Understanding "partnerships for conservation gain": how do government agencies, non-governmental organisations, private landowners and the corporate sector co-operate to deliver effective natural resource management?

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For Charlotte

"When the wind of change blows some build walls while others build windmills"

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Author's declaration

All chapters in this thesis were written by J.E. Steadman. Comments and editorial suggestions were made by my supervisors Z.G. Davies (all chapters) and F.A.V. St. John (chapters 2-5). Chapters 1 & 2 include collaborations with other researchers both within and external to the University of Kent. All research was conducted with the approval of the University of Kent, School of Anthropology and Conservation's Research and Research Ethics Committee.

Chapter 1: J.E. Steadman, Z.G Davies and K. Shevchenko conceived the idea. J.E. Steadman wrote the manuscript with collaborative input from the other co-authors.

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Abstract

With biodiversity loss and ecosystem degradation ongoing, the conservationists' toolkit needs to be augmented by innovative and sometimes bold solutions. It is already apparent that the scale of the problem exceeds the capabilities of any one organisation working in isolation. However, collaboration between stakeholder groups may have the potential to enhance conservation outcomes. Cross-sector collaborations, such as those between non-governmental organisations (NGOs) and corporations, are proliferating in conservation. However, little is known about their efficacy and subsequent impact on the wider natural environment, with many assumptions based on anecdotal rather than empirical evidence. This thesis aims to fulfil an important and substantial knowledge gap by using data-driven approaches to understand partnerships in conservation from the perspective of conservation NGOs. Firstly, I assess the types and prevalence of partnerships between conservation NGOs and corporations and find a diverse range of projects are occurring. For example, financial donations are a frequent form of NGO-corporate interaction, but other collaborative activities such as terrestrial ecosystem restoration and educational activities, are regularly reported. Secondly, I evaluate an NGO-led collaborative network to understand what motivates organisations to initiate a membership committing them to voluntary environmental measures that go beyond regulatory compliance. Results suggest that the majority of members join to fulfil strategic objectives such as reputation protection, rather than for altruistic reasons. Furthermore, participants with stronger sustainability credentials occupy the most influential positions within the network, meaning that they are strongly positioned to receive and disseminate information. Lastly, I use social network analysis to explore how a conservation NGO delivers its landscape-scale conservation projects by

acquiring key resources from multiple partners. Results indicate that partners providing land-based support are well connected with one another, meaning that landscape-scale conservation activities can be coordinated more easily. Furthermore, the in-kind support network, primarily comprising NGOs, displays the greatest innovative capacity. The research presented in this thesis highlights that cross-sector partnerships have a central role to play in bridging the interests of different stakeholder groups, and reflect the inclusive vision of conservation we should all be striving to create.

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Chapter 1. Introduction

1.1. Research Preface

The global decline in biodiversity shows no sign of abating (Pimm et al. 1995; Butchart et al. 2010; Laurance et al. 2012), despite increasing recognition that human welfare and economic development depend on the provisioning, regulating, cultural and supporting ecosystem services that nature provides (Costanza et al. 1997; Daily 1997; Pimentel et al. 1997; Capistrano 2005; Perrings et al. 2010; Costanza et al. 2014). The situation is exacerbated by the substantial shortfall between levels of financial investment and that required to fund a comprehensive global conservation program (James et al. 1999; James et al. 2001; Balmford et al. 2003; Bruner et al. 2004; McCarthy et al. 2012; Waldron et al. 2013). Consequently, whatever the personal values of individual conservationists may be (along the continuum from biocentric to anthropocentric; Hunter et al. 2014), The current suite of strategies and interventions within the conservationists' toolkit needs to be augmented by innovative and sometimes bold solutions (Noss et al. 2012; Aslan et al. 2013). It is critical for conservation to apply lessons from other disciplines (Game et al. 2013), keep an open mind and not overlook, or discredit, major opportunities because of value-laden judgment biases (Sheil and Meijaard 2010).

Tackling the loss and degradation of natural resources worldwide exceeds the capabilities of any one institution (Yaziji 2004; Bryson et al. 2006; Armitage et al.

2012). Indeed, a growing body of research suggests collaboration delivers better conservation outcomes, for example, between multiple non-governmental organisations (NGOs) (Mace 2000; Bode et al. 2011; Waldron et al. 2013), private landowners (Emery and Franks 2012; McKenzie et al. 2013; Guerrero et al. 2015) or stakeholders (defined as any individual or group who can affect, or is affected by, the achievement of an organisation's objectives; Freeman et al. 2004) (Gordon et al. 2013; Beever et al. 2014; Bjärstig et al. 2014). The role of corporations in conservation therefore warrants further investigation, despite the scepticism expressed by some authors (Doak et al. 2013; Soulé 2013; Doak et al. 2014; Soulé 2014; Miller et al. 2014). As acknowledged by Kareiva (2014), evidence is still sparse on the risks and benefits associated with working with corporations, but this should encourage, rather than deter, assessments of their ability to deliver conservation outcomes.

The overall objective of this thesis is to understand the potential of cross-sector partnerships for conservation gain, by exploring how conservation NGOs work with a multitude of organisations to achieve their objectives. After providing context to this highly anecdotal topic here, I discuss the theoretical and methodological approach taken in this thesis (**Chapter 2**), before presenting some of the first empirical evidence on the wider occurrence of corporate partnerships in conservation (**Chapter 3**), and finally exploring partnerships in more depth using two distinct NGOs as case-studies (**Chapters 4 & 5**).

1.2. Defining cross-sector partnerships

Partnerships are defined by the United Nations as *"voluntary and collaborative relationships between various parties, both public and non-public, in which all participants agree to work together to achieve a common purpose or undertake a specific task and, as mutually agreed, to share risks, responsibilities, resources and benefits"* (UN General Assembly 2015). Partnerships are cross-sectoral when they involve partners from at least two, but possibly all four of the following sectors: corporations; non-governmental organisations; government; and, communities or civil society (Gray and Stites 2013). Some academics separate partnerships from collaborative alliances, in that not all partnerships achieve collaborative outcomes (Gray and Stites 2013). In this line of thinking, collaborations are considered to be the rigorous processes through which different societal sectors constructively explore their differences and search for solutions to problems that go beyond their independent capabilities (Gray 1989). In a key paper on partnerships in conservation, Robinson (2012) provides examples of some of the more common relationships between conservation NGOs and corporations, including: dialogue/negotiation; philanthropy; product endorsement plus philanthropy; collaborations to promote better corporate practices; collaborations to promote better corporate practices plus philanthropy; and, joint ventures. Robinson (2012) categorises these relationships by the ethical and reputational risk that is posed to the NGO, as the exchange of money can leave NGOs open to criticism for endorsing products, or reduce their ability to mitigate the environmental impact of their corporate partner's practices (see section 1.1.5).

Within the management and public policy literature, partnerships are typically categorised along continua, reflecting increasing levels of business involvement with stakeholders (Austin 2000; Austin and Seitanidi 2012; Gray and Stites 2013). Relationships increase in scope, complexity and shared responsibility as they

progress from reactive responses such as philanthropy or short-term dyadic problem solving, to more transformative approaches which generate societal value, such as 'collaborative governance' (Gray and Stites 2013). Figure 1.1 shows a typology of partnerships between NGOs and corporations, adapted from a synthesis of the extensive literature on partnerships for sustainability (Gray and Stites 2013), with the examples offered by Robinson (2012) also integrated. Robinson (2012) defines joint ventures as the complete endorsement of corporate practices by an NGO, which differ from 'collaborative governance' shown in Figure 1.1, as this comprises six key components and goes beyond mere endorsement (Gray and Stites 2013).

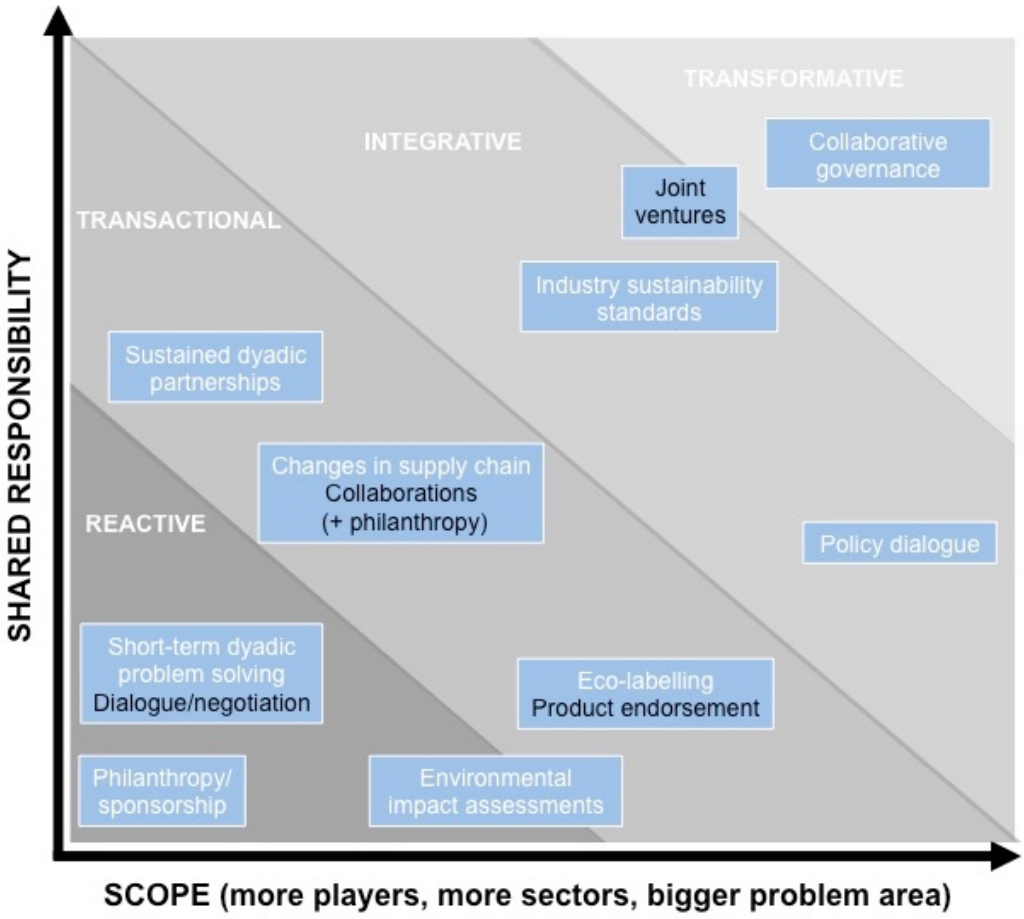

Figure 1.1: Typology of partnerships between NGO and corporations depicting the dynamic progression of relationships from reactive partnerships generating image and reputational benefits (bottom left), to 'collaborative governance which aim to produce wider societal impact

(top right). Figure adapted from Gray and Stites (2013), with the addition of Robinson (2012) relationships shown in blue boxes with black text.

The terms used to describe these relationships are interpreted differently in an applied context, which are important to note in the context of this thesis as the data chapters reflect the language used by the case study NGOs. Within **Chapter 4**, the terms 'partner' or 'partnership' are specifically not used at the request of the case study NGO, as this organisation perceives partnerships to supersede collaborations, and *"reserves these terms* [partner or partnership] *to describe specific forms of bilateral partnership"* (WWF 2013). Conversely, in **Chapter 5,** the case study NGO uses the term 'partner' and 'partnership working' when describing their relationships with a multitude of organisations in an assessment of their landscape-scale conservation projects (see Ellis et al. 2012), more accurately reflecting the typology of Figure 1.1. **Chapter 3** aimed to capture the widest scope of activities occurring, so 'partnership' and 'collaboration' were used interchangeably to elicit information about relationships, allowing corporate and NGO respondents to define 'partnerships' from their own perspective, so as not to exclude any forms of relationships from data collection.

1.3. State-led conservation

The protection of biodiversity has historically fallen to governments, safeguarding the natural environment within their political borders through statute, regulatory agencies and funding channels (MacDonald 2010; Armsworth et al. 2012; Robinson 2012). States are widely recognised as political authorities who exercise power by signing

treaties, creating international law and regulating behaviour (Avant et al 2010). Top-down, state-driven governance processes implement international standards at national and local scales, such as in the US where federal natural resource policies inform state programmes, and in the EU where member states are obliged to deliver national legislation with local solutions (Paavola 2007). States are well positioned to authoritatively make and enforce central decisions on behalf of a collective (Börzel and Risse 2010) and in recent decades have adopted several milestone multi-lateral environmental agreements, such as the UN Framework Convention on Climate Change and the Convention of Biological Diversity (Pattberg and Widerberg 2015). State-driven processes are a valuable form of environmental governance (Grafton 2000), particularly when uninhibited by institutional capacity, access to social capital and effective rules of law (Paavola 2007). However many of the world's current states exhibit 'areas of limited statehood' where central authorities do not exercise control over entire territories, making enforcement difficult (Börzel and Risse 2010). Furthermore, the state based command-and-control model of environmental governance has been criticised for its inefficient management of pooled resources (see Ostrom 2000).

State-level cooperative breakdown is exemplified by the inability to adhere to commitments to halt biodiversity loss by 2010 (Walpole et al. 2009; Butchart et al. 2010). It is further illustrated by the rising rate of carbon emissions globally, even considering extensive, robust scientific evidence demonstrating the need to halve current (2010) levels of carbon emissions by 2050 (Field et al. 2014). Moreover, many 'top-down' approaches, such as the establishment of protected areas, are inherently exclusionary, which can induce conflict with local stakeholders (Adams et al. 2013). Governmental institutions were developed to be territorial and fit for other purposes so, as a result, do not operate at the scales required to conserve social-ecological

systems effectively (Cash et al. 2006; Folke et al. 2007). The by-product of this over time has been the institutionalisation of short-term investments in environmentally damaging mechanisms, such as agricultural subsidies or energy tariffs, which often outstrip funds allocated to biodiversity and natural resource protection (James et al. 1999; James et al. 2001). While states remain a key institution for conservation, the solutions to stemming biodiversity loss lie with multi-governance approaches that take into account the complexities of the environmental and social systems they seek to conserve.

Hardin's seminal work on open access resources suggested that the problems associated with the "tragedy of the commons" could only be overcome through either nationalisation or privatisation (Hardin 1968). Since then, scholars have demonstrated the range of alternative governance arrangements that exist between these two options, in that collective resource management regimes are widespread and can be resilient in the face of economic and environmental change (Ostrom 2000; Paavola 2007; Bridge and Perreault 2009). However, Hardin's work continues to be relevant today (Castree 2010), as increasing neoliberalism in environmental governance reconfigures the institutional arrangements that manage natural resources; moving away from command-and-control approaches (e.g. bans, standards, quotas), towards economic mechanisms that favour market-based actors and practices (Ivanova; 2003; Bridge and Perreault 2009).

Neoliberalism as a policy discourse has been institutionalised in biodiversity conservation through key international political events such as the Earth Summit, the World Summit on Sustainable Development and the World Conservation Congress (Ivanova 2003; MacDonald 2010; Robinson 2012). Neoliberal conservation describes the trend towards practices and discourses which include elements of:

financialisation (e.g. biodiversity/carbon offsets); marketisation (e.g. payments for ecosystem services, ecotourism); privatisation (e.g. game reserves in South Africa); commodification (e.g. carbon sequestration through forestry and agricultural projects, wetland and habitat banking); and, decentralization (e.g. delegation of protected areas to civil society organisations, public-private partnerships to collaboratively manage watersheds) within conservation governance (Lambooy and Levashova 2011; Holmes and Cavanagh 2016). Natural resource policies that deliver elements of neoliberal proposals have been implemented in a wide range of contexts and locations (Castree 2010), producing both positive and negative results for environmental and social conditions (Castree 2010; Robinson 2012; Holmes and Cavanagh 2016).

The rise of global neoliberalism has contributed to an interconnected web of states, large conservation NGOs, corporations and multilateral financial institutions (Igoe and Brockington 2016), with cross-sector partnerships highlighted as a key implementation tool for international agreements such as Agenda 21 (Ivanova 2003). In the UK, the state has incentivised others, particularly NGOs, to engage in partnerships to achieve large-scale conservation goals, but continued to play central role by providing the necessary supporting legislative and financial frameworks (e.g. agri-environment schemes) (Adams et al. 2013). Partnerships between corporations and conservation NGOs are often closely aligned with neoliberal philosophy in that they generate opportunities for capitalist expansion, but also because the roles traditionally carried out by the state are increasingly replaced with non-state actors such as NGOs and corporations (Robinson 2012; Adams et al. 2013).

1.4. NGO-led conservation

Against a backdrop of increasing market liberalism, international charity-based NGOs fulfil a major niche in society (Millar et al. 2004; Jepson 2005). The growth of the conservation non-profit sector has been rapid, and contemporary NGOs have assumed positions of heightened responsibility for environmental management and wield impact on a global scale (Chapin 2004; Duffy 2006; Igoe et al. 2009; MacDonald 2010). Accordingly, the sector has produced some substantial household names (e.g. The Nature Conservancy, WWF, Conservation International, Friends of the Earth), all of which are widely associated with environmental management and biodiversity conservation (Jepson 2005), despite having a diverse range of values and organisational structures (Scherrer 2009; Hoffman and Bertels 2009; Hoffman 2009). These NGOs now dominate conservation funding and, generally speaking, represent the values and objectives of global conservation (Igoe et al. 2009).

Conservation NGOs deploy emotive campaigns using powerful images and narratives, to communicate an urgent problem and a donation solution (Scholfield and Brockington 2009; Igoe et al. 2009; Igoe 2010). This often establishes a relationship between sympathetic (mostly) Northern-dwelling populations and the people and/or environments distant from them (Brockington and Scholfield 2010; Igoe 2010), by tapping into constituent sympathies for specific biodiversity conservation goals. For example, saving the tiger will never be a major UK government policy platform, yet remains of interest to many concerned UK citizens. Although international NGOs have generated significant brand recognition (Chapin 2004; Dowie 2009), their communication efforts do not rival campaigns from the corporate sector (e.g. Pokémon character identification compared to British wildlife

species; Balmford et al. 2002). This suggests that the approaches deployed by NGOs might not deliver the breadth and depth of promotion that is possible, and that conservationists are perhaps not leveraging the most successful strategies.

NGOs have to balance the preservation ideology of conservation with the contemporary requirements of any legal entity, namely service delivery (in this case protecting biodiversity) and organisational survival (Sowa 2009). Achieving and maintaining legitimacy is an important process for NGOs, given that they rely on volunteerism and charitable donations. It is vital that they maintain trust and ensure accountability, particularly as they continue to grow in size and influence (Christensen 2002; Jepson 2005; Weidenbaum 2009). They are expected to maintain the position of moral and/or environmental guardians to civil society (Burchell and Cook 2011), so any relationships deemed to be a conflict of interest run the risk of losing public support and jeopardising institutional wellbeing (Jepson 2005; MacDonald 2010). However, the capabilities for achieving conservation goals may lie in collaborations that do not fit with the charity-based financing model used by the non-profit sector. It may be the case that these capabilities can be provided to the NGO sector from another organisational entity responsible for worldwide natural resource impact, the corporation.

1.5. The potential of cross-sector partnerships between NGOs and corporations

Within the global economy, which is the ultimate source of all conservation funding, corporations are naturally the ‘keystone species’ (Kareiva and Marvier 2012). They

have an unparalleled ability to mobilise financial and human capital (Armsworth et al. 2011; Pedroni et al. 2013), are able to move resources legitimately within and across state borders, and have profound effects on the structure and dynamics of ecosystems (Kareiva and Marvier 2012). For instance, the largest corporation in the world, Wal-Mart, employs more people than the population of entire countries (Walmart 2014) and has a larger GDP than Norway (Berlin 2011), which demonstrates the reach and scale of multi-national businesses. Their ecological footprint by any measure (e.g. water, carbon, natural resource use) is vast, the conservation impacts of which should be accounted for.

The concept of corporate social responsibility (CSR) is now widely recognised within the private sector and refers to the extent to which environmental and social considerations are built into aspects of business (Seitanidi 2009). Many corporations go above and beyond regulatory compliance, implementing CSR programmes to secure a social license to operate, mitigate supply chain risks, act as good public citizens attracting social conscious investors, and reduce ecological risk to sustain corporate growth (Robinson 2012). Undertaking voluntary measures to minimise their environmental and social impact offers corporations a competitive advantage in terms of financial, reputational and market performance (Miles and Covin 2000; Porter and Kramer 2002; Tsoutsoura 2004; Porter and Kramer 2006; Lopez-Gamero et al. 2010). Partnering with NGOs offers corporations access to skills, competencies and capabilities to support their corporate social responsibility efforts that may otherwise be unavailable to them (Yaziji and Doh 2009; Burchell and Cook 2011).

For conservation NGOs, the advantages of partnering with corporations include knowledge transfer or production, networking and other non-material resources which contribute to collaborative problem solving (Borgatti and Foster 2003; Hardy et

al. 2003; Yaziji and Doh 2009; Berkes 2009; Sowa 2009; Beever et al. 2014). Many successful conservation programs make use of corporate artefacts, such as marketing departments and business models, in order to be more effective when communicating or delivering conservation action (Verissimo et al. 2011; Black and Groombridge 2010). Indeed, the adoption of the values and structural forms commonly associated with the private sector is growing within the non-profit domain (Froelich 1999; Jepson 2005; Dart 2004; Rivera-Santos and Rufín 2011), reflected by cross-sector employee secondments and intensive collaborative alliances, which extend beyond philanthropic donations (MacDonald 2010). Relationships with corporations can also generate innovative opportunities for private investment in biodiversity conservation such as "pro-biodiversity business models" including ecotourism and sustainable forestry (Lambooy and Levashova 2011), but there is currently limited evidence to suggest that NGO engagement with corporations extends beyond limiting the negative effects of corporate activity on biodiversity (Robinson 2012).

1.6. The risks of cross-sector partnerships between NGOs and corporations

For a corporation, the risks of partnering with an NGO include employee resentment (Wymer and Samu 2003), as well as reputational damage as a result of actual/perceived 'greenwashing' or any negative behaviour on the part of the NGO (Yaziji 2004; Wymer and Samu 2003). The risks associated with partnerships are often larger for the NGO than the corporation, which NGOs must consider carefully (Robinson 2012). The greatest risk to NGOs is loss of legitimacy through reputational

damage (Wymer and Samu 2003). NGOs may lose support from their membership, as well as other advocacy groups, if it is felt that partnering with a corporation compromises its integrity and values (Wymer and Samu 2003). For example, in 2009 Friends of the Earth International withdrew their membership from the IUCN, citing IUCN's partnership with Shell as the main reason for leaving (Friends of the Earth International 2009). Problems with partnerships arise when a level of resource dependence is created through the exchange of financial resources from corporate donor to NGO recipient (Robinson 2012; Poret 2014). Resource dependence can lead to co-optation, the dilution of NGO values in response to the need to align with corporate objectives, which is most commonly associated with corporate sponsoring (Baur and Schmitz 2012).

1.7. Thesis Overview

This thesis seeks to provide practical value by exploring cross-sector conservation partnerships using business-orientated frameworks to understand the benefits generated for both partners, which ultimately motivate involvement with biodiversity conservation. **Chapter 2** describes the methods and approaches adopted for this thesis, with a discussion of why other approaches were not used. The remainder of this thesis is then constructed around the following three data chapters, each of which is presented in the format of "stand-alone" manuscripts for peer-reviewed journals. **Chapter 3** explores partnerships in the widest sense, allowing respondents to define 'partnerships' from their own perspective, whilst capturing the scope of activities occurring between UK-registered conservation NGOs and FTSE350 listed corporations, as well as the motivations underpinning engagement. As such, this

chapter covers a variety of partnerships covered on the typology shown in Figures 1.1 and 1.2. **Chapter 4** describes the motivations for initiating, and the outcomes of, an NGO-led 'collaborative network' of companies working towards sustainability improvements in the global timber industry. At the request of the case-study NGO, the term 'partner' or 'partnership is not used. This case-study is considered 'transactional' using the typology shown in Figures 1.1 and 1.2, as it would be categorised as a form of eco-labelling (Gray and Stites 2013) or mitigating corporate practices plus philanthropy (Robinson 2012). **Chapter 5** is an exploration of sustained dyadic partnerships as the case-study NGO collaborates with multiple partners to obtain the necessary resources to achieve landscape-scale conservation objectives. **Chapter 6** then summarises the research presented in this thesis and discusses the wider implications.

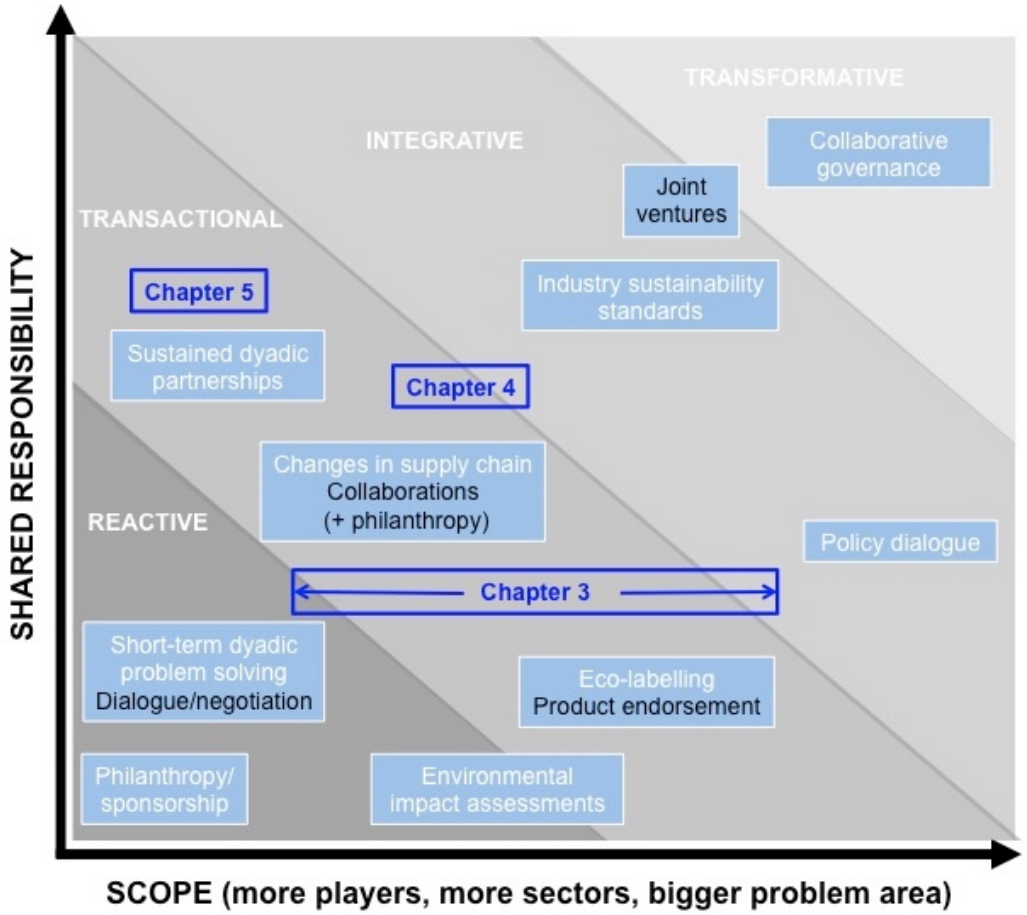

Figure 1.2: Adapted Figure 1.1 showing typology of partnerships between NGO and corporations. It depicts the dynamic progression of relationships from reactive partnerships generating image and reputational benefits (bottom left), to 'collaborative governance which aims to produce wider societal impact (top right). Figure adapted from Gray and Stites (2013), with the addition of Robinson (2012) relationships shown in boxes with black text. Thesis chapters have been added to show where the partnerships studied fall within the continuum.

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Chapter 2. Methodological Approach

2.1. Research Philosophy

A research philosophy is a belief about the way in which data about a phenomenon should be gathered, analysed and used, and it is important for researchers to declare the research philosophy that guides their work (Sefotho 2015). Two major philosophical views are applied by social scientists, namely positivism and interpretivism (or subjectivism) (Bryman 2015; Evely et al. 2008). Positivism is an epistemological position that advocates the application of natural science methods to the social world, where data can be collected in objective, discernible and measurable ways to establish estimates of the truth (Evely et al. 2008). A positivist approach assumes that knowledge can be generated by gathering empirical data on a topic and that science can be conducted in a way that is value free (Newing 2010; Bryman 2015). The contrasting philosophical position of interpretivism questions the notions of a single objective truth and that social science can be value free, as the researcher is inevitably a part of the social world in which they are interested (Newing 2010). Interpretivists contend that the social element of social sciences requires fundamentally different research approaches which reflect the distinctiveness of humans to the natural order (e.g. species richness, survival rate, age distribution) (Bryman 2015; Evely et al. 2008). An interpretivist approach emphasises the depth, quality and variety of perceptions of individuals, as opposed to establishing causal relationships (Evely et al. 2008).

This research came at a time when non-governmental organisation (NGO) engagement with the corporate sector was highly debated within the conservation community. The 'new conservation' science debate saw a flurry of articles published in peer-reviewed journals during my PhD, disputing whether conservation science in the Anthropocene should be driven by the intrinsic value of nature or for the benefits to humanity. Holmes et al. (2016) presented some of the first empirical work exploring people's perceptions of 'new conservation' and revealed three distinct philosophical positions amongst conservationists, one of which was not widely reflected in the literature; that conservation should consider human use, but that working with corporations should not be a part of this. All the chapters presented in this PhD reflect my personal view that corporations are valid stakeholders to consider within conservation practice, the reasons for which are described in Chapter 1. My view resonates with the idea that the question of whether business should be (or needs to be) involved in partnerships is moot, and that the key now is to understand "how and to what effect?" (Gray and Stites 2013). I therefore adopted a positivist approach to my research and focussed on the easily quantifiable metrics of partnerships, allowing for my results to be both transparent and repeated.

During my development as a researcher, I witnessed lively debates indicative of the philosophical divides highlighted by Holmes et al. (2016). However, it was evident to me that while academics and practitioners debated whether corporations had a role to play in conservation, partnerships between NGOs and corporations were continuing regardless (as did biodiversity declines, over-population and increasing consumerism) and, seemingly, evolving at a rate that outpaced our understanding of them. Furthermore, in the corporate world, debates about whether private sector involvement should play a part in environmental sustainability were had decades ago, when Milton Friedman famously declared that "*there is one and only one social*

responsibility of business - to use its resources and engage in activities designed to increase its profits" (Friedman 1970).

Research that discusses corporate partnerships in the conservation literature typically adopts an interpretivist or critical social science approach (Igoe et al. 2009; Brockington and Duffy 2010; Büscher et al. 2012; Spash 2015; Adams 2017), which questions the ideological and organisational shifts that are required to accommodate neoliberal conservation and its relationship with capitalism. However, there remains scarce empirical information about relationships with corporations and their subsequent effectiveness, which is concerning considering how widespread the practice is. Building on literature reviews and informal interviews, conducted as part of my Masters by Research, I found a wealth of information available on cross-sector partnerships, but many of the papers were published within the business and organisational management literature, geared towards understanding corporate contributions to sustainability. This highlighted a significant research gap to me and an imbalance of knowledge regarding such partnerships from an NGO standpoint, with the conservation community less aware of the mechanics of these relationships and the outcomes they generate. The lack of knowledge on this topic drove me to want to quantify the extent of current relationships occurring, rather than explore the philosophical, theoretical and ethical issues associated with private sector engagement with conservation. I felt that studying the on-the-ground application of these relationships not only offered applied value to those implementing these efforts, but that adopting a positivist approach meant my work was less open to misinterpretation, allowing me to navigate and avoid some of the controversies associated with corporate partnerships in conservation that have already been well-articulated elsewhere. I wanted to collect, report and present data in a way that was both truthful and objective, regardless of my personal stance.

2.2. Research Strategy

This research is primarily deductive, in that I seek to apply existing theoretical frameworks and test hypotheses to describe and explain cross-sector partnerships for conservation. Kareiva (2014), a central figure in the 'new conservation' debate, postulated that conservation can achieve more by working with, rather than against corporations, but admitted that this hypothesis requires testing. Given the scant empirical evidence available to answer this claim, I wanted my PhD thesis to contribute to testing this hypothesis. My research was guided by the body of knowledge available within the organisational management literature, using theories developed to understand organisational behaviour such as resource dependence theory, resource-based view and network theory (Pfeffer and Salancik 1978; Barney 1991; Granovetter 1985). Following the rigid structures of these theories to test hypotheses, rather than adopting an inductive approach, may have resulted in me missing the complexities and subtleties associated with this topic.

The deductive approach I took inevitably influenced the data collected and subsequent knowledge produced because, as a researcher, I imposed my own notion of what was pertinent to understand, rather than allowing this to become evident throughout the process. My deductive approach potentially meant that I missed some of the latent processes that occur outside the formal processes of conservation partnerships (e.g. individual perceptions of these relationships and their impact). Upon reflection, valuable contributions may have been made to this PhD by following a less rigid and structured form of objectives such as programme evaluation

(Chapter 4), which may have inherently emphasised the positive rather than negative aspects of the relationships.

My deductive approach primarily took the form of quantitative data, collected using questionnaires (Chapter 3), semi-structured interviews via telephone (Chapter 4) and social network analysis (Chapters 4 and 5). Given the controversy associated with this topic, I felt that quantitative approaches would be more defensible and less open to misinterpretation by myself and others, if my work were to be published. However future work in this area could benefit from qualitative approaches, which would add significant value by providing a deeper understanding of partnerships in conservation. During my time conducting this research, I learnt a lot about the practicalities of partnerships in conservation, most of which was anecdotal and untested. At the start of my research, a well-known NGO withdrew as a case-study because I wished to explore “commercially sensitive information”, and generally I found NGOs more difficult to elicit information from than corporations. This is likely due to competition between NGOs, existing confidentiality agreements between partners, or nervousness about reputational damage. In my opinion, this is because conservation NGOs are just beginning to grasp the complexities of cross-sector partnership working, whereas for the corporations this is a well-established, tried and tested way of working. I believe that the more corporate partnerships are discussed, with accompanying empirical evidence of their effectiveness (or not), the more we can improve existing relationships, regardless of the assumptions made by academic debates.

I will now describe each of the data chapters presented here in this PhD thesis, and how the research instruments used suit the stated research objectives. All my work

focuses on organisations within the UK, to not only comply with my scholarship requirements, but to also explore some of the most developed and well established examples of corporate partnerships in conservation. Focussing my attention on UK organisations also ensured that the organisational cultures studied, and the legislative requirements, were consistent across all my data chapters.

2.3. Research Instruments

2.3.1 Chapter 3

The aim of Chapter 3 is to capture the scope of activities occurring between UK-registered conservation NGOs and FTSE350 listed corporations. This listing was chosen to survey as it offers a large enough sample size to conduct this research, and contains the most influential companies. A deductive approach was adopted to test commonly held assumptions that financial donations are the most common form of partnership, and that extractive industries were more frequently partnering with conservation organisations than other types of corporation. The aim here was to describe the current state of play, as opposed to assessing the effectiveness of these relationships in relation to the CSR or conservation goals. Quantitative data were collected via structured questionnaires, sampling 303 FTSE350 listed corporations and 282 UK registered conservation NGOs. Time and financial constraints meant that a quantitative approach generated a much larger sample of respondents than would have been achieved by arranging and conducting face-to-face in-depth interviews, thereby making my results more representative. Although administering

a questionnaire remotely tends to result in a lower response rate than structured interviews (Bryman 2015), it was considered more convenient for respondents (who were mostly busy corporate/NGO executives), and would therefore elicit a greater overall sample size. I received a number of emails from prospective respondents saying they did not have time to complete my questionnaire due to limited resources, further justifying my use of structured online questionnaires for this chapter.

Alternative quantitative methods that could have been employed include content analyses of annual/sustainability/financial reports of the target organisations, which have been used to examine partnerships elsewhere (Orlitzky et al. 2003; Van Huijstee et al. 2007; Shumate and O'Connor 2010). However, there is often a lag between the initiation of partnerships and their reporting. Furthermore, such reports are often tailored to specific audiences (e.g. shareholders, funders, prospective donors, members) and may therefore be restricted to discussing only a few of the organisations' partnership efforts, or providing minimal/selective information about projects.

2.3.2 Chapter 4

Chapter 4 examines the motivations for initiating, and the outcomes of, an NGO-led 'collaborative network' of companies working towards sustainability improvements in the global timber industry. A mixed methods approach was adopted to both quantitatively and qualitatively assess the outcomes of the network, as defined by the member organisation, and qualitatively explore why corporations were investing time and money into this conservation initiative. The quantitative data collected acted as a form of programme evaluation (Thomas and Koontz 2011; Biddle and Koontz 2014), examining how well the network performed against its own objectives. This

comprised analysing the annual reports that members of this network are required to submit, detailing their progress towards procuring more certified paper and/or timber material. The qualitative data provided a deeper and richer insight into what drives corporations to engage with conservation NGOs. When coupled with the quantitative data on the outcomes of the network, this revealed that those involved in this network were already highly engaged with, and highly motivated by, sustainability issues.

Alternatively, this chapter could have focused more heavily on gauging the perceptions and experiences of both WWF and the participating organisations, explored using in-depth qualitative interviews or focus groups. However, this network is performance-based, with quantitative targets which members are required to meet (i.e. percentage of material procured from credibly certified sources). I therefore felt it appropriate to align my assessment of outcomes with the structure of the programme itself. Furthermore, interviews were secured with only 14 of the 24 members of this network, due to resource constraints on the part of the member organisations, meaning that it is unlikely that such a broad overview of the network would have been achieved through qualitative means alone.

This network, and the conservation NGO leading it (WWF), have come under intense scrutiny in recent years regarding the effectiveness of its relationships with big corporations. A documentary was released in 2011 (“Silence of the pandas”) which questioned the credibility of WWF’s green image due to its association with large multinationals. Similarly, and particularly relevant to Chapter 4, Global Witness (an NGO who aim to uncover and report on environmental and human rights injustices) released a report in 2011 (“Pandering to the loggers”) specifically criticising the Global Forest and Trade Network. However, the focus of this chapter was not to verify

or dispute the claims made in these publications, although they provided an interesting background context. While this chapter could have explored the costs related to such controversies, this would have taken a very different approach and meant the research was centred on the leading NGO rather than the participating organisations. My aim was to provide information that could inform network recruitment and retention strategies for all types of conservation NGOs, regardless of their previous experience with corporations, size and stature.

2.3.3 Chapter 5

Chapter 5 explores the networks that support the provision of financial, land and in-kind resources to an NGO (Butterfly Conservation) seeking to achieve landscape-scale conservation objectives. The approach of this chapter rests on the theory that the structural arrangement of relationships between organisations influences the capacity of a network to fulfil particular objectives (Bodin and Crona 2009; Alexander et al. 2016). Therefore, my intention was to explore any differences in the networks supporting the provision of key resources to Butterfly Conservation. Quantitative network analyses were particularly suitable to address this goal, as they allowed me to map and measure the structural properties of the networks. Qualitative approaches to studying social networks are less concerned with understanding the structures that support the flow or exchange of resources, and instead offer insights into the 'lived experience' of social networks (Edwards 2010). Qualitative approaches could have added significant value to this chapter, especially the notion of 'network weaving' whereby data are fed back to network members to not only verify the findings with those actively experiencing the network, but to also highlight where new connections could be made (Vance-Borland and Holley 2011; Mills et al. 2014).

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Chapter 3. Collaborative conservation: shining a light on corporate-NGO partnerships

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3.1. Abstract

Partnerships between different sector organisations, such as corporations and non-governmental organisations (NGOs), are beginning to proliferate in conservation. Research is lacking on this highly controversial topic, with many assumptions regarding these partnerships based on anecdotal rather than empirical evidence. Here we use questionnaires, administered to UK-based conservation NGOs and FTSE350 listed corporations, to collect data on the type of activities occurring and the motivations which underpin them. Although financial donations are one of the most frequent forms of partnership, activities centred on terrestrial ecosystem restoration and education are equally well represented. Conservation partnerships appeal to a wide range of business industries and not just those that have a high environmental impact. Currently, corporations recognize the strategic value of conservation partnerships more than NGOs. This rapidly developing area warrants further attention, as these collaborations are currently unstandardized, unmonitored and poorly understood, yet could potentially deliver significant environmental benefits.

3.2. Introduction

Anthropogenic pressures on the natural world are presenting conservationists with challenges that are impossible to overcome with the resources available to them. Biodiversity declines show no signs of abating (Butchart et al. 2010), and there remains a substantial shortfall between actual and required financial investment in conservation worldwide (McCarthy et al. 2012). We must therefore look towards new

approaches that are inclusive of all sectors of society to deliver the widest social and environmental changes possible.

While collaborations between corporations and conservation non-governmental organisations (CNGOs) are occurring in many contexts, there is a paucity of scientific literature on the topic. This is despite the subject being hotly debated within the practitioner and academic community (eg Soulé 2013; Doak et al. 2014; Kareiva 2014; Miller et al. 2014). Much of the information that exists on cross-sectoral conservation partnerships consists of either critical media exposure (Ottaway and Stephens 2003) or promotional literature, which generally emphasizes the benefits of such relationships (eg ZSL 2011; TNC and Dow Chemical 2013). The few published research studies that exist typically approach conservation partnerships from a case-study perspective, providing valuable project-specific examples of how ecosystem service valuation can be integrated into business planning (Reddy et al. 2015a) or implementing novel environmental compliance strategies (Kroeger et al. 2014).

In this paper, we take the first step towards shifting our understanding of the wider corporate-CNGO partnership landscape from anecdotal to empirical. Specifically, we examine the following questions: (i) what types of activities are occurring; (ii) what business industries are involved; and, (iii) what motivational drivers underpin engagement? Currently, this lack of descriptive knowledge is inhibiting the development of more effective partnerships. It also prevents on-going deliberations within the conservation community from being informed by evidence, as opposed to opinion or information from isolated case studies.

Relationships between CNGOs and corporations have evolved from conflict to collaboration as environmental responsibility has become increasingly important to external stakeholders (Rondinelli and London 2003). As demonstrated in the wider literature, corporations now answer to both their shareholders and the public, who can call them to account, promote/damage their reputation and subsequently influence their share price. Many NGOs are organisational manifestations of social movements, and working with them provides a means for corporations to understand their business environment in the context of public opinion (Van Huijstee et al. 2008). Indeed, some research suggests a positive link between improved financial performance and reputational advantages generated through environmentally responsible corporate behaviour (Wang et al. 2015). For NGOs, in addition to providing sources of funding, corporate expertise can help to optimize operational processes, broaden professional networks, and advance technical and human resource capacity (Sanzo et al. 2014).

Partnerships can be characterized along a continuum describing the degree of interaction between organisations, ranging from low-intensity to committed collaborations (Wymer and Samu 2003). To understand the value generated from CNGO-corporate partnerships, we explore the different types of activity both parties report engaging in and classify the relationships as arms-length, interactive or intensive (see Appendix 3.7.1). It is purported that intensive partnerships have the greatest potential to bring about social and/or environmental change through mutually agreed objectives and the creation of shared value (Austin and Seitanidi 2012). While the prevalence and extent of such collaborations between corporations and CNGOs is unknown, evidence from NGOs with a non-conservation/environmental remit suggests that low-intensity philanthropic interactions will dominate (Neergaard et al. 2009; Jain and Jamali 2015).

Understanding the key motivations that underpin partnership initiation is important for gauging collaborative intent and can be explored from a resource-based view. This theory proposes that sustained competitive advantage can be derived from the resources an organisation has access to when these are rare, valuable and hard to replicate (Barney 1991). From this perspective, NGO-corporate partnerships present organisations with opportunities to harness specialized resources from one another, so they can achieve their organisational goals in spite of external pressures (Hardy et al. 2003). With arms-length relationships, generic resources are exchanged: cash from corporation to NGO, and associational benefits from NGO to corporation. In contrast, intensive collaborations aim to solve problems that are central to the objectives of both partners via the integration of specialized competencies and knowledge exchange (Rondinelli and London 2003). However, the extent to which CNGOs can offer relevant resources to corporations may not be consistent across different business industries. For instance, a study on corporate reporting of NGO partnerships found that utility, mining and crude-oil production companies are more likely to engage with environmental NGOs (Shumate and O'Connor 2010). Following this trend, we might expect CNGOs to be more prominently aligned with corporations that have a direct impact on the environment, because there is greater immediate resource complementarity between these types of organisations.

3.3. Methods and Materials

We sampled FTSE350 corporations (April 2013) and UK CNGOs listed on Charity Trends, a database compiling total gross incomes of UK-based NGOs (March 2013). Corporate assets were ascertained from companycheck.co.uk (December 2013). We

excluded corporations that are investment trusts, and NGOs that devote less than 20% of the charitable objective to biodiversity conservation (Charity Commission 2013). Data were collected May-August 2013 using pre-piloted online questionnaires (separate versions for CNGOs and corporations; available upon request) administered via Survey Monkey (SurveyMonkey.com). We emailed the questionnaire link to corporate social responsibility (CSR) personnel (or similar) within businesses, and corporate partnerships managers (or equivalent) within CNGOs. Overall, we sent the questionnaire to 303 corporations and 282 CNGOs. To minimize self-selection bias, the survey invitation referred to cross-sector partnerships in general, and did not mention conservation specifically.

The questionnaires consisted of closed-format questions. We adapted a list of 10 conservation activity/project types from the partnership literature (see Apendix 3.7.1), and presented them to both CNGOs and corporate respondents. They could tick more than one activity type and an open-ended 'other' category was also provided. We asked corporate participants to indicate which Industry Classification Benchmark (ICB) best describes their business (FTSE International 2012), and CNGOs for their maximum scale of operation ('local', 'within country/national' or 'international'). We further categorized responding corporations using the FTSE4good classification (FTSE4Good 2006), which distinguishes business industries by their level of environmental impact ('low', 'medium' or 'high'). Potential CNGO and corporate motivational drivers underpinning partnership engagement were assessed using a Likert scale (1=very unimportant, 5=very important).

We used the Bradley-Terry model (BTm; Strobl et al. 2011), a form of logistic regression, to analyze the frequency with which each activity type (multiple choice answer option) was chosen by respondents, accounting for the representation of

respondents in multiple categories which violates Kruskal Wallis (KW) assumptions. Differences between organisation types were tested using chi-squared tests (X2), and motivations were analyzed with Mann Whitney-U tests (U). Both CNGO income and corporate assets were not normally distributed, so we used Spearman's rank correlations (rs) to test for associations between partnering behaviour and the financial status of organisations. We conducted the analyses in R (version 3.2.0; R Development Core Team, 2015).

3.4. Results

Sixty-five corporations responded (21.5% response rate), 22 of which completed the questionnaire in full, and half reported engaging with CNGOs in some manner (see Appendix 3.7.2 for summary statistics for, and categorisation of, corporate and CNGO respondents). Every ICB business industry was represented except 'healthcare', with the majority being 'financials' (25%) or 'industrials' (17%). Industries with less than 5% representation in our sample included 'oil & gas', 'telecommunications' and 'technology'. Of the 136 NGO respondents (48% response rate), 59 finished the questionnaire entirely, and over half (54%) reported interactions with corporations. The sample contained comparable numbers of CNGOs operating at 'local', 'within country/national' and 'international' geographic scales (Appendix 3.7.2). There were no differences between responding and non- responding CNGOs or corporations on the basis of their financial status ($U=9024$, $n=280$, $p=0.263$ and $U=7591$, $n=295$, $p=0.213$ respectively).

3.4.1. What types of activities are occurring?

Corporations interact with CNGOs via 'education/raising awareness' (19%) and

'donations' (16%), significantly more than other types of activity (Appendix 3.7.2; Figure 3.1a). Neither the types of activity corporations engage in, nor the intensity of partnership ('arms-length', 'interactive' or 'intensive'), vary according to their FTSE4Good impact category ('high', 'medium' or 'low') (see Appendix 3.7.3 for statistical output). CNGOs most frequently cite collaborations related to 'donations' (32%), 'ecosystem restoration (land)' (19%) and 'education/raising awareness' (17%) (Appendix 3.7.2; Figure 3.1b). The frequency of partnerships varied across CNGOs operating at different scales. No 'within country/national' CNGO respondents report projects related to shrinking carbon or water footprints, and 'international' CNGOs are four and two times more likely to engage in 'supply chain' projects than both 'local' or 'within country/national' equivalents respectively (Appendix 3.7.4 for statistical output). For both CNGOs and corporations, financial status is positively associated with the number of different types of activity the organisations are involved with via a partnership (CNGOs: rs=0.184, n=123, p=0.042 and corporations: rs=0.346, n=63, p=0.005).

3.4.2. What business industries are involved?

Corporations in 'high' environmental impact business industries (eg 'industrials', 'oil & gas') are no more likely to have a partnership with a CNGO than those classed 'medium' (eg 'financials', 'electronics') or 'low' (eg 'telecommunications', 'media') impact (X^2=0.512; d.f.=2; p=0.774; n=62). CNGOs engage primarily with 'consumer services' (16%) and 'industrials' (15%) business industries (Figure 3.2), and CNGOs operating at 'international' scales were less likely to collaborate with 'utilities' corporations (Appendix 3.7.4). Drilling 'consumer services' down further, the highest proportions of partnerships reported are with 'retail' (25%), 'food' (21%) and 'leisure' (20%). 'International' CNGOs are three times less likely to report partnerships with

'utilities' corporate partners than both NGOs working at 'local' and 'within country/national' scales (Appendix 3.7.4). The number of different business industries a CNGO engages with is positively associated with its income (r_s=0.603; n=75; $p < 0.001$).

3.4.3. What motivational drivers underpin engagement?

Most corporations reported 'brand/reputational positioning' (86%), 'CSR' (82%) and 'organisational learning/knowledge exchange' (82%) as 'important' or 'very important' motivations for partnering with CNGOs (Figure 3.3a; Appendix 3.7.5). More than 70% of CNGO respondents cited 'funding stability' (86%) and 'achieving objectives more effectively' (78%) as 'very important' or 'important' (Figure 3.3b; Appendix 3.7.5). When comparing CNGO and corporate responses to the five motive statements that correspond across the two questionnaires, it is evident that both 'brand/reputational positioning' and 'organisational learning/knowledge exchange' are significantly more important to corporations than to CNGOs (see Appendix 3.7.5 for statistical output). Government involvement in partnerships was considered 'very unimportant', 'unimportant', or 'neither important nor unimportant' by 54% of corporate and 52% of CNGOs respondents.

3.5. Discussion

Our results show that corporations are open to establishing conservation partnerships, irrespective of the level of environmental impact their business is likely to have, and that a diverse array of activities are occurring. However, partnership formation is not a strategy employed by all CNGOs and corporations, with some NGOs taking a more antagonistic stance to the business sector, and companies having the option to either engage with a different charitable focus (eg sports, arts) or none at all. The prominence of collaborations between CNGOs and retail/financial corporations we observed is surprising, given that companies in these business industries rarely refer to biodiversity within their CSR reports (Bhattacharya and Managi 2012). However, corporations in industries where product differentiation is lacking frequently ally with NGOs to enhance legitimacy through claims of social differentiation (Shumate and O'Connor 2010). In addition to being more willing to engage in partnerships generally, financial and retail corporations can offer extensive communication and distribution capabilities to CNGOs, which could help fulfill both outreach and finance objectives. A high-profile example of a CNGO-retail corporation partnership is 'Project Ocean', an initiative between the Zoological Society of London (ZSL) and luxury department store Selfridges, which generated significant publicity value for ZSL, as well as funds for a marine protected area in the Philippines (ZSL 2011).

Past research on NGOs in general suggests that philanthropic interactions are more common than intensive forms of NGO-corporate partnership (Neergaard et al. 2009; Jain and Jamali 2015). While donations are frequently reported in our study, both CNGO and corporate respondents are just as likely to be involved in education or terrestrial ecosystem restoration projects, which are interactive collaborations

focused on processes external to a business (Rondinelli and London 2003). This finding indicates corporate-CNGO partnerships have evolved beyond the traditional donor-recipient model, reflecting a growing trend in NGO-corporate collaborations occurring across society more widely (C&E Advisory Services 2014). Intensive activities that center on CNGOs influencing corporate behaviour are less common, with the majority of partnerships focused on generating value for the partners independently. This is despite some high-profile and successful examples, such as The Nature Conservancy and Dow Chemical, who have a long-term relationship explicitly aimed at integrating the value of nature into business decisions (TNC and Dow Chemical 2013). Where intensive partnerships occur, such as supply chain auditing, our study shows that they are more likely to involve international CNGOs, signifying the greater institutional capacity of these organisations and their attractiveness to potential partners due their higher public profiles (Guo and Acar 2005).

CNGOs with a greater income are engaged in a greater diversity of partnership activities, which is in accordance with a previous study that has demonstrated that larger NGOs are more inclined to collaborate (Guo and Acar 2005). Partnerships are inherently risky strategies so those with the ability to invest resources comfortably (both financial and human capital) are more likely to accept the associated risks and engage. Similarly, corporate financial status is positively correlated with the number of activities reported, probably because corporations with greater resources have more freedom to invest in CSR (Miles and Covin 2000). The main motivations for engaging in partnerships found here concur with an annual poll of leading multinational corporations and UK charities, which reported that NGOs are driven to obtain financial resources primarily, and corporations seek to enhance their brand (C&E Advisory Service 2014). This poll concluded that corporations are further ahead

in their understanding of the strategic value of partnerships, representing the resource-based view of collaborations (Barney 1991). Our findings across conservation partnerships support this, with corporations considering organisational learning, a hard to replicate resource, more important than the CNGOs.

Our results clearly demonstrate that although not all CNGOs participate in partnerships, those that do are not restricted to collaborating with particular types of corporation or focused on specific activities. Although the efficacy of conservation partnerships may be challenged with respect to realizing economic and ecological benefits simultaneously (Doak et al. 2014), working with corporations presents CNGOs with opportunities to improve the efficiency of their operations and ultimately the delivery of their objectives (Sanzo et al. 2014). Resource complementarity is being realized by both partners even if the majority are not centered on changing corporate practices.

Acknowledgements

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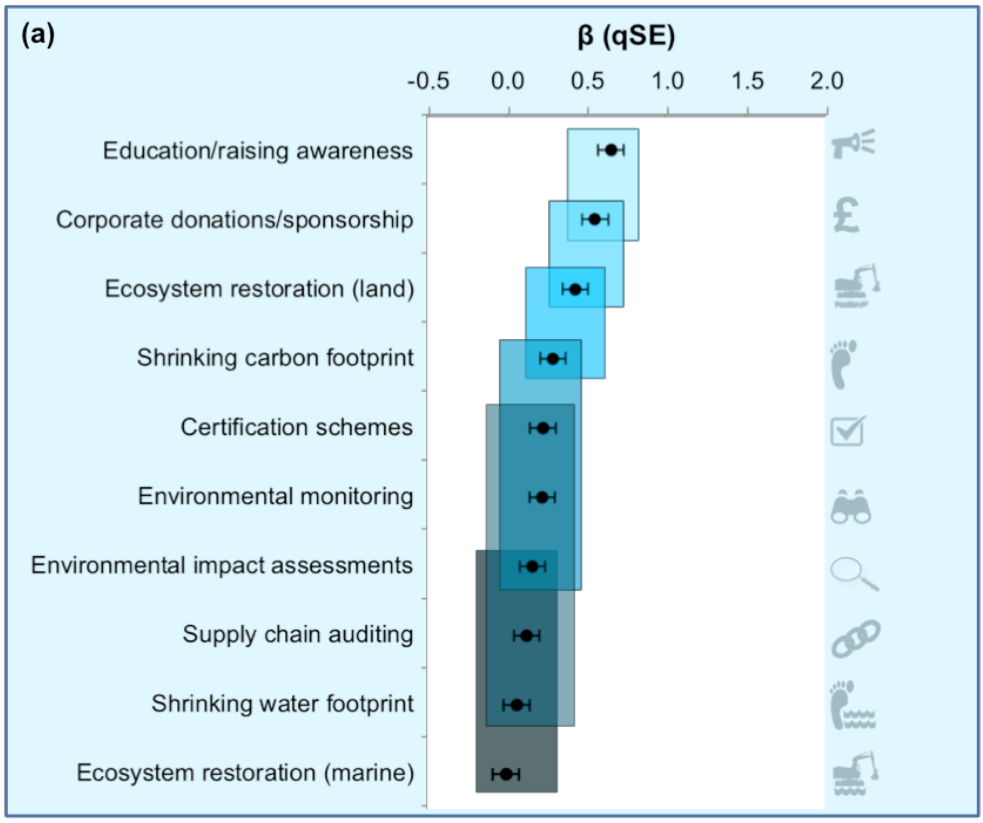
Figure Legends

Figure 3.1: Differences between the frequency with which (a) FTSE350 corporations and (b) UK conservation NGOs report having NGO-corporate partnerships focused on 10 types of conservation activity. Values shown are β coefficients with quasi standard error bars (qSE). Shaded boxes indicate where there are significant differences between engagement in each activity.

Figure 3.2: Illustrative perspectives on conservation partnerships provided by (a) one corporation and (c) three UK conservation NGOs. The graph in (b) depicts differences between the frequency with which UK conservation NGOs report having a partnership with corporations across 10 business sectors (FTSE International 2012). Values shown are β coefficients with quasi standard error bars (qSE). Shaded boxes indicate where there are significant differences between engagement in each activity.

Figure 3.3: Graphs showing percentage of (a) FTSE350 corporations and (b) UK conservation NGOs describing motivations for forming conservation partnerships as: very unimportant (lightest red) or unimportant (light red) to the left of zero on the x axis, and important (red) or very important (darkest red) to the right of zero on the x axis. The percentage of respondents who reported that the motive was neither important nor unimportant is listed on the far right.

Figure 3.1


(a)
β (qSE)
-0.5
0.0
0.5
1.0
1.5
2.0
Education/raising awareness
Corporate donations/sponsorship
Ecosystem restoration (land)
Shrinking carbon footprint
Certification schemes
Environmental monitoring
Environmental impact assessments
Supply chain auditing
Shrinking water footprint
Ecosystem restoration (marine)

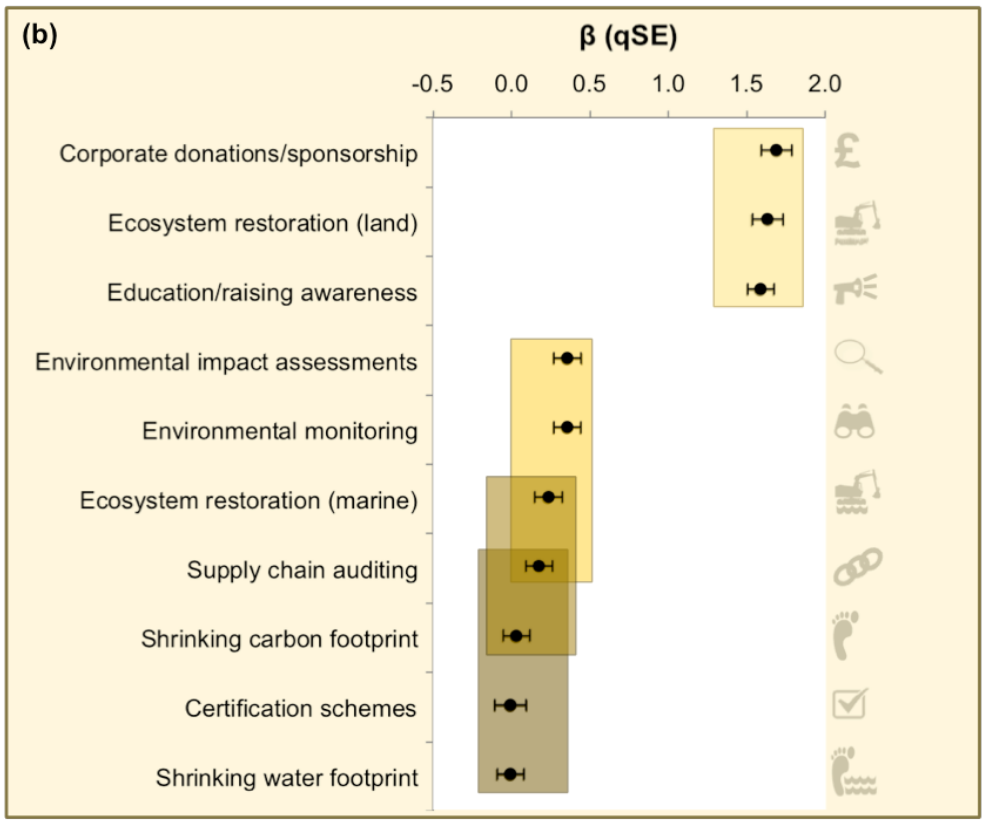

(b)
β (qSE)
-0.5
0.0
0.5
1.0
1.5
2.0
Corporate donations/sponsorship
Ecosystem restoration (land)
Education/raising awareness
Environmental impact assessments
Environmental monitoring
Ecosystem restoration (marine)
Supply chain auditing
Shrinking carbon footprint
Certification schemes
Shrinking water footprint

Figure 3.2

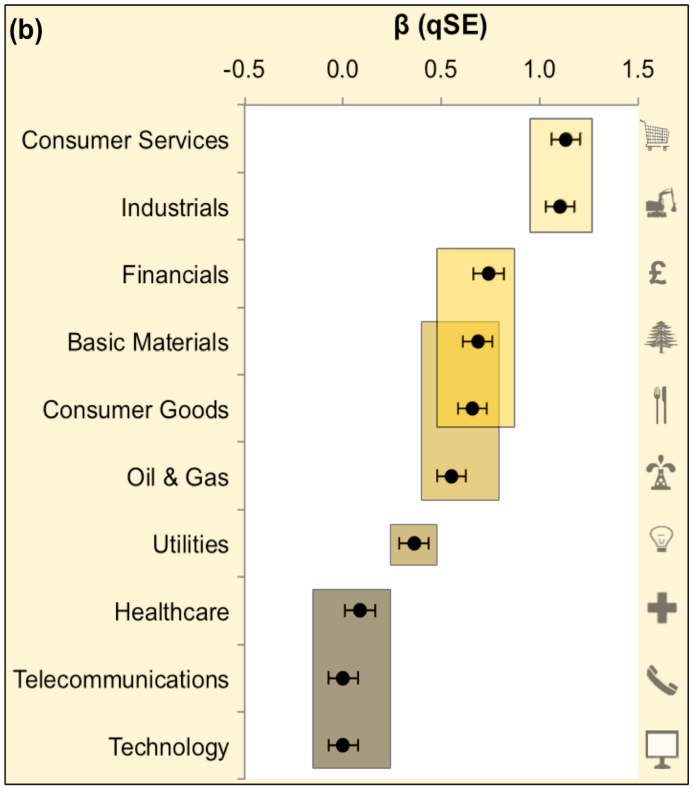
(a) Corporate perspective

At Hermitage Quarry in Maidstone in the United Kingdom (right), an Industrials corporation called Gallagher Aggregates operates one of only two remaining Kentish Ragstone quarries. Since 1990, 74 acres have been quarried, 40 of which have been restored to agricultural land or planted with broadleaved woodland and hedgerows. A representative for Gallagher Aggregates stated:

"Although we have many 'official' partnerships with conservation NGOs, we also have a number of informal relationships which have been particularly valuable during the planning process for our quarry expansion."

Common kestrel *(Falco tinnunculus)* circling Hermitage Quarry

(b)



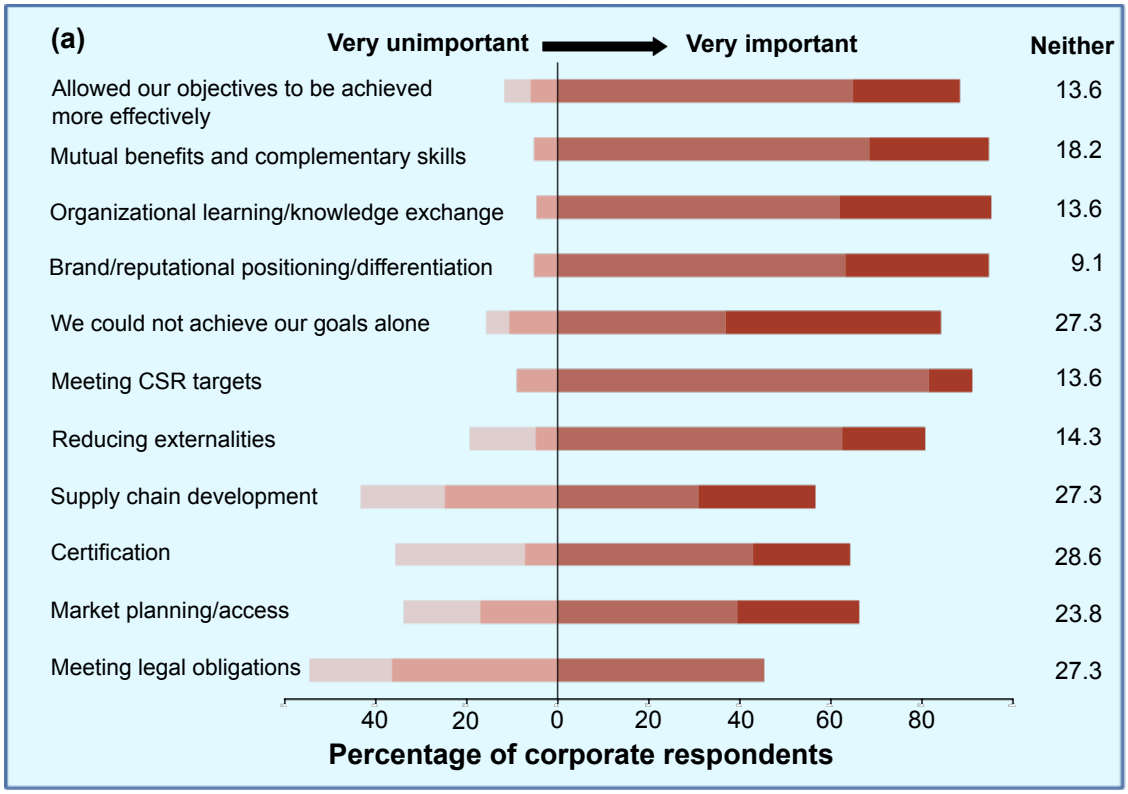
(c) NGO perspective

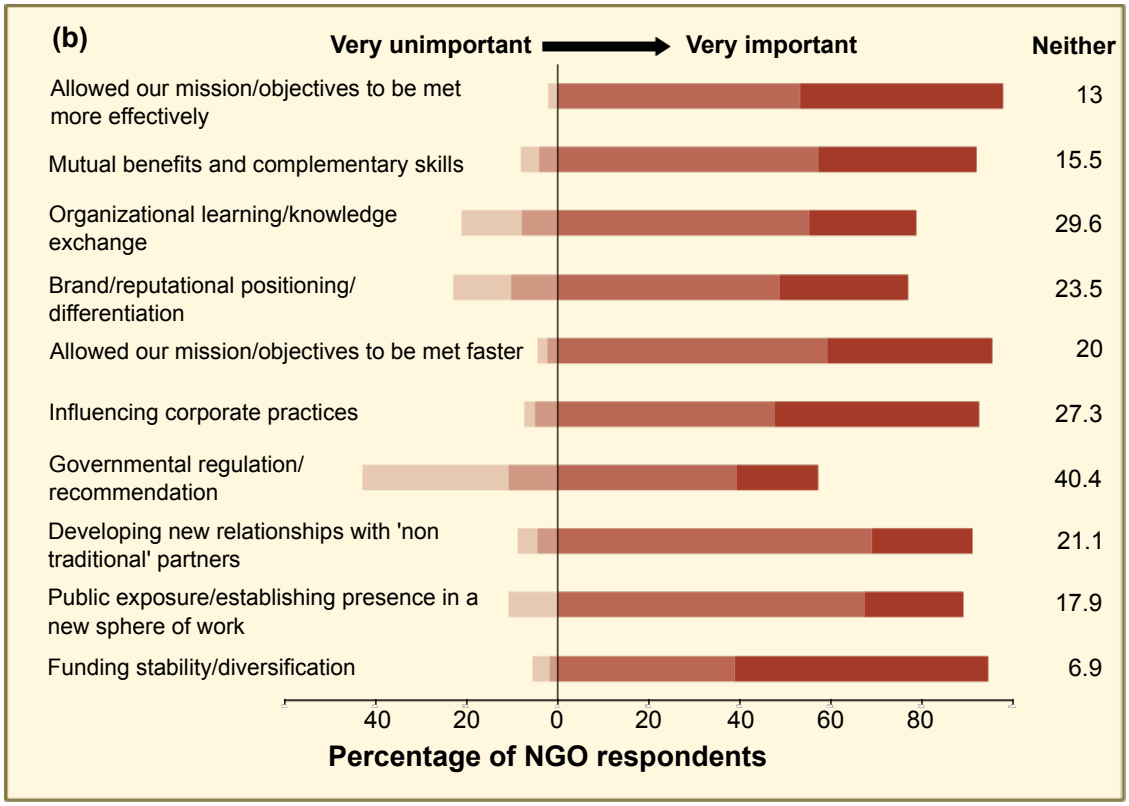
"Our NGO is constantly criticised because of our partnerships with commercial corporations by other NGOs, as they perceive that the connection means that our NGO is a cover for a commercial operation rather than a legitimate NGO."

"Our corporate members, sponsors and partners have all been important. We do not receive many straight corporate donations."

"We have found all of our partnerships to be difficult and time consuming for very little money. Corporations expect a lot more from us that we can give, exceeding what any other funding source requires."

Figure 3.3


(a)
Very unimportant
Very important
Neither
Allowed our objectives to be achieved more effectively
13.6
Mutual benefits and complementary skills
18.2
Organizational learning/knowledge exchange
13.6
Brand/reputational positioning/differentiation
9.1
We could not achieve our goals alone
27.3
Meeting CSR targets
13.6
Reducing externalities
14.3
Supply chain development
27.3
Certification
28.6
Market planning/access
23.8
Meeting legal obligations
27.3
40
20
0
20
40
60
80
Percentage of corporate respondents


(b)
Very unimportant
Very important
Neither
Allowed our mission/objectives to be met more effectively
13
Mutual benefits and complementary skills
15.5
Organizational learning/knowledge exchange
29.6
Brand/reputational positioning/ differentiation
23.5
Allowed our mission/objectives to be met faster
20
Influencing corporate practices
27.3
Governmental regulation/ recommendation
40.4
Developing new relationships with 'non traditional' partners
21.1
Public exposure/establishing presence in a new sphere of work
17.9
Funding stability/diversification
6.9
40
20
0
20
40
60
80
Percentage of NGO respondents

3.7. Appendices

Table 3.7.1: Definitions for the types of activity that can occur between conservation non-governmental organisations (CNGOs) and corporations working in partnership (adapted from Rondinelli and London 2003; Wymer and Samu 2003). Type of activity was further categorized into one of three partnership classifications: (i) arms-length (the one-way transfer of generic resources); (ii) interactive (the generation of independent value for participating organisations); or, (iii) intensive (co-creation of shared value) (Rondinelli and London 2003; Austin and Seitanidi 2012).

Type of Activity	Partnership Classification	Definition
Corporate donations/sponsorship	Arms-length	Corporate donations (financial support) given to CNGOs. This category also includes other forms of financial relationships including sponsorship, licensing agreements and transaction/marketing-based promotions (e.g. direct one off/annual/quarterly/monthly payments made to a CNGO).
Education/raising awareness	Interactive	Educational interactions between companies and CNGOs, namely involving raising public awareness about conservation issues.
Environmental impact assessments	Interactive	CNGOs providing external certification in the form of environmental impact assessments.
Certification schemes	Interactive	Certification schemes (e.g. carbon credits, fair trade, habitat banking, FSC, REDD+) accredited to the corporation as a result of partnership with a CNGO.
Shrinking carbon footprint	Intensive	Projects with CNGOs that are centered on assessing, changing or addressing corporate energy and/or carbon usage.
Shrinking water footprint	Intensive	Projects with CNGOs that are centered on assessing, changing, or addressing corporate water usage.
Supply chain auditing	Intensive	Projects with CNGOs that are centered on assessing, changing, or addressing corporate sustainable procurement across supply chains.
Environmental monitoring	Interactive	Data collection for conservation purposes in collaboration with a CNGO via corporate volunteering schemes, as well as corporate support for NGO monitoring activities.

Type of Activity	Partnership Classification	Definition
Ecosystem restoration (land)	Interactive	Restoration of terrestrial and/or freshwater wildlife/habitats/ecosystems as a result of CNGO-corporate collaboration.
Ecosystem restoration (marine)	Interactive	Restoration of marine and/or coastal wildlife/habitats/ecosystems as a result of CNGO-corporate collaboration.

Table 3.7.2: Summary statistics for, and categorization of, corporate and conservation non-governmental organisation (CNGO) respondents. Corporate respondents were classified by their business industry (Industry Classification Benchmark; FTSE International 2012), the environmental impact of their business industry (FTSE4Good 2006), and the type of activity they report engaging in via partnership with CNGOs. CNGO respondents were classified by their maximum scale of operation, the business industry of their corporation conservation partners, and the type of activity they report engaging in via partnership with corporations.

Corporate respondents			**%**	**n**
	Business industry of each corporation	Consumer services	14	9
		Industrials	17	11
		Financials	25	16
		Basic materials	11	7
		Consumer goods	14	9
		Oil & gas	5	3
		Utilities	6	4
		Healthcare	0	0
		Telecommunications	5	3
		Technology	5	3
	Environmental impact of each corporation's business industry	Low	14	9
		Medium	49	31
		High	37	24
	Type of partnership activity	Arms-length	32	22
		Interactive	40	27
		Intensive	28	19
		Corporate donations/sponsorship	16	22
		Education/raising awareness	19	25
		Environmental impact assessments	8	10
		Certification schemes	9	12
		Shrinking carbon footprint	10	14
		Shrinking water footprint	5	7

		Supply chain auditing	7	9
		Environmental monitoring	9	12
		Ecosystem restoration (land)	13	18
		Ecosystem restoration (marine)	4	5
CNGO respondents			**%**	**n**
	Maximum scale of operation	Local	33	45
		National/within country	33	45
		International	34	46
	Business industry of corporate partners	Consumer services	16	44
		Industrials	15	40
		Financials	12	32
		Basic materials	11	29
		Consumer goods	16	42
		Oil & gas	10	27
		Utilities	13	34
		Healthcare	4	10
		Telecommunications	3	7
		Technology	2	5
	Type of partnership activity	Arms-length	41	55
		Interactive	45	60
		Intensive	14	18
		Corporate donations/sponsorship	32	93
		Education/raising awareness	17	50
		Environmental impact assessments	7	19
		Certification schemes	3	9
		Shrinking carbon footprint	3	10
		Shrinking water footprint	3	9
		Supply chain auditing	5	14
		Environmental monitoring	7	19
		Ecosystem restoration (land)	19	55
		Ecosystem restoration (marine)	5	16

Table 3.7.3: Chi-squared tests (X^2) for differences between corporate respondents (n=62) based on the environmental impact of their business industry (FTSE4Good 2006) and the type of activity they are engaged in via partnership with CNGOs. A * denotes the use of Fisher's exact tests where 20% of expected counts were less than five.

Type of partnership activity	Environmental impact of each corporation's business industry	X^2	df	P
Arms-length	Low Medium High	5.10	2	0.086
Interactive	Low Medium High	1.32	2	0.598
Intensive	Low Medium High	0.69	2	0.741
Corporate donations/sponsorship	Low Medium High	5.10	2	0.086
Education/raising awareness	Low Medium High	2.86	2	0.260*
Environmental impact assessments	Low Medium High	5.34	2	0.052*
Certification schemes	Low Medium High	2.38	2	0.245*
Shrinking carbon footprint	Low Medium High	0.66	2	0.703
Shrinking water footprint	Low Medium High	1.28	2	0.628*

Type of partnership activity	Environmental impact of each corporation's business industry	X^2	df	P
Supply chain auditing	Low Medium High	0.24	2	1.000*
Environmental monitoring	Low Medium High	1.03	2	0.663*
Ecosystem restoration (land)	Low Medium High	2.36	2	0.312
Ecosystem restoration (marine)	Low Medium High	1.39	2	0.424*

Table 3.7.4: Chi-squared tests (X^2) for differences between conservation non-governmental organisation (CNGO) respondents based on their maximum scale of operation, and the type of partnership activity and the business industries (FTSE4Good 2006) of their corporate collaborators. A bold P value highlights significance at P<0.05. A * denotes the use of Fisher's exact tests where 20% of expected counts were less than five. Indented text shows pairwise testing across the different maximum scales of operation. A ± indicates that odds ratio (OR) and relative risk (RR) could not be subsequently calculated due to sample sizes. OR and RR 95% confidence intervals (CI) are provided. The pairwise comparison for significant result denoted [a] are shown for project activities indicated with a [b].

Type of partnership activity	Maximum scale of operation	X^2	df	P	N	OR	OR 95% CI	RR	RR 95% CI
Arms-length	Local Within country/national International	1.02	2	0.649	123				
Interactive	Local Within country/national International	1.31	2	0.774*	63				
Intensive	Local Within country/national International	8.27	2	0.014[a]	63				
	Local v International	0.41	1	0.522*	39				
	Local v National	4.61	1	**0.049*±**	41				
	National v International	8.20	1	**0.004***	46	9.167	1.720, 48.853	5.455	1.340, 22.201
Corporate donations/sponsorship	Local Within country/national International	1.01	2	0.585	123				
Education/raising awareness	Local Within country/national International	0.48	2	0.857*	63				

Type of partnership activity	Maximum scale of operation	X^2	df	P	N	OR	OR 95% CI	RR	RR 95% CI
Environmental impact assessments	Local Within country/national International	0.77	2	0.694	63				
Certification schemes	Local Within country/national International	1.34	2	0.546*	63				
Shrinking carbon footprint[b]	Local Within country/national International	9.40	2	**0.006***	63				
	Local v International	1.01	1	0.464*	39				
	Local v National	4.57	1	0.064*	41				
	National v International	9.01	1	**0.003*±**	46				
Shrinking water footprint[b]	Local Within country/national International	7.43	2	**0.016***	63				
	Local v International	0.00	1	0.623*	39				
	Local v National	6.26	1	**0.024*±**	41				
	National v International	6.12	1	**0.019*±**	46				
Supply chain auditing[b]	Local Within country/national International	9.56	2	**0.007***	63				
	Local v International	5.11	1	**0.026**	39	6.250	1.145, 34.123	3.864	0.972, 15.358
	Local v National	0.13	1	0.555*	41				
	National v International	8.20	1	**0.005**	46	9.167	1.720, 48.853	1.681	1.126, 2.507
Environmental monitoring	Local Within country/national International	0.55	2	0.784	63				
Ecosystem restoration (land)	Local Within country/national International	2.65	2	0.284*	63				
Ecosystem restoration (marine)	Local Within country/national International	6.63	2	**0.033**	63				

Type of partnership activity	Maximum scale of operation	X^2	df	P	N	OR	OR 95% CI	RR	RR 95% CI
	Local v International	0.55	1	0.518	39				
	Local v National	3.12	1	0.105*	41				
	National v International	6.70	1	**0.015**	46	0.191	0.039, 0.941	0.842	0.720, 0.984
Business industry of corporate partners									
	Oil & gas	0.55	2	0.802	83				
	Basic materials	1.46	2	0.481	83				
	Industrials	1.83	2	0.422	83				
	Consumer goods	0.91	2	0.651	83				
	Consumer services	2.30	2	0.332	83				
	Financials	0.01	2	1.000	83				
	Healthcare	5.56	2	0.064*	83				
	Telecommunications	1.09	2	0.692*	83				
	Utilities	9.35	2	**0.011**	83				
	Local v International	7.17	1	**0.012**	57	6.273	1.813, 21.703	2.897	1.215,6.905
	Local v National	0.03	1	0.545	55				
	National v International	7.66	1	**0.010**	54	5.367	1.558, 18.488	3.015	1.263, 7.201
	Technology	0.50	2	1.000*	83				

Table 3.7.5: Summary statistics for the motivational drivers which underpin partnership initiation relevant to: (i) both corporate and conservation non-governmental organisations (CNGO) (these were represented in both of the questionnaires); (ii) corporations specifically (these were represented in just

the corporate questionnaire); and, (iii) CNGOs specifically (these were represented in just the CNGO questionnaire). N indicates the total number of respondents who answered the question, of which n indicates the number who rated the motivation as either 'important' or 'very important'. For the motive statements common to both the corporate and CNGO questionnaire, Mann Whitney-U tests were used to detect whether there were significant differences in median Likert-scale ratings. A bold P value highlights significance at P<0.05.

		Corporations					**CNGOs**					**U**	**P**
		N	**%**	**n**	**Median**	**IQR**	**N**	**%**	**n**	**Median**	**IQR**		
Corporate and CNGO motivational drivers	Allowed our mission/objective to be achieved more effectively	22	77	17	4	3, 4	59	78	46	3	3, 3	541.5	0.358
	Mutual benefits and complementary skills	22	77	17	3	2.75, 3	59	77	45	3	3, 3	636.5	0.982
	Organisational learning/knowledge exchange	22	82	18	3	3, 3	59	51	30	3	2, 3	434.0	**0.032**
	Brand/reputational positioning	22	86	19	3	3, 3	59	51	30	3	2, 3	479.0	**0.062**
	Meeting legal obligations for corporations	22	46	10	2	1, 3							
	Governmental recommendations for CNGOs						59	27	16	2	1, 3		
Corporate specific motivational drivers	Could not achieve our goals alone	22	59	13	3	2, 3							
	Meeting CSR targets	22	82	18	3	3, 3							
	Reducing externalities	22	64	14	3	2, 3							
	Supply chain development	22	41	9	2	1, 3							
	Certification	22	46	10	2	1.5, 3							
	Market planning/access	22	46	10	2	1, 3							
CNGO specific motivational drivers	Allowed our mission/objective to be met faster						59	71	42	3	3, 3		
	Influencing corporate practices						59	63	37	3	2, 3		
	Developing new relationships with 'non-traditional' partners						59	70	41	3	2, 3		
	Public exposure/establishing presence in a new sphere of work						59	70	41	3	2, 3		
	Funding stability/diversification						59	86	51	3	3, 3		

Chapter 4. Influencing the market: an investigation into the WWF Global Forest and Trade Network (GFTN-UK)

4.1. Introduction

The relationship between conservation non-governmental organisations (NGOs) and corporations has undergone a significant change in recent decades. These once historical adversaries, whose interactions were characterised primarily by confrontation, are now collaborating on a wide variety of cooperative environmental endeavours (MacDonald 2010; Steadman et al. submitted). Yet, despite the increasing prevalence of NGO-corporate partnerships, there remains a paucity of research exploring what motivates organisations to engage in such activities and, subsequently, what outcomes are derived. Without understanding the key stages in the collaborative process, we cannot learn what makes a partnership successful, and how this underpins the delivery of the desired conservation outcomes.

Corporations can contribute to conservation in a number of ways. For instance, they can provide financial income to conservation NGOs (e.g. donations, sponsorship; Gutman and Davidson 2007; Parker et al. 2012), manage land holdings for the benefit of biodiversity (e.g. mining and quarrying, Armsworth et al. 2010; tropical biodiversity management, Meijaard and Sheil 2012) or ecosystem services (e.g. biological carbon storage and water filtration, Bishop 2012), or engage in non-state market driven (NSMD) governance mechanisms (e.g. certification schemes, Auld 2008; product labelling schemes, Bernstein and Cashore 2004). NGOs have increasingly turned to instigating the latter, using environmental norms embedded within the global

marketplace to leverage voluntary changes in corporate behaviour (Lyon and Maxwell 2008; Cashore et al. 2003; Bernstein and Cashore 2007). This reflects growing concern that traditional state-driven models of regulatory environmental governance are not sufficiently able to address the destruction of habitats and ecosystems at requisite scales (Berkes 2009; Bodin and Crona 2009; Cash et al. 2006; Folke et al. 2007). Indeed, there is now widespread recognition that the biodiversity crisis is too complex for any one type of organisation to overcome, and cross-sector collaborations (defined here as partnerships between private, public or voluntary sector organisations in the pursuit of joint objectives) are emerging as a potential mechanism for achieving conservation benefits more efficiently through pooled resources (Bryson et al. 2006; Berkes 2009; Austin and Seitanidi 2012a).

While unexplored from a conservation perspective, cross-sector collaborations have been well studied in other disciplines such as business and organisational management, which typically focus on working with NGOs from a corporate viewpoint (e.g. Rondinelli and London 2003; Bryson et al. 2006; Selsky and Parker 2011), rather than the other way around. It is widely accepted that partnerships evolve through three stages: (i) formation; (ii) implementation; and, (iii) outcomes (Seitanidi and Crane 2009; Seitanidi 2010; Neergaard et al. 2009) (Figure 4.1).

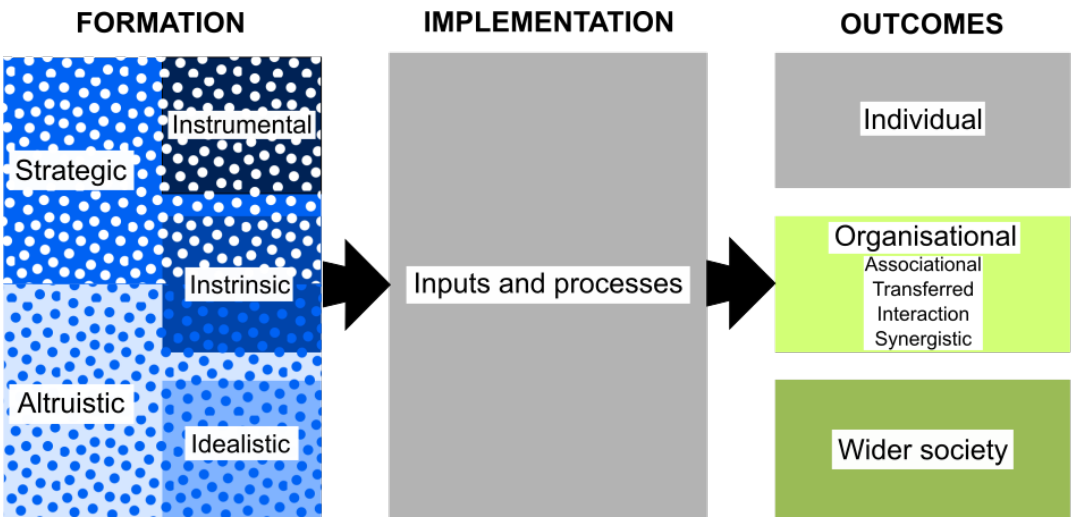


Figure 4.1: Conceptual framework depicting the three stages of cross-sector collaborations (Seitanidi and Crane 2009; Seitanidi 2010; Neergaard et al. 2009; Austin and Seitanidi 2012a; 2012b). Grey indicates aspects of the framework not covered in this chapter. The formation stage (blue) comprises the potential motivational drivers for initiating a relationship, which are broadly characterised as strategic (white dots) or altruistic (blue dots) forms of corporate social responsibility (CSR). Strategic CSR encompasses instrumental and intrinsic motivations for engaging, and altruistic CSR characterises both intrinsic and idealistic motivational drivers. The implementation stage (grey) involves collaborative inputs and processes that deliver collaboration outcomes. The outcomes stage incorporates changes produced by collaborations and can be generated at three levels: individual (grey); organisational (light green); and, wider society (dark green). Organisational outcomes are measured via partner satisfaction and consist of four types of perceived organisational value (associational, transferred, interaction and synergistic).

The formation stage (Figure 4.1) comprises the motivational drivers leading to initiation of a relationship (Seitanidi 2010). It is important to understand these motivations because they can provide an early indication of the transformative potential a collaboration may have, as well as potentially informing recruitment and retention strategies for NGOs wishing to maintain relationships with corporations in the long-term. For NGOs, the decision to collaborate can be funding, capability or mission driven (Austin 2007). In the case of corporations, they seek to address stakeholder concerns by engaging in corporate social responsibility (CSR) based on either strategic decisions to maximise profits ('strategic CSR'), or due to moral or ethical values ('altruistic CSR') (Baron 2001; Berman et al. 1999; Schwartz and Carroll 2003). Seitanidi (2010) goes further and categorises corporate motivations as: (i) instrumental (guided by the needs of the organisation); (ii) intrinsic (relating to the essential nature or character of the organisation); or, (iii) idealistic (doing the right thing from a moral or ethical perspective, where profit maximisation does not influence participation).

Instrumental motivations reflect the strategic view of CSR, as corporations seek to engage with NGOs to achieve end gains such as reducing the transaction costs of regulatory compliance (Maxwell et al. 2000; Tully 2004), securing a competitive advantage (Brønn and Vidaver-Cohen 2009), achieving better risk management, or improving their reputation (Van Huijstee et al. 2007; Brønn and Vidaver-Cohen 2009; Kourula 2010). At the other end of the spectrum, idealistic motivations represent altruistic CSR. In comparison, intrinsic motivations acknowledge the 'triple bottom line', where economic, social and environmental performances are interconnected (Porter and Kramer 2006). There is greater empirical support for the profit-maximising view of responsible business behaviour, in that corporations prioritise strategic management over altruistic considerations (Van Huijstee et al. 2007; Brønn and

Vidaver-Cohen 2009), with purely social drivers less influential than regulatory or market pressures (Darnall 2003).

The implementation phase of a partnership (Figure 4.1) involves the inputs and processes required to deliver joint organisational objectives (Seitanidi 2010). To date, the majority of cross-sector collaboration research has focused on the formation and implementation stages, prompting calls for greater reporting and evaluation of the outcomes generated by partnership initiatives (Van Huijstee et al. 2007; Koontz and Thomas 2006).

Outcomes (Figure 4.1) are defined as the social changes produced as a consequence of collaborative activity (Koontz and Thomas 2006). They can be generated at three different levels: (i) individual (e.g. enhanced personal skills); (ii) organisational (e.g. meeting organisational objectives); and, (iii) wider society (e.g. improved ecological condition of a habitat patch) (Austin and Seitanidi 2012b; Selsky and Parker 2011). As organisational level outcomes are determined by the participating organisations themselves, they can be measured subjectively, and readily, via partner satisfaction (Barroso-Méndez et al. 2014). Previous work has identified four different perceived value types: (i) association (benefits accrued simply through a relationship between organisations); (ii) transferred resources (depreciable or durable resources, like cash or skills respectively); (iii) interaction (intangibles derived from the process of collaboration, such as joint problem solving, knowledge exchange or mutual trust); and, (iv) synergistic (co-creation of social/environmental and economic value) (Austin and Seitanidi 2012a). Interaction value is particularly interesting and important because it fundamentally underpins the ability of a collaboration to deliver its key objectives (Bodin and Crona 2009; Guerrero et al. 2013), with the structural arrangement of the relationships between organisations

either inhibiting or facilitating knowledge exchange (Guerrero et al. 2013). This is key as interactive value can be consolidated, building up from knowledge acquisition through to the development of new capabilities and, ultimately, synergistic value (Austin and Seitanidi 2012b).

To understand what might motivate organisations to instigate a cross-sector collaboration with a NSMD governance mechanism run by a conservation NGO, and examine the conservation outcomes derived from such a partnership, we used the WWF Global Forest and Trade Network (GFTN-UK) as a case study. We sought to answer the following research questions: (i) what motivates member organisations, particularly corporations, to engage during the partnership formation stage; (ii) what outcomes are produced for participating organisations; and, (iii) what wider societal outcomes are produced? To date, scant empirical evidence exists demonstrating the outcomes that can be derived from cross-sector collaborations in the conservation sector. However, studies in other fields, such as poverty reduction and improved healthcare, suggest that relationships between NGOs and corporations can have transformative potential (Seitanidi et al. 2010; Austin and Seitanidi 2012b).

4.2. Methods

4.2.1. Study System

The GFTN is a collaborative membership network, operated by WWF in 34 different countries and involving 270 participating organisations (WWF 2015a). It forms part of WWF's wider corporate stewardship programme, which aims to create sustainable markets for commodities such as forest products. Specifically, the network aims to drive sustainability improvements within the timber trade in three ways: (i) reducing

illegal logging; (ii) driving improvements in forest management; and, (iii) transforming the global marketplace to help save the world's threatened forests, while providing economic and social benefits for the businesses and people that depend on them (Hewitt and Sutherland 2012).

Here we focused on the UK branch of the network (GFTN-UK), which comprises 24 trade participants from the private, public and voluntary sectors (correct as of February 2015). The member organisations represent processors, manufacturers, traders or end-users of forest products. Members are grouped by WWF into the following categories: (i) retail; (ii) construction; (iii) paper/printing/publishing; (iv) timber; and, (v) other (Table 4.1). GFTN-UK participants are encouraged to increase their purchasing of forest products from Forest Stewardship Council (FSC) certified sources. Furthermore, they are required to publish annual statements detailing information including the total volume of forest products procured from FSC certified sources, and the total volume of forest products purchased of unknown origin (WWF 2015a). In addition to members, GFTN includes 'advocate' organisations, which are governed by a separate set of participation rules and are not required to report on the status of the forest products used within their supply chain. WWF defines advocates as "*companies that may not be GFTN participants but are actively involved with WWF to motivate the industry to move towards responsible forestry and trade"* (WWF 2014). There are currently four advocates within GFTN-UK (Table 4.1).

Table 4.1: Summary of Global Forest and Trade Network UK (GFTN-UK) member organisation attributes (correct as of 2015). Membership category and organisation description are provided by GFTN-UK (WWF 2015b). Income is defined as net assets for 2014, sourced from annual accounts submitted to Companies House (www.gov.uk/government/organisations/companies-house) or Charity Commission (www.apps.charitycommission.gov.uk/) unless otherwise stated in the footnotes. Klout score (correct as of 2016) is a measure of social media influence, ranging from 1–100 (www.klout.com). The number of employees for 2014 was determined from the Financial Analysis Made Easy (FAME) database (www.fame.bvdinfo.com) unless otherwise stated in the footnotes.

GFTN-UK membership category	Name	Organisation type	Member since	Income 2014 (£ '000)	Klout score	No. of employees 2014	GFTN-UK organisation description
Retail companies	Argos	Corporation	2009	1,362,042	65	27,399	Argos is a multi-channel retailer selling general merchandise and products for the home from over 700 stores throughout the UK and Republic of Ireland.
	Boots UK	Corporation	1992	1,204,000	66	60,000[g]	Boots UK is a member of Alliance Boots, an international pharmacy-led health and beauty group, with close to 2,500 stores from local community pharmacies to large destination health and beauty stores.
	Co-operative Retail	Corporation	1996	2,865,000[a]	65	88,046	Co-Operative is a grocery retailer specialising in the convenience market and a department store retailer. The Co-operative Food became the first retailer to graduate from WWF's GFTN-UK.
	Homebase	Corporation	1996	404,326	64	15,494	Homebase is a DIY retailer specialising in garden, DIY and home enhancements, and part of Home Retail Group. It has more than 340 stores throughout the UK and Republic of Ireland, and a growing internet

GFTN-UK membership category	Name	Organisation type	Member since	Income 2014 (£ '000)	Klout score	No. of employees 2014	GFTN-UK organisation description
							offering.
	J Sainsbury	Corporation	1995	6,005,000	87	107,000	Sainsbury's is major food retailer founded in 1869, and today the business operates over 1,000 stores, including 440 convenience stores.
	Marks & Spencer Group	Corporation	2004	39,479,000	87	83,069	Marks and Spencer Group plc is a leading retailer of clothing, food, homewares and financial services. We now operate in over 50 territories worldwide and employ almost 82,000 people.
Construction companies	Canal & River Trust	NGO	2002	664,000	62	1,600	Canal & River Trust (formerly British Waterways) is responsible for the management and maintenance of 2000 miles of canals and waterways in the UK.
	Carillion	Corporation	1997	8,945,000	64	27,858	Carillion plc is a support services company with a portfolio of Public Private Partnership projects and extensive construction capabilities.
	Lend Lease	Corporation	2000	2,742	50	155	Lend Lease is one of the world's leading fully integrated property solutions providers, and one of the UK's largest construction companies, employing over 7,000 employees in 93 offices worldwide.
	Network Rail	Corporation	1996	4,655,000	65	35,457	Network Rail run, maintain and develop Britain's rail tracks, signalling, bridges, tunnels, level crossings, viaducts and 17 key stations.
	Redrow Group	Corporation	2002	69,570	52	1,530	Redrow is one of the UK's leading residential and mixed-use property developers, aiming to be the developer of

GFTN-UK membership category	Name	Organisation type	Member since	Income 2014 (£ '000)	Klout score	No. of employees 2014	GFTN-UK organisation description
							choice for customers, landowners, suppliers, subcontractors and investors.
Paper, printing and publishing companies	Immediate Media Company	Corporation	2013	117,063	45	1,100[h]	Immediate Media Co was formed in November 2011 following the merger of BBC Magazines, Origin Publishing and Magicalia.
	MBNA	Corporation	2004	2,553,895	64	1,900	MBNA, a Bank of America company based at our headquarters in Chester, North West England, is one of the UK's largest credit card issuers.
	Office Depot UK	Corporation	1995	850	82	825	Office Depot Inc. is a global supplier of office products and services, and a leading global provider of products, services, and solutions for every workplace.
	Pearson Group	Corporation	2004	251,014	66	2,550	Pearson is a business made up of companies that produce books, newspapers and magazines.
	Penguin Random House	Corporation	2013	713,746	0	10,000[i]	Penguin Random House was formed in July 2013, when Bertelsmann and Pearson merged their respective trade publishing companies, Random House and Penguin.
	Polestar UK Print	Corporation	2001	8,690	27[d]	1,272	The Polestar Group is an independent printing company, offering a comprehensive range of printing and associated services, including direct mail, transactional mail, book printing, journal production and commercial print.
	Pureprint	Corporation	2001	3,249	46	237	Pureprint Group provides sustainable printing solutions for the corporate,

GFTN-UK membership category	Name	Organisation type	Member since	Income 2014 (£ '000)	Klout score	No. of employees 2014	GFTN-UK organisation description
							creative, commercial and fine art markets. After an independent audit in 2011, Pureprint Group graduated from WWF's GFTN-UK, and with this high level of performance, now participates as an advocate for responsible forest trade.
	Steinbeis	Corporation	2014	43,927[b]	0	350[j]	Steinbeis Papier is a German producer and distributor of high quality recycled paper made from 100% recovered fibre, for magazine, office and inkjet paper ranges.
	Williams Lea	Corporation	2006	69,566	0	8,000[k]	Williams Lea is a global business process outsourcing organisation, specialising in corporate information solutions that re-engineer end-to-end business processes.
Timber importers and users	Nobia UK	Corporation	1995	11,979	61[e]	2,284	Nobia is a European kitchen specialist whose operation consists of developing, manufacturing and selling kitchens through well-known brands such as Magnet as well as manufacturing under private label.
	Saint-Gobain Building Distribution	Corporation	1998	278,829	70	2,920	Saint-Gobain's businesses form a robust integrated supply chain, and the building distribution sector in the UK and Ireland comprises of 23 brands ranging from manufacturers such as Pasquill and the merchant brands including Jewson.
	Travis Perkins	Corporation	2003	267,770	47	23,480	Travis Perkins have been supplying building materials to the trade for over 200 years and are now one of the largest suppliers to the UK's building and construction industry with a national network of branches.

GFTN-UK membership category	Name	Organisation type	Member since	Income 2014 (£ '000)	Klout score	No. of employees 2014	GFTN-UK organisation description
Other	Forest Enterprise	Government agency	2001	1,535,915[c]	61[f]	851	The Forestry Commission is made up of the Forestry Commission England and Wales, the Forestry Commission Scotland and Forest Research, which includes Forest Enterprise, the executive government agency responsible for management of state-owned woodlands.

[a] Co-operative is not required to submit reports to Companies House as a consumer co-operative (sourced from their Annual Report: www.co-operative.coop/Corporate/PDFs/Annual-Report/2014/Co-operative-Group-Annual-Report-2014.pdf).
[b] Steinbeis is a non-UK registered corporation so income was obtained from the German equivalent to Companies House (www.unternehmensregister.de/ureg) and converted from Euros into GBP using the exchange rate (0.78) correct for 31st December 2014.
[c] Forest Enterprise income reported within the 2014 financial statements (www.gov.uk/government/organisations/forest-enterprise-england).
[d] No Klout score available for Polestar, so that of CEO (@BarryPolestar) was used as a proxy.
[e] No Klout score available for Nobia UK, so that of the British division of Nobia Group (Magnet) was used as a proxy.
[f] No Klout score available for Forest Enterprise specifically, so the score for the overarching governing body, Forestry Commission, was used instead.
[g] Boots UK employee size was not available on FAME database (obtained from: www.retail-week.com/sectors/health-and-beauty/boots-revives-annual-uk-staff-bonus-scheme-after-strong-performance/5075007.fullarticle).
[h] Immediate Media employee size was not available on FAME database (obtained from: www.immediate.co.uk/story/).
[i] Penguin Random House employee size was not available on FAME database (obtained from: www.global.penguinrandomhouse.com/wp-content/uploads/2013/06/PenguinRandomHouse_PressRelease.pdf).
[j] Steinbeis employee size not available on FAME database (obtained from: www.stp.de/en/press/single-view/artikel/steinbeis-mit-neuem-firmennamen-und-neuem-markenleitbild-weiter-auf-erfolgskurs/).
[k] Williams Lea employee size not available on FAME database (obtained from: www.williamslea.com/en/about-us).

4.2.2. Data Collection

GFTN-UK member questionnaire

A questionnaire was developed to collect data on the interaction value GFTN-UK members derive at an organisational level. To measure the exchange of knowledge between organisations, respondents were asked to identify which GFTN-UK members they: (i) exchange information with on day-to-day business matters; (ii) seek sustainable business practice information from; (iii) provide sustainable business practice information to. Each question presented respondents with a complete list of GFTN-UK members, following a roster recall method (Wasserman and Faust 1994) (please see section 4.6 Appendix). Subsequently, these data allowed us to construct quantitative measures that could be used to describe the network characteristics of each GFTN-UK member. A link to the online questionnaire, administered via Survey Monkey (www.surveymonkey.com) was distributed to GFTN-UK members by email in February 2015. A modified Dilman methodology (Dilman 1978), whereby a second email was sent to non-respondents one week after initial contact and a third reminder sent two weeks later, was followed to maximise response rates.

To establish the motivational drivers underpinning initiation of a relationship and the types of value members perceive to gain at an organisational level, all questionnaire participants were subsequently interviewed via telephone. Each semi-structured interview consisted of three open-ended questions about the participant organisation's perspectives on GFTN-UK network membership: (i) why did your organisation decide to first join the GFTN-UK; (ii) what value has your organisation derived from your membership; and, (iii) do you feel WWF are helping you achieve your objectives, fulfilling their role as facilitator? Permission was obtained to record

the interviews, which lasted a mean of 12 minutes. Informed consent was sought from the GFTN-UK members prior to participation in the study. The participants were advised of their right to terminate involvement at any time and assured that their responses would be anonymised.

Prior to being launched, both the questionnaire and the semi-structured interview script were piloted with non-GFTN-UK member organisations with experience of conservation NGO-corporate partnerships. The final questionnaire and semi-structured interview content were agreed with the GFTN-UK manager and the University of Kent School of Anthropology and Conservation Research Ethics Committee.

Content analysis

One of the primary goals of the network is to bring about improvements in the timber trade, so organisational level outcomes were assessed by examining GFTN-UK members' sourcing of sustainable products. We evaluated the extent to which members' consumption of certified material had changed (positively or negatively) since first joining the network, through content analyses of the annual GFTN-UK member reports which are publicly available online (www.gftn.panda.org). We focused on two of the five categories of forest products GFTN-UK members are required to report on (Category 1 and Category 5), as these provide the best indication of whether, or not, WWF timber sustainability standards are being met: 'Category 1' records timber items sourced with limited knowledge about, or undesirable, forest origins; and, 'Category 5' accounts for timber items from credibly certified sources which meet the highest social and environmental standards (e.g. FSC certified material) (WWF 2010). The other three categories represent intermediate stages towards achieving more sustainable timber sourcing. For

'Category 5' products, members were considered to have: (i) 'improved' their sourcing if there was a >5% increase in the percentage of their timber products from certified sources between their first and 2014 reported figures; (ii) 'deteriorated' if there was a decrease of <5%; or, (iii) 'not changed' if still within 5%.

In terms of wider societal outcomes, we investigated whether members attained external certification (e.g. FSC or Programme for the Endorsement of Forest Certification [PEFC]), a commonly used proxy used to measure the success of forest certification programmes (Auld 2008). Determining causal relationships between actions and environmental changes is difficult due to the numerous external variables and long time frames that can potentially impact upon eventual outcomes (Mandarano 2008; Conley and Moote 2003). To try to overcome this and examine the effectiveness of the network, we compared the outcomes associated with GFTN-UK member organisations ('treatment' group) to a counterfactual situation with no intervention (c.f. Ferraro 2009; Ferraro and Pattanayak 2006). A sample of UK registered non-GFTN-UK companies ('comparison' group) was therefore constructed to determine the extent of certification within the same business industries as corporate GFTN-UK members, using a quasi-experimental design with judgmental matching (Bamberger et al. 2009). Using the Financial Analysis Made Easy (FAME) database (www.fame.bvdinfo.com), matches were made on the basis of Standard Industry Code (SIC) and staff headcount, the latter being acknowledged as an appropriate proxy for organisation size (Merson 2016). For each GFTN-UK member, we selected the two comparison group companies with staff headcounts immediately larger and smaller than the treatment organisation.

Searches for external certification were conducted using public search tools for both the WWF approved FSC scheme (http://info.fsc.org/certificate.php), as well as the

similar PEFC scheme (http://www.pefc.org/find-certified/certified-certificates). For the GFTN-UK members, we assessed when certification was achieved in relation to membership tenure, as participation rules encourage certification to be achieved within five years of an organisation joining the network (WWF 2010). We noted whether FSC certification was obtained: (i) not at all; (ii) before joining GFTN-UK; (iii) within five years of membership; or, (iv) after five years of membership.

4.2.3. Data analysis

To examine the exchange of knowledge between GFTN-UK members as an organisational outcome, we used social network analysis. Social network analysis quantifies the socially meaningful interactions that occur between network members (Prell et al. 2009; Guerrero et al. 2013); in this case, data derived from the GFTN-UK member questionnaire on both day-to-day and sustainable business practice interactions between organisations. Data on these two forms of knowledge exchange were combined to form one network.

High levels of interconnectedness between partners in a network (also referred to as network density), enables good communication flow with little distortion of knowledge (Coleman 1988; Sandström and Carlsson 2008; Bodin and Crona 2009). However, if this density is too concentrated around a few key players (displaying high network centralisation), innovation can be restricted (Newig et al. 2010; Sandström and Carlsson 2008; Sandström and Rova 2010). Network diversity is characterised by connections between different types of organisations (e.g. timber, retail and construction GFTN-UK member categories) and also promotes innovation (Newig et al. 2010; Sandström and Carlsson 2008; Holt et al. 2012), but collective action is more easily mobilised within homogenous networks (Sandström and Carlsson 2008).

In other words, network members of the same organisation type are more easily able to respond as a group (e.g. committing to a particular sustainability standard or establishing environmental norms) because knowledge flow is quicker, but diverse networks have a greater capacity for generating innovative solutions to complex issues (such as sustainability).

The questionnaire data were imported into UCINET 6 (Borgatti et al. 2002) for the social network analyses. The data were symmetrised, assuming that missing values were zeros, as well as all relationships were binary (present or absent) and undirected (i.e. only one respondent is needed to confirm relationship presence). All network measures were defined at the level of the individual GFTN-UK member organisation, consisting of: (i) density (probability that a tie exists between two random members); (ii) average degree (average number of ties each member has); (iii) network size (raw number of ties a member reports); (iv) External-internal (EI) index (diversity of connections; links with organisations of a different member category); (v) Freeman's betweenness centrality (the extent to which members dominate communication flow, by holding central positions); and, (vi) eigenvector centrality (power as a function of members' connections to powerful members, i.e. central players).

We used the UCINET t-test function to understand differences in the key network characteristics of GFTN-UK members. To distinguish organisations by particular characteristics, partitions were assigned using median scores to describe members as: (i) certified versus non-certified; (ii) having improved sourcing versus no change/deteriorating; (iii) advocate versus standard organisation; (iv) higher (>£342 million worth of net assets for 2014) versus lower income; (v) higher (>63 Klout score for April 2016) versus lower social capital; and, (vi) longer (>14 years) versus shorter

membership periods. We were interested in the Klout score because social capital is a catalyst for influence (Solis and Webber 2012), so it might distinguish GFTN-UK members holding powerful network positions, independent of their financial capacity. Differences between the network characteristics for four of the five different types of GFTN-UK members (retail, paper, construction and timber) were assessed using UCINET ANOVAs. All standard errors and significance were calculated from 10,000 random permutations.

Pearson chi-square tests were used to evaluate differences between the certification status (FSC and PEFC) of corporations within GFTN-UK and our counterfactual comparison group. Qualitative interview data were processed using thematic content analyses with deductive approaches (Burnard et al. 2008). Recurring themes and domains were identified and coded from the transcripts, guided by a predefined conceptual framework (see Figs. 1 & 2).

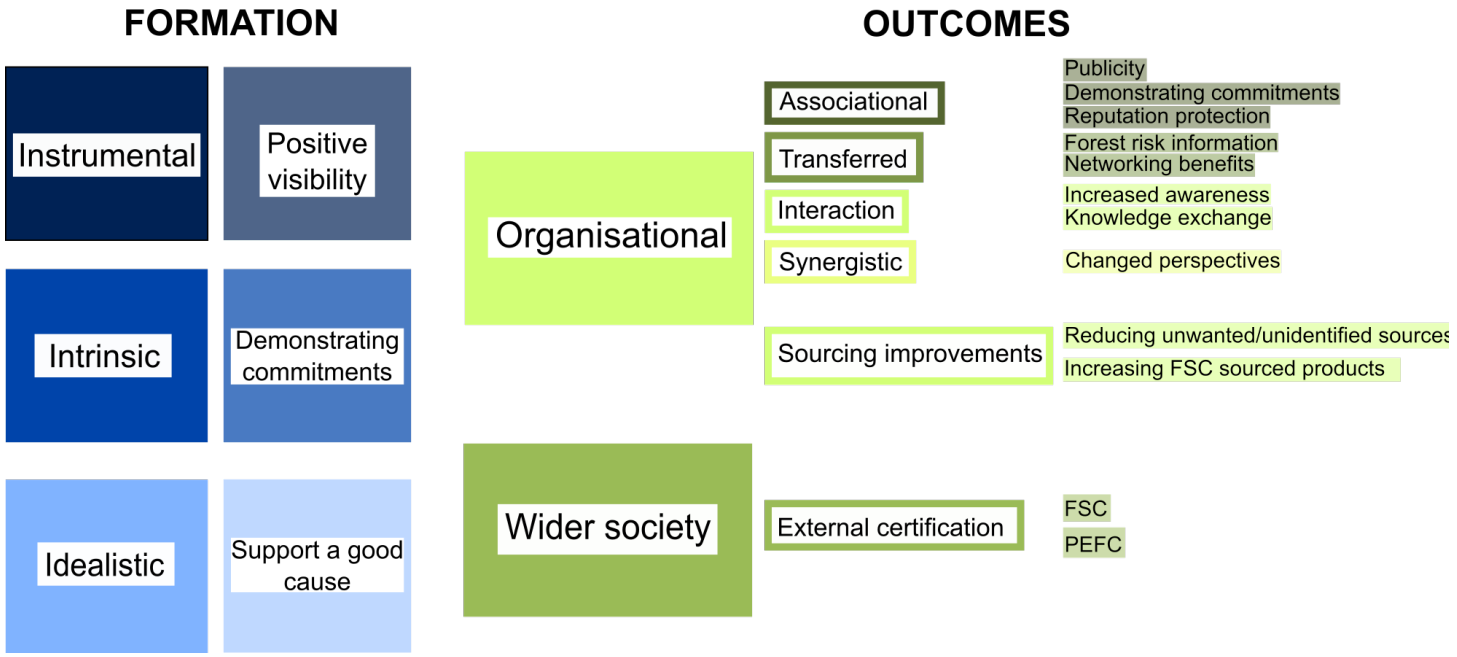


Figure 4.2: Adapted conceptual framework (Figure 4.1) highlighting the major results from this chapter, describing the formation (blue) and outcomes (green) stages of a cross-sector collaboration, as derived from interviews with members of the Global Forest and Trade Network (GFTN-UK). The formation stage consisted of three potential motivational drivers for initiating GFTN-UK membership (instrumental; intrinsic; idealistic), within which three major domains were identified (positive visibility; demonstrating commitments; support a good cause). The outcomes stage encompasses changes induced by collaborations. At the

organisational level, perceived value was categorised into four types (associational; transferred; interaction; synergistic), the major domains of which are indicated in the same font colour.

4.3. Results

Questionnaire data were obtained from 15 GFTN-UK members (65% response rate), and telephone interviews were conducted with 14 respondents (58% response rate; one organisation managed the interests of two members).

Formation stage: motivations for initiating GTFN-UK membership

Most members interviewed (n= 7) reported intrinsic motives for joining the GFTN-UK (Table 4.2), indicating that corporate environmental responsibility was an inherent component of their organisational identity. Three organisations became members because a parent or partner company were, or had previously been, part of the network. All expressed similar sentiments:

> *"… it made sense for* [new company] *to join in their own right, and it's quite typical that operating companies are members in their own rights because they are independent businesses."*

and:

> *"…we saw the benefits whilst we were members under* [parent company] *so we wanted it under our own right."*

and:

> *"…when we became* [new company] *we joined* [GFTN-UK] *as them, although we've been involved with WWF for about 20 years."*

Table 4.2: Summary of the motivational drivers underpinning initiation of Global Forest and Trade Network UK (GFTN-UK) membership, the formation stage, according to interview data (n= 14). Each row represents an interviewee and ticks indicate a reference to one of three pre-identified themes during interviews: instrumental; intrinsic; or, idealistic (Austin and Seitanidi 2012a).

GFTN-UK membership category	Motives for engaging		
	Instrumental	Intrinsic	Idealistic
Retail		✓	
	✓	✓	
Construction	✓		
		✓	
		✓	
		✓	
Paper		✓	
			✓
		✓	
	✓		
Timber	✓		
	✓		
Other	✓		

Four interviewees referenced encouragement from senior management, or other influential staff members, as a primary reason for joining GFTN-UK:

> *"…our CEO at the time…was very interested in the environmental side of things and wanted to make sure that we were doing the right thing."*

and:

> *"…first of all, sustainability is at the heart of* [our] *principles…it was quite clear we were significant users of timber…aligning ourselves with WWF was something people in the business felt quite strongly about, and that it would be a good idea to nail our colours to the mast…"*

and:

> *"We've got a very deeply ingrained sustainability ethos at our business that goes all the way back to our founder. It's something that has run through the business for many years, and it's one of our USPs just to be the most sustainable developer and contractor."*

One participant was unaware of the circumstances that prompted membership initiation upon first asking, but later remarked:

> *"…we have a longstanding relationship with WWF, so I think it would be more incongruent if they* [member name] *were not a member of GFTN."*

Six respondents expressed instrumental motives for joining the network, such as to achieve a particular organisational need or ensure organisational survival (Table 4.2). For one member, GFTN-UK membership allowed:

> *"…access to a lot of the other members who are actually timber producers, to make them aware that the timber we supply in the UK is all fully certified and sustainable."*

Positive visibility was particularly important. Four of the six said that external pressures were influential drivers for membership initiation. Two interviewees specifically referenced high-profile NGO campaigns at the time of joining. For example:

> "…*there was a reasonable amount of NGO activity around some of the high profile products we supply (like plywood), so it was a measure to say look, we're doing something about your concerns…"*

and:

> "*…10 years ago there was lots of illegal timber floating around, so it was probably good for* [us] *to come on board…and have the backing of GFTN."*

One construction company was prompted to become a member because of bad publicity they had received:

> *"There was a lot of bad publicity going back eight or nine years, about how* [we] *were helping to sponsor the illegal forest trade…and as poor as that was, it became a focal point for the whole business. We needed to improve."*

Only one participant, articulated idealistic motives for engaging (Table 4.2), commenting that they joined:

> *"Just to be seen more than anything to be supporting an important cause."*

This same interviewee was the only one that reported a personal connection to the GFTN-UK manager and, because of this, they said:

> *"…so I already had an understanding of what they* [GFTN-UK] *did, and I just felt that the time was right. I have been with* [company] *for almost six years now, and it's always been on my list of things to do."*

Outcomes stage: organisational values members derive from GFTN-UK

Nine members interviewed referenced the associational value of their membership (Table 4.3), within which three major domains were identified: publicity; reputation protection; and, demonstrating commitments to key stakeholders. The majority (n= 5) conveyed the importance of the publicity generated, for example:

> *"Really its association, it's almost a bit like when you're looking for a house, location, location, location, everything else massively secondary."*

For one, the publicity allowed them to assume a role they could not have otherwise fulfilled:

> *"…there aren't that many avenues which are open to us to publicly advocate… so to be able to support a big public campaign in a way which already fits in with our general business practices is ideal."*

Table 4.3: Summary of organisational outcomes of the Global Forest and Trade Network UK (GFTN-UK), represented by the perceived organisational values members derive (n= 14). Ticks indicate references to any of the four pre-identified themes during interviews: associational; transferred resource; interaction; and, synergistic (Austin and Seitanidi 2012a).

GFTN-UK membership category	**Types of value**			
	Associational	**Transferred**	**Interaction**	**Synergistic**
Retail		✓		
		✓	✓	✓
Construction	✓	✓	✓	
	✓	✓		
	✓	✓		
	✓	✓		
Paper	✓		✓	
		✓		
	✓			
	✓	✓		✓
Timber	✓		✓	
	✓			
Other		✓		

Reputation protection was recognised by four respondents, whether this was because of past experience:

> *"…they* [an environmental NGO] *wrote to our CEO…it was a bit of a spray and pray, I don't think they had any evidence to know we were buying* [unsustainable/illegal material]. *It was more a case of we are going to rattle your cage and see what happens. We actually responded by saying we're*

part of the WWF GFTN…and they responded with: that's fantastic, not: sorry for accusing you of something you obviously didn't do…there are two sides of the NGO impact."

or to pre-empt any potential reputational damage, such as:

"…lots of other NGOs will want to look at [us] *and they will make judgements about us… so I like having that NGO contact where they are looking at our fibre sources."*

and:

"Very much reputation protection obviously. We don't want to be seen to be doing the wrong thing and bringing the wrong species in."

and:

"…being part of GFTN, having them [WWF] *come in and look at our data, gives us a level of third party verification that we are doing the right thing- that the data we are reporting is as accurate as it could be and we are walking the talk."*

For some (n= 4), an association with GFTN-UK helped demonstrate corporate responsibility commitments to important stakeholders, for example:

"…it was to do with demonstrating our commitment to the environment as a responsible paper purchaser…it was part of a wider CSR strategy."

The stakeholder groups that members referenced included employees:

"[we've] *got a fairly strong brand and it's got a strong brand with its own employees…*[GFTN-UK] *helps people to pigeon hole it in some way as to why we are doing it."*

the wider public:

> *"We want to be able to report to the wider public, demonstrate that we don't just say these things, we don't just have policies, we actually do what we say we are going to do…"*

clients:

> *"*[it] *helps us when it comes to responding to requests for information from our client base…"*

and suppliers:

> "[GFTN-UK is a] *useful membership to have when we are talking to our suppliers. They are aware that we are members and hopefully that puts a little bit more pressure on them."*

The associational value respondents recognised was closely linked to the credibility of WWF, with four respondents valuing the strength of this brand. Comments included:

> "…*it's great for us to be associated with a figurehead such as WWF."*

and:

> "…*it's a globally recognised brand which adds weight to our internal argument…*"

and:

> "…*the power of the WWF brand is so strong…it's a great way of communicating that amount of work.*"

Transferred value was recognised by nine interviewees (n= 9) (Table 4.3), with two major domains identified: market intelligence regarding timber sourcing and networking with other GFTN-UK members. Most valued the information provided around best practice for timber procurement (n= 8); this represents a transferred

value given that knowledge exchange is one of the primary purposes of the GFTN-UK. More than 60% of the respondents that acknowledged the importance of this market intelligence were motivated to join GFTN-UK for intrinsic reasons, and viewed their membership as a way of managing external risks within or beyond their industry, pre-empting any potential compromising reputational situations. Some expressed the general value of the advice provided, for example:

> *"...to ensure that any of the material that we use within the business does come from legal and sustainable sources."*

and:

> *"…to participate and learn from the lectures or meetings to keep abreast of what's going on."*

Others specifically cited the advice GFTN-UK provided in preparation for the European Union Timber Regulations (EUTR) legislation that came into force in 2013, which allowed members to position themselves ahead of more stringent reporting requirements:

> *"…before EUTR it certainly allowed our businesses to look to operate in a more controlled way in terms of sourcing timber. And the advice, through to scrutiny, that GFTN creates in that area, creates momentum to require us to think about where the timber was coming from."*

another said:

> *"…it's invaluable that we understand trends, not just in our industry but in other industries related to timber issues. So that we can flag anything early on, we can pick it up within the business and nip any issues in the bud before they become a problem….make sure we are minimising our risk and complying with EUTR."*

and another remarked:

> *"…they* [WWF] *facilitated quite a lot of information around the new EUTR that helped us at that stage understand what we did or didn't need to do."*

Five valued the networking benefits GFTN-UK offers three-quarters of which were motivated to join the network for intrinsic reasons (Table 4.3). This represents a form of transferred value because members conveyed a link to increased business opportunities. Respondents expressed sentiments such as:

> "…*work with like-minded businesses…"*

and:

> "…*increase your contacts within other businesses…"*

and:

> "*access the other members who are actually timber purchasers."*

and:

> *"…the whole network that WWF provides us, pan-industry, is also really valuable, so being able to talk to other people…"*

One member went further and said:

> "[we are] *always looking for opportunities to meet other like-minded organisations to see if there can be opportunities to collaborate, but also from a sales perspective, which is what makes business go around, opportunities to network with companies that understand your philosophy and your product."*

Questionnaire data on knowledge exchange between GFTN-UK members showed that three of the five respondents that valued networking benefits (described above) held the most central positions within the network. We also found that those with a

higher income had significantly larger networks at their disposal (t=4.24: p= 0.026; Figure 4.3), which were better connected (t= 2.79; p= 0.008), and occupied significantly more central positions (eigenvector centrality: t= 0.79; p= 0.008) than members with a lower income. There were no differences in the network characteristics of those with longer versus shorter membership periods, or those with a 'high' or 'low' Klout score.

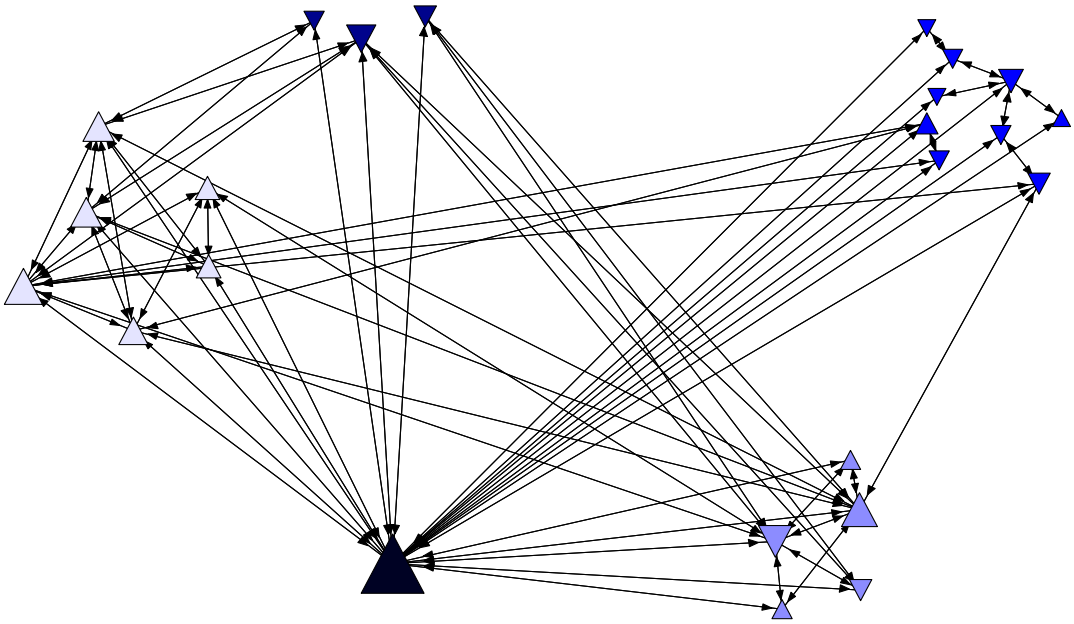


Figure 4.3: Social network diagram depicting knowledge exchange between members of the Global Forest and Trade Network UK (GFTN-UK), an interaction value outcome gained at the organisational level. Symbol colours denote GFTN-UK member category (from light to dark: retail; construction; paper/printing; timber; other), shape denotes whether members have a high (upward pointing triangle) or low income (downward pointing triangle), and size indicates the total network size.

Differences were evident in the network characteristics across different types of GFTN-UK members: (i) average degree (F= 11.52; p<0.001); (ii) network size (F=

20.06; p<0.001); (iii) EI (F= 8.10; p<0.001); (iv) Freeman's betweenness centrality (F= 547.66; p<0.001); and, (v) eigenvector centrality (F= 15.28; p<0.001). Paper/printing companies exhibited significantly less well-connected networks than construction (t= 2.84; p= 0.005); retail (t= 5.85; p<0.001); and timber (t= -2.34; p= 0.016) members. Retail companies had significantly better-connected networks than construction members (average degree: t= 2.17; p= 0.026), and reported significantly more knowledge exchange connections than paper/printing organisations (t= 6.27; p<0.001). Timber members exhibited the greatest network diversity and interacted with significantly more organisations of a different member category than: paper (t= -4.94; p= 0.004); construction (t= -3.51; p= 0.018); and, retail (t= -5.88; p= 0.007) organisations. Retail members occupied significantly more central positions than paper/printing companies (Freeman's betweenness: t= 3.41; p= 0.014), and paper/printing companies had significantly less eigenvector centrality than construction (t= 0.68; p= 0.008); retail (t= 1.40; p<0.001); and, timber (t= -0.52; p= 0.022) members.

Interaction value was recognised by four interviewees (Table 4.3). One mentioned access to NGO expertise:

> *"…it's difficult for us to be a specialist in all areas, and responsible sourcing and procurement of timber is something all firms should be doing but it's* [GFTN-UK] *a good point of advice and leadership."*

Others expressed an increased level of awareness around conservation issues, such as:

> "[GFTN-UK has] *made me more aware of illegal logging and deforestation and it's given me an insight into species and botanical names…"*

and:

> *"I'm a lot more aware of what's behind the whole paper and timber industry and where it all comes from."*

Another valued the information provided, but offered a suggestion:

> *"My feeling is that it's good we have these information meetings but maybe we need working groups as well. Sustainability is very frustrating world- we all want to actually do something."*

One benefited from the informal networking benefits GFTN-UK facilitated via member meetings, but not for the potential business opportunities as previously discussed. For example:

> "…*those forums always help probably on the softer side as well. I can sit there with some of the other groups and go 'sometimes this is hard work'…not feeling that we are alone sometimes in those struggles.*"

Synergistic value was identified by two organisations (Table 4.3), both of which initially joined GFTN-UK for instrumental reasons. Respondents said their experience with the network had changed their view of NGOs; considered synergistic because of the long-term value generated as a result. One said:

> "*we don't work with many NGOs in the same way, to be honest, so we have quite a useful dialogue with* [GFTN-UK manager] *on the subject."*

and another:

> "…*my role is purely commercial, so I was quite sceptical as to why NGOs exist before being introduced to it* [GFTN-UK], *and I have to say it has probably changed my mind on why they exist, having seen how pragmatic WWF seem to be in engaging big businesses, whereas some of the other NGOs don't seem to do that."*

Outcomes stage: GFTN-UK member progress in sourcing FSC certified material

In 2010, 56% (n= 9) of members procured less than 1% of their forest products from 'unknown or unwanted sources', with two acquiring 5% or more of their products from Category 1 sources (Table 4.4). Data availability for 2014 was more limited. Only two members (12.5%) provided information, both of which were below 1%, and one figure pertained to the improvement of the member that reported the highest figure in 2010 (Canal and Rivers Trust; see Table 4.4).

Of the 19 members required to report annually on the status of their forest product sourcing, 47% (n= 9) showed improvements meaning that, since joining GFTN-UK, they acquire more than 5% of their timber products from certified sources. An additional 16% made no change (n= 3), and 37% (n= 7) source fewer forest products from sustainable sources now compared to when they first joined the network (Table 4.4). We found no significant differences between whether members had 'improved' their sourcing of FSC material, or 'not changed'/'deteriorated', and any of the network measures assessed.

Outcomes stage: GFTN-UK member attainment of external certification

Many (63%; n= 15; Table 4.5) GFTN-UK members achieved FSC certification within five years of being a member of GFTN-UK network. PEFC certification was less

prevalent (37%; n= 9; Table 4.5). For non-GFTN-UK companies, 15% (n= 13) were FSC certified and 13% (n= 11) held PEFC certificates (Table 4.6). GFTN-UK members were nine times more likely to be FSC certified than non-members (X^2= 21.05; d.f.= 1; p<0.001), as well as five times more likely to hold PEFC certificates (X^2= 8.75; d.f.= 1; p= 0.003).

Table 4.4: Summary of organisational outcomes of the Global Forest and Trade Network UK (GFTN-UK), measured by the sourcing of sustainable forest products by members (n= 24). Information was obtained from annual member reports (WWF 2015b) unless otherwise stated in footnotes. Members were considered to have: 'improved' their sourcing if there was a 5% or more increase between their first and 2014 reported figures; 'deteriorated' if there was a decrease of 5% or more; or, 'not changed' if within 5%. Shading highlights advocate organisations who are not required to report relevant data. Blanks indicate that the required data was not available and NA indicates any year that an organisation was not a GFTN-UK member.

GFTN-UK membership category	Member name	Volume of forest products purchased from FSC certified sources (%)					Overall improvement in sourcing	Volume of forest products from unknown sources (%)				
		2010	2011	2012	2013	2014		2010	2011	2012	2013	2014
Retail	Argos	25	20		22	13	Deteriorated	0.3	0.1			
	Boots	62	53	67	48	83	Improved	0.1	0.2			
	Co-operative	94	94		93		No change	0.0	0			
	Homebase		72		72	69	No change		0.3			
	J Sainsbury	81	73	82	80	74	Deteriorated	4.6				
	Marks & Spencer	59	66	73	73	71	Improved	4.0	9.0			
Construction	Canal and River Trust	69		86	97	2	Deteriorated	12.2	12.2		0.8	0.3
	Carillion	69	48	50	8	10	Deteriorated	3.8	1.7			
	Lend Lease	93	96	82	97	87	Deteriorated	1.0	0.9			
	Network Rail	76	88	98	40[a]		Deteriorated	0.0	0		50.0[a]	
	Redrow Group	58	58	62	58	60	No change	0.8	0.8	0.3	0.3	0.2
Paper/printing	Immediate Media	NA	NA	64	69	71	Improved	NA				
	MBNA	79	71	82	98		Improved	0.0	1.0			
	Office Depot	3	4		19	39	Improved	3.8				
	Pearson Group	44	56	21	28	5	Deteriorated	6.7	2.0			
	Penguin Random House	NA	NA	NA	NA		Yet to report	NA				NA

GFTN-UK membership category	Member name	Volume of forest products purchased from FSC certified sources (%)					Overall improvement in sourcing	Volume of forest products from unknown sources (%)				
		2010	2011	2012	2013	2014		2010	2011	2012	2013	2014
	Polestar	9	26	20		18	Improved	0.0	0.0			
	Pureprint	94						0.7				
	Steinbeis	NA	NA	NA	NA	NA		NA				NA
	Williams Lea	81	83	79	80	80	No change	2.0	2.0	9.0		
Timber	Nobia		35	50	83	76	Improved		0.0			
	Saint-Gobain		65	64[b]	61[c]	72	Improved		1.0	0.0	1.0	
	Travis Perkins	61	60	57	57	72	Improved	5.0	4.0			
Other	Forest Enterprise											

[a] Network Rail did not publish a GFTN-UK member report for 2014, but a pie-chart is shown in their 2013/14 Sustainability update, which shows that less than half of products are FSC certified, and more than half of pie chart is from 'limited knowledge of source'.
[b] Saint-Gobain did not publish a GFTN-UK member report for 2012, figure provided within Sustainable Development Review 2012.
[c] Saint-Gobain did not publish a GFTN-UK member report for 2013, figure provided within Corporate Social Responsibility Review 2013.

Table 4.5: Summary of wider societal outcomes of the Global Forest and Trade Network UK (GFTN-UK) represented by attainment of certification by GFTN-UK members. Forest Stewardship Council (FSC) and Programme for the Endorsement of Forest Certification (PEFC) certificate information sourced from www.info.fsc.org/certificate.php and www.pefc.org/find-certified/certified-certificates respectively.

GFTN-UK membership category	Member details		FSC certification information				PEFC certification information
	Member name	Member since	Certified prior to joining	Certified within 5 years	Certified more than 5 years	Not certified	Certified
Retail	Argos	2009	✓				✓
	Boots	1992				✓	
	Co-operative	1996				✓	
	Homebase	1996			✓		✓
	J Sainsbury	1995				✓	
	Marks & Spencer	2004		✓			
Construction	Canal and River Trust	2002				✓	
	Carillion	1997			✓		
	Lend Lease	2000			✓		
	Network Rail	1996				✓	
	Redrow Group	2003				✓	
Paper/printing	Immediate Media	2013				✓	
	MBNA	2004				✓	
	Office Depot	1995			✓		✓
	Pearson Group	2004				✓	
	Penguin Random House	2013			✓		
	Polestar	2001			✓		✓
	Pureprint	2001	✓				
	Steinbeis	2014	✓				✓

GFTN-UK membership category	Member details		FSC certification information				PEFC certification information
	Member name	Member since	Certified prior to joining	Certified within 5 years	Certified more than 5 years	Not certified	Certified
	Williams Lea	2006		✓			✓
Timber	Nobia	1995			✓		✓
	Saint-Gobain	1998			✓		✓
	Travis Perkins	2003		✓			✓
Other	Forest Enterprise	2001			✓		

Table 4.6: Summary of wider societal outcomes of the Global Forest and Trade Network UK (GFTN-UK), represented by attainment of certification by GFTN-UK members, compared with non-member corporations. Non-members were matched by primary Standard Industry Code and staff headcount, with two comparison group companies selected for each GFTN-UK member. Forest Stewardship Council (FSC) and Programme for the Endorsement of Forest Certification (PEFC) certificate information sourced from www.info.fsc.org/certificate.php and www.pefc.org/find-certified/certified-certificates respectively.

GFTN-UK membership category	Member name	Member certification status		Competitor	Competitor certification status	
		FSC	PEFC	Name	FSC	PEFC
Retail	Argos	✓	✓	Dunelm Group		
				Ikea		
				Howden Joinery Group		✓
				DFS Furniture		
	Homebase	✓	✓	Kingfisher		
				Wilko Retail		
				Screwfix Direct		
				Hill & Smith Holdings		
	Boots			Lloyds Pharmacy		
				Superdrug Stores		
				LRowland & Company (Retail)		
				Paydens Group Holdings		
	Co-operative			Tesco		
				WM Morrison Supermarkets		
				Waitrose		
				Asda Stores		

GFTN-UK membership category	Member name	Member certification status		Competitor	Competitor certification status	
		FSC	PEFC	Name	FSC	PEFC
	J Sainsbury			Tesco		
				WM Morrison Supermarkets		
				Waitrose		
				Asda Stores		
	Marks & Spencer	✓		Asda Stores		
				John Lewis	✓	✓
				Next		
				Debenhams	✓	✓
Construction	Carillion	✓		Kier Group		
				Laing O'Rourke		
				Barratt Developments		
				BDW trading		
	Redrow			Keepmoat Regeneration		
				Bellway homes		
				The Miller Group (UK)		
				Advance Construction (Scotland)		
	Network Rail			The Go-ahead group		
				First Great Western		
				First Scotrail		
				Stagecoach South Western Trains		
	Lend Lease	✓		GF Group		
				Barnbrook		
				Sadlers & Sons (Ipswitch) Realisations		
				T Richard Jones (Betws)		

GFTN-UK membership category	Member name	Member certification status		Competitor	Competitor certification status	
		FSC	PEFC	Name	FSC	PEFC
Paper/printing	Immediate Media			Hallmark Cards	✓	
				Eagle Spain Holdco 2013		
				Vancouver Midco 2		
				Euromonitor International		
	MBNA			Visa Europe		
				Close Brothers		
				Intelligent Processing Solutions		
				Marks & Spencer's Financial Services		
	Office Depot	✓	✓	Cork International Consumer Products		
				James Hall and Company		
				Bunzl Retail & Healthcare Supplies		
				Musefield		
	Pearson			HM Publishers Holdings		
				Macmillan Publishers	✓	✓
				Butterworths		
				John Wiley & Sons		
	Penguin Random	✓		Reed Elsevier		
				HM Publishers		
				Wilmington		
				Harpercollins Publishers	✓	
	Polestar	✓	✓	International Greetings	✓	
				DST Output	✓	✓
				Coveris Flexibles UK	✓	✓
				Walstead Investments		

GFTN-UK membership category	Member name	Member certification status		Competitor	Competitor certification status	
		FSC	PEFC	Name	FSC	PEFC
	Pureprint	✓		Scientific Games International	✓	✓
				Worldmark UK		
				Warners (Midlands)		
				Image Data Group	✓	
	Steinbeis	✓	✓	Anton Group	✓	✓
				Augustus Martin	✓	✓
				CFH Docmail		✓
				Services Graphics		
	Williams Lea	✓	✓	Menzies Distribution		
				Surridge Dawson		
				Arco		
				H Young Holdings		
Timber	Nobia	✓	✓	ITW		
				Ultra Electronics		
				Airbus Defence and Space		
				Voith Industrial Services		
	Saint-Gobain	✓	✓	Jewson	✓	✓
				Novoferm Europe		
				Topps Tiles		
				Palgrave Brown UK		
	Travis Perkins	✓	✓	DS Smith		
				TJX UK		
				Sportsdirect.com Retail		
				Wickes Building Supplies		

Social network analyses of knowledge exchange between GFTN-UK members revealed that FSC certified members held significantly more central positions (Freeman's betweenness centrality: t= 7.98; p= 0.008; Figure 4.4). They were also characterised by larger (size: t= 1.33; p= 0.028) and more diverse networks (EI index: t= 1.41; p= 0.035) than non-FSC certified members. However, those with FSC certification had less well-connected networks (density: t= -1.50; p= 0.003). There were no differences in the network characteristics of members and PEFC certification status (Table 4.6).

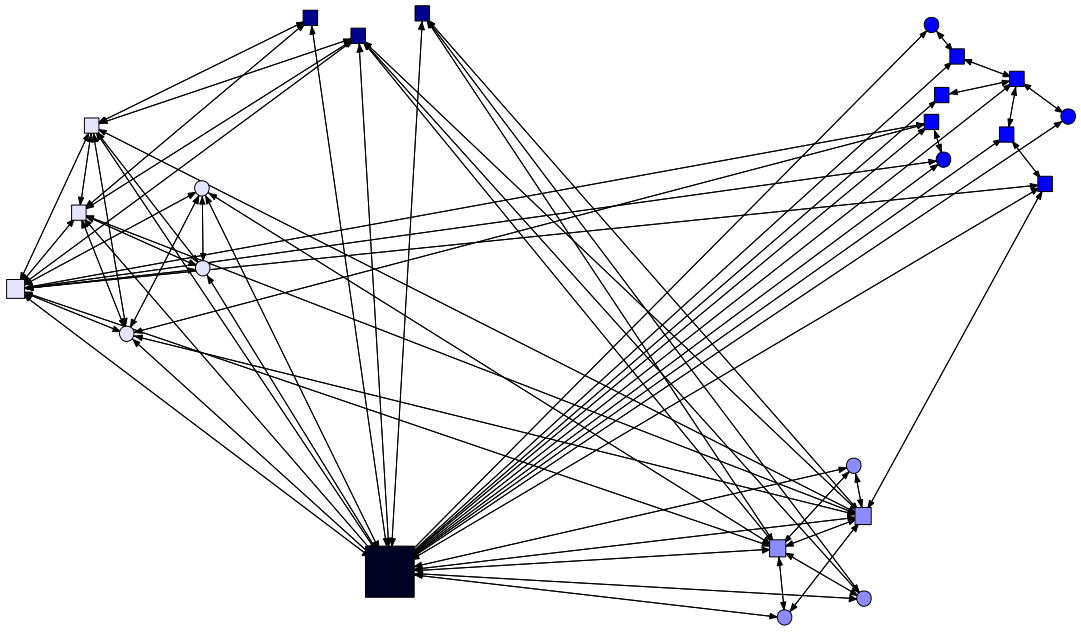


Figure 4.4: Social network diagram depicting knowledge exchange, an interaction value outcome gained at the organisational level, between members of the Global Forest and Trade Network UK (GFTN-UK). Symbol colours denote GFTN-UK member category (from light to dark: retail; construction; paper/printing; timber; other), shape distinguishes members that hold FSC certification (square) from those that do not (circle), and size indicates the Freeman's betweenness centrality of each member organisation

4.4. Discussion

Our findings provide evidence that GFTN-UK members engage in voluntary initiatives to enhance the operations of their business and generate valuable returns (strategic CSR), over and above ethical or moral motivations (altruistic CSR). The lack of idealism communicated by network members could be linked to the longstanding relationship between the forestry industry and biodiversity conservation, where commercial pressures to adopt sustainability standards have presented corporations with economic incentives to engage for some time (Boiral and Inãki 2015). Some argue that whilst strategic CSR encourages resource efficiency, it does little to confront major societal issues such as overconsumption (Dauvergne 2016). However, it is purported that greater wider society outcomes are accrued under the strategic model of CSR, because when interests are aligned, corporations are more motivated to improve their social performance (Husted and de Jesus 2006). Interviewees frequently expressed that their commitment to GFTN-UK originated from senior management, which is an important antecedent for pro-active environmental behaviour in corporations (Banerjee 2001) because it demonstrates that the link between voluntary action and economic value is recognised at a senior level (Banerjee et al. 2003). So although members participate in the network for their own benefit, this means there is greater potential to generate long-term value for conservation, as both parties are motivated to engage.

Other organisations joined GFTN-UK to attain positive visibility through an association with a reputable NGO, with many referring to pressures exerted by other NGOs. This appeared to stem from the ‘Mahogany is Murder’ campaign of the 1990s, which began in the UK with Friends of the Earth and Greenpeace, and spread to the

US via the Rainforest Action Network (RAN) (Barbosa 2015). NGOs are considered the most trusted sector of society (Edelman 2015) and engaging in a dialogue with one NGO can cushion the impact of an attack from another (Van Huijstee and Glasbergen 2007). A highly visible, positive image, improves the social legitimacy of a company's operations, enhancing their 'social licence to operate', which is particularly important for natural resource-based companies who have poor credibility for managing biodiversity issues (Boiral and Inãki 2015). Changes in global markets have heightened the importance of legitimacy (Brønn and Vidaver-Cohen 2009) and, in addition to being an important motivator for initial engagement 20 years ago, positive visibility continues to be an important outcome for GFTN-UK members today, either for protection against NGO campaigns or to convey positive images to stakeholders. GFTN-UK membership is used as a vehicle to communicate commitments to key organisational stakeholders, legitimising their activities in the process (Brønn and Vidaver-Cohen 2009). Consumer facing organisations are more likely to implement environmentally proactive initiatives, even when there are no obvious strategic business benefits (i.e. cost reduction), due to such stakeholder pressures (Haddock-Fraser and Touvelle 2010). However, a good reputation is important for any company making sustainability claims because doing so signals to confrontational NGOs that a company is more willing, and able, to respond to their demands, making them attractive targets for activist campaigns (Baron and Diermeir 2007). The importance of external pressures exerted by activist NGOs demonstrates the need for diversity in the charitable sector because even the potential of such a threat encourages continued participation in voluntary conservation initiatives.

The most consistently recognised form of value reported by interviewees was market intelligence obtained from WWF. Contrary to other studies, which found that corporations collaborate with NGOs to reduce the cost of regulatory compliance

(Maxwell et al. 2000; Tully 2004), the new EUTR legislation was mentioned by only a few of our respondents. Instead, GFTN-UK membership offers a dialogue with WWF who provide valuable information relevant to forest risk that may otherwise be unknown. Not only does this offer corporations a 'society scan' for any impending issues that may affect them (Van Huijstee and Glasbergen 2007), it also provides the knowledge required to solve complex problems linked to the environment (Boiral and Inãki 2015). Self-regulatory mechanisms such as certification are beneficial to corporations when the threat of regulation is high (Maxwell et al. 2000), but legislative compliance was not an important outcome for GFTN-UK members. This is likely because members already met the requirements of EUTR prior to its implementation, and that the GFTN-UK programme was valued more as a means of demonstrating commitments to stakeholders, as previously discussed, and to access a reputable NGO who can divulge information on pertinent societal issues on the horizon.

Most of the members that valued the networking benefits of GFTN-UK joined for intrinsic reasons, suggesting those with a wider sustainability strategy readily acknowledge the economic benefits that can be leveraged through participation. Organisations with a higher income occupy the most powerful positions within GFTN-UK, suggesting members gravitate towards these key players for information. Although we found no link with social media prestige, those with greater financial capacity are better at receiving, and controlling, the flow of knowledge across the network.

Synergistic value was identified by only two respondents and was recognised in the form of increased long-term value potential. Good relations between corporations and NGOs can build social capital, and an increase in trust and respect affects the way in which future engagements are approached (Sasser et al. 2006). Both members that recognised synergistic value joined GFTN-UK for instrumental

reasons, demonstrating that participants engage in a learning experience, which can shift motivations from functional to sustainable through a better understanding of one another (Van Huijstee and Glasbergen 2007).

Members did not show significant progress in their sourcing of FSC products, the primary goal of GFTN-UK, but evidence elsewhere suggests this may be because participants in voluntary initiatives have already implemented changes in their environmental performance (the 'low-hanging fruit') prior to engaging (Darnall and Sides 2008). Indeed, we found members reported negligible amounts of unidentified/unwanted forest material in 2010, demonstrating an existing commitment to sustainable sourcing. Lack of improvements in sourcing could also be explained by difficulties procuring 100% FSC certified material, where demand exceeds supply, forcing members to source from a mix of certified sources (FSC and PEFC) or alternative schemes which are prevalent in other countries such as PEFC or SFI (not considered 'Category 5' products by WWF).

Significantly more GFTN-UK members were certified (by FSC or PEFC) than matched non-GFTN-UK companies. Most GFTN-UK member organisations achieved certification more than five years into their membership suggesting that, as with synergistic value, long-term value takes time to materialise in cross-sector collaborations. Therefore despite limited sourcing improvements, GFTN-UK members achieved high standard sustainability qualifications and demonstrated existing commitments to sustainable sourcing prior to joining. Primarily engaging companies who are already making positive changes allows WWF to adopt a cautious approach to relationships with corporations, protecting themselves from reputational damage (Burchell and Cook 2011). It is important for WWF to retain their strong brand given this was highly valued by members interviewed.

Members with stronger sustainability credentials (external FSC certification) hold more central positions within the knowledge exchange network and have larger, more diverse, sets of contacts with which they share knowledge. Larger networks are more resilient (Newig et al. 2010), and heterogeneous networks are useful for seeking key resources (Arya and Lin 2007) particularly knowledge (Newig et al. 2010; Reagans and McEvily 2003). Our results suggest that the central players within GFTN-UK are better informed and can disseminate sustainability norms more quickly through more resilient networks.

In summary, reputation was a key motivational driver of GFTN-UK membership initiation, but this was not to 'greenwash' an image; a common criticism of corporate interactions with NGOs (Lyon and Maxwell 2011). Instead, membership appears to serve as a mechanism for companies who already acknowledge the importance of CSR, to demonstrate existing commitments and cushion themselves from attacks from confrontational NGOs. Organisational outcomes such as improvements in sourcing are more difficult to achieve for companies making efforts prior to attaining network membership, but wider societal outcomes are evidenced by the prevalence of FSC certification. Furthermore, the requirements of membership, such as verifying forest-product sources, mean that better environmental performance is induced across a wider supply chain, via the indirect control mechanisms imposed on the suppliers to GFTN-UK members (Darnall et al. 2008). It is important to consider the wider societal value generated by cross-sector collaborations, as outcomes at the organisational level may underestimate the overall impact of these relationships.

4.5. References

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4.6. Appendix

4.6.1. **Appendix 1:** Example of questionnaire distributed to members of t he Global Forest and Trade Network (GFTN-UK).

Example WWF survey

Thank-you for agreeing to take part in this survey which will take approximately 5-10 minutes to complete.

This survey explores your interactions with the other members of the Global and Forest Trade Network (GFTN), and will be followed up with a short telephone conversation about your experience as a GFTN member.

For further information please contact: Janna Steadman (js676@kent.ac.uk)
Thank you in advance for you time.

Please provide the name of the GFTN organisation you represent

Please provide your name and telephone number so we can contact you
(this information will not be shared)

Please tick this box to consent to participating in this research

◯ I consent

Example WWF survey

Business Interactions

1. How often do you interact with other members of the GFTN, regarding<u>DAY-TO-DAY BUSINESS MATTERS</u>? *Please select one option for each organisation*

	Never	Low	Medium	High	Don't know
Boots UK Ltd.	○	○	○	○	○
Canal & River Trust	○	○	○	○	○
Carillion Construction Ltd.	○	○	○	○	○
Co-operative Retail	○	○	○	○	○
Forest Enterprise	○	○	○	○	○
Home Retail Group	○	○	○	○	○
Immediate Media Company Ltd.	○	○	○	○	○
J Sainsbury plc	○	○	○	○	○
Lend Lease Ltd.	○	○	○	○	○
Marks & Spencer Group plc	○	○	○	○	○
MBNA Bank Europe Ltd.	○	○	○	○	○
Network Rail Infrastructure Ltd.	○	○	○	○	○
Nobia UK Ltd.	○	○	○	○	○
Office Depot UK Ltd.	○	○	○	○	○
Pearson plc	○	○	○	○	○
Penguin Random House	○	○	○	○	○
Polestar UK Print Ltd	○	○	○	○	○
Pureprint Group	○	○	○	○	○
Redrow Homes Ltd	○	○	○	○	○
Saint-Gobain Building Distribution Ltd	○	○	○	○	○
Steinbeis Papier	○	○	○	○	○
Travis Perkins plc	○	○	○	○	○
Williams Lea	○	○	○	○	○

Example WWF survey

Seeking Information

2. How often do you go to the other GFTN members when<u>SEEKING</u> sustainable business practice information? ***Please select one option for each organisation.***

	Never	Low	Medium	High	Don't know
Boots UK Ltd.	○	○	○	○	○
Canal & River Trust	○	○	○	○	○
Carillion Construction Ltd.	○	○	○	○	○
Co-operative Retail	○	○	○	○	○
Forest Enterprise	○	○	○	○	○
Home Retail Group	○	○	○	○	○
Immediate Media Company Ltd.	○	○	○	○	○
J Sainsbury plc	○	○	○	○	○
Lend Lease Ltd.	○	○	○	○	○
Marks & Spencer Group plc	○	○	○	○	○
MBNA Bank Europe Ltd.	○	○	○	○	○
Network Rail Infrastructure Ltd.	○	○	○	○	○
Nobia UK Ltd.	○	○	○	○	○
Office Depot UK Ltd.	○	○	○	○	○
Pearson plc	○	○	○	○	○
Penguin Random House	○	○	○	○	○
Polestar UK Print Ltd	○	○	○	○	○
Pureprint Group	○	○	○	○	○
Redrow Homes Ltd	○	○	○	○	○
Saint-Gobain Building Distribution Ltd	○	○	○	○	○
Steinbeis Papier	○	○	○	○	○
Travis Perkins plc	○	○	○	○	○
Williams Lea	○	○	○	○	○

Example WWF survey

Providing Information

3. How often do you PROVIDE sustainable business practice information to the other GFTN members? *Please select one option for each organisation.*

	Never	Low	Medium	High	Don't know
Boots UK Ltd.	○	○	○	○	○
Canal & River Trust	○	○	○	○	○
Carillion Construction Ltd.	○	○	○	○	○
Co-operative Retail	○	○	○	○	○
Forest Enterprise	○	○	○	○	○
Home Retail Group	○	○	○	○	○
Immediate Media Company Ltd.	○	○	○	○	○
J Sainsbury plc	○	○	○	○	○
Lend Lease Ltd.	○	○	○	○	○
Marks & Spencer Group plc	○	○	○	○	○
MBNA Bank Europe Ltd.	○	○	○	○	○
Network Rail Infrastructure Ltd.	○	○	○	○	○
Nobia UK Ltd.	○	○	○	○	○
Office Depot UK Ltd.	○	○	○	○	○
Pearson plc	○	○	○	○	○
Penguin Random House	○	○	○	○	○
Polestar UK Print Ltd	○	○	○	○	○
Pureprint Group	○	○	○	○	○
Redrow Homes Ltd	○	○	○	○	○
Saint-Gobain Building Distribution Ltd	○	○	○	○	○
Steinbeis Papier	○	○	○	○	○
Travis Perkins plc	○	○	○	○	○
Williams Lea	○	○	○	○	○

Example WWF survey

End of Survey

Thank-you for completing this survey. Your time is much appreciated.

To complete your contribution to this study, I will contact you by phone to ask you to complete a few short questions about your experience as a GFTN member.

If you have any queries about this, or any other aspect of the study, please do not hesitate to contact me for more information:
Janna Steadman; js676@kent.ac.uk; +447951685619

Chapter 5. Landscape-scale partnerships: an investigation into the projects of Butterfly Conservation

5.1. Introduction

Biodiversity loss is occurring 1,000 times faster than the natural background extinction rate (Pimm et al. 2014). Agricultural activity represents one of the greatest threats to global biodiversity (Maxwell et al. 2016) as changes in land-use practices result in extensive modifications to the environment (Foley et al. 2005). In the UK, farmland now dominates two-thirds of the landscape, having replaced important habitats such as lowland meadow, lowland heathland and blanket peat bog (Burns et al. 2013). Global wildlife population trends are reflected in the UK, where 60% of all species have declined since 1970, of which 31% have experienced population reductions of more than half in a five-decade period or are likely to halve within the next 25 years (Burns et al. 2013; Hayhow et al. 2016). The most threatened species, designated as conservation priorities by the UK Biodiversity Action Plan (UK BAP), have suffered population decreases of 18% between 2000 and 2010 (Burns et al. 2013). The intensive conversion of land for agriculture has resulted in patches of (semi-)natural habitat too small and isolated to sustain viable populations, and produced a landscape matrix that is increasingly impermeable for dispersing individuals (Benton et al. 2003; Opdam and Wascher 2004).

While protected area networks are the cornerstone of conservation strategies (Adams 2004), they alone cannot sustain species diversity (Rodrigues et al. 2004; Watson et al. 2014; Gray et al. 2016). Landscape-scale conservation is a well-

established sub-discipline of ecology which encompasses several advances in ecological theory that consider how spatial heterogeneity influences a range of fundamental ecological patterns and processes (Turner and Gardner 2015). The theory of island biogeography (MacArthur and Wilson 1967), metapopulation theory (Hanski and Simberloff 1997; Hanski 1998) and debates around model designs for reserves (Diamond 1975) have shaped the way in which conservation action is delivered on-the-ground. Landscape-scale conservation involves the co-ordinated management of habitat patches, often a network of smaller reserves and farmland managed under agri-environment prescriptions, for the benefit of a range of species across a large spatial area (Bourn and Bulman 2005). Whilst site-based interventions (like nature reserves) remain crucial for the conservation of some species (e.g. Boyd et al. 2008; Watts et al. 2016), linking fragmented habitat patches in the landscape, either structurally (Bennett 1990) or functionally (Davies et al. 2005), facilitates local (re-)colonisation events for species persisting as metapopulations (Feber et al. 2007; Opdam and Wascher 2004), and increases resilience against environmental pressures such as climate change (Thomas et al. 2001). In the UK, landscape-scale conservation was formally advocated by the Lawton Review (Lawton et al. 2010), which, in turn, prompted the publication of the first White Paper on the natural environment in 20 years (HM Government 2011). The White Paper contained pledges to achieve a 'resilient and ecological network across England' (HM Government 2011) and was supported by a government investment of £7.5m to establish Nature Improvement Areas and Local Nature Partnerships (DEFRA 2014).

Partnerships between stakeholders is key to facilitating collective responses to local or regional plans across a large-scale (Guerrero et al. 2014; Beever et al. 2014) and is an increasingly common feature of conservation initiatives (Reed 2008; Young et al. 2013). Partnerships are especially relevant for landscape-scale conservation

projects because many threatened ecosystems and species are found primarily on private land (Moon and Cocklin 2011; Kleijn et al. 2011). Additionally, in recent years, new governance arrangements have been developed within environmental management that seek to address the perspectives and priorities of a multitude of stakeholders (Scarlett and McKinney 2016; Alexander et al. 2016). The implementation of landscape-scale conservation in particular often involves managing areas of multi-ownership (Adams et al. 2016).

Non-governmental organisations (NGOs) are key drivers of conservation action, fulfilling significant shortfalls in public conservation funding (Halpern et al. 2006), delivering on-the-ground conservation activities, influencing public policy (Gemmill and Bamidele-Izu 2002) and generally representing the goals and values of global conservation (Igoe et al. 2009). In the UK, conservation NGOs have led the way in bringing together networks of public and private actors to undertake landscape-scale conservation (Hodge and Adams 2012). Indeed, there are a number of independent landscape-scale conservation programmes spearheaded by conservation NGOs that pre-date the government White Paper. Examples include 'Futurescapes' initiative by the Royal Society for the Protection of Birds in 2001 (RSPB 2001) and 'Living Landscapes' established by the Royal Society of Wildlife Trusts in 2008 (The Wildlife Trusts 2010). Given the international reach and relative power of conservation NGOs, it is important to understand how they function to ensure that the decisions and actions they take are as cost-efficient and effective as possible (Sutherland 2009; Armsworth et al. 2012). The strategic management literature offers useful insights into the performance of organisations from a private-sector perspective, but these can also be applied to non-profit organisations because they experience similar competitive pressures for donors, project grant funding and government approval (Hardy et al. 2003; Arya and Lin 2007).

All organisations depend on resources for survival, whether tangible (e.g. monetary or physical assets) or intangible (e.g. non-monetary or in-kind support), with the latter purported to be of the greatest value (Barney 1991; 2001). For conservation NGOs, money and appropriate management of land parcels are central to the delivery of action that links fragmented habitats across a landscape. Money is the most generic and easily replicable form of tangible resource but is nonetheless fundamentally important as it underpins the majority of on-the-ground activities (e.g. employment of staff, land management). Land parcels are harder to obtain but equally crucial. Intangible support is the most specialised form of resource (Barney 1991) and, for many conservation NGOs, in-kind donations or assistance fulfil important shortfalls in other resources. For example, partners may contribute machinery to undertake land management that would otherwise be costly to hire, or provide voluntary human capital to carry out conservation groundwork or help with funding application processes.

Network theory views organisations as embedded within an environment of complex social interactions (i.e. they must interact with other organisations operating within the same space) (Granovetter 1985). Likewise, according to the resource dependence theory, no organisation is self-sufficient and must interact with organisations within this space to obtain key resources (Pfeffer and Salancik 1978; 2003). Network and resource dependence theory are therefore often considered together (Arya and Lin 2007; Zaheer and Bell 2005), because the structural arrangement of relationships between organisations influences the capacity of a network to fulfil particular objectives, such as resource provision (Bodin and Crona 2009; Alexander et al. 2016). Studies suggest that when networks are well-connected, natural resource management goals can be achieved more effectively (e.g. better collective management of fishery resources between fishermen and

government officials; Bodin and Crona 2009). However, the extent to which key resource provision is supported by different forms of network structure has never been explored. To examine this, our first research question asked '*how do the structures of the three key resource networks that underpin landscape-scale conservation differ*?' The transfer of complex resources, such as in-kind or land support, demands a higher level of interaction between partners than the acquisition of generic resources, and are therefore likely to be supported by more complex, better connected network configurations (Reagans and McEvily 2003; Inkpen and Tsang 2005; Reed et al. 2009).

Organisations occupying superior network positions enjoy greater benefits and are more able to obtain key resources from partners than those which do not (Arya and Lin 2007). Landscape-scale conservation involves a multitude of stakeholders and understanding which type of organisations occupy the most powerful network positions can highlight potential barriers or opportunities underpinning the success of conservation efforts. Therefore the second research question posed was '*how do the network structures vary for different types of partner organisation* (e.g. *NGOs, government or universities*)?' Dependence on partner organisations for key resources can produce power dynamics within a network, as one organisation can exercise control over another by possessing a critical resource. Understanding how much, or how frequently, a partner contributes to particular activities, therefore, provides an indication of resource dependence. Consequently, our final research question was '*is resource dependence (how much a partner contributes) associated with network position?*' We examined our questions using the UK-registered conservation NGO Butterfly Conservation (BC) as a case study. BC has been actively implementing landscape-scale conservation initiatives since 2001, engaging with a variety of partner organisations to achieve their objectives (Ellis et al. 2012).

5.2. Methods

5.2.1. Study system

BC was formed in 1968, with a mission to halt and reverse the decline of butterfly and moth species in the UK (BC 2015). To deliver landscape-scale conservation, BC own and manage sites, provide advice to landowners to encourage/assist with the uptake of agri-environment or woodland grant schemes, and secure funding to undertake direct habitat management (Ellis et al. 2012). To date, direct improvements have been made to 800 hectares of habitat on 270 sites across 73 habitat networks, contributing to the metapopulation recovery of species such as *Euphydryas Aurinia* (marsh fritillary), *Cupido Minimus* (small blue), and *Boloria Euphrosyne* (pearl-bordered fritillary) (Ellis et al. 2012).

5.2.2. Data collection

Ellis et al. (2012) quantified the benefits of landscape-scale conservation for Lepidoptera, publishing evidence from 12 of their 73 projects. We used these 12 projects to identify 78 partner organisations providing BC with resources (Table 5.1). BC personnel, including the Director of Science and Policy, Head of Regions and relevant regional project managers, contributed data regarding the amount of each resource provided by every partner. Three major types of resource contributions were identified: (i) financial (cash donations attributed to specific landscape-scale conservation projects); (ii) in-kind (intangible support such as volunteer effort, grant advice and other informal interactions); and, (iii) land parcels (areas of land integrated into a BC landscape-scale conservation project, measured in hectares). As our aim was to explore the interactions between organisations rather than individuals, we excluded private (often anonymous/unidentifiable) landowners. Bodies whose sole

purpose is to award funding via competitive processes were also excluded (e.g. Biffa Award, Heritage Lottery Fund, Pori, Natur a Threftadaeth). Partners were categorised according to the type of organisation they represented: *corporations* (registered with Companies House; www.gov.uk/government/organisations/companies-house), *NGOs* (registered with the Charity Commission; apps.charitycommission.gov.uk/), *governmental agencies* (www.gov.uk/government/organisations), *universities*, or *other* (such as local community groups, action groups, voluntary organisations).

BC staff questionnaire

To quantify the resource contributions each partner made to individual landscape-scale projects, we administered a questionnaire (hereafter called the BC staff questionnaire), via email, to the relevant BC regional/project managers (please see section 5.6.1). Using tables, BC staff were asked to: (i) confirm, remove, edit or add partner names; (ii) specify the level of contribution made by each partner using five categorical bins; and, (iii) indicate any partners considered to contain 'organisational champions'. For financial contributions the categories were: 1= less than £100; 2= £100.01–£499.99; 3= £500–£999.99; 4= £1,000–£9,999.99; and, 5= more than £10,000. Land contributions were measured by area: 1= 1–50 ha; 2= 51–100 ha; 3= 101–300 ha; 4= 301–1000 ha; and, 5= more than 1000 ha. In-kind support was assessed on a five-point horizontal scale where 1= relatively little amount of support through to 5= relatively large amount of support. Organisational champions were measured as a binary response (Yes/No) and were defined as '*individuals within a partner organisation that you perceive to have been particularly crucial to your partnership working'* (please see section 5.6.1).

Table 5.1: The 78 partner organisations, broken down by type, that contributed financial, in-kind or land resources to Butterfly Conservation for 12 of their landscape-scale conservation projects: (a) indicates the total number of organisations that provide each of the three different resource types and (b) shows the number of organisations that contributed to more than one type of network.

Organisation type	a	a	a	b	b	b	b
	Financial	In-kind	Land	Financial & in-kind	Financial & land	In-kind & land	In-kind, financial & land
Non-government organisations	6	14	12	0	0	8	2
Corporations	1	2	7	0	1	1	0
Government agencies	10	15	12	1	1	1	1
Universities	0	6	0	0	0	0	0
Other	2	11	1	0	0	0	0
Total number of partners	19	48	32	1	2	11	3

Resource partner questionnaire

We used social network analysis (SNA) to assess the relationships between each of the 78 partners providing resources and every other member within the network (Provan and Sebastien 1998). A personalised questionnaire (hereafter referred to as the resource partner questionnaire) was presented to each of the 78 organisations, consisting of a list of all other partners. Respondents were asked to indicate (by ticking) which organisations on the list that they are currently working with, or have worked with, in the last five years. The resource partner questionnaires were administered using Survey Monkey (www.surveymonkey.com), with links to the online survey distributed via email to senior members of staff who were most likely to have the deepest understanding of organisational activities (e.g. Chairman, Chief Executive and Chief Operating Officer). Participants were advised of their right to terminate their involvement at any time and assured that responses would be anonymised (please see section 5.7.2).

5.2.3. Data analysis

In situations where a partner made contributions of the same resource type to a number of different BC landscape-scale conservation initiatives, the median was estimated. For example, for financial donations, if an organisation contributed a rating of '1' to one project, but '3' to another, their median financial contribution to BC landscape-scale conservation projects was rated '2'. Due to the distribution of the data, the five original categorical bins were collapsed into two categories that reflected 'high' (points 4–5) or 'low' (points 1–3) contributions.

Each of the three resources types were analysed separately. Prior to undertaking SNA the data were symmetrised, with missing values assumed to be zeros, and all

relationships considered binary (present or absent) and undirected (i.e. only one respondent needed to confirm a relationship presence). Data were analysed using UCINET 6 (Borgatti et al. 2002). A range of network measures were computed at both socio-centric (whole network) and ego-centric (individual partner) levels to establish the overall structure of the network, as well as the characteristics of individual resource partners (Table 5.2).

Density portrays the interconnectedness of a network, with denser networks supporting an increased flow of resources between partners (Coleman 1988; Hardy et al. 2003; Reagans and McEvily 2003; Sandström and Carlsson 2008; Bodin and Crona 2009; Newig et al. 2010; Sandström and Rova 2010). Ego-centric average degree considers the density of the relationships that exist between the contacts of an individual partner. Ego-centric centrality captures the extent to which network structures are organised around particular organisations, indicating the power/influence it has. Considered together, density and centralisation capture the extent to which a network exhibits high levels of activity channelled through key individuals via a hierarchy (Sandström and Carlsson 2008). Network heterogeneity describes the diversity of a network defined by the proportion of relationships occurring between different organisation types. Network theory suggests that organisations of the same type are more likely to engage with each other, rather than with those of a different type (e.g. NGOs work with other NGOs more than government agencies) (McPherson et al. 2001). This network 'homophily' facilitates easier inter-organisational co-ordination, but can stifle the circulation or creation of new ideas due to closed-off attitudes (Krackhardt and Stern 1988).

Table 5.2: Network measure definitions used to assess the relationships between Butterfly Conservation partner organisations. Socio-centric refers to the whole network structure, and ego-centric denotes characteristics of individual network members.

Network characteristic	Network measure	Level of analysis	Definition	Examples of conservation application
Cohesion	Density	Socio-centric	Density is the recommended measure of group cohesion (Blau 1977; Wasserman and Faust 1994) and is the number of relationships present relative to the total possible number (Scott 2000). Density indicates the speed with which information can flow through a network (Borgatti et al. 2013), and whilst cohesion facilitates group action, when the relationships are too dense, innovation can be inhibited (Sandström and Carlsson 2008).	Networks supporting conservation initiatives typically exhibit low levels of density, which can promote learning, and the efficient achievement of conservation goals (Pietri et al. 2015; Vance-Borland and Holley 2011), but dense networks are less innovative (Sandström and Carlsson 2008).
	Average degree	Ego-centric	As an ego-centric measure of density, average degree describes the average number of relations each network member has access to and indicates the speed with which information can flow through a network (Borgatti et al. 2013).	
	Clustering coefficient	Socio-centric	Describes the degree to which the 'neighbourhoods' within networks are organised into subsets or cliques. Quantifies the notion of '6 degrees of separation' in that individuals in a real world network typically exhibit higher clustering than random graphs of the same size (Hanneman and Riddle 2005). The weighted clustering coefficient describes the 'clumpiness' of a network by averaging the densities of 'local	Typically used in conservation from an epidemiology standpoint to determine how the arrangement of, and interaction between species populations can influence disease or infection transmission (e.g. Grange et al. 2013), but has also been used to demonstrate the first biological small-world network using species movements within the Great Barrier Reef (Kininmonth et al. 2009)

Network characteristic	Network measure	Level of analysis	Definition	Examples of conservation application
			neighbourhoods', establishing how closely connected network members are by summing the number of triads (a>b; b>c; a>c) present (Watts and Strogatz 1998; Hanneman and Riddle 2005; Borgatti et al 2013).	
		Ego-centric	The individual clustering coefficient describes the extent to which the local neighbourhood of an individual exhibits high or low levels of density (Watts and Strogatz 1998; Borgatti et al 2013).	
Centrality	Degree	Socio-centric	Centrality describes the distribution of network members across a network and whether network activity (relationships) is concentrated around a few key players (Borgatti et al 2013). Central players control the flow of resources within a network and communicate information to all other network members quickly (Becerra-Fernandez and Leidner 2014).	Low centralisation within a network establishing an urban river corridor inhibited the ability of the stakeholder group to agree on a shared vision and promote common priorities/goals (Holt et al. 2012). Identifying central individuals can aid with conservation planning through the identification of key stakeholders (Sandström and Rova 2010; Mills et al. 2014).
		Ego-centric	Describes an individual's position within a network as a function of the number of relationships they have. Central members are more exposed (i.e. the 'risk' of receiving whatever is flowing through the network) and receive greater levels of prestige/popularity (Borgatti et al 2013).	
	Betweenness	Socio-centric	Here centrality is defined by the extent to which network cohesion depends on a few key players to bridge all other relationships (i.e. key players connect other members by lying 'between' them (Freeman 1979; Borgatti et al 2013).	

Network characteristic	Network measure	Level of analysis	Definition	Examples of conservation application
		Ego-centric	As an ego-centric measure of centrality, betweenness describes the individual position of network members as a function of the number of times they sit 'between' other network members, connecting two otherwise unconnected members (Freeman 1979; Borgatti et al 2013). Having high betweenness centrality is interpreted as an organisational advantage because an individual has better control over the resources flowing through the network (Borgatti et al 2013).	Can aid with conservation planning by identifying key stakeholders (Sandström and Rova 2010; Mills et al. 2014).
Structure	EI Index	Socio-centric & ego-centric	An inverse measure of network homophily, where 1 indicates that all links are between organisations of different types, and -1 that all the links are between organisations of the same type (Krackhardt and Stern 1988; Borgatti et al 2013)	
	Effective size	Ego-centric	Effective size is a measure of structural holes, or a gap in network relationships, which is thought to generate advantage because having access to partners that are unconnected means that information redundancy is reduced (Burt 1995; Borgatti et al. 2013),	

To compare the three resource networks, we used the z-test function in UCINET. T-tests were conducted to assess differences between the network measures for: (i) the three resource types (financial, in-kind or land); (ii) high or low resource; and, (iii) whether the organisations are considered champions. Differences between organisation types (*Corporations, NGOs, Governments, Universities* and *Other*) were assessed using ANOVAs. To test for network homophily, and relate network characteristics to how much BC depends on a partner for resources, we used a Quadratic Assignment Procedure (QAP) to correlate variables from two matrices. For example, to test for network homophily we converted data on organisation type (e.g. NGO) into a matrix, with partner names occupying both rows and columns, and binary codes (1=yes, 0=no) indicating whether the two corresponding organisations were of the same type or not. Bootstrap methods were used to overcome independence violations, and significance levels ($P<0.05$) were calculated from 10,000 random permutation tests (Eveland et al. 2012).

5.3. Results

In total, we received 56 completed resource partner questionnaires (71.8%). Across the three resource networks, 84% (n= 16) of financial contributors, 69% (n= 22) of land donors, and 77% (n= 39) of in-kind partners responded. For whole network studies that are undirected, such as this, response rates of 60–70% are considered to generate robust estimates of SNA measures with <0.1 relative error (Kossinets 2006; Cronin 2016).

We found no significant differences between the socio-centric densities of financial and in-kind (Z= 1.504; p= 0.0695), financial and land (Z= 0.660; p= 0.262), or in-kind and land (Z= -1.617; p= 0.9559) resource networks. However, land donors exhibited significantly greater ego-centric average degree than financial partners (t= -4.397; p= 0.022; Figure 5.1; Table 5.3; Table 5.4). Socio-centric centralisation indices showed the in-kind network had the largest centralisation, with financial displaying the least (Table 5.3). However, ego-centric measures suggest that in-kind supporters have significantly less degree centrality than both financial (t= 1.33; p= 0.003) and land (t= -0.954; p= 0.018) partners (Table 5.4). Overall, the land donor network had the highest level of network closure, with the relationships between resource partners more densely connected and centrally arranged.

Table 5.3: Socio-centric measures of the resource networks providing financial, land and in-kind resources to Butterfly Conservation landscape-scale conservation projects. Median resource contributions were £100.01–£499.99 for finance, 101–300 ha for land and a three out of five rating for in-kind support. Organisational champions are individuals within a partner organisation perceived to have been particularly crucial to partnership working.

	Financial	**Land**	**In-kind**
Number of 'organisational champions'	4	5	3
Number of resource partners	19	48	32
Number of relationships	134	320	502
Density	39%	36%	22%
Average degree	7	10	11
Degree centralisation index	49%	52%	55%
Betweenness centralisation index	11%	12%	13%
Weighted clustering coefficient	0.61	0.58	0.46
EI Index	0.18	0.23	0.24

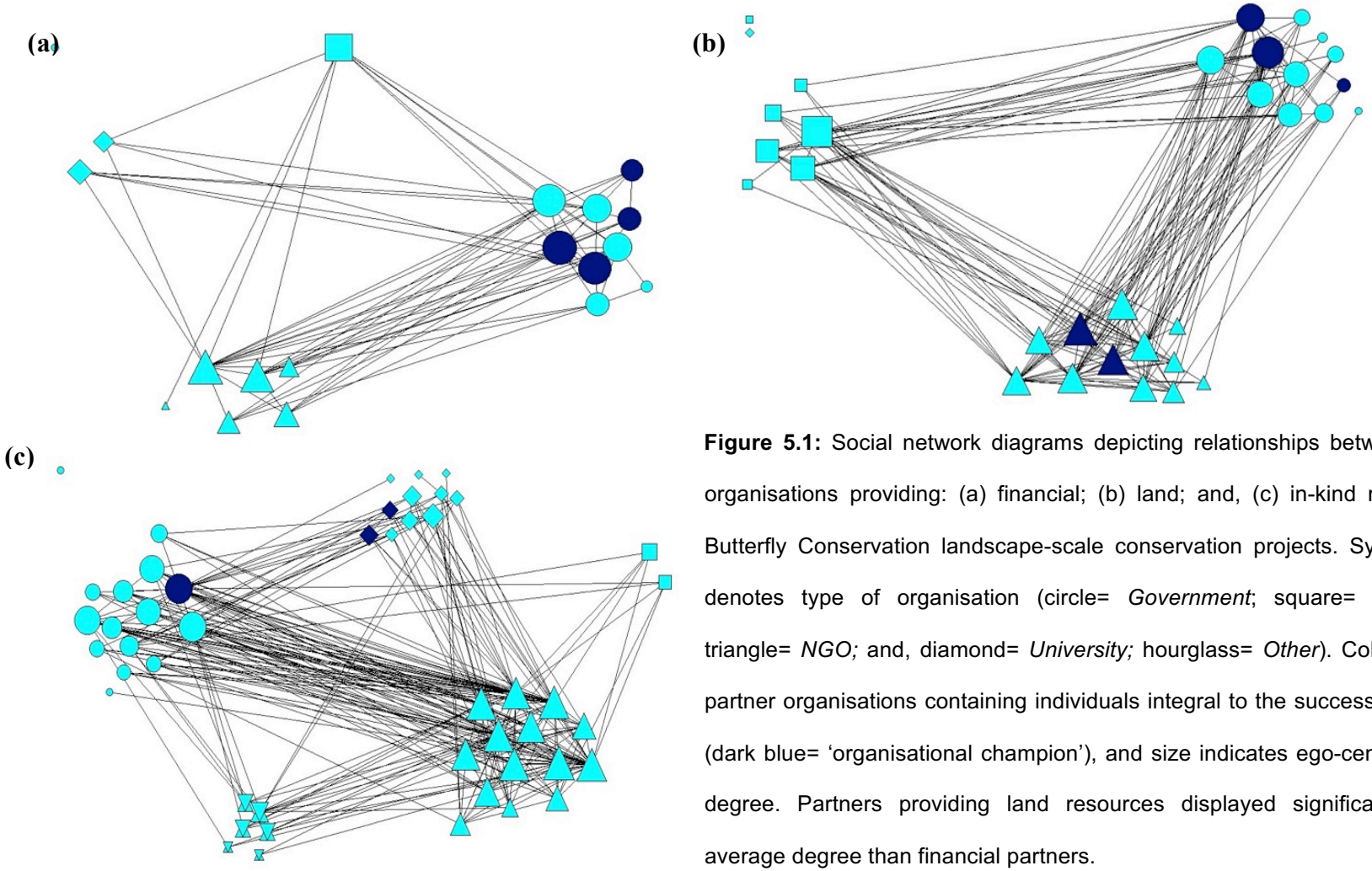

Figure 5.1: Social network diagrams depicting relationships between partner organisations providing: (a) financial; (b) land; and, (c) in-kind resources to Butterfly Conservation landscape-scale conservation projects. Symbol shape denotes type of organisation (circle= *Government*; square= *Corporation*; triangle= *NGO;* and, diamond= *University;* hourglass= *Other*). Colour denotes partner organisations containing individuals integral to the success of a project (dark blue= 'organisational champion'), and size indicates ego-centric average degree. Partners providing land resources displayed significantly greater average degree than financial partners.

Table 5.4: Matrix of pair-wise t-test results (d.f.= 1) assessing differences in ego-centric measures across resource networks (financial, land and in-kind support) for Butterfly Conservation landscape-scale conservation projects. Significant t-test values are indicated in bold where: *= P<0.05; **= P<0.01; and ***= P<0.001.

	Network measure	Financial	In-kind	Land
Financial	Degree centrality		**1.33****	**0.49***
	Average degree		**-**2.90	**-4.40***
	Effective size		-4.13	-2.19
	Clustering coefficient		0.50	-0.02
	EI		-0.67	0.10
In-kind	Degree centrality			-0.96
	Average degree			-1.94
	Effective size			1.92
	Clustering coefficient			-0.60
	EI			1.01

Socio-centric measures of network diversity suggested that, for all three resource networks, organisations are more likely to have relationships with organisations of a different type (EI index >0; Table 5.3). Ego-centric measures of diversity showed no significant differences in the diversity of partners' relationships, across financial, land and in-kind networks (Table 5.4). However, the QAP correlations suggest that partners within both the in-kind and land networks are more likely to engage with an organisation of the same type as themselves (R= 0.178; p<0.001 and R= 0.082; p= 0.049 respectively), unlike financial contributors (R= 0.028; p= 0.437). We found no significant differences in the other ego-centric structural measures (clustering coefficient and effective size) across the three resource networks (Table 5.4).

The only differences observed in the ego-centric network characteristics of resource partners across the five types of organisations, were between those that provided in-kind support (Table 5.5). NGO partners occupied the most central positions, had the densest networks, and engaged with the least diverse array of partners (Table 5.6).

Table 5.5: ANOVA results (F-statistic) assessing differences in ego-centric measures across the five types of organisations (*Government, Corporation, NGO, University* and *Other*) that contribute financial, land and in-kind support to Butterfly Conservation landscape-scale conservation projects. Significant F values are indicated in bold where: *= P<0.05; **= P<0.01; and ***= P<0.001. Superscript letters indicate degrees of freedom where: [a] indicates d.f.= 3 and [b] indicates d.f.= 4.

Network measure	Financial [a]	Land [a]	In-kind [b]
Degree centrality	0.33	0.48	**8.58*** **
Average degree	0.37	1.95	**14.26*** **
Effective size	0.48	0.26	**4.81** **
Clustering coefficient	1.45	0.87	**3.02***
EI	14.55	2.23	**14.23*** **

Table 5.6: Matrix of pair-wise t-test results (d.f.= 1) assessing differences in ego-centric network measures across the five types of organisations (*Government, Corporation, NGO, University* and *Other*) that contribute in-kind support to Butterfly Conservation landscape-scale conservation projects. Significant t-test values are indicated in bold where: *= P<0.05; **= P<0.01; and ***= P<0.001.

	Network measure	Corporation	NGO	University	Other
Government	Degree centrality	0.77	**-1.40*** **	0.60	0.64
	Average degree	3.22	**-5.73****	3.77	**4.51***
	Effective size	2.81	**-6.89** **	2.43	2.15
	Clustering coefficient	-0.24	1.26	-0.23	0.12
	EI	-2.86	**3.76*** **	**-1.54** **	0.23
Corporation	Degree centrality		**2.58** **	0.04	0.05
	Average degree		**8.31** **	-0.32	-0.75
	Effective size		**9.32** **	0.55	1.03
	Clustering coefficient		**-0.97***	-0.07	-0.36
	EI		**-7.91** **	-0.60	-2.10
NGO	Degree centrality			**1.97*** **	**2.07*** **
	Average degree			**9.27*** **	**10.57*** **
	Effective size			**9.23*** **	**9.28*** **
	Clustering coefficient			**-1.27** **	-0.93
	EI			**-5.18*** **	**-2.68*** **
University	Degree centrality				0.00
	Average degree				-0.44
	Effective size				0.48
	Clustering coefficient				-0.39
	EI				**-1.41***

For measures of resource dependence, differences in network characteristics were only apparent amongst in-kind resource providers, with partners contributing high, rather than low, levels of support displaying significantly less clustered networks (t= -0.826; p= 0.008; Figure 5.2; Table 5.7). We found no differences between resource partners considered to contain 'organisational champions' and any of the network measures assessed (Table 8). The final measure of dependence revealed that BC typically works more frequently with, and obtains a greater range of resources from, partners that occupy central network positions and have better-connected networks, although the correlations were weaker for land resources (Table 5.9). However, when financial partners contribute other forms of resources (financial in addition to in-kind and/or land), BC is more likely to seek financial support from partner organisations with less well-connected networks (Table 5.9). The strongest correlations between network measures and resource dependence were evident for in-kind support, indicating that BC seeks a broader range of resources from partners that have less diverse ranges of contacts (Table 5.9).

Table 5.7: Matrix of pair-wise t-test results (d.f.= 1) assessing differences in ego-centric network measures across partner organisations that have contributed high or lower levels of resources to Butterfly Conservation landscape-scale projects. Significant t-test values are indicated in bold where: *= P<0.05.

Network measure	Financial	In-kind	Land
Degree centrality	0.29	0.67	-0.32
Average degree	1.20	0.94	-0.19
Effective size	1.24	5.23	-1.72
Clustering coefficient	-0.57	**-0.83***	0.16
EI	-0.27	-0.19	-0.34

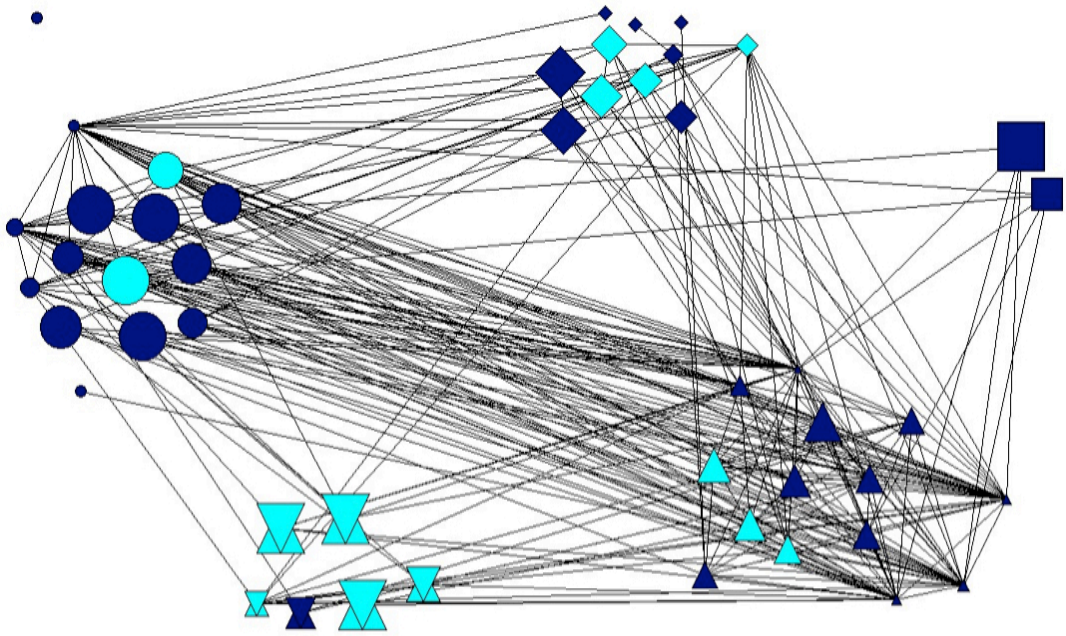

Figure 5.2: Social network diagram depicting relationships between the resource partners providing in-kind support to Butterfly Conservation. Symbol shape denotes type of organisation (circle= *Government*; hourglass= *Other*; square= *Corporation*; triangle= *NGO;* and, diamond= *University*), colour denotes levels of resource contribution (light blue= lower contributions, dark blue= higher contributions), and size indicates ego-centric clustering coefficients. Partners providing higher levels of in-kind support exhibited significantly less ego-centric clustering networks than lower contributors.

Table 5.8: Matrix of pair-wise t-test results (d.f.= 1) assessing differences in ego-centric network measures across partner organisations considered to contain 'organisational champions' (organisations containing individuals integral to the success of a landscape-scale conservation project, from the perspective of Butterfly Conservation). We found no significant differences (P>0.05).

Network measure	Financial	In-kind	Land
Degree centrality	-0.81	-0.18	-0.33
Average degree	-1.46	-0.50	-1.57
Effective size	-1.72	-1.07	-2.03
Clustering coefficient	0.45	-0.18	0.38
EI	1.89	-0.53	0.86

Table 5.9: Pearson correlation results (r) between three ego-centric network measures and: (a) the overall number of times an organisation contributed to Butterfly Conservation landscape-scale conservation projects (ranging from 1-13 times); and, (b) the number of resource networks partners contribute to (between one and all three). Significant r values are indicated in bold where: *= P<0.05; **= P<0.01; and ***= P<0.001.

Network measure		Financial	Land	In-kind
Degree centrality	a	**0.64****	**0.31***	**0.58*****
	b	**0.69****	0.27	**0.63*****
Average degree	a	**0.51*****	0.22	**0.47*****
	b	**-0.56***	0.24	**0.56*****
EI index	a	-0.13	0.01	-0.15
	b	-0.06	-0.04	**-0.36****

5.4. Discussion

The challenges associated with managing multi-purpose landscapes mean that partnership working will continue to be an increasingly important feature of conservation programmes (Reed et al. 2008; Young et al 2013). Understanding the arrangement of partners that provide key resources can identify any power imbalances and indicate the stability of an NGO's resource acquisition strategies.

Land resource partners exhibited higher density than financial supporters, and greater centrality than in-kind partners, demonstrating a better capacity for collective action. In other words, the partners providing land-based support to BC have more connections with one another, making it easier to co-ordinate activity between them. Dense networks produce higher levels of activity and are more productive because information flows more efficiently when there is trust and familiarity between partners (Reagans and Zuckerman 2001; Reagans et al. 2004; Brass et al. 2004; Sandström and Carlsson 2008; Newig et al. 2010). The financial resource network contains representatives from two county council offices, whereas the land network comprises seven council partners. However, despite the wider spatial area represented in the land resource partner network, there was a greater level of interconnectedness between partners. This suggests that, notwithstanding geographical (county) boundaries, there is a well-co-ordinated network of conservation stakeholders spread the breadth of the country (from Sussex to Durham) that can implement landscape-scale conservation goals via land holdings.

Dense networks can more easily establish management objectives (i.e. landscape-scale conservation) and reach a consensus due to fewer conflicting views

(Sandström and Rova 2010), therefore it is likely that these organisations are managing their sites towards a common objective. For BC, a well-connected network of land donors means that local knowledge that could impact sites (e.g. impending sales, changes in management, information on best practices, species distributions, or knowledge about illicit behaviour in an area) will be communicated quickly to them, and can be dealt with collaboratively with partners aware of the context and motivated to help. Co-ordination between partners is less important for the acquisition of financial resources, but the stability of these sources is imperative.

The moderate levels of density and centrality we found amongst financial partners suggest that the funding strategy of BC is not heavily dependent on a few key players, making it resilient to potential changes to the network such as the unexpected exit of members (Bodin and Crona 2009; Newig et al. 2010; Fliervoet et al. 2016). Without funding stability, NGOs cannot sustain the delivery of their vision, and diversifying revenue sources has become increasingly important in recent decades (Froelich 1999) in light of shortfalls in government expenditure on global conservation (Waldron et al. 2013).

Shared views and group consensus can enhance group cohesion, but low levels of network closure are purported to be better structures for solving complex environmental issues involving multiple stakeholders (Pietri et al. 2015). Dense interactions can circulate repetitive information and centrality can restrict learning opportunities because central players can dominate decision-making processes (Newig et al. 2010; Weiss et al. 2012; Pietri et al. 2015). We hypothesised that specialised resource networks would be more complex than financial and we found this to be true; the differences between the specialised resources were interesting. Land donors exhibited more densely connected relationships, facilitating activities

between organisations across a large area, whereas in-kind supporters were characterised by low levels of centrality, reflecting a greater innovative capacity in the face of complex environmental issues.

Social network analysis allows for the identification of key stakeholders within a conservation initiative, and we found that NGO partners hold the most important positions within the network providing in-kind resources to BC. High centrality makes NGOs the most visible and powerful network participants, with the greatest ability to facilitate or constrain the interactions between other organisations (Freeman 1979; Kim et al. 2011). The dense arrangement of relationships between NGOs indicates a high capacity for group co-ordination, potentially allowing projects to be finished more quickly (Reagans et al. 2004; Brass et al. 2004). By occupying the most central positions, NGOs have the greatest influence, access to resources and ability to establish broad objectives (Brass et al. 2004).

Many of the NGOs represented in this study are conservation NGOs with similar landscape-scale objectives to BC, meaning that project activities will reflect the values and goals of these organisations more than alternative views. Furthermore, four of the five most central positions within the land resource network are occupied by NGOs which are unlikely to relinquish ownership of land for non-conservation purposes. This means that long-term investments in sites are warranted and sustainable because drastic changes are unlikely. NGOs are thus well positioned to not only influence the over-arching objectives of landscape-scale conservation projects, but they can also implement these standards by delivering on-the-ground changes via their own land holdings. Alternatively, the prominence of NGOs in our study could be because our case study is from the perspective of an NGO, and what we have captured reflects the interactions occurring within the NGO community.

However, the prominence and relevance of NGOs to the process of landscape-scale conservation mean that such a perspective is valuable regardless of potential bias.

We found that BC receives greater levels of in-kind support from partners operating within less connected neighbourhoods, which is an advantageous structure for BC in order to acquire specialised resources. Not only do they receive less redundant information (Burt 1992; Borgatti and Foster 2003), but the un-connectedness of their in-kind partners allows BC to integrate the capabilities and knowledge of multiple organisations, paving the way for the generation of new innovative ways to achieve objectives (Hardy et al. 2003). Other than this finding for in-kind support, we found no other obvious relationships between the amount of resource BC receives from an organisation and its network position. Additionally, partner organisations considered to contain an 'organisational champion' showed no differences in their network characteristics compared to other partners, providing further evidence that BC does not rely on central, or well-connected partners for the delivery of landscape-scale projects. Therefore BC obtains their crucial resources from an array of partner organisations that enjoy a variety of network positions. Whilst BC may not acquire more resources from partners occupying particular network positions, we did find a link between network characteristics and the frequency with which BC engaged with that partner. BC works more frequently with centrally located partners for all forms of resources, suggesting strong links with the most visible and influential network members. This awards BC the benefits of engaging with powerful members of the network but avoids the drawbacks of relying on these partners for key resources (Brass et al. 2004). Land resources showed fewer correlations with network measures, which is perhaps an indication that regardless of network position, BC must partner with particular organisations that own particular habitat patches, when needed.

Landscape-scale conservation initiatives require the collaboration of multiple stakeholders across multi-functional landscapes, therefore NGOs must work to understand the formal and informal networks that support the delivery of their conservation goals. Here, a densely structured network of NGOs means that co-ordinated action, information flow, and productivity of landscape-scale conservation efforts are enhanced (Reagans and Zuckerman 2001; Reagans et al. 2004; Brass et al. 2004; Sandström and Carlsson 2008). It is only through a systematic assessment of the arrangement of key conservation partners that we can understand how best to manage our socio-ecological systems and all the stakeholders contained within them.

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5.6. Appendices

5.6.1. Appendix 1: Example of Butterfly Conservation questionnaire administered to the regional project managers of landscape-scale conservation projects. Data collected (right hand side) were the names and types of organisations that contributed, as well as a quantifiable measure of their contribution.

University of Kent Butterfly Conservation Partnership Questionnaire

Understanding Partnerships for Conservation Gain

This study explores the partnerships that Butterfly Conservation has with other individuals/organisations to achieve landscape-scale conservation goals. The data collected will help us to understand the collective contribution of partners and how network structures can influence this. We are interested in the value of the partner network as whole, as opposed to the performance of individual partners. All responses will be anonymised in subsequent publications.

This questionnaire below is sub-divided into each of the landscape-scale conservation projects led by Nigel. Under each project, there is a table for different resource types that partners can offer: (i) financial donations, (ii) land contributions (e.g. the use/renting of land for Butterfly Conservation projects); and (iii) in-kind donations (e.g. volunteer effort, office space). It would be greatly appreciated if you could work your way through the questionnaire to complete the following:

- **Confirm the names of the partners associated with each resource type under each individual project**
  *(Names confirmed at our meeting on 22nd Sept have a "✓" in the first column. Those **without** a "✓" require confirmation, as they have been identified subsequently via the BC website/literature indicated)*
- **Strike through any incorrectly assigned partners (either to the project as a whole, or the resource type) to remove them from the table(s)**
- **Add any additional partners to the table(s)**
  (Please use the extra lines at the bottom of the relevant resource type table for each individual project to add in additional partners)
- **Confirm the level of contribution each partner provides from the five options**
  (Please tick the category that best represents the level of contribution made by each individual partner)
- **Indicate any partnerships which you consider to rely solely on an individual 'champion' being present within the organisation by ticking the last column ("Champion in org").**
  (We would like to identify partnerships with organisations that are based on the presence of an individual who has played a particularly important role - a 'champion')

Thank you for taking the time to complete the questionnaire. If you have any questions or would like to talk anything through, please drop me an email or telephone call: Js676@kent.ac.uk (07951 685619).

University of Kent

Butterfly Conservation Partner Questionnaire

1. Threatened Butterfly Project

Please confirm/edit the list of partners and tick the relevant box to indicate the level of their contribution to the project. Extra space is provided to add the names of any missing partners. Please also tick the last column to identify any organisation where the partnership has been driven by an individual 'champion'.

	Financial Contribution*					
Name of partner (FUNDERS)	**Less than £100**	**£100.01 – £499.99**	**£500 – £999.99**	**£1,000 – £9,999.99**	**More than £10,000**	**Champion individual within org**
Example Government 1						
Example NGO 1						
Example Corporation 1						
Example Government 2						

	Land Contribution*					
Name of partner (FUNDERS)	**0 – 5ha**	**>5 – 10ha**	**>10 –20ha**	**>20 –50ha**	**More than 50ha**	**Champion individual within org**
Example Government 1						
Example Government 2						
Example Corporation 2						
Example NGO 2						

	In-Kind Contribution*					
Name of partner (FUNDERS)	**1 = relatively little amount of support**	**2**	**3**	**4**	**5 = relatively large amount of support**	**Champion individual within org**
Example Community 1						
Example NGO 2						
Example Corporation 2						
Example Government 3						

5.6.2. Appendix 2: Example of the resource contributor questionnaire administered to all organisations identified as partners providing financial, in-kind or land resources to the landscape-scale conservation efforts of Butterfly Conservation. The diagrams are screen shots of the questionnaire, with the opening and closing information shown on the left hand side (top and bottom respectively), and an example of the single question presented to respondents.

Example questionnaire

Social Network Survey

Thank-you for agreeing to take part in this survey, which contains ONE question and will take minutes to complete.

We would like to know about your interactions with other organisations involved in conserva UK.

This study forms part of a wider research project by the University of Kent exploring the soci between conservation groups. For further information please contact: Janna Steadman (js67

Thank you in advance for you time.

Please tick this box to consent to participating in this research

◯ I consent

Example questionnaire

Who have you worked with?

Which of the following organisations are you currently working with, or have worked with in the last 5 years?

Please tick all that apply

	Have worked with:
Example NGO 1	○
Example Government agency 1	○
Example University 1	○
Example NGO 2	○
Example NGO 3	○
Example Government agency 2	○
Example Community group 1	○
NONE OF THE ABOVE	○

Example questionnaire

End of Survey

Thank-you for completing this survey. Your time is much appreciated.

If you have any queries about this, or any other aspect of the study, please do not hesitate to contact me for more information:

Janna Steadman; js676@kent.ac.uk; +44 7951 685 619

Chapter 6. Discussion

Cross-sector partnerships led by NGOs are becoming an integral component of conservation. However, limited empirical research has been undertaken to elucidate the benefits arising from such collaborations. To date, the conservation partnership literature has typically focused on the co-management of specific socio-ecological systems, primarily coastal or freshwater resources where multiple users are linked by the need for access (e.g. river catchments, Holt et al. 2012; coastal areas, Berdej et al. 2016; watersheds, Biddle and Koontz 2014). This is in stark contrast to the wealth of knowledge centred on cross-sector partnerships from a corporate perspective, where a number of journals are dedicated to understanding the link between businesses and non-economic issues (e.g. '*Business and Society', 'Business Ethics Quarterly', 'Business Strategy and the Environment', 'Corporate Social Responsibility and Environmental Management', 'Organization and Environment*').

To begin to address this significant mismatch between the growing prevalence of cross-sector conservation partnerships and paucity of academic research exploring such collaborations, the first step I took in this thesis was to examine the partnerships occurring between UK-registered conservation NGOs and FTSE350 corporations (**Chapter 3**). My scrutiny of the types of activities occurring, the business industries involved and motivations underpinning engagement makes an important empirical contribution to what has previously been a highly anecdotal debate. The results suggest that corporations are further ahead in their appreciation of the strategic value of partnering compared to non-profit organisations in the conservation sector.

Corporate logic can often dominate collaborative relationships with NGOs (Bitzer and Glasbergen 2015), possibly due to the widespread adoption of corporate social responsibility (CSR) and the advanced way in which corporations approach their relationships with NGOs (Porter and Kramer 2002; **Chapter 3**). Environmental issues are one of many potential elements of a CSR portfolio that a business may engage with. The data collected in **Chapter 3** indicated that most (85%) corporations partner with some type of NGO. However, less than half (48%) of these collaborate on projects with conservation NGOs, choosing instead to work with society, health or development NGOs. While the corporate will for engaging with NGOs is apparent, it appears that conservation is not as high up the CSR agenda as other social issues. Consequently, more could be done to leverage the capabilities of the private sector for the benefit of biodiversity conservation, via cross-sector partnerships.

6.1. NGOs as focal organisations

Within the organisational management literature, research on understanding how partnerships work has generally been approached from the perspective of individual corporations, with a view to further a corporate agenda. In this thesis, I have shifted away from that mind-set to one that considers NGOs as the focal organisations and conservation as the primary objective (Figure 6.1). By viewing collaborative working as a strategy employed by NGOs to drive and derive environmental benefits (**Chapters 4 & 5**), my work explores how two focal conservation NGOs seek resources, or capabilities, from various partners to achieve their respective conservation goals (Figure 6.1).

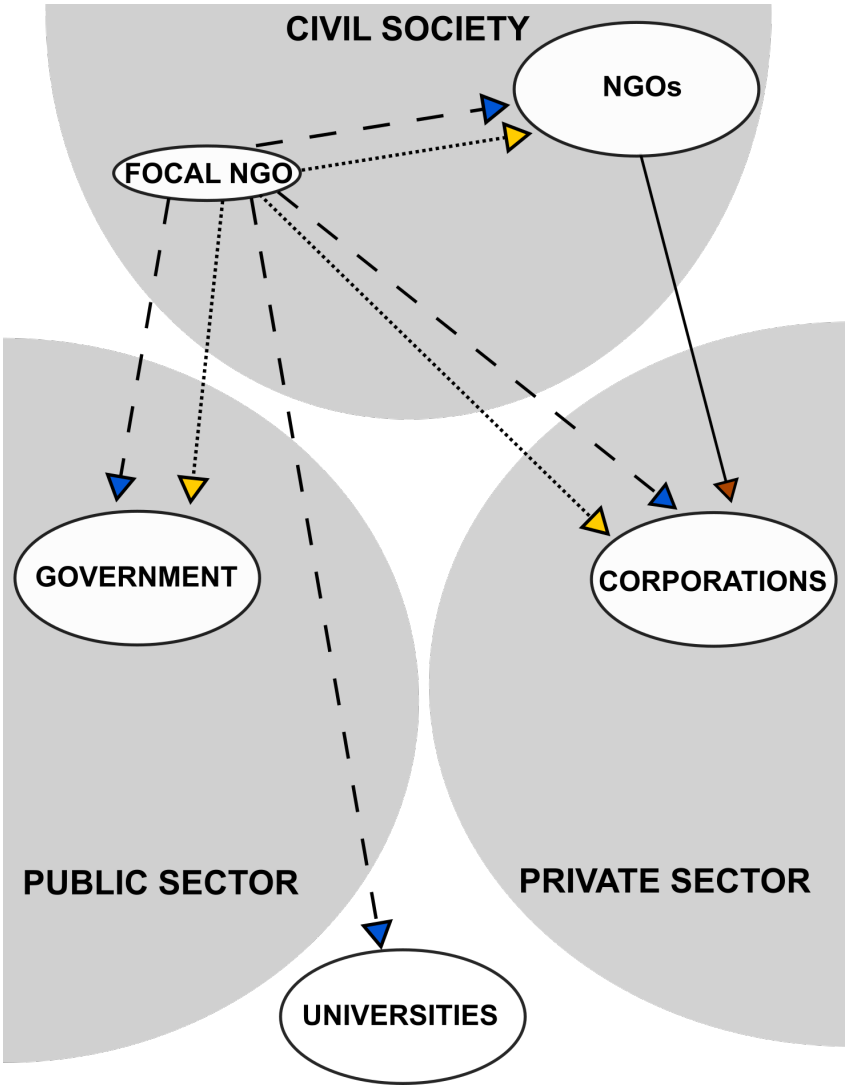

Figure 6.1: Conceptual framework mapping the forms of conservation partnership examined within this thesis, between private, public, and civil society organisations (grey). Arrows indicate the type of partnership studied, with coloured arrowheads distinguishing each data chapter of this thesis (adapted from Delmas and Young 2009; Wassmer et al. 2014). **Chapter 3** (solid line; brown) investigates the conservation activities occurring between FTSE350 corporations and UK-registered conservation NGOs. **Chapter 4** (dotted line; yellow) explores how a focal NGO applies a non-state market driven mechanism by collaborating with another NGO, multiple corporations and a government agency. **Chapter 5** (dashed line; blue) describes how a focal NGO implements landscape-scale conservation by partnering with other NGOs, corporations, government agencies and universities.

Anecdotal evidence currently dominates our understanding of partnerships, so an intended outcome of this research was to critically explore empirical data to inform our understanding of partnerships from the perspective of conservation NGOs. I encountered a number of difficulties collecting data and conducting my research for this thesis, which indicate that NGOs are more reticent and cautious about disclosing partnership information than corporations. This reluctance to share knowledge and experiences could be stifling progress made towards optimising the delivery, and outcomes, of collaborative activities led by conservation NGOs.

6.2. The conservation toolbox

Some members of the conservation community remain sceptical about partnerships with the private sector and fear that NGOs are adopting the ideology of corporations, such as the use of market mechanisms to promote sustainability (SustainAbility 2003; MacDonald 2010; Blanchard et al. 2016). In particular, concerns have been expressed about the market's preference for profit over morals (Büscher et al. 2012), the contradiction associated with promoting consumptive solutions to environmental problems (e.g. McDonald's endangered species happy meal programme; Brockington and Duffy 2010; Igoe et al. 2010), and the rise of biodiversity offsetting (Ives and Bekessy 2015). Furthermore, attention has been drawn to the marginalisation of individuals within the conservation community who hold dissenting views and oppose partnerships with corporations (Brockington and Duffy 2010; Büscher et al. 2012). For example, conservationists expressing pro-market opinions may be more likely to acquire senior level positions within conservation research and practice organisations (Blanchard et al. 2016).

Partnerships are by no means a panacea to environmental problems, and should be entered into with a clear understanding of the potential challenges as well as benefits arising from the partnership. Cross-sector collaborations can sometimes complicate institutional arrangements, where existing agreements are augmented, broadened and diversified (McAllister and Taylor 2015). For instance, implementing collaborative agri-environment schemes where landowners meet, work together and engage in dialogue, are more costly than managing schemes that co-ordinate the activities of multiple landowners in isolation (Prager 2015). Therefore the costs should be given equal weighting to the benefits when making the decision to partner (McAllister and Taylor 2015; Bitzer and Glasbergen 2015). The highest cost for NGOs is reputational damage as it is essential that civil society organisations maintain legitimacy with their donor base, governmental institutions and fellow NGOs (Baur and Schmitz 2012).

WWF, the case-study NGO in **Chapter 4**, are often criticised for their public sector relationships. Many argue that the integrity of WWF is compromised when they accept money from some businesses, yet continue to fulfil a watchdog role against others for example by engaging in forms of anti-corporate campaigns (Vidal 2014; Zhou 2010; Global Witness 2011). NGOs accepting corporate funding are therefore more likely to adopt collaborative, rather than highly confrontational approaches (e.g. Greenpeace campaigns) to litigation and advocacy activities, to protect their reputations against any disputes of legitimacy (Van Huijstee et al. 2011). Financial transactions can contribute to the perception that NGOs are working for, rather than with, corporations, so NGOs must balance the benefits of revenue generating strategies with the associated organisational risks (Stafford and Hartman 1996). To address legitimacy challenges, the NGO community must strengthen their use of accountability frameworks. This would require them to be more transparent about the

impact of their conservation activities reporting both successes and failures (Jepson 2005).

Partnering with corporations is not a practice embraced by all NGOs (**Chapter 3**), and neither should it be. Although the rise of social media means that civil society activism will become ever easier to mobilise (Cammaerts 2015), the campaigns spearheaded by the more confrontational NGOs are powerful deterrents against unscrupulous or illegal corporate behaviour (**Chapter 4**). To illustrate, in 2014, Lego announced it was ending a 50-year partnership with Royal Dutch Shell and dropping its range of Shell branded toys as a direct result of a Greenpeace campaign that opposed Shell's Arctic expansion (Lego 2014). Greenpeace released a slick parody of The Lego Movie soundtrack, which received more than 7.5 million views on YouTube (YouTube 2014) and obtained a level of notoriety that would have been difficult for a less prominent group of activists to achieve (Figure 6.2).

Figure 6.2: A Greenpeace image celebrating the outcome of a three-month campaign that encouraged Lego to drop a long-standing partnership with Shell. Greenpeace designed the most viral video in their campaigning history, which resulted in one million people emailing Lego asking them to revoke their relationship with Shell (Greenpeace 2014).

Whether an NGO decides to partner with corporations or not, it is important to remember that partnerships are only one of many tools available within the 'conservation toolbox' (Marvier and Kareiva 2014). In addition to working with members of their Global Forest and Trade Network (**Chapter 4**), WWF engage in a number of other activities to further their goal of transforming the global timber market. In 2015, WWF audited the timber policies of 128 UK retailers, which led to the 'naming and shaming' of low scorers, including some **Chapter 4** participants (WWF 2015a). Following this, WWF launched a campaign that targeted market leaders in the worst performing industries (e.g. Oak Furniture Land; WWF 2015b) and lobbied to reform the European Union Timber Regulation (EUTR)(WWF 2015c). Their engagement with companies through the Global Forest and Trade network (**Chapter 4**) undoubtedly enhanced WWF's ability to secure the signatures of more than 70 big businesses, which increased the impact of their proposed EUTR revisions on a global political stage. Organisational behaviour change can therefore be exerted in many ways and we must work towards understanding how to maximise the conservation benefits of these different approaches.

State intervention continues to be another important conservation tool, because legislation will always be necessary to inhibit or encourage particular behaviours (e.g. oil spill prevention; Frynas 2012). For example, the demand for single-use plastic bags in England has risen steadily, with the seven major supermarkets distributing

7.64 billion in 2014, causing a range of associated environmental problems (WRAP 2014). The government introduced a plastic bag tax in October 2015 and within the first six months the same seven retailers reported that only 0.6 billion bags had been dispensed which, if continued for the rest of 2016, would represent an 83% decrease (Morelle 2016). Some believe corporations oppose all restrictions imposed by regulation (Fletcher 2014), but for a large number of companies the opposite is true (SustainAbility 2003). When WWF rallied for EUTR reforms, a move that would impose further obligations on corporations in the timber market, they had the backing of businesses they had no immediate connections with (i.e. were not corporate sponsors/partners/members of collaborative networks). This is because businesses that are already making the effort want to 'level the playing field' within their industry so that free riders are penalised (Frynas 2012).

The majority of collaborative working is currently implemented on an ad-hoc basis, using financial mechanisms designed for other conservation purposes (Adams et al. 2016). For example, agri-environment schemes, which are ultimately designed to provide financial support to farmers adopting environmentally friendly ways of managing their land (Merckx et al. 2009), have increasingly become a tool for facilitating landscape-scale conservation. This was evident in **Chapter 5** where the majority of landscape-scale projects implemented by Butterfly Conservation were supported by agri-environment schemes (Ellis et al. 2012).

6.3. The effectiveness of our conservation tools

Greenpeace hail their campaign against Lego a success (Greenpeace 2014; Figure 6.2), but the main component of plastic toys continues to be crude oil and Lego are

in fact ahead of their competitors in terms of managing environmental risk within their supply chain (Ethical Consumer 2014). Unlike Lego, Mattel and Hasbro continue to use polyvinyl chloride (PVC) plastics in both their products and packaging (DesMarais 2013). We need confrontational NGOs, but we have no evidence to suggest that if every NGO adopted this approach we would be any further ahead in addressing biodiversity loss and ecosystem degradation. However, there are plenty examples where cross-sector collaborations have simultaneously improved the efficiency of business operations and environmental conditions (e.g. flood mitigation, Reddy et al. 2015a; freshwater availability, Reddy et al. 2015b; packaging revolutions, EDF 2016).

Without the co-operation of corporations who supply the products and services that we all buy, the conservation community simply cannot address the root causes of our carbon-dependent and highly consumptive society. Many will feel uncomfortable with this and are unable to reconcile that the source of the consumption can have a role in stemming it, but revolutionising the way we all live needs innovations that stretch beyond the capabilities, or willingness, of governments. The Paris Agreement (UNFCC 2015) is a milestone for environmental protection, but has taken more than two decades of scientific evidence to reach this point, and will take even longer to be implemented to the extent that it actually ameliorates the impacts of climate change. Unfortunately, the extent of the biodiversity crisis is such that innovative solutions and threat reductions are typically required faster than laws can be passed and enforced.

Elon Musk, the Chief Executive Officer of Tesla Motors, has plans to transform the energy sector the way Apple revolutionised the mobile phone industry, with long-term

visions of creating a network of solar powered electricity to support the use of cars, buildings and household appliances (Randall 2016). Musk announced the intention to buy the biggest solar panel installer in the US, which not only knocked 11% off Tesla's share prices (equating to billions of dollars) and surprised investors, but also signalled a potentially seismic shift towards making renewable energy more accessible in the home (Fehrenbacher 2016). No government would be willing to take such dangerous financial risks with public money.

6.4. New directions

Collaborative cross-sector working presents an exciting new direction for conservation that complements, rather than replaces, other critical forms of intervention such as protected areas or legislation. Partnerships seek to address problems that demand alternative approaches to the single-issue responses we are used to (SustainAbility 2003), and working with these new institutional arrangements requires flexibility and an aptitude for adaptive learning (Berkes 2009; Adams et al. 2016). The wider societal impacts of the Global Forest and Trade Network (**Chapter 4**) could have been overlooked if evaluations were based on the short-term goal of improving the volume of products procured from FSC sources, as opposed to the attainment of external certification. Furthermore, the relationships supporting the implementation of landscape-scale conservation projects developed over 10 years or more (**Chapter 5**). Rather than transforming global governance, partnerships nudge us towards a vision of conservation that is more inclusive of diverse views and therefore better able to act swiftly and decisively (McAllister and Taylor 2015).

Critics of collaborations cite conflicting motives as a major underlying issue (Büscher et al. 2012; Doak et al. 2013). However, are diverging motives an issue if the desired conservation outcome is delivered? If conservation adopted this approach to other groups of stakeholders, significant opportunities would be missed. For instance, corruption in countries with weak institutions can undermine the effectiveness of conservation interventions, but rather than blacklist working in these areas, such issues should be used to inform the structure and management of projects (Smith et al. 2005). Furthermore, the limited success of some conservation interventions has been attributed to failures to consider the perspectives of diverse stakeholders, including indigenous communities (Chapin 2004; Dowie 2009). Listening to different stakeholder groups only enhances the outcomes of conservation projects (Smith et al. 2009), and corporations are one such group. The way in which conservationists manage the interests of different stakeholder groups will define the success of conservation in the 21st century. Cross-sector partnerships have a central role to play in bridging the interests of these different groups, and reflect the inclusive vision of conservation we should all be striving to create.

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