically get farmers to buy in and protect it, and not to pull out fynbos or build buildings. And now it reached a point where it is so – everyone knows of BWI, while wineries currently over-deliver on their targets for conservation. Many of these guys do not need help or custodianship any more. (Interviewee N8)*

Other interviewees felt that the BWI was a unique differentiator for the South African wine industry and criticised the decision. In all likelihood the BWI certification will be incorporated into the "sustainable wines" label, which represents the merging of a number of sustainability aspects. Some believe that BWI will continue to exist for champions.

6.6 THE GREATER SIMONSBERG CONSERVANCY

6.6.1 Introduction

The Greater Simonsberg Conservancy is situated along the slopes of the Simonsberg Mountain near Stellenbosch ('Simonsberg' means Simon's mountain), an area of great conservation value. It is home to fragments of critically-endangered Swartland shale renosterveld (a type of *fynbos* or fine bush biome), Boland granite *fynbos* and Mountain *fynbos*. In 2004, only four percent of the Swartland shale renosterveld was still in existence (Interviewee W12).

A big fire in 2000 exposed a small yellow-wood forest on top of Klapmutskop, prompting the five founding farms (Delheim, Elsenburg, East Hill, Le Bonheur and Warwick) to establish the conservancy in 2004. Initially the conservancy was established as the Klapmutskop Conservancy under Cape Nature's Stewardship Programme. The five founding wine farms are all situated around the Klapmutskop (or Klapmuts Hill).

Figure 6.10 provides an aerial view of the mountain (at the back) and hill (in the front).

Figure 6.10: Klapmutskop (in the front) and Simonsberg mountain behind it

Not long after the establishment of the Klapmutskop Conservancy, the conservancy managed to secure funding to remove the young invasive alien plants that were starting to grow after the fire. Alien invasive plants are associated with a number of ecological impacts. Table 6.10 provides a summary of ecological impacts of alien plants in the *fynbos* biome.

Table 6.10: Ecological impact of alien plant invasion

Alien invasive species	Disruption
Acacia longifolia (tree)	↑ litterfall ↓ diversity of ground-living invertebrates ↓ streamflow
Acacia mearnsii (tree)	↓ diversity of ground-living invertebrates ↓ streamflow
Acacia saligna (tree)	↑ biomass ↑ litterfall Change in nutrient chemistry in lowland *fynbos* Change in seed dispersal dynamics size and distribution of fuel ↓ moisture content = fire regime Attrition of seed banks of native plants with time in dense stands
Eucalyptus spp. (tree)	↑ water repellence and soil erosion
Hakea sericea (woody shrub)	↑ biomass Change in size and distribution of fuel ↓ moisture content = changed fire regime ↑ biomass; results in very intense fires when felled plants are burnt (water-repellent soils - erosion) Dense stands limit options for fire management Change in vegetation structure ↓ abundance and diversity of native birds Change in arthropod community structure (some taxa ↑; some ↓) ↓ leaf retention and % seed set in native *Proteaceae*
Lantana camara (woody shrub)	↓ diversity of ground-dwelling invertebrates ↓ suppresses regeneration via allelopathy Poisons livestock (R1.7 million/year)
Pinuspinaster (tree)	Out-competes native plants Dense stands limit options for fire management ↓ streamflow
Sesbaniapunicea (tree)	↓ access, ↑ bank erosion, ↓ streamflow Poisoning of livestock

Source: Adapted from Van Wilgen, Richardson, Le Maitre, Marais & Magadlela, 2001.

Two of the most mentioned impacts of alien plants in this dissertation are reduced water availability and fire risk. Fire risk increases because of the drier environment. Alien plants also typically increase the fuel loads in case of a fire, burn at higher intensity and grow in dense growths, making firefighting very difficult (Van Wilgen & Richardson, 1985). Overall, alien plants therefore increase the probability and costs of large veld-fires, while making the control of the fire more difficult.

Much of the natural environment has been restored through sponsorship and support from the landowners. Because of the impact of alien invasive trees and shrubs, a large focus in the conservancy (today known as the Greater Simonsberg Conservancy) is on the suppression of alien growth through mechanical removal. The members of the conservancy are actively involved in conservation efforts and in this way collaborate with each other.

In 2009, a full-time conservation officer was appointed to manage the conservancy. The conservancy has since grown to thirty-two members in 2015 (Interviewee W12).

Table 6.11 shows the interviewees who were interviewed regarding the Simonsberg Conservancy.

Table 6.11: Interviewees: Greater Simonsberg Conservancy

Interviewee	Description of organisation or person	Position	Date of interview	Duration of interview (hours)
W4/W15	Wine producer. Diversified liquor company, large sized in bottling capacity.	Sustainability manager	13 Jul 2011	1:23
W11	Wine producer, part of Greater Simonsberg Conservancy, BWI Champion. Is a farm under the control of Distell.	Wine maker	29 Jan 2015	0:46
W12/N5	Wine producer, part of Greater Simonsberg Conservancy, BWI Champion. Person interviewed is a coordinator of the conservancy and therefore plays a dual role.	Conservancy manager	12 Feb 2015	1:18
W14	Wine grower/producer	CEO/Owner & Conservancy manager	10 Mar 2015	1:08
W17	Organic wine farm. Stellenbosch region	Managing director	29 Apr 2015	0:38
N4	Environmental organisation	Project manager	24 Jun 2014	1:18
N6	Environmental multinational NGO. Local initiative in the wine industry	Project manager	16 Feb 2015	0:48
J1	Journalist working in the wine industry	Journalist	23 Apr 2015	0:30

6.6.2 Common benefits

The Greater Simonsberg Conservancy affords its members a number of benefits such as environmental legitimacy, reduced costs, reduced risk, as well as access to financial and knowledge resources (See Figure 6.11).

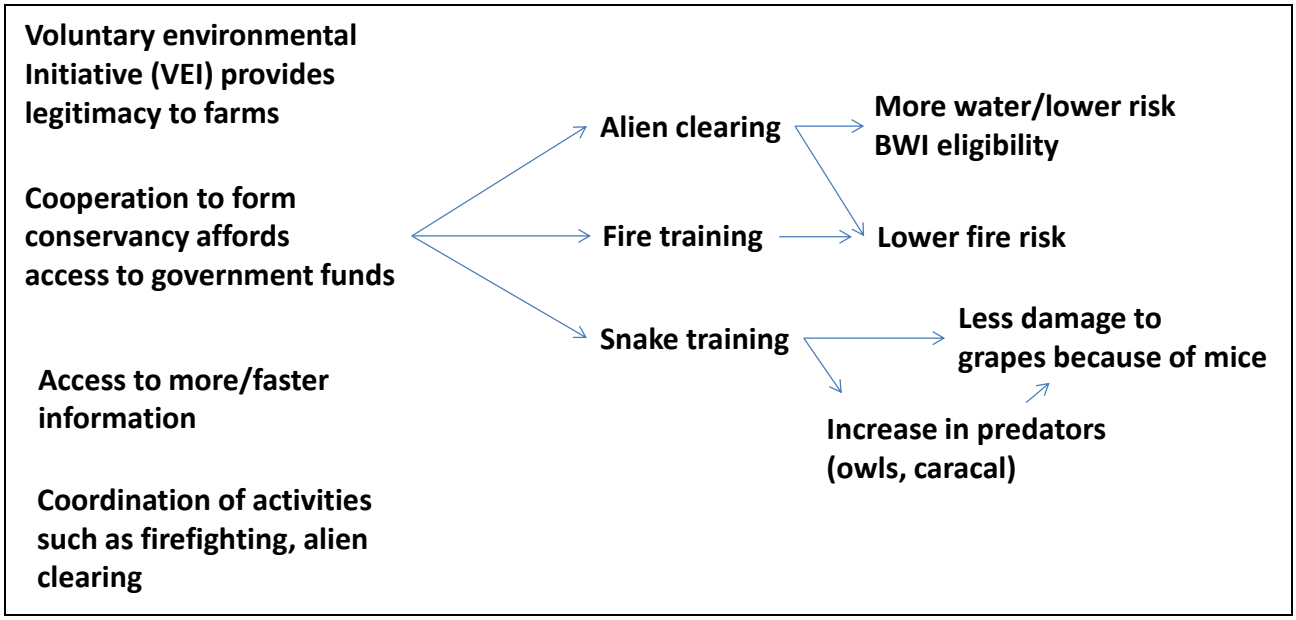


Figure 6.11: Benefits of cooperation in the Greater Simonsberg Conservancy

The benefits in Figure 6.11 could only be acquired through the conservancy, i.e. only by working together do they manage to create a benefit for everyone.

> *If that thing – that vehicle was not there, we would not today have had so many farms together. To belong to the conservancy is good because of fire protection, insurance risks, security, social networks, access to information and the training courses. (Interviewee W14)*

Asked by the interviewer if such an initiative could have worked at a dyadic level, the same interviewee responded as follows:

> *…a farmer working with a farmer to address environmental issues hasn't worked in our situation. And it would never have worked if it were not for the conservancy. And I think it flowed from there that everyone said "I want to be part of the Simonsberg Conservancy because it's an identity I can belong to". And from that you get some benefit. (Interviewee W14)*

The power of the bigger collective was also evident from the interview with Interviewee W12. Because the farmers collectively created a separate entity to govern the initiative, it allows for easier access to funding.

> *Not only does the central body facilitate access to government funding, but also makes information and knowledge more accessible to member-farms.* (Interviewee W12)

Interviewee W14 also elaborated on this aspect:

> *But now it's just easier to provide that type of conservation service to your members. They do not need a secretary to have to call around and about in order to find out where to get an owl house or where to get this or that. They can call one place and we already have that network and we can help them with that, or if we do not, we can get it. So you get to know the needs of your people. (Interviewee W14)*

The clearing of alien invasive plants like black wattle, pine and gum trees is a key activity of the conservancy as such aliens presents a threat to water supply, fire management and conservation of biodiversity in the area.

> *Because you know, to clean a block in the mountain and to transport the cuttings from there, is a lot of man-hours. Some of those blocks are steep and all that. So, that's an expensive option, or an expensive situation, but there are definitely many advantages. It is a huge water issue. I mean, there is a scarcity of water – that we all know. And I think water is our primary objective, and it is about the resilience of the farm. (Interviewee W11)*

Over 478 ha of alien invasive plants have been removed because of funding from LandCare. “LandCare is a community-based and government supported approach to the sustainable management and use of agricultural natural resources” (Landcare, 2016).

Although farmers pay a membership fee, the financial benefit they gain through cooperation far exceeds the membership cost.

> *So we are very grateful for the assistance. I would necessarily have applied for such external funding as an individual, but because they are part of this group, and we are a non-profit organisation, it is easier for us to apply on behalf of the group and then to spend it at grassroots level. (Interviewee W12)*

The collective action provides farmers with a substantial economic benefit. More water translates to potentially more hectares that can be planted, increased yield per hectare, lower drought risk and lower risk of fires.

The value attached to reduced risk of veld-fires is extremely hard to quantify, as the cooperation to fight fires may prevent the fire from reaching a particular farmer, in which case the potential loss is impossible to estimate.

A number of interviewees gave example of increased water, not only on their own farms but also on other farms (W12, W11, W14, N6). In essence, the removal of invasive trees increases the resilience of farms.

> *I have photographs here of places where there was never water. We started cutting down trees and as you progress up the gorge, the water starts running at the bottom. You know, they say that a eucalyptus tree that a grown man can put his arms around, uses 960 litres of water a day. So you can think for yourself (Interviewee W11).*

While cooperation is required to access government funding, farmers do not cooperate in the alien removal activity. Alien clearing is coordinated centrally and the worst areas enjoy priority. As a result, bigger farms and farms that have more invasive trees capture a bigger component of the benefit associated with clearing (Interviewee W12). Because there is a limited *pie* of funding every year, the capturing of the benefits flowing from the clearing of invasive species can be considered a zero-sum game.

A last economic benefit of alien clearing is BWI-eligibility. As mentioned before, BWI requires farmers to preserve a certain percentage of their farms for indigenous flora. When farmers remove alien vegetation, it naturally opens up space for the natural vegetation to return and therefore makes BWI certification easier to attain.

While alien clearing may be a zero-sum activity, snake training is a positive-sum activity. Interviewee W17 explained the economic value that flows from increased knowledge value (awareness).

> *…you know, people, when they see a snake, they want to kill it. The guy who received snake training will think twice about killing it... the snake captures all the mice in the vineyards. And we sometimes have problems with mice. In other words, if there are enough snakes, there will not be mice, or there will be far less mice.*

The conservation of snakes (indicative of biodiversity) therefore provides farms with ecosystem services in the form of natural control of pests, in this case, mice.

Outside of the tasting area of Laibach, one of the Greater Simonsberg Conservancy members, is a sign that declares its membership of the conservancy (see Figure 6.12). Such a declaration of membership provides legitimacy to member-farms. The sign provides an example of where environmental coopetition is close to consumers.

Figure 6.12: Greater Simonsberg Conservancy membership at Laibach wines

The sign in front of the tasting room in Figure 6.12 arguably provides a stronger association between environmental action and the wine producer than the BWI does. The conservancy is more exclusive, and is potentially easier for consumers to understand than the BWI.

6.6.3 The coopetition value matrix for the Greater Simonsberg Conservancy

The Greater Simonsberg Conservancy turned out to be one of the richest case studies in terms of the common benefits at both economic and knowledge level. In the view of the researcher, this may be related to the fact that the locus of control of the conservancy lies very close to the member-farms. It also relates to the fact that the partners are all very close in terms of social, cognitive and geographic proximity. All the farmers experience the same problems and therefore the cooperation is more meaningful than an industry-wide initiative (like the BWI) or a supra-industry wide initiative (like the TGRC).

The CVM in Table 6.12 reflects the richness in common benefits, as well as in socio-environmental benefits.

Table 6.12: CVM for the Greater Simonsberg Conservancy

		Value creation		
		Economic value	**Knowledge value**	**Environmental value**
Value appropriation	**Common benefit**	Easier and more efficient access to government funding for alien clearing (positive-sum logic) Removal of alien trees (zero-sum logic) Access to more water (positive-sum logic) Less fire risk (positive-sum logic) Snake & fire awareness training (positive-sum logic) Brand protection from Voluntary Environmental Initiative (positive-sum logic)	Snake & fire awareness training (positive-sum logic) Coordination of fire-fighting efforts provides an opportunity to respond faster. (positive-sum logic) Conservancy office serves as an information and knowledge source (positive-sum logic)	Socio-environmental value is per definition value that accrues to society and a public good. It therefore implies that it cannot be captured by the coopetition parties.
	Privately captured common benefit	The farmer with the highest infestation of alien trees receives the biggest benefit from government funding for alien clearing. Yet, this also translates to lower risk for other farmers.		
	Private benefit			
	Public benefit	Reduced fire risk benefits the immediate community.	The conservancy runs various education programmes for school children and farm workers around conservation. (Interviewee W12)	Removal of alien species allow natural habitat for fauna & flora Return of animals such as caracal, owls, snakes, mice. More water

As was the case with BWI, there was no indication of private benefits. This may not be an entirely accurate reflection, as the next case tells about one particular initiative that was embedded in the geographic space of the conservancy. However, the researcher decided to separate the case study as it represents a smaller collaboration effort that started and runs separately from the conservancy.

6.7 CONTROL OF MEALYBUG USING NATURAL PREDATORS

6.7.1 Introduction

Laibach organic wine was one of the first wine producers in the Stellenbosch region and in South Africa to farm organically. The wine producer is well known for the Ladybird brand (see a marketing pamphlet of Laibach in Figure 6.13).

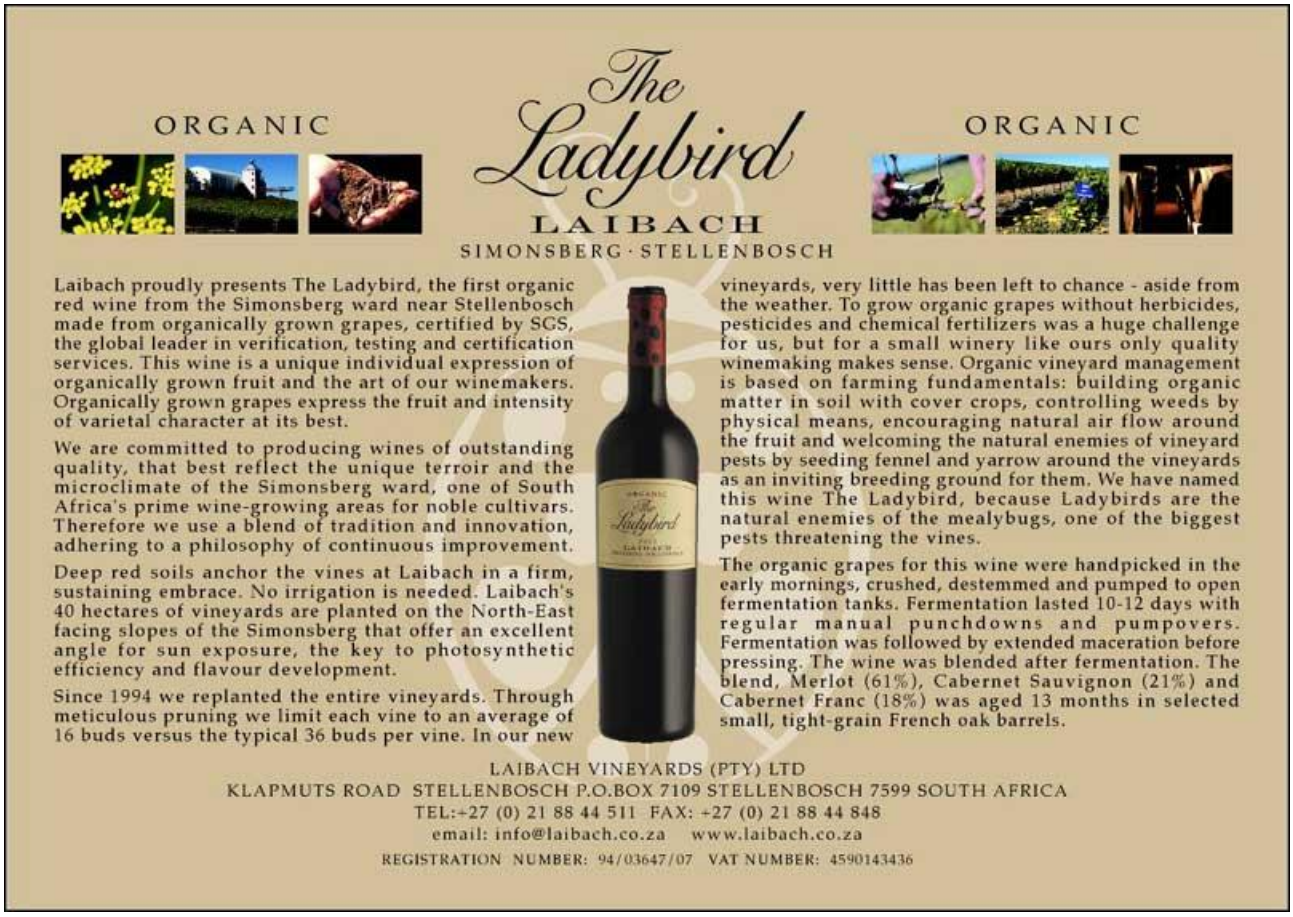


Figure 6.13: Marketing pamphlet of The Ladybird wine brand

The ladybird refers to the ladybird as a natural predator of the vine mealybug *(Planococcus ficus),* a major problem pest for wine farmers. Mealybugs feed on plant juices and sap, and secrete honeydew that is a growth medium for sooty mould fungus (Jonker, 2014). The ability to photosynthesise, especially in younger plants, may be affected negatively by the fungus and can lead to poor yield or the death of the vine. Premature leaf drop may happen as a result of the mealybug's toxic saliva. Figure 6.14 shows the typical signs of mealybug infestation.

Figure 6.14: Evidence of vine mealybug

Mealybugs rapidly become resistant to pesticides. The application of broad-spectrum insecticides can lead to outbreaks as the insecticide would kill the predators and potentially allow the mealybug population to boom instead (Jonker, 2014).

Laibach was the first among its peers to make use of *perminutus* wasps and *cryptoleamus* bugs to control mealybug numbers. Its neighbours followed suit and, at the time of this study all Laibach's neighbours made use of natural predators to control mealybugs. The cooperation is weak, and one could even question whether this should be seen as cooperation at all. As a respondent (Interviewee W16) in a different conservancy noted: "to go to church together is not coopetition". Yet there are definite signs that knowledge is transferred between farmers, either through the breeder of the insects or between farmers themselves:

> *Yes, it's a fairly loose cooperation, you know. What happens is that Braam Jonker, the guy who deliver the predator insects for us, says "but listen, at Koos this is happening, over there something else is happening." and then I will see Koos at an Agricultural Society meeting or at the cooperative. It's not explicitly said "listen here, you do that block or you do that block or you do this block". It is every guy doing his bit on his farm. And he runs his farm in order to make economic sense for him. We all try, every guy is trying. You start with your worst affected spots and so you move out. (Interviewee W17)*

Interviewee W11 also confirmed that farmers often exchange knowledge about natural predators, but made it explicit that the cooperation is not at a conservancy level, but rather between farms:

> *It's one of those type of things that if I do it alone, it will not make a dent. If you are not doing it as a group, it does not help to do it on an isolated farm, as the populations are just too big. And now we are at a stage where the whole spot here all work together, that's us and Laibach and [wine farm X] and [wine farm Y] and [wine farm Z]. All of us in this area release these natural enemies, predators of mealybugs. It's been a few years now and it works. At this point there is very limited use of pesticide for mealybug. (Interviewee W11)*

6.7.2 Common benefit and privately captured common benefit

Exchanging knowledge (common knowledge becomes privately captured common knowledge) about the control of mealybug creates a common economic value for all the farmers by reducing the cost of controlling mealybug numbers.

Laibach is the only organically certified wine producer among the cooperating farms. Without the cooperation from their neighbours, Laibach would not be able to control mealybugs as effectively.

> *They [our neighbours] also no longer spray insecticides, or 90% of them [our neighbours] no longer use insecticides. Because we can control the mealie bug 100% in an organic way. …if everyone uses the parasites, you understand, then there will be very few mealybugs. And if one guy sprays, you understand, he will kill all the predators. But like I said, everyone around me uses parasites. So it actually works very well.*

6.7.3 Private benefit

Laibach has done exceptionally well on the strength of the Ladybird brand. In the words of the respondent:

> *Yes. Look, we are doing very well. Our Ladybird brand is doing very very well. We started in 2000 with it, and with only six acres at the time; we did not have much then. But every year we converted more and more to organic, so in 2010 the whole farm became certified as organic. We were one of the first organic farms in Stellenbosch. And when we started 5% of our production went into the Ladybird brand, and today it's at 80%.*

In 2015, Laibach's 2014 Chardonnay was recognised as one of the top organic white wines in South Africa by the Nedbank Green Wine Awards (see Figure 6.15). Because Laibach is the only organically certified farm in the group of coopetitors, they are able to generate private economic benefits that non-organic farms do not have access to. This would include increase in brand value because of the Nedbank wine awards, and the potential increase in wine sales.

Figure 6.15: Laibach acknowledged by the Nedbank Green Wine Awards

6.7.4 Distance to consumer

In response to the question "How important is it for you to tell the client about the environmental activities that you do?", the interviewee responded as follows:

> *No, it's important, you understand, because people know Ladybird is an organic product and they want to know why; why it is organic. But at least the guy can ask, you follow? And then; it is nice for the consumer then. It is interesting for him to hear about the ladybirds and the things that we do.*

The quote above accentuates the importance of raising awareness of the *result* of the coopetition initiative, but not so much raising awareness of the details of the cooperation between competitors. Thus, the case shows that the coopetition initiative and activities may not be marketed explicitly, but the results are marketed as part of an eco-branding strategy.

6.7.5 The coopetition value matrix for the Mealybug

The CVM of the mealybug initiative is somewhat different to the ones from previous case studies. It is the first case where a private benefit is generated by one partner because of exclusive access to a market – in this case the organic wine market. Farmers do not seem to be convinced that there is a cost saving, but most interviewees believe it will reduce costs in the future as the ecosystem builds up resilience.

Table 6.13: CVM for the Mealybug case study

		Value creation		
		Economic value	**Knowledge value**	**Environmental value**
Value appropriation	**Common benefit**	Brand value is available to all participants Natural pest control may reduce operational costs in the long term.	Farmers exchange knowledge from time to time, but not in a coordinated way.	Socio-environmental value is per definition value that accrues to society and a public good. It therefore implies that it cannot be captured by the coopetition parties
	Privately captured common benefit	Laibach generates most of the brand value by using the ladybird in its marketing and raising awareness about the control of pests using natural predators of mealybugs. The ladybird acts as an eco-label. All the farmers have reduced expenses because of natural pest control.	Farmers learn from each other and the supplier of mealybug predators.	
	Private benefit	Laibach is the only organically certified wine producer amongst the group of wine producers in the immediate vicinity. Because of its neighbours using natural pest control, Laibach's attempts are also more effective.		
	Public benefit	Less herbicide and pesticide spraying in the region is healthier for the immediate community.	The ladybird brand and marketing around brand raises awareness of natural pest control.	Increased biodiversity in vineyards.

6.8 ORGANIC FARMERS ASSOCIATION

6.8.1 Introduction

Three of the farmers (see Table 6.14) who were interviewed participate in a semi-formal cooperation between organic farmers.

Table 6.14: Interviewees: Organic Farmers Association

Interviewee	Description of organisation or person	Position	Date of interview	Duration of interview (hours)
W17	Organic wine farm/ Stellenbosch region	Managing director	29 Apr 2015	0:38
W18	Biodynamic wine farm/ Stellenbosch region	Owner	12 May 2015	1:06
W20	Organic farmer, supplier of grapes to organic wine producer W18	Owner	15 Sep 2015	0:41

Although the group is still in an informal structure, talks are in place to formalise an association of organic farmers. Interviewee W18 relayed the origins of the group:

> *So, each time, you know, you only have one chance a year, and you have one harvest a year. So, this thing very quickly became very rough. So that's when we realised, you know, it will benefit all of us if we can work together.*
>
> *It started with a phone call. (Interviewee W17) or Willie or whoever asked "what do you do with "kweek" (Cvnodon dactylon or Bermuda grass), or what do you do with weevils or what do you do with this, or whatever." And it happened so often that we thought "let's get together and then we drink a cup of coffee and talk about it". And then we discovered, you know, that (Interviewee W17) farms differently to Willie, who farms differently to me or Piet or Sannie or whoever. And then we started to take turns to go to each other's farms, and this thing has grown and it continues to grow. I think it was only informally, we were three or four, five. Now we are close to 15. As recently as last week, I again received a call from someone who wants to be part of the group. (Interviewee W18)*

6.8.2 Knowledge value

The primary purpose of the cooperation between farmers, as the above quote illustrates, comes from a need to share knowledge and best practice:

> *About four times a year we get together on another person's farm, and we discuss the work for that season, whether its fall or spring or summer or winter. And it's very interesting, because every guy has a different opinion, but we can at least hear why people do what they do and why they think as they think. And I think we all learn and grow quickly in this process, and we have learnt a lot. You know, rather than every guy*

> *repeating the same mistakes, we very quickly started to share with each other certain pitfalls and things that happened. And I think, as a whole, the group benefitted, and individual farmers went ahead faster than when every farmer tries to figure it out on their own. (Interviewee W18)*

The collective knowledge in the group is a common benefit that increases with a positive-sum logic. As farmers share their experiences, everyone gains from it. The knowledge gained in the group helps farmers to reduce the risks of pests and crop failure, and therefore reduce the costs. As it happens, Interviewee W20 learned from Laibach about how to deal with mealybugs, even though they are not part of the neighbour-network around Laibach that was discussed earlier in this chapter.

> *I cannot remember if it was at Laibach, but one of the guys told me that's what they do with mealybugs, yes. We have no problem when we need advice. We went to Laibach exactly on such a day and he showed us what they are doing there. (Interviewee W20)*

The common knowledge is therefore captured by each farmer when they learn from other farmers.

6.8.3 Economic value

Once the knowledge from the group is applied on individual farms, it leads to economic value in the form of lower risks, lower costs and/or higher yields than would be possible in the absence of coopetition.

> *There is absolutely a wish in the wine industry to farm more biologically because it makes economic sense. It uses less electricity. The less you irrigate, the less you need to pump and the less money you spend. So many of these biological things make good economic sense, and that's why they do it. (Interviewee N6)*

The above quote is also a good illustration of how collaboration with competitors is different to collaboration with other entities. Organic farmers would not be able to learn much from conventional farmers, and *vice versa*. It makes sense to share knowledge with competitors that experience the same problems.

But there are also other economic benefits stemming from the cooperation between organic producers. The cooperation between farmers started out as a knowledge-sharing initiative, but has since grown to other forms of cooperation. By cooperating with competitors through knowledge sharing, the members of the organic farmer group have identified other opportunities to cooperate, such as joint stands at wine shows.

> *… let's say we go to a wine show, then we book as an organic body, so then all the organic farms stand together. So in other words, if someone is looking for organic wine, he doesn't need to search for you among all the other where you would disappear. Thus we form a group that is differentiated from the rest of the market, but compete with each other. (Interviewee W17)*

One of the farms in the Organic Farmers Association is Reyneke Wines. (More focus is placed on Reyneke Wines in Section 6.9. The reason that it is covered here is because the examples below relate well to the structure created by the Organic Wine Association).

Reyneke Wines provides a very tangible example of economic value that flows from the Organic farmer group:

> *I cannot comment on other people's businesses, but if I just look for example Reyneke Wines, we have what they call an estate wine, in other words, wine from grapes produced on this farm. We very quickly realised there was not nearly [enough] – we cannot meet the demand. Thus, the wine was all sold out on allocation and it started to cause problems, because you know, if you are listed at a restaurant and you cannot supply the wine, the restaurant takes you off the list and you will not be listed again.*
>
> *As other farmers started to convert their farms to organic, let me say a little later than us, they delivered very good grapes, but not long enough to establish their own brands. For them it was difficult because they had taken on all the risk, they had worked very hard and did everything right, but they could only use 20 or 30% of their production, and then they would need to sell the rest at conventional prices to conventional wineries. And we thought well, there is an absolute synergy, we can offer them a premium and we can grow our brand.*
>
> *So, we now have three series; we have a biodynamic series from grapes of this farm only, and then we have a range of organic wines and we have a Vine Hugger series. The organic and the Vine Hugger series are made from grapes from our farm, but we have in the group of fifteen maybe two or three farms, you know, that can supply good quality, and we buy bulk wine or grapes from them and label the wine as Wine of Origin: Western Cape or whatever.*
>
> *[…] we just saw this thing grow, and if we work together, individually we can actually achieve more than if we each try alone.*

As the quote suggests, Reyneke Wines buys organic grapes from other farmers in the Organic Farmers Association, of which some are his neighbours. This allows Reyneke Wines to meet the increasing demand for its wines in the market, an economic benefit that Reyneke captures for itself (i.e. a privately captured common benefit) because of its brand and access to market.

A neighbour of Reyneke Wines, makes reference to three big advantages of converting his whole farm to organic production with the help of Reyneke:

i) The price for organic grapes are roughly double that of conventional grapes;
ii) The operation costs are lower, and
iii) The market is guaranteed. At the time of the interview, the full harvest of organic wine grapes was sold to Reyneke Wines.

Although the yield of an organic vineyard is lower, the higher price, lower costs and less market risk makes the conversion to organic production worthwhile.

Apart from buying organic wine from producers, Reyneke Wines also reciprocates by providing resources to wine producers that they buy from:

> *I received a call the other day from one of the guys who has been given an opportunity to provide wine. But he did not have enough wine, so we were able to tell him, okay, here's a few thousand litres, now you can go ahead again. I mean, you help us every year with your grapes, and here you now have an opportunity. (Johan Reyneke)*

As can be seen from this section, there are multiple economic benefits for the members of the Organic Farmers Association. The case study up to now could have been any initiative that involves knowledge sharing. However, what makes this example environmental coopetition is the socio-environmental value that is created in the process.

6.8.4 Socio-environmental value

By sharing best practice between farmers, more farmers convert and apply organic or biodynamic practices. The conservation and restoration of a natural eco-system represents socio-environmental value. Such improved eco-systems provide resilience against pests, diseases and droughts:

> *You do not use synthetic fertilisers, everything is natural fertiliser. In other words, the soil cannot salinate or get polluted, and we don't use insecticides that kill everything, and we don't use herbicides or synthetic fungicides. (Interviewee W17)*

The socio-environmental benefit is deliberate, and the sharing of best practice is deliberate as explained by Interviewee W18:

> *I think all of us, especially the guys in the beginning, took risks because we thought it was the right thing to do, rather than perhaps the most financially beneficial thing. I am of the opinion that it is not healthy for me or my family or my natural environment to spray these herbicides, pesticides, fungicides and stuff the whole time. So, do I now want to keep my trade secrets to myself and watch as the rest of the place is destroyed around me? Or would I rather say "come guys, it's not that difficult, it's completely possible. If you're not sure whether you want to or not, become part of our group and take a cautious approach. Discuss your fears and your risks and your stuff with us and you will see it is quite feasible." (Interviewee W18)*

It is difficult to see any financial benefit for an organic farmer to encourage other farmers to farm organically. Although the demand and market for organic wine was and is growing fast, there is no apparent strategic benefit in sharing 'trade secrets'. One can therefore argue that there is a moral driver present rather than a legitimacy or business case for doing so.

The Organic Farmers Association is far from consumers. Nowhere is there any evidence of certification or marketing material that makes mention of it. As a result, there is no brand value for the common benefit or any of the members individually.

6.8.5 The coopetition value matrix for the Organic Farmers Association

The Organic Farmers Association is a good example of how a coopetition initiative evolves over time. The Association started informally (and was still somewhat informal at the time of the interviews) as a vehicle to share knowledge. With time, it evolved to include economic transactions that benefit both the more-established farms like Laibach and Reyneke Wines through increased access to grapes, and the less-established wine-grape growers through higher prices for their grapes.

Table 6.15: CVM for the Organic Farmers Association

		Value creation		
		Economic value	**Knowledge value**	**Environmental value**
Value appropriation	**Common benefit**	Cooperation around wine fairs to share expenses and form an organic cluster so that organic wines are easier to find. Higher prices for organic wine and grapes.	Farmers meet every quarter on a different farm to exchange best practices. (Interviewee W17, W18, W20)	Socio-environmental value is per definition value that accrues to society and a public good. It therefore implies that it cannot be captured by the coopetition parties
	Privately captured common benefit	Each producer may experience increased sales at fairs because the farmers have a joint exhibit. By helping other farmers convert, the farmers with stronger presence in the market is able to source more grapes, while the producers of the grapes attain a higher price. (Interviewee W18, W20)	Farmers learn from one another and apply the knowledge on their own farms. One example is interviewee W20 who learnt from Laibach how to deal with mealybugs.	
	Private benefit			
	Public benefit	A healthier environment for the direct community. Healthier wines for consumers.		Natural yeasts control harmful yeasts and mites (Setati, Jacobson, Andong & Bauer, 2012).

The CVM for the Organic Farmers Association illustrates how value is created for different stakeholders. None of the interviewees referred to any value that could be regarded as private benefit. What is also evident is the absence of public knowledge value. Such value would reflect public awareness, and it would be worthwhile for the member farms to reflect about whether this is a deliberate decision.

6.9 REYNEKE ORGANIC WINES

6.9.1 Introduction

Reyneke Organic Wines is situated in the Stellenbosch wine region. The farm was first established as Uitzicht in 1863. In 1988, the Reyneke family bought a part of the farm and a number of years later bought the remainder. Since 2000, the farm has been following principles of biodynamic farming. In 2006, Vinimark approached the owners because they had identified a niche market for environmentally-friendly wines. As a result, Reyneke Wines sold 50 percent of the ownership in the Reyneke Wines label. As with Laibach, Reyeke Wines won an award as one of the top organic wines in South Africa in 2015 in the Nedbank Green Wine Awards (See Figure 6.16).

Figure 6.16: Reyneke Wines won award as best organic red wine in South Africa in 2015

This case study revolves around the value that is created through the collaboration of Reyneke Wines with its direct neighbours. One economic component of the collaboration was already discussed in the previous case as both Reyneke Wines and the particular neighbour are part of the Organic Farmers Association.

Three interviews (W18, W19, W20) mainly dealt with Reyneke Wines and the collaboration with its neighbours, although some of the other interviewees (W10, W14, W17, N6, N8) directly referred to Reyneke Wines in the interviews.

Table 6.16: Interviewees: Reyneke Organic Wines

Interviewee	Description of organisation or person	Position	Date of interview	Duration of interview (hours)
W10	Wine producer, Stellenbosch area, known for pro-active environmental initiatives, does not cooperate much apart from BWI.	Wine maker	21 Jan 2015	0:34
W14	Wine grower/producer.	CEO/Owner & Conservancy manager	10 Mar 2015	1:08
W17	Organic wine farm/ Stellenbosch region.	Managing director	29 Apr 2015	0:38
W18	Biodynamic wine farm/ Stellenbosch region.	Owner	12 May 2015	1:06
W19	Ultra-premium wine producer, small bottling capacity, Stellenbosch region.	Owner	11 Sep 2015	0:39
W20	Organic farmer, supplier of grapes to organic wine producer W18.	Owner	15 Sep 2015	0:41
N6	Environmental multinational NGO. Local initiative in the wine industry.	Project manager	16 Feb 2015	0:48
N8	Wine body	Communications manager	13 May 2015 19 May 2015	0:48

Johan Reyneke, owner of Reyneke Wines, related the story of why he and other organic farmers started to exchange experience and knowledge.

> *This is not a family farm that has come through many generations; […] I tried to farm under the bank as far as they let me, and they basically told us they are sailing close to the wind with us, "we will not actually allow you to take on more risk by farming organically".*
>
> *I did manage to persuade them to allow me to farm a quarter of the 11 ha as organic at the time, and the first year was a nightmare. I had every pestilence, plague, disease, whatever you can get in viticulture in South Africa here in this little block of Pinotage; it was terrible. Our harvest fell to two tons a hectare, which as you know, is not sustainable.*

Reyneke realised that there was a lot of risk in farming organically and that he could potentially lose the farm. It was at this point that Johan Reyneke started to engage with other organic farmers as relayed in the previous case study.

6.9.2 Knowledge value

In the case study of the Organic Farmers Association (discussed in Section 6.8), it is evident that Reyneke participates in knowledge sharing in other networks. As already pointed out, Reyneke also began collaborating with his direct neighbours. Reyneke helped some of his neighbours to convert to organic practices and some of these neighbours have subsequently become members of the organic farmers group.

In the case of Interviewee W19, a wine producer who is not a member of the Organic Farmers Association, there is a two directional flow of know-how between the owner and Johan Reyneke:

> *Johan and I talk a lot about many different things. He will knock on my door to discuss finance, for advice, for strategy. And we knock on his door to talk about biodynamic farming, organic stuff, how he does his things because we want to learn from him and apply it here with us. His overall marketing is based on it, but we want to do it in order to control and improve the environment. (Interviewee W19)*

The closer collaboration with neighbouring farmers has had significant spin-offs for Reyneke Wines itself, but also for its neighbours.

6.9.3 Economic benefits

What is interesting in the case of the cooperation between Reyneke Wines and its neighbours is the symbiotic nature of the benefits that are generated. Because of different foci, the different entities all benefit without necessarily impeding on each other. In the previous section dealing with the Organic Farmers Association, mention was made of the value to Reyneke to convert other farmers to organic, as some are its neighbours (like Interviewee W20) mentioned. It was also mentioned that the neighbour benefits in a symbiotic way by attaining higher prices for their grapes in a guaranteed market.

Another neighbour, Interviewee W19, chose not to convert completely to organic farming, but does apply many of the principles. Interviewee W19 provided an example of how they cooperate with Reyneke Wines in the production of compost because of physical barriers they experience.

> *We had a compost pit right above our borehole, but IPW [Integrated Production of Wine, an industry body] came to us and said you cannot have a compost heap above your water source. So we had to decide to either stop making compost or do something else. Then we said "why don't we talk to Johan, let's take all our compost and we will make our compost with his compost and then we divide it there." So in that way we will work together again.*

There is seemingly very little benefit for Reyneke Wines in jointly producing compost, but they do so anyway.

Another example of cooperation between Reyneke and a neighbour provides another case of environmental coopetition. As part of its biodynamic practices, Reyneke Wines use cattle to fertilise the soil rather than other forms of fertilisation. When he did not have enough feed for his herd, Johan Reyneke asked his neighbour if his cattle could graze in the neighbour's vineyard. Reyneke tells the story:

> *I have a herd of cattle here, I started with two cows, I now have more than 60, and the farm is only 37 ha. So, there is no way there is enough food for all the cattle. So these guys allowed me to put some cattle on their land. I pay them, they get the dung of the cattle, they get additional income, some are making compost and, you know, are now far less dependent on primary input and production costs to keep their business going. […] There is a growing demand for organic wine and those are my cattle. It's like a sub-business that grew from this that nobody planned.*

Reyneke mentioned that biodynamic farmers are not subjected to exchange rate moves when it comes to fertiliser prices. Reyneke's neighbour supports this view:

> *He [meaning Johan Reyneke] is a pioneer; so many of the things he has tried and saw what works and what does not work. Part of organic farming is that you use cattle and Johan has herds. So he and I work together regarding the cattle. He brought his cattle here, so his cattle graze on my farm. A big thing with it is that you can make compost for example, it's very important. And oh, you know, we saw now, we have allowed the cattle to graze in the vineyard this year. So, previously we used machinery to cut the grass. Now the cattle eat the grass. You do not pay the cattle to keep the grass short.*

Both Reyneke Wines and the neighbouring farm benefit economically from the cooperation, but in a synergistic way.

As with Laibach in the mealybug case study (in Section 6.7), Reyneke benefits directly from converting his neighbours to organic farming because he suffers fewer losses from potential herbicide and pesticide drift from his direct neighbours. The neighbours realise that they cannot farm with conventional methods while Reyneke Wines does not.

> *Well, if he is biodynamic on his own island and he may not spray and we spray, then the pesticides may affect his vineyards. His pests, because he would have more pests, and I'm talking about insects and such things, can come to us again. So, we are starting to work together and saying "okay, let's make this whole hill almost organic. You can go certify, we're not going to certify, but it's much better for the environment". (Interviewee W19)*

Interviewee W19 estimated that there is a negligible difference in cost between farming organically and conventionally. They adopt some of the practices from Reyneke, but do not follow the rules strictly. Table 6.17 summarises the synergistic value appropriation between the farms.

Table 6.17: Synergistic value appropriation between Reyneke Wines and its neighbours

	Reyneke Wines	Neighbouring farms
Conversion to organic farming	Access to more resources Increased production due to more organic grapes Increased sales Access to organic grapes Diversification of supply Less drift from neighbouring farms Increased brand visibility	Higher prices for grapes Guaranteed market
Cattle grazing on neighbour's farm	Access to more feedstock Able to grow herd size and sell cattle	Reduced costs of keeping grass short Cattle fertilise vineyard
Reduced use of pesticide and herbicide	Greater biodiversity in natural aromatic and biocontrol yeasts.	Greater biodiversity in natural aromatic and biocontrol yeasts.

Source: Researcher

Reyneke Wines can increase their brand value as biodynamic vineyard. In a number of the interviews for this study, Johan Reyneke would be mentioned as a pioneer in the wine industry.

> *I know Reyneke is [collaborating] – you know, when they talk about environmentally aware, Reyneke is always like one of the most important places, but they're one of those sort of top biodynamic producers in South Africa. But I mean, it's very much a guy with his passion for biodynamic and he tells the story well, you know, Johan Reyneke. (Interviewee W10)*

Lastly, the conversation of brand value again returns to the issue of distance to consumer. Reyneke Wines gain considerable brand value as a leading organic farm. One respondent felt that Reyneke has an opportunity to market the cooperation of surrounding farmers to increase the capacity for organic and biodynamic wine producing in the immediate region.

> *He [Reyneke], out of that cooperation agreement, can use it in his marketing and say look, it's rubbing off on our neighbours, and they are now starting to improve, because once again, an organic biodynamic guy cannot be an island. He has to rally his neighbours around him. (Interviewee W19)*

6.9.4 Socio-environmental value

A resilient eco-system holds economic value for wine producers through reduced costs, healthier grapes and wines, and ultimately higher prices for the wines. A study done by the Institute for Wine Biotechnology at Stellenbosch University (Setati, Jacobson, Andong & Bauer, 2012) evaluated the impact of different farming systems (viz. conventional, integrated and biodynamic viticulture practices) on grape associated yeast diversity. Part of the study was conducted in the vineyards of Reyneke Wines, as well as some of its neighbours.

The study reported that higher number of yeasts with biocontrol potential were isolated from the biodynamic vineyard. *M. geulakoningii*, for instance, is a mite-associated yeast that causes 100 percent mortality in different species of mites, e.g. carmine spider mite and citrus rust mite, and which could be effective against other mites that are found in vineyards (ibid.). The authors concluded that:

> *…the unique diversity could be due to the poor phytosanitary condition associated with the biodynamic vineyard, but it could also reflect the establishment of the natural enemies of different pests in the absence of pesticide application (ibid.: 6).*

Apart from biocontrol, yeasts and other microorganisms contribute significantly to the final aromatic properties of wine (ibid.: 1).

The same study also reported that there could be limited cross-transfer of yeasts from one vineyard to another (ibid.: 9), supporting an earlier view that biodynamic farming requires the cooperation of neighbours, but furthermore, that it also benefits its neighbours.

Apart from micro-organisms, other forms of biodiversity are also impacted by conventional farming techniques. Herbicides, pesticides and fungicides have a negative impact on multiple trophic levels (a term referring to the place in the food chain).

> *You know, in our original days when we had mealybugs, you would come in and you spray this vineyard for mealybug, but with the mealybug, you also spray the ladybirds and all the other good insects, killing the chameleons. (Interviewee W19)*

Interviewee 19 further explained the positive impact of organic farming on natural predators on his farm:

> *So, our owl population is growing. Our hawk population is growing. Our chameleons are starting to come back. We now see ladybirds. We are even seeing small buck in the vineyards. (Interviewee W19)*

A visible increase in biodiversity affords Interviewee W19 an opportunity to tell visitors (physical and on their website) about the conservation of the natural wildlife. While Reyneke Wines uses its biodynamic methods as a strong differentiator in the market, it rather serves as a reputation protection tool for Interviewee W19:

> *We want to see that nature returns. And yes, we talk a lot with people. You know, part of our tour, when we go through here, we show them "there is an owl". "Oh, you've got owls? What do you do with owls?" And we explain, "you know, if you poison the mice in the vineyard and the owl eats a dead mouse, he eats the poison and then the owl also dies". And that's the kind of thing that we can convey. That we are firstly working with nature, and secondly, that we are carbon neutral producers. And we do it again in a different way, not by saying we're going to use small thin bottles or not going to export, but rather planting plants around the vineyards. (Interviewee W19)*

However, there is also appreciation among the farmers for the intrinsic value of the environment:

> *In other words, if you look at a person; let's say you work in a company and you earn X amount, it's hard to think of yourself as the sum total of value X. You'd like to think there is a bit more to you than what you earn. Now, biodynamic farming feels strongly that people deserve that respect, but so do animals and plants. I would almost say everything, soil microbes, fungi, all life in the soil, everything deserves that respect. In other words, when you walk in the vineyard and you see a little weed, you don't look at those plants and say "you compete with food and water for my vineyard, so I will kill you". I seek a greater harvest. You will manage it, but you don't assume that if you cannot make money out of something, that it is completely worthless. Thus, the effect or impact on your management style is that you follow a bit of a 'live and let live' approach. So, you know certain things, you understand certain things, and you respect it. But you also know that there are certain things that you don't know and that you don't understand, and you respect that. (Interviewee W18)*

6.9.5 Public benefits

The absence of herbicides and pesticides results in wines that are considered healthier (Interviewee W18). One could translate healthier wines to mean less illnesses or allergies, meaning an economic benefit to society.

Awareness around the benefits of organic wine would be considered public knowledge. As far as the case is concerned, there is little effort from Reyneke Wines to raise awareness about organic wines and its benefits. However, raising awareness about organic wine would benefit all organic farmers, implying free-rider behaviour. Raising awareness would therefore be something which the Organic Farmers Association should be responsible for.

Because these public benefits did not feature strongly in the interviews, these blocks (see Table 6.18) were left unpopulated. It serves as a good example of how the CVM can indicate potential areas for expanding coopetition efforts.

6.9.6 The coopetition value matrix for Reyneke Wines

The CVM for Reyneke Wines is one of the most complex. What makes it an interesting CVM is that much of the value is synergistic. The value is created through coopetition and would not have been created if it was not for the competitors working together. But because of the different roles played by the different collaborators, not all the value is available to all partners.

The synergistic coopetition described in this case creates privately captured common benefits. For instance, an increase in organic grapes means increased economic value for both Reyneke Wines and its neighbour. Reyneke Wines can increase its presence in the market because of increased production. Reyneke's neighbour would not be able to capture that value, because they do not have the same brand, i.e. attractiveness in the market. At the same time, Reyneke's neighbour

claims the value of the difference in price between conventional grapes and organic grapes. They do so because they own the land. Because the created value is related to the agreement, it represents common benefits, even though the role of each puts certain value out of reach of the other partner.

Table 6.18: CVM for the Reyneke Wines: Collaboration with neighbours

		Value creation		
		Economic value	**Knowledge value**	**Environmental value**
Value appropriation	**Common benefit**	Increased production Increased sales Access to quality grapes Increased brand value	Farmers share knowledge (know what & know how); the overall knowledge stock increases.	Socio-environmental value is per definition value that accrues to society and a public good. It therefore implies that it cannot be captured by the coopetition parties
	Privately captured common benefit	Greater biodiversity in natural aromatic and biocontrol yeasts, resulting in better wines. Reduced costs of keeping grass short. Cattle fertilise vineyard. Access to organic grapes. Increased production due to more organic grapes. Increased sales because of increased availability. Less risk of stock-out. Less drift from neighbouring farms. Increased brand visibility. Able to grow herd size and sell cattle. **Neighbours** Higher prices for grapes. Guaranteed market.	Johan Reyneke learns about finance and strategy from a neighbour, while the neighbours learn more about organic farming. The sharing of knowledge happens in positive-sum logic.	
	Private benefit			
	Public benefit	A healthier environment for the direct community. Healthier wines for consumers.		Less herbicides/pesticides and natural fertilisers result in: Higher diversity in yeasts with bio-control characteristics resulting in resistance against mites. Healthier, resilient soils sustaining life such as earthworms. More diverse animal eco-system (owls, snakes, chameleons, ladybirds, etc.) resulting in more natural control of pests such as mice, grasshoppers, etc.

Another example of synergistic value is that of Reyneke's cattle grazing on a neighbouring farm. Reyneke claims the value of the feed that his cattle eat, while the neighbour claims the value of reduced operational costs and the value of the fertilisation done by the cows. The value is created because they collaborate, but the value is not available to both parties.

A great deal of the economic and knowledge value is very similar to the kinds of value you would find in conventional coopetition cases. What makes this an interesting case of environmental coopetition is that much of the increase in the pie relies on the creation of the socio-environmental benefit.

6.10 WINE INDUSTRY NETWORK FOR EXPERTISE AND TECHNOLOGY (WINETECH)

6.10.1 Introduction

The South African wine industry in the early to mid-nineties was fragmented and characterised by internal politics and rivalry (Boshoff, 2013: 35). The nature of the industry at the time was largely as a result of the disbanding of KWV as the single buyer of wine in South Africa, the lifting of sanctions, the resulting access to new markets, and unhealthy competition between wine producers (Interviewee W5). At the time, calls were made for a shared vision, clear objectives for the industry, and to coordinate research, rather than conduct research on an *ad hoc* basis (Boshoff, 2013: 35). One of the interviewees pointed out the logic of a coordinated research programme for the industry: "Because all of us face the same problems with glass and cork and cartons and run-off and water use. Everybody has the same problems" (Interviewee W3).

Winetech was created in 1996 in response to this need. Winetech's primary purpose is to build a strong and healthy South African wine industry through cooperative (participative) R&D initiatives. Winetech describes its core function as the "facilitation and oversight responsibility for sustainable and responsible natural resource usage" (Winetech, 2014a). Table 6.19 shows a list of interviewees who spoke about the initiative.

According to the constitution of Winetech (2009):

> *The Association is financed by gifts, contributions, levies or grants of any nature made to the Association by any person, including the state or province, provided that the conditions, if any, stipulated by the donor or contributor fall within the framework of Winetech's objectives.*

Table 6.19: Interviewees: Winetech

Interviewee	Description of organisation or person	Position	Date of interview	Duration of interview (hours)
W2	Wine producer. Diversified liquor company, medium sized in bottling capacity.	Communications executive	8 Jul 2011	1:27
W3		Manager: Strategic initiatives		
W4/W15	Wine producer. Diversified liquor company, large sized in bottling capacity.	Sustainability manager	13 Jul 2011	1:23
W15	Wine producer. Diversified liquor company, large sized in bottling capacity.	Sustainability manager	13 Apr 2015	0:54

Members of Winetech are obliged to cooperate with any form of assistance that is required:

> *Each member undertakes and is obliged to provide his full cooperation by means of structure, assistance and support in order to ensure that the objectives of the Association are strived for and attained and that all rules enacted by the Association are complied with. All members are obliged to bona fide endeavour to have all research which is generic in nature and in the broad interests of the industry done by the Association (sic). (Winetech, 2014a).*

The biggest component (66% in 2014) of Winetech's revenue comes from the research and development levy to the wine industry (Winetech, 2014a: 38). Table 6.20 shows the components of the levy in 2015 for different parts in the value chain, i.e. wine, grape juice concentrate, spirits and grapes. Grape and wine producers therefore collectively fund research in the wine industry.

Table 6.20: Components of the levy to Winetech from the wine industry[2]

	2015	2016	2017
Wine	2.61c/liter	2.81c/liter	3.02c/liter
Grape juice concentrate for the production of wine	2.61c/liter	2.81c/liter	3.02c/liter
Distilling wine and wine spirits	2.25c/liter @ 10% alcohol	2.42c/liter @ 10% alcohol	2.60c/liter @ 10% alcohol
Grapes intended for the production of wine	R18.27/ton	R19.67/ton	R21.14/ton

Source: Winetech, 2014b: 37.

[2] The Winetech levy increased by 7.5% per annum between 2013 and 2017.

6.10.2 Knowledge value

The core objectives of Winetech are shown in Table 6.21. All of the benefits flowing from the objectives listed could be regarded as common benefits.

Table 6.21: Core objectives of Winetech

Objective	Outcome
To support the wine industry with expertise	This will enable it to be cost effective while producing quality wines and other grape-based products through the application of environmentally-friendly technologies.
To support the training and education of individuals for the industry	At all levels in terms of skills, knowledge and insight development – in order to ensure the practical implementation of the best knowledge and most advanced technologies in viticulture, wine making and other grape-based products.
To establish a culture of technological innovation	This will ensure the on-going utilisation of the best technology within the industry, and facilitate its dissemination to all the sectors of the industry.
To facilitate the development of resource poor and previously-disadvantaged producers	This will improve their access to the industry by making appropriate cutting-edge technology available to such producers.
To establish world leadership in selected niche areas of the wine industry	This can be facilitated through Winetech's network of scientific and technological expertise.
To commission relevant and thoroughly planned research, technology development and technology transfer	This will promote the industry's technological capabilities and the attainment of the other objectives.

Source: Winetech, 2014a.

Some of the research activities funded by Winetech include projects labeled as environmental sustainability projects, while some other projects can be considered as environmental projects despite not being classified as such. Table 6.22 summarises projects with an environmental focus. There is great appreciation for the work of Winetech among farmers (Interviewee W3, W4, W11):

> *If you see the research done in the wine industry, I mean, I wonder if the livestock industry in South Africa does as many trials as our industry does here at Nietvoorbij [a facility of the Agricultural research council] – Vineyard trials, wine testing, all that kind of research. It's an industry that gives back. [...] I think it is good, because then you can attend information days; trial results are given to you, there is Wynboer [a magazine] and technical magazines that are published that we all receive. So, I think in a broader context, the whole industry works together, but it doesn't happen here on the ground. (Interviewee W11)*

Table 6.22: Environmental research projects funded by Winetech

Project number	Project title & Project leader	Classification
WW 19/15	Composting using spent filter materials from wineries and distilleries (R. Mulidzi)	Oenology: Environmental sustainability
CRSES 201227	Guidelines for energy management in wineries (A. Brent)	Oenology: Environmental sustainability
US 2013-27	Anaerobic sequencing batch reactor (AnSBR) technology to treat winery wastewater (G.O. Sigge)	Oenology: Environmental sustainability
US ENT 11-A2	Development of a habitat management plan to promote conservation biological control in vineyards (P. Addison)	Viticulture: Plant protection
WW 05/06	Mass breeding of natural enemies of mealybug for the application of integrated pest control in vineyards. (K. Achiano)	Viticulture: Plant protection
WW HT 14/01	Impact of climate change factors on physiological and vegetative growth parameters of young grafted grapevines (H. Theron)	Viticulture: Cultivation

Source: Winetech, 2014a: 45-50.

As implied by Interviewee W11, the research results of the studies funded by Winetech is available to all stakeholders as the results are often disseminated through public channels. In fact, recipients of research funding from Winetech are encouraged to disseminate their research findings.

Winetech, in collaboration with VinPro, provides information sessions, seminars and workshops in the wine industry (Boshoff, 2013: 170). In addition to these, Winetech disseminates knowledge through multiple industry and academic magazines and journals including:

- A section in the Wineland magazine, published by Vinpro. The section is known as Wynboer Technical. According to farmers, this section is one of the most important sections in the magazine (Boshoff, 2013: 39).
- The South African Journal of Enology and Viticulture, which is sponsored by Winetech. The journal is a peer-reviewed scientific journal.
- The Winetech Scan, a monthly electronic newsletter that highlights some of the newest international research. The objective is to alert industry members of new developments that could be implemented in the winemaking process, and to stimulate new research.
- The Winetech research database (see discussion of Figure 6.17). The research database website makes it explicitly clear that Winetech focuses on research of a generic nature and makes if available to everyone.

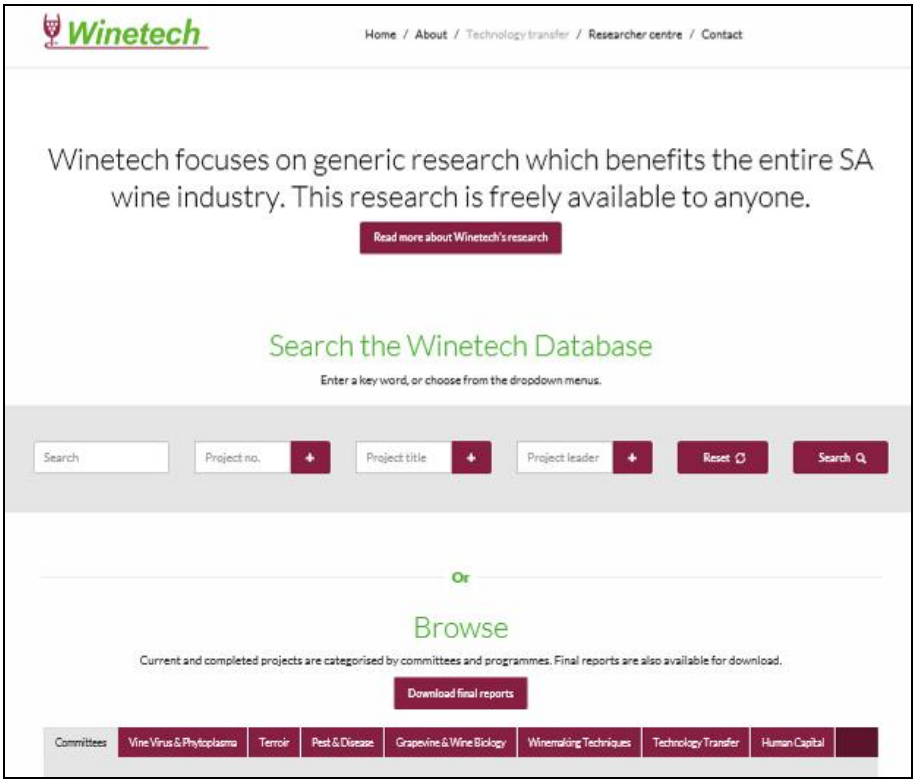


Figure 6.17: Common benefit in the form of knowledge available to the wine industry

Source: Winetech, 2014c.

The knowledge developed by Winetech represents a common benefit. Once the knowledge is processed by farmers, it becomes a privately captured common benefit. The knowledge can potentially be converted to economic value at a farm level. None of the interviewees explicitly referred to the application of Winetech research in their own environments.

6.10.3 The coopetition value matrix of Winetech

It is not surprising that the CVM of Winetech is dominated by common knowledge value. This case illustrates the intangible nature of economic benefits at times. While the cost of research is relatively easy to determine, the value of that research is extremely intangible. Similarly, the value of training would depend on how much of the training can be applied by wine farms. This dissertation did not make an attempt to determine the value or the extent of the application of Winetech's research.

Table 6.23: CVM for Winetech

		Value creation		
		Economic value	**Knowledge value**	**Environmental value**
Value appropriation	**Common benefit**	The cost of research & development is spread between the industry players. Free training days are offered to wine and grape producers	Winetech provides funding for research projects for the industry. The results are made public through various channels. Winetech, in collaboration with VinPro, provides information sessions, seminars and workshops in the wine industry (Boshoff, 2013: 170).	Socio-environmental value is per definition value that accrues to society and a public good. It therefore implies that it cannot be captured by the coopetition parties
	Privately captured common benefit		Wine producers can read, assimilate and use the knowledge by accessing publically available research. Knowledge is appropriated in positive-sum logic	
	Private benefit			
	Public benefit			The dissemination of sustainability-related research reduces the environmental impact of the wine industry. This ranges from guiding documents for energy efficiency to knowledge about how natural predators can be used to control pests.

6.11 EERSTE RIVER COLLABORATORY

6.11.1 Introduction

The Eerste River (meaning *first river*) Collaboratory is a multi-stakeholder collaboration between government agencies (such as Department of Water Affairs), environmental groups (such as WWF and Living Lands), community organisations, the Stellenbosch Municipality, and users of the river. Distell and Spier are the only two wine-producing entities in the collaboratory.

Table 6.24: Interviewees: Eerste River Collaboratory

Interviewee	Description of organisation or person	Position	Date of interview	Duration of interview (hours)
W5	Wine producer. Known as a sustainability leader, medium sized in bottling capacity.	CEO	16 Jul 2012	1:17
W13	Wine producer. Known as a sustainability leader, medium sized in bottling capacity.	Sustainability manager	18 Feb 2015	1:13
W15	Wine producer. Diversified liquor company, large sized in bottling capacity.	Sustainability manager	13 Apr 2015	0:54

Interviewee W5 explained the urgency of acting on the pollution in the Eerste River:

> *It [the pollution in the river] has a direct impact on us. The water is, in its current form, unusable. It's in such a bad state. So if collectively we get this water into, you know useable condition, it's a resource. And at the moment it's a, it's an unusable resource. So it goes. I think it's, you know, it's a key issue. It goes right back to the start point if you know, we know as an industry water in South Africa is – people still underestimate the importance of our water footprint. People are realising it, but it's only now that we're starting to say, okay you know, what will it be like in 2052 or 2042? We know, I mean statistically, they say we're probably gonna have to rely on, you know, seventy percent less water than we get now for – from the big dams. So we have pumping rights from the Eerste River that we don't even use because the water is unusable. (Interviewee W5)*

The Eerste River has been a problem for many years, and remained a problem because of bureaucracy. At the time of the first interview at Spier (2012), the interviewee explained:

> *It's starting to happen. It's not happening because I think, I think the river is an example of, you know, a bureaucracy. Because you have to work with various...administrative bodies so it's council, it's the Department of Water Affairs, it's the Department of Environment. And so you start getting bogged down a bit, you know. So it's a little bit like management by committee. But there are a number of initiatives, including from*

> *local authorities to say, listen, we have to do something about this. There's no one person saying alright, I'm laying down the law here's how it works… that's why. (Interviewee W5)*

The Eerste River Collaboratory grew from an action research study at the University of Stellenbosch. The PhD student approached a number of entities and over time, managed to facilitate a conversation that grew into the collaboratory.

6.11.2 Knowledge value

One of the actions that helped to establish a common vision was a visit by a number of stakeholders to problem areas in the river (Interviewee W13). It is therefore evident that the initiative creates knowledge about the problem (know-what). But through exploring ways to solve the problem, participants also learn about how the problem can be addressed (know-how) (Interviewee W13).

Interviewees from both the wine producers spoke of the complementary knowledge and resources that the other entity can bring to the table and how the collaboratory facilitated opportunities to exchange knowledge:

> *We've got such different areas of expertise … so my focus is much more socially focused and his is a lot more environmentally focused, and just by nature of the fact that we would spend time together, planning for the collaboratory meetings and things, we would share know-how and – but I think it's also because we're not in the exact same space. Maybe if I was strongly environmentally focused, we would be quite restricted in our – it might change the dynamic of what we share. And I think it's also probably why there was a more conscious effort for both of us to co-share the collaboratory, because there's this kind of balance, social and environmental, that's important. So I think the structure has enabled that, but trust has been built. (Interviewee W13)*

As the quote states, and as was the case with some of the previous cases, interviewees in this case reported that environmental coopetition opens avenues for other forms of coopetition. Apart from the initiative-related knowledge that is created and transferred in coopetition initiatives, it is evident that coopetitors also gain tacit knowledge (know-how) about collaborating with competitors.

> *So, we're just the actual doing space. So, in that you have Distell and us who actually never really spoke to each other before. I can't remember we did, but I don't know of it – we didn't really have any real relationship before the river collaboratory that I know of. And now it's just such a great space actually. We find many other things that, you know, so it's not in the business space, it's in the social impact space that we're able to find things that together we can do more with. (Interviewee W13)*

6.11.3 Economic value

> *The most obvious economic benefit from a cleaner river would be better access to water – a resource that is scarce and which will become even more so (Interviewee W5).*

Secondly, both wine producers are vulnerable in terms of their reputation and/or health and safety (Interviewee W13, W15). Interviewee W15 reported that the river smells so bad in summer that the staff find it hard to work there. Apart from the opportunity, the polluted river therefore represents a risk and embarrassment to both parties:

> *How does Distell benefit from cleaning up the river? How does Spier benefit from cleaning up the river? Hugely. Distell has an issue with dirty water going past Bergkelder when they have visitors who have to cross over that river and smell it; it impacts their business operations. In our environment our business operations and we were less affected, because by the time the water gets down water, the water quality is – it's not great, but it's not as terrible as up there. We equally can have the same issues. We can't have people jump into the river and have a swim, because you may get sick, because the water quality is not good. (Interviewee W13)*

The biggest value of a cleaner river originates from the lower risk (reputation, health & safety). When asked about the potential marketing value of the collaboratory, Interviewee W13 responded as follows:

> *And I don't think anybody has [attempted to generate marketing value] in the collaboratory. In fact, one of our topics on today's agenda is our collaboratory year-plan, and so we've even taken on a collaborative approach to that so that we have a plan as a collaboratory as opposed to individual business or organisations. So, I suggested that we bring in a media expert into our fold for a kind of consultation with the collaboratory to help us plan how we do this. So that it's not any one organisation's – because the reality is, between Distell and us, we've got more than enough expertise to have really run this mill a year ago, you know, started, but it's not the collaborative space. (Interviewee W13)*

The quote suggests a deliberate attempt to keep the marketing benefit as a common benefit, and to facilitate learning about media coverage inside the collaboratory. It is evident that both wine producers see communication regarding the river as a beyond compliance (i.e. reputation protection) strategy rather than an eco-branding (i.e. reputation building) strategy.

6.11.4 The coopetition value matrix for the Eerste River Collaboratory

A number of aspects are interesting about the CVM for the Eerste River Collaboratory. Firstly, the knowledge that is created is created at three levels:

i) Knowledge about the problems around the river (know-what);

ii) Knowledge about how to address problems in the river and other sustainability issues (know-how); and

iii) Knowledge about how to cooperate better, which can possibly be redefined as coopetition-experience.

A second observation is the deliberate attempt to keep the value at the level of positive-sum logic. No mention was made by the two respondents from Spier or Distell about private benefits for these two entities.

Table 6.25: CVM for the Eerste River Collaboratory

		Value creation		
		Economic value	**Knowledge value**	**Environmental value**
Value appropriation	**Common benefit**	Reduced reputational risk Reduced health & safety risk Access to cleaner water for production and/or irrigation purposes	Knowledge regarding the problems facing the river eco-system (know-what) Sharing of knowledge about related and other matters between staff of the two entities. (know-what & know-how) Know-how in cooperating with competitors	Socio-environmental value is per definition value that accrues to society and a public good. It therefore implies that it cannot be captured by the coopetition parties
	Privately captured common benefit	Reduced reputation as well as health and safety risk for both Distell and Spier. The value is relatively intangible, but is appropriated in positive-sum logic. Distell and Spier can potentially claim the value of their water rights once the water is usable.		
	Private benefit			
	Public benefit	Healthier environment for community Potable water Fewer illnesses from water-borne diseases		Cleaner water & environment Healthier eco-system Aesthetic value Recreational value

6.12 SOLAMOYO

6.12.1 Introduction

The last case study to be presented is a relatively simple example. Technically the case is not from the wine industry, but focuses on a project in the brandy industry. Because brandy is based on wine, and because of the characteristics of the project, it was decided to include it. Another reason to include the case is because the issue it addresses could easily also apply to two wine cellars. In this case, it applies to two wine producers, who also produce brandy to partly deal with overproduction of wine.

Table 6.26: Interviewees: Solamoyo

Interviewee	Description of organisation or person	Position	Date of interview	Duration of interview (hours)
W2	Wine producer. Diversified liquor company, medium sized in bottling capacity.	Communications executive	8 Jul 2011	1:27
W3		Manager: Strategic initiatives		
W4	Wine producer. Diversified liquor company, large sized in bottling capacity.	Sustainability manager	13 Jul 2011	1:23
W15	Wine producer. Diversified liquor company, large sized in bottling capacity.	Sustainability manager	13 Apr 2015	0:54

Both KWV and Distell have distillery facilities in Worcester (in the small Karoo in South Africa) that produced effluent that was previously pumped into the river (Interviewee W3). Due to environmental regulations from the South African government, the entities are no longer allowed to release the effluent into the river. This aspect makes this case the only one reviewed that was driven by a legal license to operate. Some of the other cases were driven by the potential of legislation, like the TGRC.

Because the two distilleries have similar run-off, it made sense for the two companies to build a joint facility. In May 2010, the Solamoyo (which translates to solar wind) processing company was launched at Klipvlak, a 60 ha section of municipal property, with KWV, Distell and Brenn-O-Kem owning 40/40/20 percent respectively of the project.

At the same time as cleaning the run-off, Brenn-O-Kem recovers substances (such as tartaric acid) from the effluent that can be used further or processed further. The project therefore represents industrial ecology in the sense that they use a waste stream as input material for a different process.

6.12.2 Economic value

The total investment in the facility amounted to approximately R12 million, of which Distell and KWV each carried R4.8 million (40%) of the investment (Interviewee W3).

The most prominent benefit of the project is the joint financing of the project. It would have been more expensive for the two entities to separately construct a waste plant each. The cost reduction is a common benefit, while the privately captured benefit for each company is represented by the difference between building a plant itself, and approximately 40 percent of the total cost of the Solamoyo project.

A second economic benefit would be that the companies could potentially generate income from the sales of the beneficiated run-off, in which case profits would be distributed in line with shareholding. Again, the total profit represents the common benefit, while the privately captured common benefit would be the share each can claim.

6.12.3 Knowledge value

The exchange of knowledge between the two entities lies at a superficial level and there was/is little exchange of know-how between the entities. Only in the initial stages did the two wine producers cooperate at an information (know-what) level. Interviewee W4 provided a description of the tension in sharing information and making the project work.

> *On the retail side we fight with each other on the product and at the back we work together on the run-off. At that point it must have been a funny scenario to be able to do it, but what we did find is that you need to be transparent about your future plans. You cannot go into such a project in secrecy. Now there are automatically certain things you do not want to say to everyone, but there are certain things you must put on the table like volume and quality. That's the basis of a project. You also have to give an indication of the short and medium-term plans for expansion and so on. (Interviewee W4)*

By knowing the quantity of run-off from a plant, it is possible to estimate the production volumes. In order to reduce allegations of collusion, Solamoyo is a separate operational entity, and effluent volumes are not made public.

After the effluent plant in Worcester, Distell has proceeded to build a similar plant at its facilities in Stellenbosch. It could be argued that the knowledge and experience gained from the Worcester plant was applied elsewhere, meaning that Distell generated a private benefit because it had applied some of the know-how it had acquired from the Worcester plant.

6.12.4 Socio-environmental value

The Solamoyo case is not a complex one. The underlying drivers for the project were regulatory and cost reduction. One respondent acknowledged that the situation would probably still be the same if it was not for the legislation, but also stated that there was a moral case as one "should not mess with the environment like that" (Interviewee W3). What makes the case an example of environmental coopetition is that two competitors cooperated to jointly respond to address an environmental issue. The socio-environmental value would consist of reduced pollution into a river which was impacted by distillery run-off in the past. The waste treatment plant purifies the water to a potable level.

> *Correct, if you look at the treated run-off, you can now do something with the water and possibly plant trees, or whatever the case may be. You currently cannot do that. (Interviewee W4)*

6.12.5 The coopetition value matrix for Solamoyo

What makes the Solamoyo case somewhat different is the absence of a significant knowledge-sharing component. Instead, the biggest common benefit is the joint cost saving in construction and operation. However, the absence of knowledge sharing makes it a rather shallow form of cooperation. The environmental benefit was the main objective of the plant, but it was not the biggest driver. Table 6.27 shows the CVM for Solamoyo.

Another aspect in the case of Solamoyo is the absence of public awareness of the initiative. Keeping in mind that marketing alcohol prevents the partners from using eco-branding, the initiative could still be used as part of a Beyond compliance strategy, which further provides reputational risk protection through image-management (Bansal & Clelland, 2004).

6.13 CONCLUSION

This chapter provided insight into ten case studies of environmental coopetition in order to answer the first research question presented in this study, namely *what types of value do companies create and appropriate in environmental coopetition (RQ1).*

This chapter also illustrated many of the aspects that have been introduced in the dissertation thus far, i.e. concepts from extant coopetition literature, concepts from related fields that help frame and answer the research questions, and the conceptual model that was developed (i.e. the CVM).

Table 6.27: CVM for Solamoyo

		Value creation		
		Economic value	**Knowledge value**	**Environmental value**
Value appropriation	**Common benefit**	Shared expenses for constructing a waste treatment plant. Potentially reduced operational costs of dealing with run-off. Licence to operate.	Some knowledge was exchanged in the starting phase of the project.	Socio-environmental value is per definition value that accrues to society and a public good. It therefore implies that it cannot be captured by the coopetition parties
	Privately captured common benefit	Benefit for each company is represented by the difference between building a plant itself, and approximately 40% of the total cost of the Solamoyo project.		
	Private benefit	Distell applied private knowledge and built a similar plant at a different site. One can argue that the expertise and experience that they had gained would have reduced the risk of building another plant, and also may have made it easier to do.	Distell learnt from the initiative and built a similar plant at a different site.	
	Public benefit	Less illnesses & sick-days due to the community using polluted water Potable water		Reduced effluent flowing into the river meaning a healthier eco-system and better quality water in the river.

Even though each of the cases was somewhat unique in its context, we were able to make broad observations. This higher-level view firstly provided us with examples of the nine types of value. Each case study was mapped on the coopetition value matrix, providing insight into the manifestations of each type of value.

It is evident from the chapter that the previous (or dominant) view of value in coopetition initiatives fails to give sufficient attention to a stakeholder view of value. In the process, much value is excluded from the total sum of value. As the cases illustrated, significant environmental and socio-economic value are possible in coopetition initiatives, and should not be disregarded, especially when that value can facilitate more value for the coopeting parties. The chapter thus illustrated what value is created in cases of environmental coopetition.

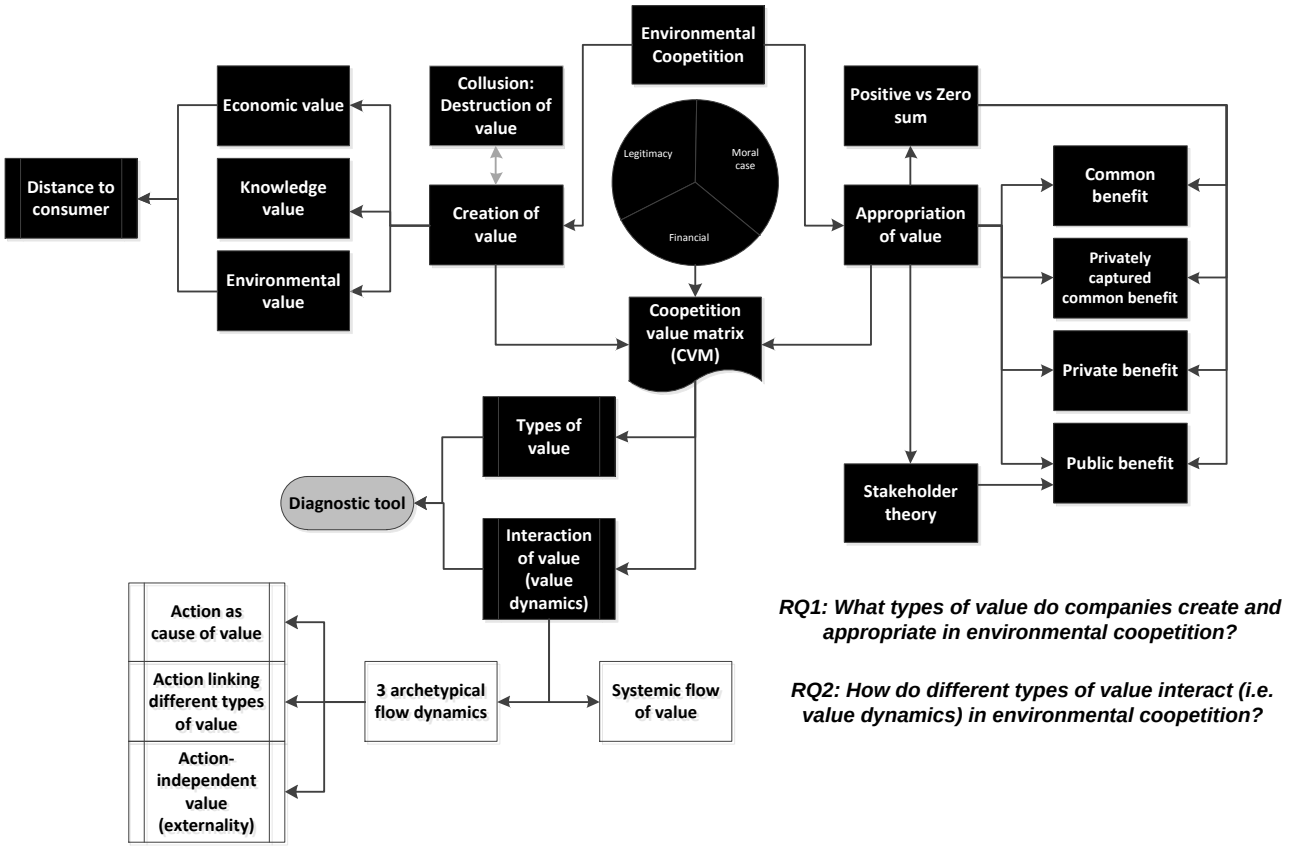


Figure 6.18: Application of the CVM as diagnostic tool

As was mentioned in the methodology chapter already, the process of mapping the case studies in the CVM led to the realisation of the matrix as a diagnostic tool (see Figure 6.18).

The CVM is not only a typology of value, but can assist researchers and practitioners alike in understanding what value is created and how various stakeholders benefit. The CVM allows one to disaggregate the value that is created for each case and focus on particular value to a specific stakeholder.

The relative significance and importance of different benefits vary between cases. While knowledge value was very important to the participants in the Organic Farmers Association, there is almost no knowledge value created in the Solamoyo case. The Solamoyo case was driven by a need for compliance at the lowest cost, i.e. an economic driver. The Organic Farmers Association in contrast had to build knowledge value, and then apply the knowledge in order to create economic value. This realisation motivated the second research question (RQ2), i.e. *how the different types of value interact (i.e. value dynamics) in environmental coopetition*.

Chapter 7 deals with this question.

CHAPTER 7
VALUE DYNAMICS

7.1 INTRODUCTION

Chapter 6 explored manifestations of value within each of the cases. This chapter expands on the previous chapter by describing the different ways in which the different types of value may interact and impact each other. It therefore addresses the research question (RQ2), *how the different types of value interact (i.e. value dynamics) in environmental coopetition*. Chapter 4 introduced some literature that eludes to how different types of value may interact (See Section 4.4.2 for reference to Steinmo & Jakobsen, 2013; Holmburg & Örne, 2013, De Marchi, 2012; Blanco, Lozano & Rey-Maquieira, 2009; Limoubpratum, Shee & Ahsan, 2014; Hanoteau, 2009: 39; Orsato, 2006 & 2009; Peloza & Falkenberg, 2009; Kendall & Willard, 2015; Wagner & Schaltegger, 2004; Porter & Kramer, 2011 and Hart & Milstein, 2003).

7.2 GENERIC VALUE DYNAMICS

The CVM simultaneously shows *content* of value at a specific level (nature of value and to whom such value was appropriated) and the *process* of value creation and appropriation at a generic level. In other words, while the content for every coopetition initiative shown in Chapter 6 may be unique, the generic patterns of value transfer/appropriation in coopetition initiatives remain very similar. Figures 7.1 to Figure 7.3 portray value dynamics that emerged from the ten cases. (For the sake of conciseness, the key to the three figures, plus examples from the TGRC case were incorporated into Figure 7.1 to 7.3).

Figure 7.1 portrays some dynamics of value between the economic and knowledge value classifications. This dynamic is not so different to the dynamic in R&D environments (See Steinmo & Jakobsen, 2013; Holmburg & Örne, 2013, De Marchi, 2012) Figure 7.2 and Figure 7.3 show the interaction of socio-environmental value with respectively economic value and knowledge value at different levels of appropriation (comparable literature would include much of the literature dealing with sustainability strategies (see Orsato, 2006 & 2009; Peloza & Falkenberg, 2009; Kendall & Willard, 2015; Wagner & Schaltegger, 2004; Porter & Kramer, 2011 and Hart & Milstein, 2003). The portrayal of these dynamics in the CVM pulls this literature into the coopetition realm. The figures also provide selected manifestations of these dynamics as observed in the TGRC case. Appendix C provides more examples of the value dynamics that are present in each of the cases.

Any permutation of the generic patterns may be possible. For example, Figure 7.4 provides an overview of how different types of value interact in the case of TGRC. TGRC was used as an illustration and not as an exhaustive example of all potential dynamics of value. The figure rather should be seen as an illustration of a combination of dynamics in a single matrix.

As can be seen from Figure 7.4, the arrows form a number of reinforcing loops. It is also important to note that there is a chronological order in some of the patterns. It is safe to assume that there is a time delay between a public awareness campaign and an economic benefit for the coopeting parties. This would potentially be an interesting topic for further research.

7.3 GENERIC DYNAMICS

Figures 7.1 to 7.4 provide an abbreviated overview of some of the basic dynamics at play between different types of value in environmental coopetition (See Appendix C1- C13 for the elaborated examples). Yet, even distilling the dynamics to the twenty-plus dynamics shown above still remains overwhelming. The researcher therefore searched for a higher level order, which led to the identification of three ways by which actions drive the creation, appropriation and transference of value:

7.3.1 Dynamic 1: Action as the cause of value

(See Tables C.1, C.4, C.7, C.8, C.9 in Appendix C)

Value can be created from an action without being linked to any other type of value (cell) in the CVM. For example, when firms cooperate to jointly market a destination, all firms save on marketing expenses, independent of the existence of prior value (Wang, 2008).

But this dynamic can also be true for more types of value that flow from a single action. Two or more types of value may increase simultaneously because of an action, but without being relationally linked to each other. For instance, cost savings (economic value) for wine producers, as well as socio-environmental value, increase when society recycles. Both types of value increase because of the recycling action, but the saving is not related to socio-environmental value or *vice versa*.

7.3.2 Dynamic 2: Action as the link between different types of value

(See Tables C.2, C.6, C.7, C.8, C.10, C.12, C.13 in Appendix C)

Two or more types of value may be causally linked, but requires an action to unlock the dependent value. For example, socio-environmental value affords the coopeting parties the opportunity to realise some brand value. In order for the brand value to be realised, the initiative must be marketed. The economic value is therefore causally linked to the socio-environmental value, but via an action. In cases where causality flows both ways, it creates a reinforcing loop.

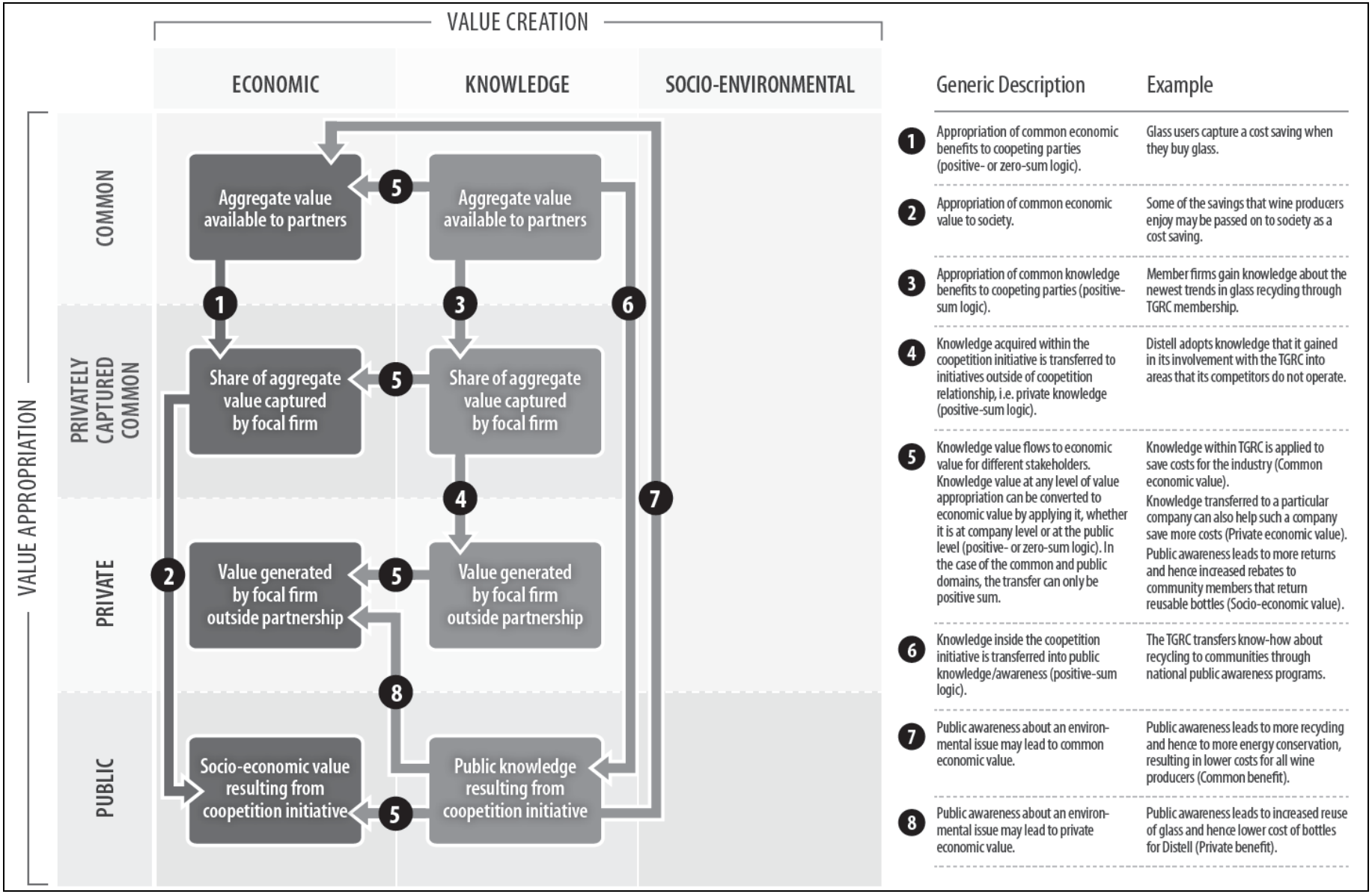


Figure 7.1: Value dynamics of common economic and knowledge value

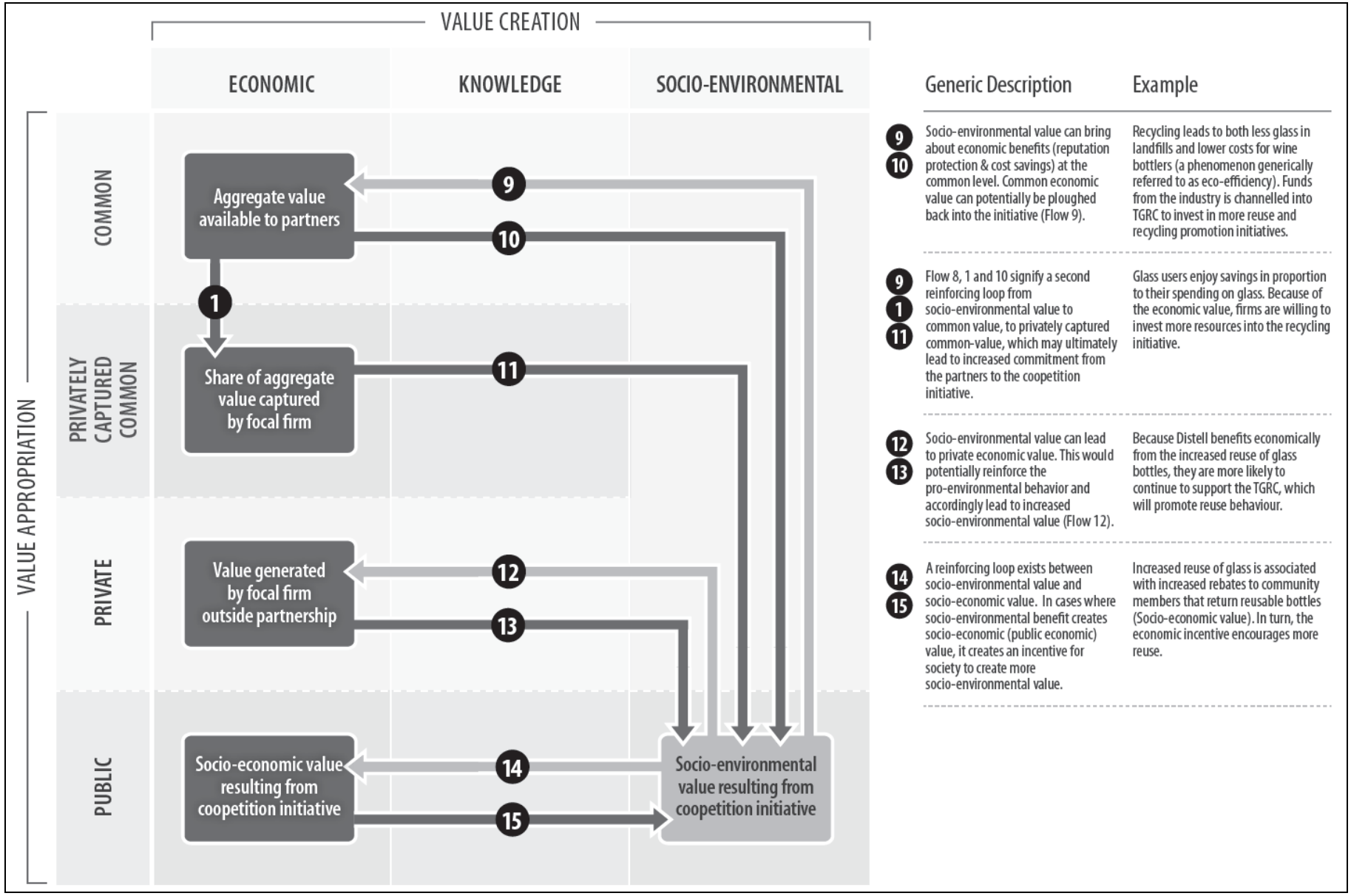


Figure 7.2: Dynamics of socio-environmental value and economic value

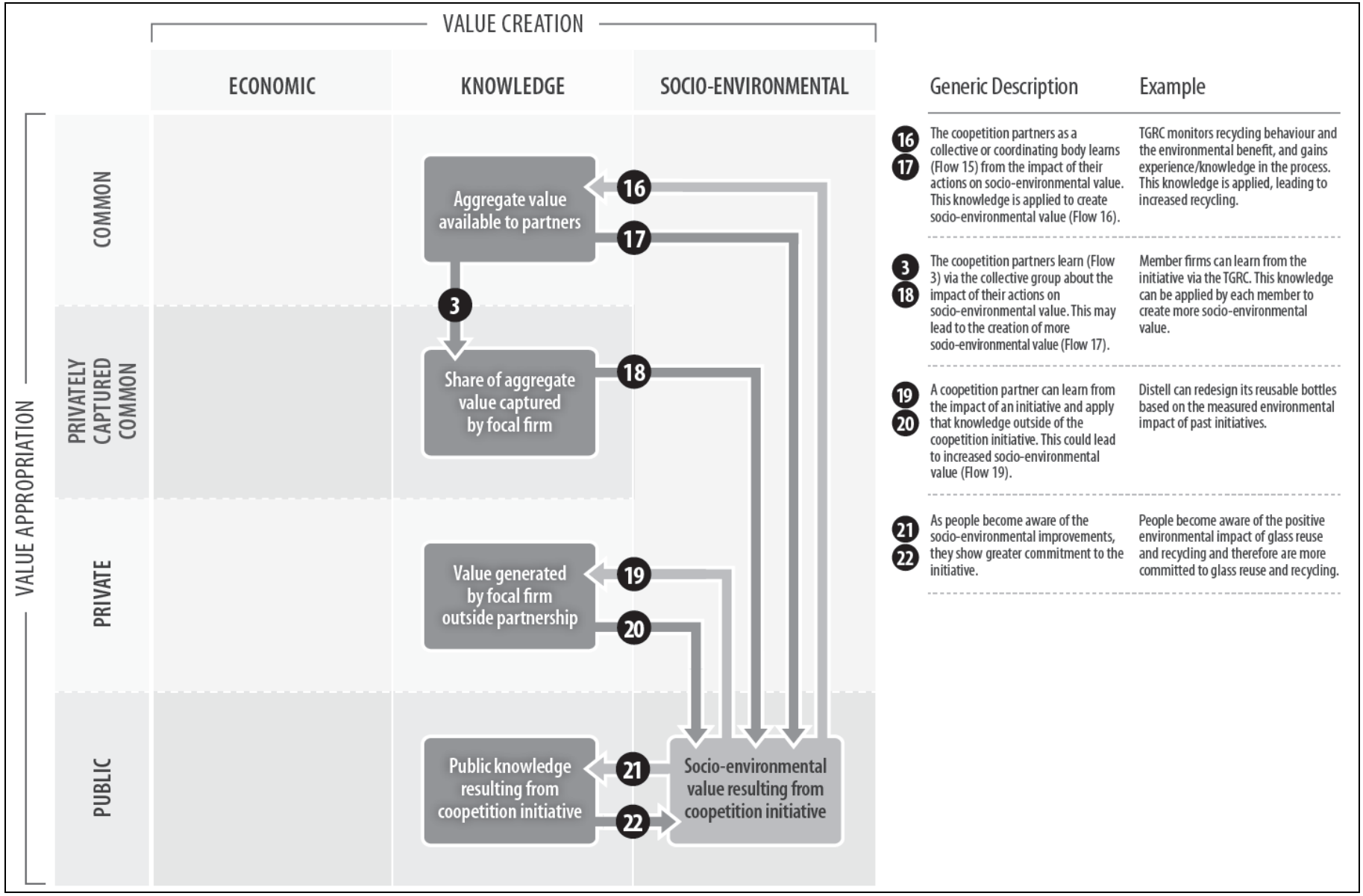


Figure 7.3: Dynamics of socio-environmental value and knowledge value

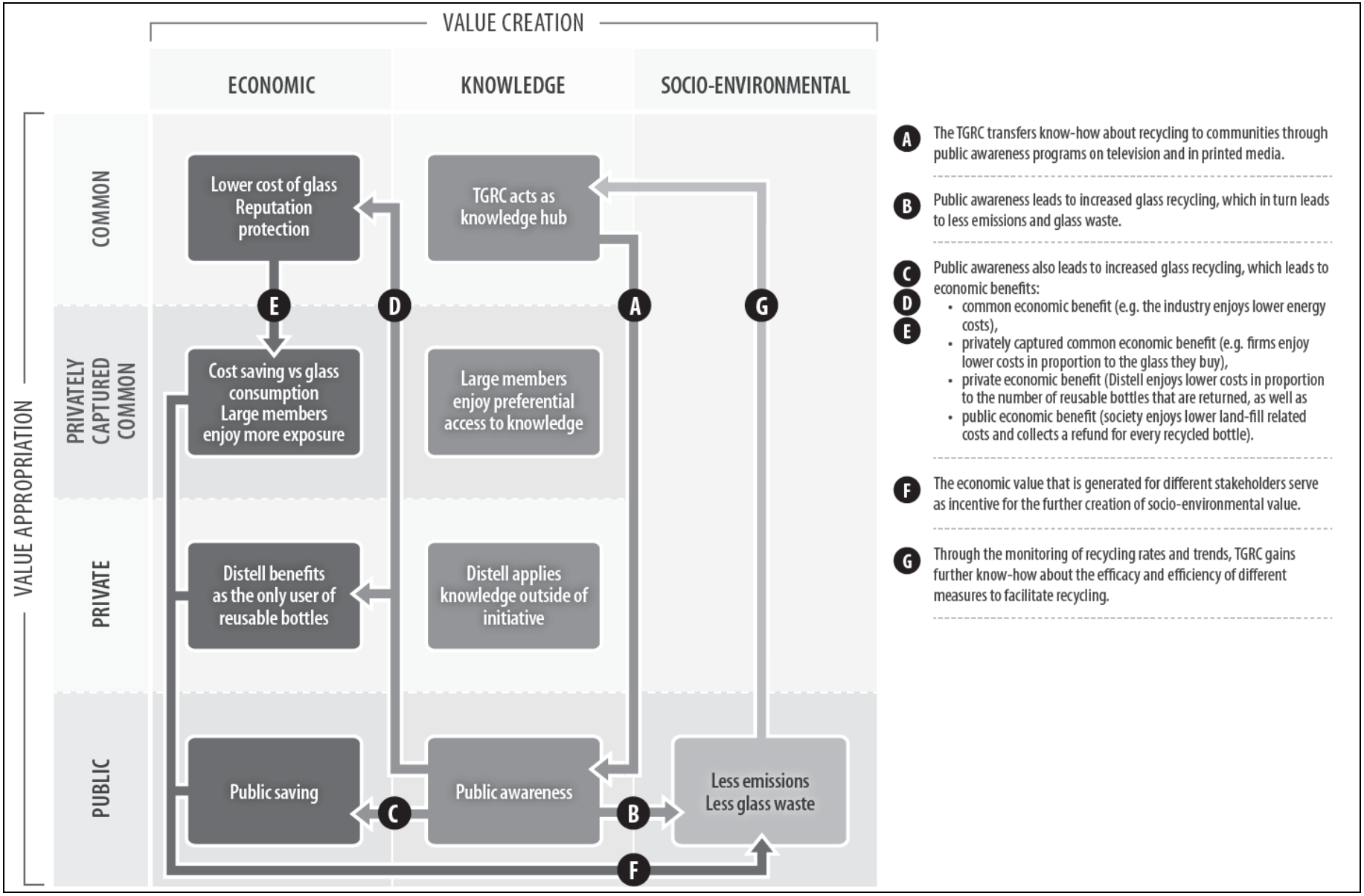


Figure 7.4: A systemic view of the dynamics between different forms of value (TGRC)

7.3.3 Dynamic 3: Action-independent value

(See Tables C.3, C.11 in Appendix C)

Value can also flow from another type of value without a direct initiating action. Ecosystem services would be such an example. As an eco-system recovers (i.e. socio-environmental value increases), the value of services it provides (common value or socio-economic value) increases without requiring an action.

The three dynamics can be illustrated as a table (Table 7.1).

Table 7.1: The underlying logic of the three generic dynamics of value

		Prior value required	
		No	**Yes**
Action required	**No**		Dynamic 3
	Yes	Dynamic 1	Dynamic 2

In addition to the three dynamics listed above, the analysis of data also presented combinations of the dynamics, which can be referred to as patterns.

7.3.4 Pattern 1: Sequential patterns

The first pattern can be any sequence of two or more dynamics. For instance, environmental coopetition may create biodiversity gains. These gains, in turn, may lead to increased sales for the coopetitors through increased market exposure. This common value in turn is appropriated by the coopetitors in relation to the relative sales value of each partner. This sequence may stop at this point if the increased profits from higher sales value is retained in the company.

7.3.5 Pattern 2: Cyclical patterns

If the increased profits mentioned above is reinvested by the partners to further increase biodiversity gains, this may result in a virtuous cycle.

It should be noted that the destruction of biodiversity can similarly lead to a vicious cycle of value destruction.

7.4 CREATION OF COMMON ECONOMIC BENEFITS

The CVM distinguishes between nine types of value. Each of these types was described earlier (see the CVM / Table 4.1), but can further be studied in terms of other characteristics. This section looks at each of the nine value types individually based on the case studies.

		Value creation		
		Economic	Knowledge	Environmental
Value appropriation	Common			
	Privately captured common			
	Private			
	Public			

7.4.1 Overview

Broadly, the nature of the economic benefits was categorised according to broad classifications put forward earlier (See Table 3.1), namely:

- Cost reduction;
- Access to new markets
- Brand building;
- Increased revenue (increased price, profit margin or increased sales volume);
- Brand protection (legitimacy/ licence to operate);

7.4.2 Generic dynamics

The creation of common economic value follows positive-sum logic. All three the generic dynamics can be identified in the ten case studies. One should observe that different types of economic value can be associated with different kinds of dynamics to create it. For instance, regardless of previous value, it requires action to build or protect a reputation as is evident in Table 7.2.

Table 7.2: The dynamics of common economic benefits

	Dynamic 1 (Action with no prior value)	**Dynamic 2 (Prior value via action)**	**Dynamic 3 (Prior value but no action)**
Brand protection	✓	✓	✗
Brand building/ enhancement	✓	✓	✗
Increased revenue (Price)	✓	✓	✗
Increased revenue (Volume)	✓	✓	✗
Cost reduction	✓	✗	✓

Common economic value can be created due to coopetition, and which is not dependent on any prior value. In fact, in some instances, an action (such as coopetition) can lead to multiple types of value being created.

What is significant about cost reduction from Dynamic 3 (prior value but no action) is that the cost reductions stem mostly from eco-system services. Cost reductions are, by implication, often a positive externality of socio-environmental value.

However, cost reduction can also stem from a number of other sources. In some cases, cost reduction is because of resource sharing, for instance joint funding of an administration office (Greater Simonsberg Conservancy), or joint funding for research or training (Winetech). Similarly, Reyneke Wines sources grapes from surrounding farms that could potentially compete with them. By doing so, both Reyneke farms and the neighbours benefit in multiple ways. One if these are reduced market risk for Reyneke and their neighbours. Reyneke Wines has less concerns of not

being able to meet demand, while the neighbour has less risk that there will not be demand for his product.

As these examples indicate, environmental coopetition does not exclude the benefits that one could expect from other forms of cooperation. In previous coopetition literature, only common and private value were considered, and only of the economic and knowledge type. Coopetition to solve environmental issues typically still deliver such value, but also delivers other public value.

7.4.3 Distance to the consumer

The issue of distance to consumer was briefly covered in Chapter 6, but it is repeated here because of the interaction between awareness amongst consumers and the brand value that exists as a result of the awareness. Environmental coopetition can provide brand protection (i.e. legitimacy) as well as an opportunity for brand building. For both protecting and building a brand, the coopetition happens closer to the customer, i.e. reputation protection and building are associated with raising awareness.

TGRC is an example of an initiative that provides legitimacy to an industry. On the other hand, the fact that Graham Beck can place the Cape leopard on its label and generate additional revenue is evidence of brand building at the company level. Even though both examples of reputation management (brand protection and brand building) are positive-sum initiatives, the example of the Cape leopard on the Graham Beck bottle portrays a greater extent of privately captured common benefit. The distance to consumers can vary in proximity to customers. For a private benefit, actors need to make their actions very explicit to the target population. For the protection or legitimacy of a brand, the distance may be further away. For the Greater Simonsberg Conservancy, one member shows a small plaque outside its tasting room. For BWI, this distance is slightly further away, with a small logo indicating membership of the BWI.

The ability to associate the outcome of coopetition with your brand provides a greater ability to capture the common benefit. In the case of BWI, the label does not grant any particular brand a strong differentiated position in the market and hence only serves as an instrument for legitimacy. It was evident in the interviews that some members of the BWI did not grasp this aspect, particularly in terms of the expectation of increased sales.

In the case of the TGRC, the distance is even further, with prominent members being indicated on the TGRC website, but not in marketing material.

7.5 CAPTURING COMMON ECONOMIC VALUE

7.5.1 The concurrence of value creation and appropriation

A number of common economic benefits have been identified in the study so far. In this section the mechanisms by which common economic value is captured are further explored.

		Value creation		
		Economic	Knowledge	Socio-environmental
Value appropriation	Common			
	Privately captured common			
	Private			
	Public			

As stated elsewhere in the dissertation, sometimes the appropriation and creation of value is a single event, meaning that value is created by capturing it. For instance, in the previous section, the researcher referred to increased sales volume as a common economic benefit. Only when the additional bottle is sold can one say that the value was created. At the same time, the value is captured by a particular participant in the coopetition initiative.

7.5.2 Positive-sum vs. zero-sum logic

When value is appropriated, one can distinguish between positive-sum and zero-sum logic. In some instances the common economic benefits are captured in a positive-sum way, meaning that if one company captures benefits from the coopetition initiative, it does not diminish the potential value available to others. In other instances, this approporiation happens by zero-sum logic.

An example of a zero-sum benefit is the increased funding that the Greater Simonsberg Conservancy enjoys through its centralised office. The appropriation of this money happens in zero-sum logic, i.e for every Rand that one farmer receives, the amount available to others reduces.

In contrast, some value is captured without dimishing the potential value for others. For instance, the presence of the Cape leopard in a region reduces the number of smaller predators and therefore creates a positive-sum logic common economic benefit for farmers that may have livestock. In this instance, it is almost impossible for one farmer to gain a larger benefit than his neighbour. Of course, this value is a public good and therefore non-excludable.

The Cape leopard conservation project also affords the participants the opportunity to build a reputation. Even though the opportunity exists for all the participants, only one wine producer makes use of the leopard in its marketing, albeit as one element of its marketing message. The logic that is applied in this instance, is also positive-sum logic.

7.6 CAPTURING PRIVATE ECONOMIC VALUE

7.6.1 Private value vs. privately captured common benefits

Private economic value does not flow from common economic value. This is because it is a very different dynamic. Instead, private value seems to flow almost exclusively from knowledge that is applied.

		Value creation		
		Economic	Knowledge	Environmental
Value appropriation	Common			
	Privately captured common			
	Private	■		
	Public			

It is in the conversation about private value that it becomes clear why it is valuable to distinguish between privately captured common economic benefit and private economic benefit. These two values together capture the total economic value captured by a firm but they are attained by completely different processes and therefore require different competencies.

7.6.2 Private value from knowledge value

From the cases the researcher observed that private economic value can stem from common knowledge, private knowledge or public knowledge (See Table C.6 in Appendix C). When society returns reusable bottles, they are simultaneously creating a cleaner environment (socio-environmental value), reducing costs for Distell (private economic value), and receiving compensation in the form of refunds on bottles (socio-economic value). One could possibly see the private value that is created for Distell as a positive externality. The main driver for the reuse of bottles is the refund that people receive when returning reusable bottles. The creation of socio-environmental value and private economic value are therefore externalities. Alternatively, we can also see the overall result as an impure public good.

The distinction between the application of common knowledge in a new context and private knowledge is difficult to separate. This study did not explore the cognitive process of converting common knowledge into private value. However, the CVM is useful in illustrating these alternatives. Private value can be as a result of common knowledge applied in a market out of reach of other participants, or it could be private knowledge applied in the existing market.

7.7 SOCIO-ECONOMIC VALUE

A significant observation from the creation of socio-economic value through action is that socio-environmental value is a co-dependent value (see Table C.9 –C.11 in Appendix C).

		Value creation		
		Economic	Knowledge	Environmental
Value appropriation	Common			
	Privately captured common			
	Private			
	Public	■		

In some instances, it is unclear what the most significant driver is for the cooperation.

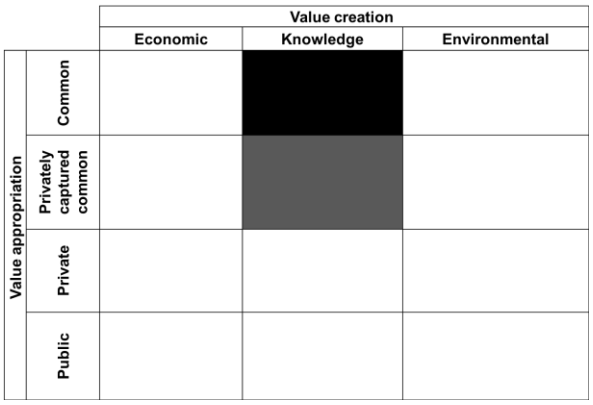
For instance, hypothetically, when consumers return reusable bottles and earn a refund, they are creating multiple forms of value at the same time, namely socio-economic value, economic value for the coopeting firm(s), and socio-environmental value.

An interesting flow of value is from the common economic block to socio-economic value. One instance is where economic benefit from recycled glass may lead to lower costs for society (this was not established as a fact in the interviews due to the difficulty in arriving at such a conclusion). This link is not explicitly made in the interviews. However, it is possible for cost savings at the common level to be transferred into lower costs of products.

As was the case earlier with common and private economic value, socio-economic value can be an externality of socio-environmental value creation. Not surprisingly, the socio-environmental value creates common economic value in addition to the socio-economic value. Most of the socio-economic value created can be considered eco-system services. Even the increased tourism in the Robertson area is as a result of an eco-system that attracts visitors.

7.8 CREATING AND CAPTURING COMMON KNOWLEDGE VALUE

7.8.1 The nature of knowledge



The knowledge that is made available through coopetition may consist of know-what (information) or know-how (transferring of skills). Know-how can also be at more than one level. As was illustrated in the case of the Eerste River Collaboratory, partners learnt from each other how to address certain issues, but also gained from growing their coopetition competence.

Knowledge is an intangible value and often difficult to describe in monetary terms. The knowledge value from coopetition can, as framed earlier, be described as the increase in knowledge stock between and inside companies and participants.

7.8.2 Knowledge is positive sum

Knowledge creation and appropriation are always positive sum. In some cases, research is collectively funded by coopeting partners (like in the case of Winetech). In other cases, a central body is created that becomes a knowledge hub to member firms, as is the case with the Greater Simonsberg Conservancy that created a central administrative office.

7.8.3 Structures to facilitate knowledge transfer

The formality of structures to transfer knowledge can vary from completely informal to highly coordinated. When a farmer learns from other farmers as in the case of the Rooiberg Breederiver

Conservancy, it happens in a very organic manner. When farmers in the Organic Farmers Association get together to share knowledge, it is somewhat more structured. In the case of Winetech, knowledge creation and appropriation happens in a very structured environment. In Winetech, the knowledge is disseminated by the Winetech body to its funders through various channels such as magazines and training days.

Knowledge can originate from a single member of the coopetition initiative. The knowledge stock of other participants increases when the knowledge is shared. Once again, this illustrates the point that value creation and appropriation happens simultaneously.

7.9 CREATING AND CAPTURING PRIVATE KNOWLEDGE VALUE

		Value creation		
		Economic	Knowledge	Environmental
Value appropriation	Common			
	Privately captured common			
	Private		■	
	Public			

The evidence of private knowledge value from the case studies supports extant literature that states that some firms are better able to capture knowledge benefits than other firms. Further, it is evident that private knowledge can be captured through engagement with partner firms as well as through engagement with third-party bodies. The case studies provide sparse examples of private knowledge creation. This may be for two reasons. Companies may deliberately withhold such information from competitors to keep the relationship stable. The researcher also believes that interviewees may not always see the link with the knowledge gained in the coopetition relationship because it may reappear in a different guise.

7.10 PUBLIC KNOWLEDGE VALUE

		Value creation		
		Economic	Knowledge	Environmental
Value appropriation	Common			
	Privately captured common			
	Private			
	Public		■	

Where initiatives require awareness in order to create value for coopeting parties, the initiatives happen much closer to consumers. As it happens, public knowledge value can also be described as public awareness.

Public awareness has been shown to be central to the creation of other forms of value in most of the cases that were discussed in this dissertation. Both reputation protection and reputation building require awareness from consumers.

7.11 PUBLIC ENVIRONMENTAL (SOCIO-ENVIRONMENTAL) VALUE

Socio-environmental value can be created through conservation efforts by coopetition partners or by actions of the public. Underlying action, regardless of who the actor is, is driven by awareness and knowledge. As seen from the cases, socio-environmental value can consist of many different forms, e.g. increased biodiversity, increased water availability, better quality water, less waste, less resource consumption, increased aesthetic value.

		Value creation		
		Economic	Knowledge	Environmental
Value appropriation	Common			
	Privately captured common			
	Private			
	Public			

Apart from the creation of socio-environmental value, conservation actions also create other value in the process. For instance, the conservation of the Cape leopard creates other socio-economic value such as reduced damages from smaller predators, as well as increased tourism value. These are externalities of a cleaner environment.

Alternatively, the focus of the coopetition initiative could be value of a different kind, while some components of socio-environmental benefit could be an externality. The removal of alien trees from the Simonsberg mountain is mainly to reduce the fire risk and increase the run-off of water from the ravines. While the increased water is a deliberate socio-environmental benefit, the recovery of the eco-system in this case is an externality.

The above two paragraphs describe the creation of impure public goods (simultaneous creation of a private and public good) by coopetition initiatives.

7.13 VALUE AS VIRTUOUS CYCLE

Figure 3.4 illustrated how value creation and appropriation can form a virtuous cycle. One classification of value can be converted or lead to value of a different classification. The second classification can in return lead to a further increase in the original classification of value. This sequential pattern and reinforcing pattern is not explored in the extant coopetition literature as far as the author is concerned. Three particular aspects in Figure 7. 4 develop a mostly static view of coopetition rooted in game theory (Brandenburger, Nalebuff, 1996), namely:

- the sequential pattern of action causing value, and
- the reinforcing pattern, for instance the loop (in Figure 7.4) connecting coopetitors' actions aimed at environment, with awareness raising actions which translate into more value in a virtuous circle.

- the pattern of value (such as public value) as an externality rather than an objective, and hence, not requiring any action. [3]

The above dynamics are very much relevant to the literature of Steinmo and Jakobsen (2013), Holmburg and Örne (2013), De Marchi (2012) and others introduced around how environmental and societale value can be created by firms through coopetition, and how economic value (such as cost savings and brand value) can be created from environmental initiatives (Orsato, 2006 & 2009; Peloza & Falkenberg, 2009; Kendall & Willard, 2015; Wagner & Schaltegger, 2004; Porter & Kramer, 2011 and Hart & Milstein, 2003). Combining these two directional flows of value leads to a virtuous cycle that was made visible in the cases.

7.14 SUMMARY

This chapter addressed the second research question of the dissertation dealing with the interaction of different types of value. The grey areas in Figure 7.5 show where the conceptual contribution of this chapter is positioned. The interaction between different types of value was introduced in Chapter 4. This chapter further extended how this can be understood and mapped.

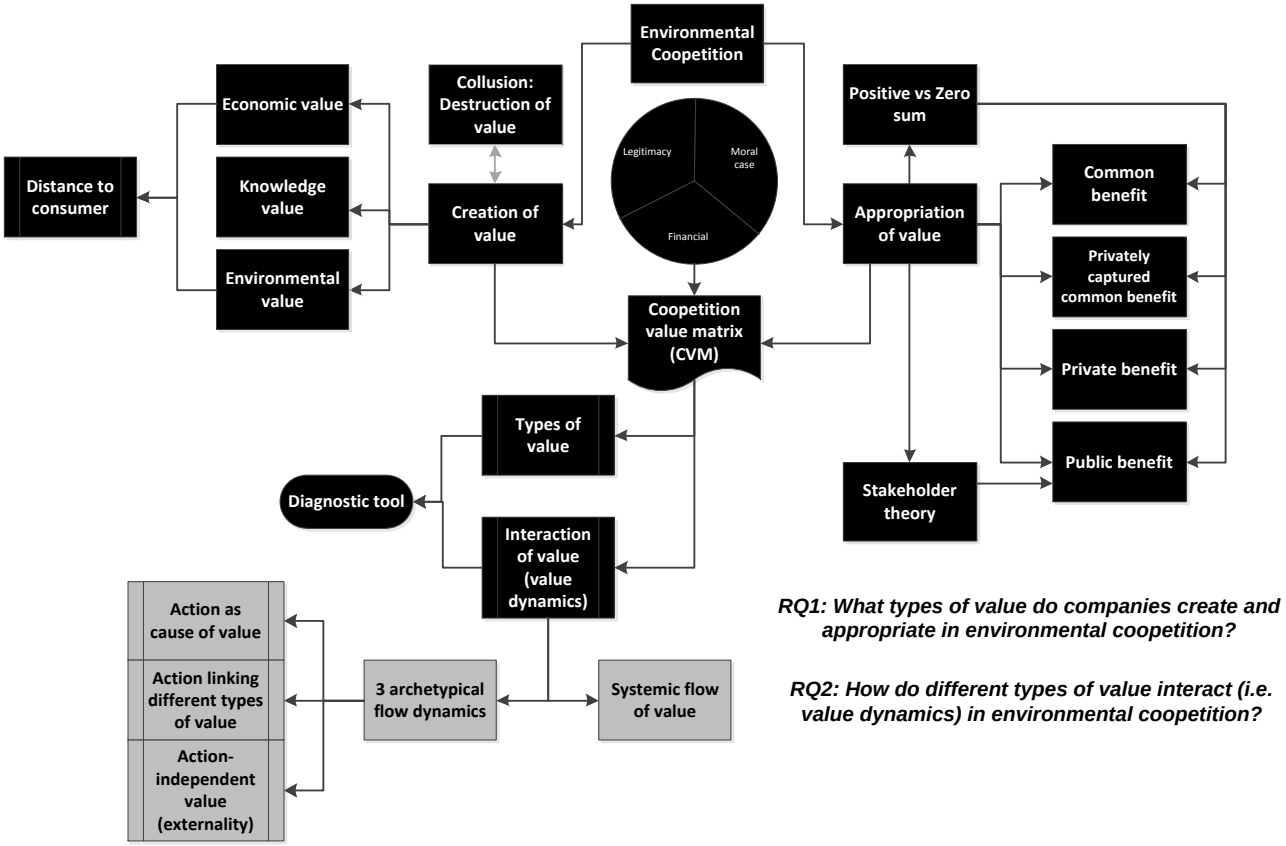


Figure 7.5: Aspects emerging from the investigation of how types of value interact

[3] The author would like to acknowledge an anonymous external examiner for these insights.

Based on the analysis of each of the nine blocks of the CVM, the researcher identified the different prior value and actions that may be required to create a particular type of value. That analysis led to twenty-plus paths by which value can flow. A further abstraction of the dynamics of value allowed us to identify three broad (or archetypical) patterns (generic dynamics) in the creation and appropriation of value. In turn, each of the nine types of value show some selectiveness in the dynamics that lead to the creation thereof.

The interaction of multiple types of value can typically be portrayed as a systems diagram. The systems view accentuates the importance of the interaction of different types of value in creating even more value.

The next chapter provides an overview of:

- The contributions to the existing coopetition body of knowledge;
- The implication for management practice;
- The limitations of the study; and
- Suggestions for further research.

CHAPTER 8
SUMMARY, CONCLUSION AND RECOMMENDATIONS

8.1 INTRODUCTION

Coopetition in this study is defined as the cooperation of two or more firms with their competition. This dissertation answered two research questions using a qualitative case study research approach. The two questions were:

RQ1: What types of value do companies create and appropriate in environmental coopetition?

RQ2: How do different types of value interact (i.e. value dynamics) in environmental coopetition?

The two research questions address what Bowman and Ambrosini (2000) referred to as the content and process of value creation and appropriation.

In order to study a broader understanding of value, the cases were all examples of environmental coopetition, i.e. initiatives where competitors work together to address environmental issues.

Figure 8.1 provides a high-level overview of the dissertation. The areas in grey indicate areas where distinct contributions were made to the extant literature.

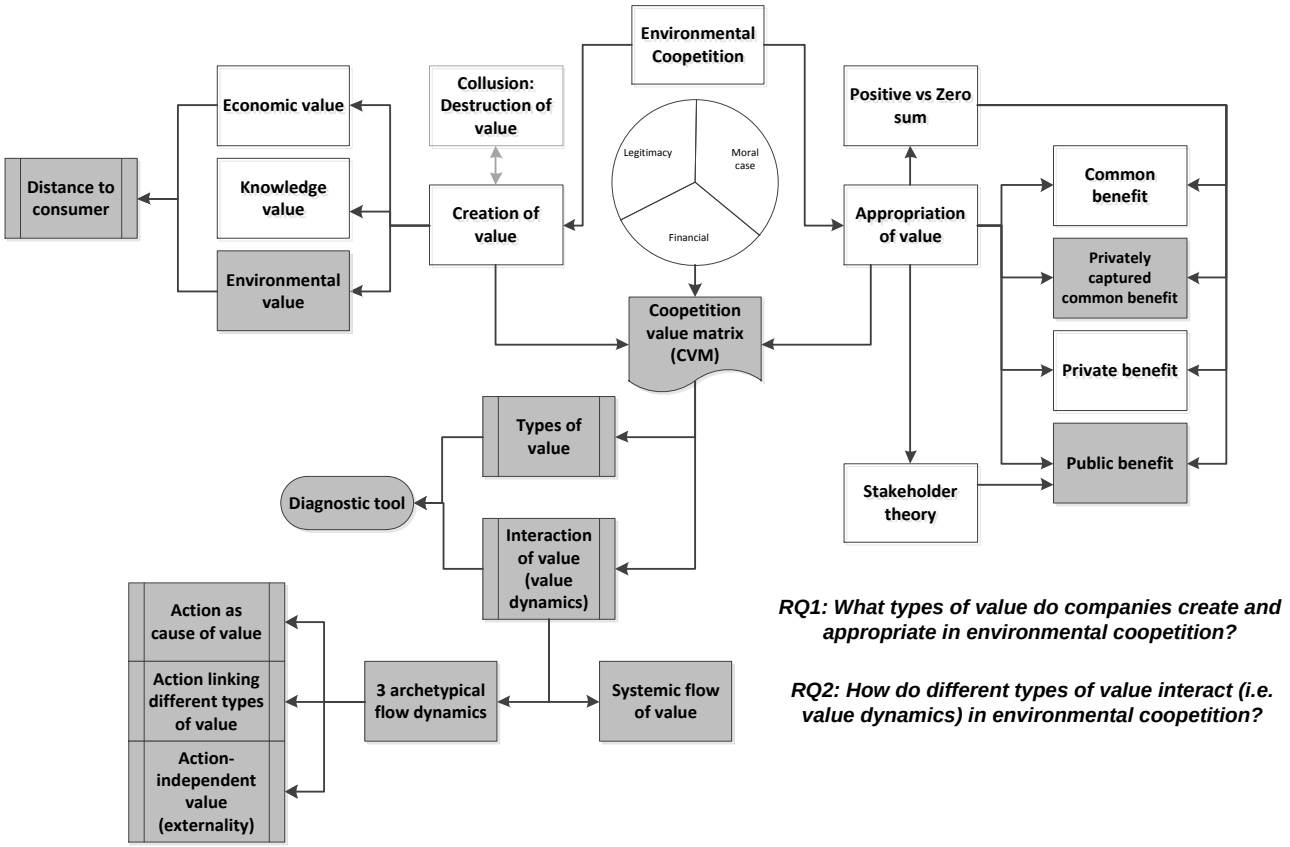


Figure 8.1: The contribution of this dissertation

This chapter provides an overview of the main findings of the study, how they relate to extant theory, what the implications are for management and theory, what the limitations of the study are and how they open an agenda for further research.

8.2 THE CONTRIBUTION TO THEORY

This study relies on previous works (Dagnino & Padula, 2002; Dyer & Singh, 1998; Garcia-Castro & Aguilera, 2014; Ritala & Tidström, 2014; Lado et al. 1997; Park et al., 2014) and extends our understanding of value and its dynamics at a conceptual and empirical level.

Theoretical contributions, regardless of the type of data used, involve findings that change, challenge, or fundamentally advance our understanding of a phenomenon. In other words, it should make us think differently to what past research would suggest (Bansal & Corley, 2011: 235).

Garcia-Castro and Aguilera (2014) stressed that our understanding of value in coopetition is "impeded by an incomplete conceptualisation and measurement of value and by scant characterisation of the different patterns of stakeholder value appropriation". Similarly, Ritala and Tidström (2014) called for research dealing with value creation and appropriation at both the empirical and theoretical level. This is where this dissertation fits in with its particular focus on the context of coopetition that generates socio-environmental value.

The dominant view of value in coopetition is of value created far away from customers for the coopeting parties in the form of economic or knowledge value. The study aimed to shift consensus from the dominant views in coopetition literature. This section discusses the contributions of the study based on Figure 8.1.

8.2.1 Creation of value

The practice of coopetition creates more value than competition or collaboration on its own could (Lado et al., 1997: 118; Ritala & Tidström, 2014). This supernormal benefit (Dyer & Singh, 1998: 662) is jointly created by the coopetition parties and can only be generated through the joint effort of the parties. Proximity of various kinds are important in such relationships, but it is also important that the parties are different (idiosyncratic) enough to complement one another.

Coopetition also has a dark side in the form of collusion that is characterised by the destruction of value for society (Walley, 2007: 16; Dima, 2010: 218; McEachern, 2013: 225). In this study the researcher focused his attention on coopetition as a practice that benefits the consumer, or at least does not reduce competition in the market.

The coopetition and collaboration literature historically focused mostly on economic and knowledge value that may emerge from coopetition. Most prominent in this respect is the work by Dagnino and Padula (2002: 32) which elaborated on the work of Kenworthy (1995). The value creation lens

allows for a finer grained analysis of the outcome of coopetition; a lens that can further be expanded to other types of collective coopetition initiatives.

This dissertation makes a contribution by expanding on this view of coopetition to incorporate socio-environmental value into the discourse.

The creation processes of economic and knowledge value are not insulated from one another. Knowledge value ultimately translates to economic value when it is applied. This is also the case with socio-environmental value. Socio-environmental value can result in economic value in a number of ways. By creating value for society and/or the environment, companies can create value for themselves. The transfer of value from one type to another may sometimes require an action. For instance, environmental initiatives can create value for companies if they market it. It is therefore necessary for such initiatives, or the results of such initiatives, to be closer to the consumer. **In this respect, the study provides an interesting empirical contribution to the conversation surrounding distance to consumer** (Bengtsson & Kock, 2000; Rusko, 2011; Steinmo & Jakobsen, 2013; Lindström & Polsa, 2015; Koza & Lewin, 1998; Orsato, 2009).

Creation and appropriation of value are dependent processes (Garcia-Castro & Aguilera, 2014). Value can only be appropriated if it was created. Conversely, the created value is a function of how much value is captured or appropriated.

8.2.2 Appropriation of value

The actions of coopetition parties could have both negative and positive impacts for other stakeholders, and not considering such impacts is sub-optimal. Apart from the private and common benefits that companies could capture from environmental coopetition initiatives, they should also take heed of value that can be created for society. This value is non-excludable and hence there is little direct economic benefit for companies to participate from a strictly financial point of view.

The dissertation makes a contribution to the literature dealing with appropriation of value by incorporating a broader stakeholder view into the conversation about to whom value is appropriated. The seminal literature about value appropriation (Khanna et al., 1998; Janssen et al., 2013; Dyer et al., 2008: 138; Ritala & Tidström, 2014; Dagnino & Padula, 2007: 42; Park et al., 2014; Rai, 2013) to date described value mostly as either common value or private value. This dissertation shows the value of disaggregating common value into the components that are captured by each partner. **The sum of privately captured common benefit adds up to the total common benefit.** In addition, **the total value captured by any firm is the sum of the component of common value (i.e. the privately captured common benefit) that it captures and the private benefit** that it generates outside of the boundaries of the coopetition initiative.

The addition of **privately captured common benefit therefore allows a clearer articulation of value dynamics** and represents a contribution in itself.

This dissertation also dealt with the conversation of zero-sum vs. positive-sum logic in the appropriation of value. Although there are no hard rules, it should be pointed out that socio-environmental value is a public good and thus automatically follows positive-sum logic. It is also apparent that **knowledge value always follows positive-sum logic** as other players are not prevented from capturing the same knowledge, or other knowledge.

8.2.3 Coopetition value matrix

An important contribution of this study is the Coopetition Value Matrix (CVM). The matrix provides interesting avenues for future research.

Value creation and appropriation are often dealt with as two independent constructs, while the combination of the two holds much potential for understanding value and its dynamics. The CVM (Table 4.1) addresses the gap in the literature as identified by Garcia-Castro and Aguilera (2014) and Ritala and Tidström (2014) by:

- Improving the articulating of value creation;
- Improving the articulation of value appropriation;
- Allowing a better understanding of the interaction (or dynamics) of the two processes; and
- Allowing the articulation of potential gaps in value creation or appropriation.

The CVM provides a powerful diagnostic tool to map both the content aspect of value and the process aspect (dynamics) of value. It is important to acknowledge that the CVM was not the main aim of this study, but rather emerged through the synergy of

- the extant literature surrounding coopetition,
- literature from related fields such as environmental economics and stakeholder theory, and
- empirical data gathered during the completion of this research.

Despite the unintentional emergence of the CVM, it became a central tool in answering the two research questions posed by this study.

8.2.3.1 Types of value

Relating to the first research question posed by this study, the CVM allows the mapping of nine classifications of value based on the form of value, i.e.:

- Economic;
- Knowledge; and
- Environmental (Socio-environmental);

and according to whom the value is appropriated, i.e.

- The partners collectively (common value);
- A particular partner (private value or privately captured common value);
- Society/community.

Through the application of the CVM, it became evident that not all the cases had all nine of the classifications of value.

The CVM therefore can be used to explore the potential to create value that previously was not present or was not articulated. The CVM makes it possible to make value explicit, thereby raising awareness of the value that is created, and also how such value comes about.

8.2.3.2 Archetypical value dynamics

The second research question of the study referred to the dynamics of how different classifications of value. Each of the nine classifications of value can be created/appropriated in a number of ways, culminating in more than twenty separate flows of value (see Chapter 7). An analysis of the ways in which types of value interact indicated a number of patterns. At a generic level, value is created in three ways as summarised in Table 8.1.

Table 8.1: The archetypical dynamics of value

Dynamic #	Description	Examples
Dynamic 1	Action as the cause of value	Coopeting with your competitor can bring about cost savings, risk reduction, etc. Recycling can create reduction in carbon emissions. Reuse of glass generates an economic benefit in the form of rebates. Public awareness marketing can raise public knowledge.
Dynamic 2	Action as the link between different types of value	Raising awareness about environmental benefits creates brand value. Applying knowledge links knowledge value with economic value.
Dynamic 3	Action-independent value	Removing alien trees creates socio-environmental value. The economic benefit of more water is an externality.

As far as a detailed view of the nine value types is concerned, some values show evidence of all three dynamics, while other types of value show evidence of only one of the three generic dynamics (see Table 8.2). Appendix C provides a detailed view of the creation and appropriation dynamics with examples.

Table 8.2: How value is created

		Value creation		
		Economic value	**Knowledge value**	**Environmental value**
Value appropriation	**Common benefit**	**Dyn 1:** Action **Dyn 2:** Prior value + Action **Dyn 3:** Prior value	**Dyn 1:** Action **Dyn 2:** Prior value + Action	
	Privately captured common benefit	**Dyn 2:** Prior value + Action **Dyn 3:** Prior value	**Dyn 2:** Prior value + Action	
	Private benefit	**Dyn 2:** Prior value + Action **Dyn 3:** Prior value	**Dyn 1:** Action **Dyn 2:** Prior value + Action	
	Public benefit	**Dyn 1:** Action **Dyn 2:** Prior value + Action **Dyn 3:** Prior value	**Dyn 2:** Prior value + Action	**Dyn 2:** Prior value + Action

8.2.3.2 Reinforcing loops

A further contribution of the study is the identification of re-enforcing loops in the CVM. The dynamics shown in Table 8.1 can be combined into a sequence that may involve multiple combinations of created value and actions by the coopeting parties and/or other stakeholders. Figure 7.4 illustrated such a combination in the case of TGRC.

As stated earlier, this view of coopetition dynamics moves away from the static modelling approach rooted in game theory (Brandenburger & Nalebuff, 1996).

8.2.4 NETWORKED COOPETITION

Figure 6.1 illustrates a diagrammatic view of coopetitors in a network. The study therefore contributes to an emerging body of knowledge dealing with networked coopetition i.e. various projects carried out by the same pool of actors (Czakon & Czernek, 2016).

8.2.5 SUMMARY OF CONTRIBUTIONS TO THEORY

Table 8.3 provides a summary of the contributions of the study at the theoretical level.

Table 8.3: The theoretical contributions

Theory building	Theory refinement	Theory extension
Expands the value creation perspective to include socio-environmental value.	Private & common value not sufficient as descriptors. The dissertation adds privately captured common value to the typology.	Applies coopetition theory in a new context, i.e. environmental coopetition.
Expands the value appropriation perspective to include public benefit (stakeholder theory).		Applies coopetition theory in a relatively unexplored context, i.e. the wine industry.
Defines nine types of value by means of the CVM.		Expands on the understanding of distance to consumer and the role it plays in reputation protection and reputation building.
Defines three archetypical value dynamics.		Provides examples of networked coopetition in a new context
Describes how different types of value impact each other.		.
Provides a framework (the CVM) through which value in coopetition initiatives can be analysed at a finer resolution than before.		

Source: Synthesis with Ridder et al., 2014: 381.

8.3 CONTRIBUTION TO CONTEXT

8.3.1 ENVIRONMENTAL COOPETITION

Although environmental coopetition exists, it is a latent phenomenon. A number of studies (Steinmo & Jakobsen, 2013; Holmburg & Örne, 2013; De Marchi, 2012; Blanco, Lozano & Rey-Maquieira, 2009; Limoubpratum, Shee & Ahsan, 2014) focus on issues that may be considered as environmental coopetition, but these do not particularly frame the focus in the way this sdissertation does. The study made a distinct contribution in its investigation of coopetition to protect and create environmental value.

8.3.2 THE SOUTH AFRICAN WINE INDUSTRY

This study secondly contributes to the literature (Choi, et al., 2009; Dana, et al. 2013; Granata, et al., 2015) focusing on coopetition in the wine industry. It is the first study to explore coopetition in the wine industry in South Africa. It therefore contributes to the empirical base of research of such studies.

8.3.2 NETWORKED COOPETITION

The cases under investigation in this study can be regarded as examples of networked coopetition (Czakon & Czernek, 2016). Although this was not a particular aim, this contribution was kindly noted by one of the examiners.

8.4 CONTRIBUTION TO METHOD

This dissertation contributes further to the method dimention by describing how cases can be analysed using the CVM, providing new insights regarding missed opportunities for value creation and how value may interact.

8.5 IMPLICATIONS FOR MANAGERS

Whether a company is motivated moral, financial or legitimacy–related drivers, environmental coopetition can improve the impact of its initiatives.

The value dynamics portrayed in this dissertation provides significant opportunity for firms to look at value creation and appropriation from environmental coopetition by means of a strong diagnostic tool. The matrix clearly portrays the importance of public awareness and public incentives for increasing the efficacy of the creation of value for the environment and for the coopetition partners. The CVM assists in portraying the systemic interdependence of different types of value.

Understanding how value is created and distributed can enhance the effectiveness and stability of environmental coopetition initiatives and coopetition alike. By mapping coopetition initiatives in the CVM, managers can be sensitised about the possibility to maximise stakeholder value. In cases where some categories of value are absent in the matrix, or are unintentional, the matrix makes such opportunities explicit and could present previously-unidentified opportunities.

Apart from the private and common benefits that companies can gain from environmental coopetition initiatives, they should also take heed of value that can be created for society. This value is non-excludable and hence there is little direct economic benefit for companies to participate from a strictly financial point of view. However, as was shown in the study, it is possible to generate economic value from environmental coopetition initiatives by actively raising awareness in the market about the initiative. This implies that the initiative should happen in closer proximity to customers than coopetition initiatives that do not aim to manage the reputation aspect. Understanding how to use the potential exposure is key to generating common and private benefit from the public value that is generated.

Once managers are aware of the value that they create for society through their coopetitive actions, it may become valuable, and ultimately deliberate. One should immediately caution against the notion that value must be economic in nature, or even that it must be measurable.

Understanding the dynamics of different types of value could help managers to make better choices about coopetitive actions. To understand what prior value is required, and what actions would potentially facilitate value creation, could strengthen the firm's ability to create and capture value.

8.6 LIMITATIONS OF THE STUDY AND AGENDA FOR FUTURE RESEARCH

This dissertation explored value creation and appropriation in cases of environmental coopetition. As with any study, doing in-depth research often leads to new or previously unthought-of research topics. Exploration and discussion of a topic with peers also provided hints for areas where a study could have been improved.

8.6.1 From qualitative to quantitative

Firstly, the dissertation was based on a qualitative inductive approach, and was aimed at understanding value creation and appropriation in coopetition initiatives rather than arrive at natural immutable laws (Corbetta, 2003: 15). The field of environmental coopetition remains an emergent field and more studies such as this one would strengthen the generalisability of the theory. The most obvious limitation of this dissertation is that it was conducted in one industry (i.e. the wine industry) and studied a particular context of coopetition (i.e. environmental coopetition).

The researcher believes that the dynamics of value portrayed in this dissertation would hold in other contexts as well, but further research is required to corroborate the conceptual contribution of this study in a deductive way. There would certainly be merit in conducting large sample deductive studies in order to quantitatively explore the dynamics illustrated in this study.

8.6.2 The CVM as foundation for future research

The articulation of value dynamics presented in this dissertation provides grounding for future research. The CVM is powerful for both academic discourse and real-life interrogation of value in coopetition initiatives. While every instance of coopetition may be different in the specific nature of the types of value, the dynamics in the CVM can be considered as generic.

A further aspect of the CVM as diagnostic tool may be the ability to compare the value captured by different stakeholders within the different types. Exploring the privately captured common benefit for different partners may yield interesting insights that were beyond the scope of this study.

8.6.3 Other dynamics

The researcher does not claim to have identified all the potential dynamics, but the matrix provides a robust point of reference for future studies, particularly studies that recognise a wider stakeholder view of value. Future research could focus on an exhaustive study of the different dynamics that may exist in the CVM.

8.6.4 Other contexts

The structure of an industry manifests itself in the form of environmental coopetition. Fragmented industries (such as the wine industry) may find it easier to collaborate unhindered due to a lower risk of collusion. In fact, "the environment is probably going to be a bit of a catalyst for cooperation" (Interviewee W4). On the other hand, concentrated industries see a potential legal/regulatory risk in environmental coopetition.

The fishing industry experiences a "tragedy of the commons". The initiatives are therefore in line with Ostrom's eight rules (1990). The wine industry, on the other hand, sees biodiversity as an opportunity, while it views water as a risk. But water is not, in the context of this study, a commons type problem.

The South African wine industry is highly fragmented (i.e. competition levels seem to be low), and therefore one would not necessarily expect firms in other industries to act in the same way. It is therefore likely that other contexts may result in other manifestations of the different types of value to what have been presented in this dissertation. For instance, firms in the fishing, forestry or mining industries would benefit from the expanded view of value in coopetition as presented in this dissertation, but may present other types of environmental coopetition and could potentially exhibit different value dynamics.

There are many instances and situations in which coopetition can be applied, ranging from inter-governmental to inter-personal level. This is arguably also true for environmental coopetition, particularly at the inter-government and inter-industry levels. This aspect was not explored in much depth, but represents a vast field for exploration, particularly given the urgency of environmental issues at the global level.

By way of implication, "we can foresee that the coopetitive framework proposed here may be extended in the future to a range of analytical levels referring to relationships between other market, non-market or extra-market institutions, such as governments, interest groups, unions and firms and among entire countries and blocks of countries."[4]

8.6.5 Motivation for environmental coopetition

Defining environmental coopetition as a deliberate strategy implies that one can investigate the motivation for such strategies. In most of the interviews there was barely a mention of the public benefit in initiatives, prompting one to be sceptical about the amount of consideration given to a wide stakeholder group. Instead it seems most of the initiatives were driven by the interest of the firm. This implies that one would have to consider the measures that would incentivise firms to collaborate on environmental issues. One such recent example would be emissions trading.

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[4] This was a suggestion by a reviewer of a paper that was based on this dissertation.

However, at least one example (see the Cape Leopard case) thus far has found that companies may collaborate with competitors despite generating little common or private value from the initiative. The purely moral case is therefore present in some instances.

This dissertation did not focus on this aspect very strongly, but there is certainly merit in exploring the underlying driver in future studies.

As an additional note it should be added that one of the external examiners of this dissertation made an interesting request to elaborate on the difference between strong and weak sustainability, and to argue in which of these two environmental coopetition would fall. This aspect fell outside of the scope to study, and the researcher does not believe coopetition needs to be classified in either of the weak or the strong views. The researcher also did not promote any particular stance as the study tried to work from the views of respondents. Instead the request represents an interesting avenue for future research in that coopetition may appear different under the two views.

8.6.6 Generic coopetition vs. environmental coopetition

There seem to be some differences between the traditional view of coopetition (here referred to as generic coopetition) and environmental coopetition as it is presented in this dissertation. More research is required to better understand the differences and similarities between the two constructs, and whether environmental is a special case of coopetition.

Although the dissertation set out to show that environmental coopetition is a unique construct (see Table 8.4), the focus softened somewhat to rather just focus on examples of coopetition with a deliberate environmental benefit.

Table 8.4: Potential differences between generic coopetition and environmental coopetition

	Generic coopetition	Environmental coopetition
Distance to consumer	Mostly far from the consumer.	Sometimes close to consumers, especially when the company needs to generate brand value in order to generate value, although some examples are still removed. The distance to consumer and the value created is closely linked in that it is the lack of distance that generates the value in environmental coopetition.
Value created	Knowledge and economic value leading to common or private benefit flowing to the collaborating competitors.	In addition to the knowledge and economic value, socio-environmental value can be created that is neither private nor common. In this study it is referred to as public value.
Capture of benefit	Common and private benefits can be captured fully by partners.	Public benefit outside reach of partners in environmental coopetition relationship.
Motivation	Self-interest in increasing shareholder value.	Still unclear, though examples do exist of pure moral cases.

Source: Bengtsson & Kock, 2000.

8.6.7 Distance to consumer

The concept of distance to consumer deserves further exploration. As was pointed out, awareness of socio-environmental value can boost the image of companies. Sometimes this can be collectively, as is the case with BWI, TGRC and membership of the Simonsberg Conservancy. But there are also other cases in which the value is at company level, as is the case for Graham Beck and the Cape leopard conservation effort, as well as for Laibach wines. Based on the different instances of distance to consumer, the dynamics of value may be different. Further research is required to investigate this line of thought.

8.6.8 Collusion

Collusion was briefly discussed earlier in the dissertation. It is a topic that deserves more exposure in the coopetition literature. Even though this study gave it relatively much exposure, there is much more room for exploration. For instance, "How do companies avoid colluding while they may be in coopetitive relationships?"

8.6.9 Stability of coopetition

Figure 2.4 showed stability of coopetition based on private vs. common benefits (Dyer et al., 2008:146). In the absence of public value, the most stable position is "high common benefits – high private benefits". Anecdotal evidence from the cases presented in this dissertation seems to indicate that public benefit may have a stabilising effect on coopetition initiatives (See Figure 8.2).

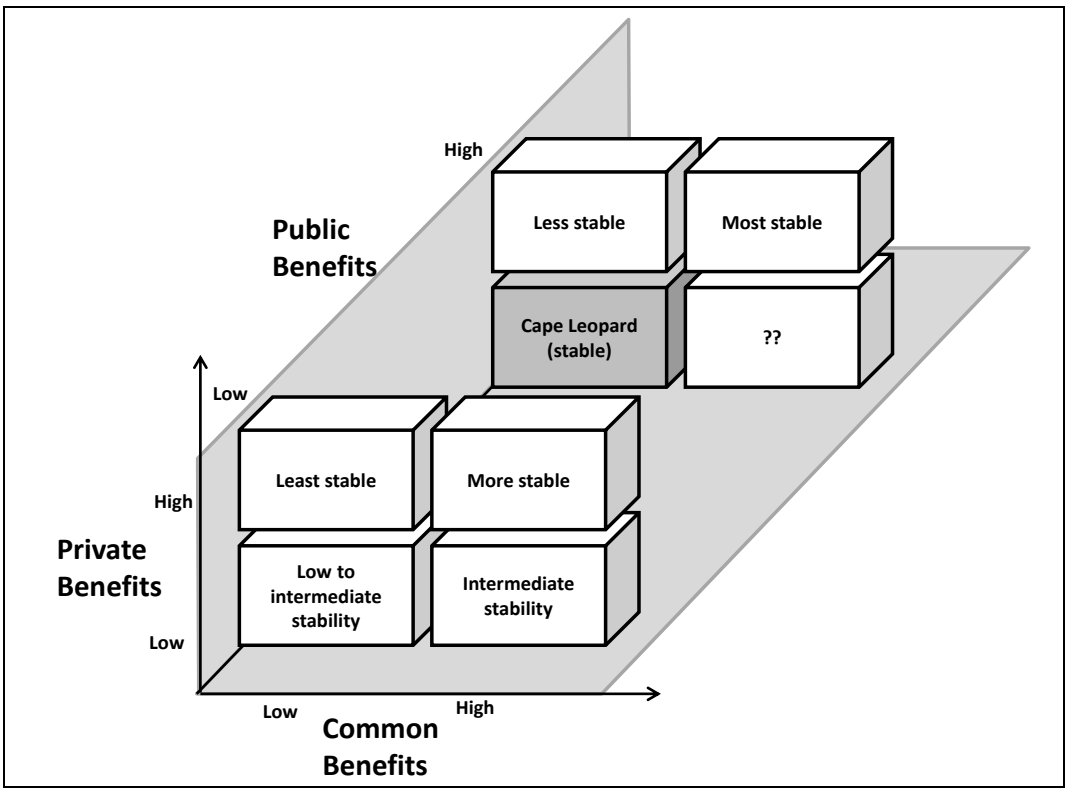

Figure 8.2: Stability of coopetition in a wide stakeholder view

Source: Researcher.

In the case of the Cape leopard project, the position could be described as “low common – high private – high public” (indicated by the grey block in the back on the lower left). The initiative has been stable for many years, which may not have been the case without the public benefits. Therefore, the emerging research question would therefore be: “What impact does public benefits have on the stability of coopetition initiatives?”

8.6.10 The relationship between created and appropriated value

An aspect that was challenged at a number of occasions during the completion of this research was the statement that created and appropriate value are equal (see section 4.2.3 for the discussion). Although the researcher has full confidence in this statement and assumption, the statement was again challenged during the examination process. One examiner made particular reference to the It therefore represents an area that needs clarification and stronger empirical substantiation.

8.6.11 Networked coopetition

Figure 6.1 shows a diagram of the respondents in the survey and how they interconnect. It therefore represents a view of networked coopetition (Czakon, Czernek, 2016). This dissertation did not explore this aspect further, but it does provide an opportunity for further investigation.

8.6.12 Social proximity and reciprocal perceptions of competitors

An interesting aspect of the study was social and other community-orientated forms of proximity as antecedents of coopetition. In most of the cases, coopetition parties were hesitant to refer to their partners as competitors. This friendly form of competition fosters coopetition. Whether this phenomenon is present in other industries would be an interesting future study, as well as understanding what unique characteristics can be identified that fosters such attitudes.

This particular aspect is an additional argument for defining coopetition through a value creation lens rather than overlapping market segments.[5]

8.6.13 Dynamics of competition

One aspect of coopetition that was not covered much is that of the dynamics of competition, i.e. aspects such as negotiation, power, bargaining (See for instance Kim et al., 2005 and Bengtsson et al., 2010), etc. A vast body of knowledge exists that describe aspects of competitive bargaining such as power and influence tactics.

8.6.14 Common pool resources

It is apt to conclude the areas for further research with one of the first topics that were introduced in the study. This dissertation gave limited coverage of governance of common pool resources (CPRs). This was partly because of its limited relevance to the conversation of value. However, it

would be of value to align the CVM with examples of CPRs and investigate whether these portray any particular idiosyncrasities.

8.5 CONCLUSIONS

This dissertation in essence spoke to the need to widen the perspective on value in coopetition research. The findings speak specifically to socio-environmental value and the incorporation of stakeholder theory. In doing so, however, the study encourages new thinking about other kinds of value too. This study put particular focus on the natural environment and society/communities as stakeholders. But it is worthwhile to consider what other value can potentially be created by considering other stakeholders and other interpretations of value.

For instance, social capital refers to trust and goodwill as alternative views of what value may be (see Figure 1.2 and the discussion of the five capitals model).

Some forms of coopetition may generate trust and goodwill, not only in society, but also between competitors. And because trust and goodwill are antecedents for successful and stable coopetition initiatives, they serve to create a reinforcing loop of more coopetition and more trust.

Trust, however, can also be at other levels; for instance, between a company and a government. Such trust could have value when negotiating new agreements or lobbying for a particular aspect of legislation.

Coopetition may also create cultural value; for instance, it may contribute to the survival of a language or cultural artefacts, which may (like the environment) have intrinsic value.

This dissertation therefore represents a larger movement to recognise value that accrues to stakeholders beyond the coopeting partners, but also recognises that such value can translate to value for the partners.

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[5] My thanks to an external examiner for pointing this out.

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APPENDIX A:

RESEARCH QUESTIONS AT THE OUTSET OF THE STUDY

Table A.1: Research design aspects

Objectives	**Research questions**	**Design & source data**
Define environmental coopetition.	**RQ1:** How can environmental coopetition be distinguished from "generic" coopetition?	**CASE STUDIES**
Establish **the types of initiatives** that can be classified as environmental coopetition.	**RQ2:** What are the forms of environmental coopetition?	**Primary data** Semi-structured interviews
Establish **how** competing companies typically engage in environmental coopetition?	**RQ3:** What are the mechanisms by which firms engage in environmental coopetition?	
Establish **the motivation/drivers/ enablers** of environmental coopetition.	**RQ4:** Why do companies engage in environmental coopetition)?	**Secondary:** Company reports & websites
Establish **why** competing companies may **not** collaborate with their competitors on environmental aspects.	**RQ5:** What are the barriers to environmental coopetition?	
Determine how context affects environmental coopetition.	**RQ6:** How does the industry context of firms influence the types, methods, motivations and barriers of environmental coopetition?	**Selected industries only** Wine, Fishing, etc.
Determine how value is created from environmental coopetition activities.	**RQ7:** How is value created? What does the value constitute of?	
Determine how the value created from environmental coopetition is shared among stakeholders.	**RQ8:** How is the value created from environmental coopetition shared among stakeholders?	

APPENDIX B:
THE INITIAL DISCUSSION GUIDE

At the start of the study, a flow diagram of question was constructed. After a number of interviews, it was evident that such an initial structure is of great value, but that it was too wide.

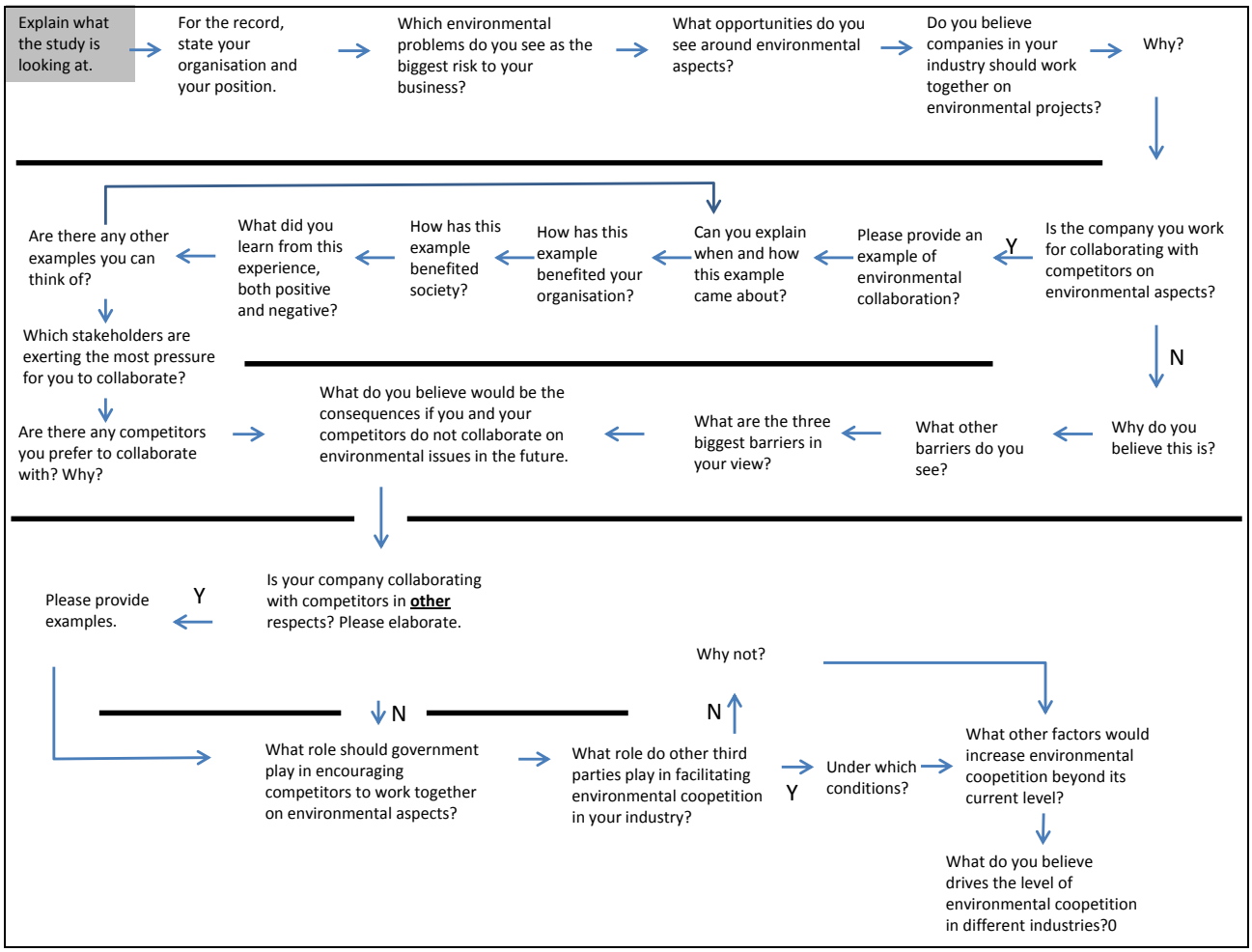

Figure B.1: Initial flow diagram of questions for interviews

APPENDIX C: VALUE DYNAMICS

Table C.1: Common economic value creation through action

Case	Common benefits	Nature of economic value	Action	Co-dependent
TGRC	TGRC is a VEI. It affords the member firms legitimacy.	Brand protection	Raising awareness in society	Public knowledge
Solamoyo	Licence to operate	Legitimacy	Raising awareness	
Greater Simonsberg Conservancy	The conservancy is a VEI. It affords the member firms legitimacy.	Brand protection	Raising awareness in society	Public knowledge
Reyneke collaboration with neighbours	Increased brand visibility through increased presence in the market	Reputation building	Assisting other farmers to convert	Socio-environmental value Common knowledge value
Reyneke collaboration with neighbours	Less risk of stock-out	Lower risk Reputation protection	Assisting other farmers to convert	Socio-environmental value Common knowledge value
Reyneke collaboration with neighbours	Supplier contract for organic grapes	Reduced risk	Signing contract	
TGRC	Cullet melts at a lower temperature, meaning an energy saving in the glass manufacturing process. Some of this saving may be passed on to wine bottlers.(Interviewee W4)	Cost reduction	Recycling	Socio-environmental value
Greater Simonsberg Conservancy	Easier and more efficient access to government funding for alien clearing	Cost reduction	Create a central office	
Greater Simonsberg Conservancy	Snake & fire awareness training	Cost reduction	Joint training	Common knowledge
Greater Simonsberg Conservancy	Less fire risk. Removing aliens reduces both the cost and probability of a big fire.	Cost reduction	Removing alien trees	Socio-environmental value
Organic Farmers Association	Cooperation around wine fairs to share expenses and form an organic cluster at wine shows so that organic wines are easier to find. Coopetition allows lower costs for wine producers. Each farm can spend fewer resources to attract people to their stand.	Cost reduction	Joint marketing	
Reyneke collaboration with neighbours	Sharing cattle: Reduced costs of keeping grass short	Cost reduction	Sharing cattle	
Winetech	The cost of research & development is spread between the industry players.	Cost reduction	Joint funding of research	Common knowledge
Winetech	Free training days to wine and grape producers	Cost reduction	Joint training	Common knowledge
Solamoyo	Shared expenses for constructing a waste treatment plant.	Cost reduction	Joint construction of facility	
Solamoyo	Potentially reduced operational costs of dealing with run-off	Cost reduction	Joint operation of facility	
Reyneke collaboration with neighbours	Cattle fertilise vineyard/ Healthier soil	Cost reduction	Sharing cattle	Socio-environmental value
Organic Farmers Association	Cooperation around wine fairs to share expenses and form an organic cluster at wine shows so that organic wines are easier to find. Because the organic group is easier to find and more visible, it is likely that they will have higher sales.	Increased revenue	Joint marketing	
Organic Farmers Association	By helping other farmers convert, the farmers with stronger presence in the market is able to source more grapes.	Increased revenue (volume)	Assisting other farmers to convert	Socio-environmental value Common knowledge value
Reyneke collaboration with neighbours	By helping other farmers convert, Reyneke Wines is able to source more grapes.	Increased revenue (volume)	Assisting other farmers to convert	Socio-environmental value Common knowledge value
Reyneke collaboration with neighbours	Less drift from neighbouring farms. Reyneke loses less of its harvest from pesticide drift.	Increased revenue (volume)	Assisting other farmers to convert	Socio-environmental value Common knowledge value
Reyneke collaboration with neighbours	Able to grow herd size and sell cattle	Increased revenue	Sharing cattle	

Table C.2: Common economic value creation from other value via an action

Case	Common benefits	Nature of economic value	Prior value	Value dynamics	Action
Cape leopard case	The Cape leopard conservation effort affords coopetition partners a collective brand value. (Interviewees F1, N7)	Brand value	Socio-environmental Public knowledge	Socio-environmental value creates economic value through brand exposure of the environmental initiative. It could have been positive-sum logic if the Rooiberg Breederiver Conservancy kept the value common, as is the case with the Eerste River Collaboratory.	Marketing of the initiative Raising public knowledge Certification & labelling
BWI	BWI provides a differentiator for South African wines that are exported. (Interviewee W5)	Reputation building	Socio-environmental Public knowledge	BWI is a VEI. Socio-environmental is a prerequisite for membership, which in turn creates economic value. Internationally it seems to provide some differentiation for South African wines.	Certification & labelling
BWI	Attention is drawn to BWI wines in some retailers such as Woolworths. This provides free marketing value and raises awareness about BWI wines.	Brand exposure	Socio-environmental Public knowledge	Socio-environmental value leads to BWI, leading to preferential exposure in Woolworths. BWI works because of public awareness, so an element of its success is connected to public knowledge value. Orsato talks of stakeholder management.	Certification & labelling
Mealybug project	Brand value is available to all participants	Reputation building	Socio-environmental Public knowledge	Socio-environmental value allows for eco-branding, and potentially consumers would be willing to pay more.	Raising awareness
BWI	BWI provides preferential access for members in some cases. (Interview N6)	Legitimacy	Socio-environmental Public knowledge	BWI is a VEI. Socio-environmental is a prerequisite for membership, which in turn creates economic value. Locally BWI does not seem to provide differentiation in the market, except in a retailer like Woolworths.	Certification & labelling
Greater Simonsberg Conservancy	Brand protection from Voluntary Environmental Initiative	Legitimacy	Socio-environmental Public knowledge	Belonging to the Greater Simonsberg Conservancy provides members with legitimacy.	Raising awareness
Eerste River Collaboratory	Reduced reputational risk	Legitimacy	Socio-environmental Public knowledge	See BWI	Raising awareness

Table C.2: Common economic value creation from other value via an action (continued)

Case	Common benefits	Nature of economic value	Prior value	Value dynamics	Action
Cape leopard case	The Cape leopard conservation effort affords coopetition partners a collective brand value that leads to increased sales. (Interviewees F1, N7)	Increased revenue (Volume & price)	Socio-environmental Public knowledge	Socio-environmental value creates economic value through brand exposure of the environmental initiative. It could have been positive-sum logic if the Rooiberg Breederiver Conservancy kept the value common, as is the case with the Eerste River Collaboratory.	Marketing of the initiative Raising public knowledge Certification & labelling
BWI	BWI provides a differentiator for South African wines that are exported. (Interviewee W5)	Increased revenue (Volume & price)	Socio-environmental Public knowledge	BWI is a VEI. Socio-environmental is a prerequisite for membership, which in turn creates economic value. Internationally it seems to provide some differentiation for South African wines.	Certification & labelling
BWI	BWI provides preferential access for members in some cases. (Interview N6)	Increased sales (Volume)	Socio-environmental Public knowledge	BWI is a VEI. Socio-environmental is a prerequisite for membership, which in turn creates economic value. Locally BWI does not seem to provide differentiation in the market, except in a retailer like Woolworths.	Certification & labelling
BWI	Attention is drawn to BWI wines in some retailers such as Woolworths. This provides free marketing value and raises awareness about BWI wines.	Increased sales (Volume)	Socio-environmental Public knowledge	Socio-environmental value leads to BWI, leading to preferential exposure in Woolworths. BWI works because of public awareness, so an element of its success is connected to public knowledge value. Orsato talks of stakeholder management.	Certification & labelling
Reyneke collaboration with neighbours	Greater biodiversity in natural aromatic and biocontrol yeasts, resulting in better wines	Increased revenue (price)	Socio-environmental Public knowledge	Using less pesticides encourages biodiversity, which in turn provides ecological services	
Organic Farmers Association	Higher prices for organic grapes.	Increased revenue (price)	Socio-environmental	Some wine producers buy grapes from other organic farmers. These farmers (for now) decided not to compete with their own brand, but rather to sell grapes to wine producer.	
Reyneke collaboration with neighbours	Higher prices for organic grapes.	Increased revenue (price)	Socio-environmental	Organic grapes are considered to be healthier. Consumers are also willing to pay for the ecological benefit of organic farming. Because of this, there is value in terms of eco-branding.	

Table C.3: Common economic value creation from other value (no action)

Case	Common benefits	Nature of economic value	Prior value
Cape leopard case	The presence of the leopard (an apex predator) reduces the losses due to smaller predators such as jackal and caracal. Farmers therefore experience fewer losses of small livestock. (Interviewee W7, N7)	Risk reduction	Socio-environmental
Eerste River Collaboratory	Reduced health & safety risk	Lower risk	Socio-environmental
Cape leopard case	The presence of the leopard (an apex predator) reduces the losses due to smaller predators such as jackal and caracal. Farmers therefore experience fewer losses of small livestock. (Interviewee W7, N7)	Cost reduction	Socio-environmental
Greater Simonsberg Conservancy	A strong underlying driver for removing alien trees is the economic benefit of more water. More water is both a socio-environmental benefit and an economic benefit.	Cost reduction	Socio-environmental
Mealybug project	Natural pest control may reduce operational costs in the long term. Socio-environmental value is created, and the economic value flows from the ecological services.	Cost reduction	Socio-environmental
Eerste River Collaboratory	Access to cleaner water for production and/or irrigation purposes	Cost reduction	Socio-environmental

Table C.4: Common economic value appropriation through action

Case	Common benefits	Nature of economic value	Action
Cape leopard case	The Cape leopard conservation effort affords coopetition partners a collective brand value. (Interviewees F1, N7)	Brand value	Value is captured through marketing or branding by a particular wine producer, for instance Graham Beck.
Reyneke collaboration with neighbours	Increased brand visibility through increased presence in the market	Reputation building	Value is captured by putting Reyneke branded wine in the market. The value is equal to the additional profit generated by Reyneke.
BWI	BWI provides a differentiator for South African wines that are exported. (Interviewee W5)	Reputation building	Value is captured by exporting wines.
Mealybug project	Brand value is available to all participants	Reputation building	Value is captured by raising awareness of a farms involvement.
BWI	Attention is drawn to BWI wines in some retailers such as Woolworths. This provides free marketing value and raises awareness about BWI wines.	Brand exposure	Value is captured by taking advantage of available shelf space and/or exposure.
BWI	BWI provides preferential access for members in some cases. (Interview N6)	Legitimacy	Value is captured by taking advantage of available shelf space and/or exposure.
Greater Simonsberg Conservancy	Brand protection from Voluntary Environmental Initiative	Legitimacy	Value is captured by raising awareness of a farms involvement. One of the ways is to display a membership sign as was shown earlier.
TGRC	TGRC is a VEI. It affords the member firms legitimacy at an industry level.	Brand protection	The creation and appropriation of value happens simultaneously. This is an intangible value and is hard to value accurately.
Greater Simonsberg Conservancy	The conservancy is a VEI. It affords the member firms legitimacy.	Brand protection	The creation and appropriation of value happens simultaneously. This is an intangible value and is hard to value accurately.
Eerste River Collaboratory	Reduced reputational risk	Brand protection	Value is captured by raising awareness of farm-level involvement.
Reyneke collaboration with neighbours	Less risk of stock-out	Brand protection	The value captured is equal to the avoided reputational damage and loss of sales of a stock-out. Value is captured by putting Reyneke branded wine in the market.
Reyneke collaboration with neighbours	Less risk of stock-out	Reputation protection	The value captured is equal to the avoided reputational damage and loss of sales of a stock-out. Value is captured by putting Reyneke branded wine in the market.
TGRC	Cullet melts at a lower temperature, meaning an energy saving in the glass manufacturing process. Some of this saving may be passed on to wine bottlers.(Interviewee W4)	Cost reduction	Value is captured by users of glass when they procure glass at a reduced cost. It is hard to determine what the reduction in cost is, and if there even is a cost reduction.
Greater Simonsberg Conservancy	Easier and more efficient access to government funding for alien clearing	Cost reduction	
Greater Simonsberg Conservancy	Snake & fire awareness training	Cost reduction	Member firms capture value by sending staff for training.
Winetech	The cost of research & development is spread between the industry players.	Cost reduction	The value to each participant is the difference between the cost of funding similar research, and the actual cost of the research.
Winetech	Free training days to wine and grape producers	Cost reduction	Member firms capture value by sending staff for training.
Greater Simonsberg Conservancy	By helping other farmers convert, the farmers with stronger presence in the market is able to source more grapes.	Increased revenue (volume)	The farmer buying the grapes capture value through buying the grapes and increasing production.
Reyneke collaboration with neighbours	By helping other farmers convert, Reyneke Wines is able to source more grapes.	Increased revenue (volume)	Reyneke Wines capture value through buying the grapes and increasing production.
Reyneke collaboration with neighbours	Greater biodiversity in natural aromatic and biocontrol yeasts, resulting in better wines	Increased revenue	Value is captured by attaining a higher price.
Cape leopard case	The Cape leopard conservation effort affords coopetition partners a collective brand value. (Interviewees F1, N7)	Increased revenue	Value is captured through marketing or branding by a particular wine producer, for instance Graham Beck.
BWI	BWI provides a differentiator for South African wines that are exported. (Interviewee W5)	Increased revenue	Value is captured by exporting wines.
BWI	BWI provides preferential access for members in some cases. (Interview N6)	Increased sales	Value is captured by taking advantage of available shelf space and/or exposure.
BWI	Attention is drawn to BWI wines in some retailers such as Woolworths. This provides free marketing value and raises awareness about BWI wines.	Increased sales	Value is captured by taking advantage of available shelf space and/or exposure.
Organic Farmers Association	Higher prices for organic grapes.	Increased revenue (price)	Value is captured by attaining a higher price.
Reyneke collaboration with neighbours	Higher prices for organic grapes.	Increased revenue (price)	Value is captured by attaining a higher price.

Table C.5: Common economic value appropriation without action

Case	Common benefits	Nature of economic value	Action
Cape leopard case	The presence of the leopard (an apex predator) reduces the losses due to smaller predators such as jackal and caracal. Farmers therefore experience fewer losses of small livestock. (Interviewee W7, N7)	Cost reduction Risk reduction	
Eerste River Collaboratory	Reduced health & safety risk	Lower risk	
Organic Farmers Association	Supplier contract for organic grapes	Reduced risk	
Solamoyo	Licence to operate	Legitimacy	The creation and appropriation of value happens simultaneously. This is an intangible value and is hard to value accurately.
Greater Simonsberg Conservancy	Less fire risk. Removing aliens reduces both the cost and probability of a big fire.	Cost reduction	Difficult to quantify the value of the saving as one would have to know what damage would be caused in absence of the removal of alien species.
Greater Simonsberg Conservancy	A strong underlying driver for removing alien trees is the economic benefit of more water. More water is both a socio-environmental benefit and an economic benefit.	Cost reduction	
Organic Farmers Association	Cooperation around wine fairs to share expenses and form an organic cluster at wine shows so that organic wines are easier to find. Coopetition allows lower costs for wine producers. Each farm can spend fewer resources to attract people to their stand.	Cost reduction	
Mealybug project	Natural pest control may reduce operational costs in the long term. Socio-environmental value is created, and the economic value flows from the ecological services.	Cost reduction	
Reyneke collaboration with neighbours	Sharing cattle: Reduced costs of keeping grass short	Cost reduction	The farmer who grants access to his farm captures the cost reduction benefits. The value is equal to the avoided cost of mowing the grass with a tractor.
Reyneke collaboration with neighbours	Cattle fertilise vineyard /Healthier soil	Cost reduction	The farmer who grants access to his farm captures the cost reduction benefits. The value is equal to the avoided cost of mowing the grass with a tractor.
Eerste River Collaboratory	Access to cleaner water for production and/or irrigation purposes	Cost reduction	
Solamoyo	Shared expenses for constructing a waste treatment plant.	Cost reduction	
Solamoyo	Potentially reduced operational costs of dealing with run-off	Cost reduction	
Organic Farmers Association	Cooperation around wine fairs to share expenses and form an organic cluster at wine shows so that organic wines are easier to find. Because the organic group is easier to find and more visible, it is likely that they will have higher sales.	Increased revenue	
Reyneke collaboration with neighbours	Less drift from neighbouring farms. Reyneke loses less of its harvest from pesticide drift.	Increased revenue (volume)	
Reyneke collaboration with neighbours	Able to grow herd size and sell cattle	Increased revenue	The value for Reyneke Wines as owner of the cows is equal to the avoided feeding cost of the cattle.

Table C.6: Private economic value creation from other value via an action

Case	Private benefits	Prior value	Action	Co-dependent
Cape leopard case	A farmer (Interviewee W7) used knowledge captured about different plant species in his olive oil business to create innovative new products. This economic benefit is outside of the coopetition initiative and not available to other wine farmers.	Private knowledge	Applying the knowledge	
Mealybug project	Laibach is the only organically certified wine producer amongst the group of wine producers in the immediate vicinity. Because of its neighbours using natural pest control, Laibach's attempts are also more effective.	Private knowledge	Applying knowledge. The context makes it private economic value. Laibach can leverage more value from the initiative because of its organic certification.	Socio-environmental value
Winetech	Applying research from Winetech can represent private benefit.	Private knowledge	Applying the knowledge	Socio-environmental value
TGRC	TGRC receives contributions from all glass users. Many glass users contribute funds. The funds are used to promote both recycling and reuse of glass, but only one firm reuses glass in its "spirits" division. (Interviewee W4, W9). When the public returns reusable bottles, they created value for firms that make use of reusable bottles, in this case Distell.	Public knowledge	Knowledge is applied by society, leading to a private economic benefit	Socio-environmental value Socio-economic value

Table C.7: Creating and capturing common knowledge benefits

	Common benefits	Capturing of benefits	Nature of knowledge value	Prior value	Action
Cape leopard case	Being part of the conservancy affords all the partners access to the knowledge of a knowledgeable sustainability manager. (Interviewee W7)	One of the farmers reports the ability to access more of the time of the knowledgeable person, and thus captures more conservation related and other knowledge value for himself. (Interviewee W7)	Know-what Know-how		Cooperate through 3rd party
TGRC	TGRC serves as knowledge hub to the glass industry (Interviewee T1).	Representation on the board provides some players with a higher level of access to information and knowledge. (Interviewee T1, W9).	Know-what Know-how		Cooperate through 3rd party
BWI	BWI serves as knowledge hub about biodiversity conservation.	Members of BWI may draw on knowledge within BWI, but none of the respondents made mention of this.	Know-what Know-how		Cooperate through 3rd party
BWI	Audit reports provide particular members with areas for improvement. (Interview W13)	Members capture knowledge by using the knowledge resource and gaining insight into areas for improvement from audit reports.	Know-what		Cooperate through 3rd party
Greater Simonsberg Conservancy	Snake & fire awareness training	The value is available at very little cost. By sending staff to be trained, the value is captured.	Know-what Know-how		Cooperate through 3rd party
Greater Simonsberg Conservancy	Coordination of fire-fighting efforts provides an opportunity to respond faster.	Farmers benefit from lower risk by sharing information. The value is captured in reduced damage.	Know-what Know-how		Cooperate through 3rd party
Greater Simonsberg Conservancy	Conservancy office serves as an information and knowledge source	Value is captured by making use of the resource.	Know-what Know-how		Cooperate through 3rd party
Mealybug project	Farmers learn from one another and apply the knowledge on their own farms.	One example is interviewee W20 that learnt how to deal with mealybugs from Laibach.	Know-what Know-how		Cooperate/share best practice
Organic Farmers Association	Farmers meet every quarter on a different farm to exchange best practices. (Interviewee W17, W18, W20)	Farmers learn from one another and apply the knowledge on their own farms. One example is interviewee W20 that learnt how to deal with mealybugs from Laibach.	Know-what Know-how		Cooperate/share best practice
Organic Farmers Association	Farmers learn from one another and apply the knowledge on their own farms. One example is interviewee W20 that learnt how to deal with mealybugs from Laibach.	Johan Reyneke learns about finance and strategy from a neighbour, while the neighbours learn more about organic farming. The sharing of knowledge happens in positive-sum logic.	Know-what Know-how		Cooperate/share best practice
Reyneke collaboration with neighbours	Farmers share knowledge (know-what & know-how); the overall knowledge stock increases.		Know-what Know-how		Cooperate/share best practice
Winetech	Winetech provides funding for research projects for the industry. The results are made public through various channels.	Knowledge is disseminated and captured though different channels.	Know-what Know-how		Jointly fund research
Winetech	Winetech, in collaboration with VinPro, provides information sessions, seminars and workshops in the wine industry (Boshoff, 2013:170)	Wine producers can read, assimilate and use the knowledge by accessing publically available research. Knowledge is appropriated in positive-sum logic	Know-what Know-how		Cooperate through 3rd party

Table C.7: Creating and capturing common knowledge benefits (continued)

	Common benefits	Capturing of benefits	Nature of knowledge value	Prior value	Action
Eerste River Collaboratory	Knowledge regarding the problems facing the river eco-system (know-what)	Participants learn about problems through their participation.	Know-what		Cooperate through 3rd party
Eerste River Collaboratory	Sharing of knowledge about related and other matters between staff of the two entities. (know-what & know-how)	Two participants exchange knowledge about how to address mutually problems.	Know-what Know-how		Cooperate/share best practice
Eerste River Collaboratory	Know-how in cooperating with competitors	Coopetition partners learn an important skill through their interaction with competitors.	Know-how		Cooperate/share best practice
Solamoyo	Some knowledge was exchanged in the starting phase of the project.	Partners capture knowledge from the initiative, but to a limited extent.	Know-what		Share limited information
TGRC	TGRC gains knowledge from studying the efficacy of recycling initiatives.	Representation on the board provides some players with a higher level of access to information and knowledge. (Interviewee T1, W9).	Know-what Know-how	Socio-environmental	TGRC studies impact of initiatives

Table C.8: Capturing private knowledge value through action (with or without prior value)

	Private benefits	Nature of knowledge value	Action
Cape leopard case	One of the farmers is able to tap into the collective knowledge of the coopetition partners about health benefits of different plants to use in a secondary business. (Interviewee W7)	Know what	Engaging with other members
TGRC	Distell adopts knowledge that it gained in its involvement with the TGRC into areas that its competitors do not operate.	Know what Know how	Engaging with 3rd party

Table C.9: Public economic value (socio-economic) value from action (no prior value)

	Private benefits	Action	Co-dependent value
TGRC	Glass is recycled and reused, meaning reduced cost to society for waste disposal and landfills (Interviewee W9, T1).	Recycling	Socio-environmental
	The bulk of glass recycling is driven by the lower end of the market who earns a living from recycling (Interviewee T1).	Recycling	Socio-environmental
Greater Simonsberg Conservancy	Reduced fire risk benefits the immediate community.	Alien tree removal	Socio-environmental
Mealybug project	Less herbicide and pesticide spraying in the region is healthier for the immediate community.	Less herbicide and pesticide spraying	Socio-environmental

Table C.10: Public economic value (socio-economic) value from prior value via action

	Private benefits	Capturing of benefits	Prior value	Action	Co-dependent value
TGRC	The lower cost to the glass manufacturer could potentially translate to lower cost of bottled wine.		Common economic value Private economic value	Saving is realised by buying wine	

Table C.11: Public economic value (socio-economic) value prior value (no action)

	Private benefits	Capturing of benefits	Prior value	Co-dependent value
Cape leopard case	The community benefits economically from fewer losses from small predators due to the presence of an apex predator. (Interviewee W7, N7)	Public	Socio-environmental	Common benefit
Cape leopard case	Bed and breakfast businesses leverage from the increased popularity of the region. (Interviewee W7, F1)	Public	Socio-environmental	Common benefit
BWI	Socio-economic benefit in BWI stems from protection of eco-systems and the promotion of biodiversity on wine and grape producing farms	Public	Socio-environmental	Common benefit
Organic Farmers Association	Socio-economic benefit in BWI stems from protection of eco-systems and the promotion of biodiversity on wine and grape producing farms	Public	Socio-environmental	Common benefit
Reyneke collaboration with neighbours	Socio-economic benefit stems from protection of eco-systems and the promotion of biodiversity on wine and grape producing farms	Public	Socio-environmental	Common benefit
Eerste River Collaboratory	Healthier environment for community	Public	Socio-environmental	Common benefit
Eerste River Collaboratory	Potable water	Public	Socio-environmental	Common benefit
Eerste River Collaboratory	Less illnesses from water-borne diseases	Public	Socio-environmental	Common benefit
Solamoyo	Potable water	Public	Socio-environmental	Common benefit
Solamoyo	Less illnesses from water-borne diseases	Public	Socio-environmental	Common benefit

Table C.12: Public knowledge value from prior value

	Knowledge value	Prior value	Action
Cape leopard case	The community becomes aware of the existence of the leopard and the benefits of having it around. Also about how to conserve the leopard. (Interviewee N7)	Socio-environmental value	Community observes & word of mouth
TGRC	The primary mandate of TGRC is to raise public awareness regarding glass recycling, glass reuse, and the benefits thereof (Interviewee T1, TGRC, 2012).	Common knowledge	Awareness campaign
BWI	BWI raises awareness about biodiversity and informs consumers about BWI wines.	Common knowledge	Awareness campaign & Labelling
Greater Simonsberg Conservancy	The conservancy runs various education programmes for school children and farm workers around conservation. (Interviewee W12)	Common knowledge	Education
Mealybug project	The ladybird brand and marketing around brand raises awareness of natural pest control	Common knowledge	Awareness campaign
Organic Farmers Association	Labelling and raising awareness about organic wines	Common knowledge	Awareness campaign
Reyneke collaboration with neighbours	Labelling and raising awareness about organic wines	Common knowledge	Awareness campaign

Table C.13: Socio-environmental value

	Socio-environmental value	Number of dynamic	Prior value	Action	Co-dependent value
TGRC	Recycling glass has numerous benefits for the environment in terms of a reduction in pollution and resource dependency (Glass producer website).	(21) Dependent on recycling action, which is driven by public awareness.	Public knowledge	Recycling action of society	Common economic benefit Private economic benefit Socio-economic value
Cape leopard case	There is intrinsic value (ecosystems value, biological value) in maintaining the trophic pyramid by having an apex predator present. The leopard holds aesthetic value. (Interviewee W6, W7, W8, N7)	(17) Dependent on conservation action, driven by knowledge of the individual members of the conservancy.	Common knowledge	Conservation effort of farmers	Public knowledge
BWI	Biodiversity gains mean more natural resilience in the eco-system.	(17) Dependent on conservation action, driven by knowledge of the BWI members.	Common knowledge	Conservation effort	
	Increase in ecological services such as pest control, fire control, support of indigenous fauna, etc.	(17) Dependent on conservation action, driven by knowledge of the BWI members.	Common knowledge	Conservation effort	
	Aesthetic value of indigenous fauna and flora	(17) Dependent on conservation action, driven by knowledge of the BWI members.	Common knowledge	Conservation effort	
Greater Simonsberg Conservancy	Removal of alien species allow natural habitat for fauna & flora	(17) Dependent on conservation action, driven by knowledge of the members of the conservancy.	Common knowledge	Conservation effort	
	Return of animals such as caracal, owls, snakes, mice.	(17) Dependent on conservation action, driven by knowledge of the members of the conservancy.	Common knowledge	Conservation effort	
	More water	(17) Dependent on conservation action, driven by knowledge of the members of the conservancy	Common knowledge	Conservation effort	Socio-economic
Mealybug project	Increased biodiversity in vineyards.	(17) Dependent on conservation action, driven by knowledge of the members of the initiative	Common knowledge	Conservation effort	
Organic Farmers Association	Other yeasts such as Rh. diobovatum and Cr. laurentii are also potential biocontrol agents against B. cinerea. This unique diversity could be due to the poor phytosanitary condition associated with the biodynamic vineyard, but it could also reflect the establishment of the natural enemies of different pests in the absence of pesticide application. (Setati et al., 2012)	(17) Dependent on conservation action, driven by knowledge of the members of the initiative	Common knowledge	Conservation effort	
Reyneke collaboration with neighbours	Other yeasts such as Rh. diobovatum and Cr. laurentii are also potential biocontrol agents against B. cinerea. This unique diversity could be due to the poor phytosanitary condition associated with the biodynamic vineyard, but it could also reflect the establishment of the natural enemies of different pests in the absence of pesticide application. (Setati et al., 2012)	(17) Dependent on conservation action, driven by knowledge of the members of the initiative.	Common knowledge	Conservation effort	
Winetech	Knowledge in the industry leads to energy efficiency and other environmental benefits.	(17) Dependent on conservation action, driven by knowledge of the members of the initiative	Common knowledge	Environmental action	
Eerste River Collaboratory	Collaboration to clean the Eerste River creates a healthier eco-system.	(17) Dependent on conservation action, driven by knowledge of the members of the initiative	Common knowledge	Cleaning of the river and catchment area	
	Collaboration to clean the Eerste River from pollution and invasive plants provides more and cleaner water to the direct environment.		Common knowledge	Cleaning of the river and catchment area	
Solamoyo	The joint waste treatment facility creates cleaner run-off water than was previously the case. Doing it as a joint project reduces the construction cost as well as the operations expenses of compliance.	(17) Dependent on conservation action, driven by knowledge of the members of the initiative	Common knowledge	Construction of the waste treatment plant Operation of the plant	Common economic benefit