

Master Thesis



Universiteit Utrecht

Building Watershed Partnerships For Sustainable Development

A comparative analysis of partnerships in the Biesbosch
and the San Francisco Estuary

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Abstract

This comparative case study, examining two partnerships in the San Francisco Estuary and two in the Biesbosch, seeks to contribute to the body of knowledge on good water governance. More specifically, it zooms into the waterscapes known as estuaries to find out how the relevant actors can work to achieve better water governance systems that are (1) respectable, (2) legitimate, and (3) robust. To do so, it poses the central research question:

Which explanatory factors promote or hinder the development of watershed partnerships in the Biesbosch and the San Francisco estuaries? Furthermore, how can any incongruities with the assessments of theoretical literature be explained?

The research tackled this question by assembling a cluster of independent variables derived from literature and tested them in the four areas. The main findings were that communication and the adaptability/ flexibility of a partnership were the most important factors for success. When tested, the relationship between the partnerships' conformity to aggregated list of independent variables versus their actual success proved to be internally valid, but was externally unverifiable, as the results were inconsistent when interpreted in an isolated context without the knowledge of contextual information. This discrepancy is due to the fact that the independent variables tested did not account for the external factors and events that affected the functioning of the partnerships. Overall, this list of independent variables is useful as a tool for partially assessing partnership success, however it is in need of refinement, especially in its inclusion of exogenous factors in the analysis.

Keywords: partnerships, estuaries, San Francisco, Biesbosch, governance

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1. Introduction: The Sustainability Challenge of Water

Water is a sustainability contradiction. It is our world's most abundant resource, it is cyclically regenerating and it is a basic part of every living entity. As the saying goes, "water, water, everywhere..."

Yet, the use and treatment of water is quickly becoming a global sustainability disaster. The scarcity, poor quality, dangerous sanitation conditions of water and the effects of extreme weather bear witness to the fact that clean, reliable, well-managed water is in-demand. This fact is so crucial to human progress and so elusive in its achievement that the United Nations declared 2005-2010 the "Water For Life" decade, setting world goals to achieve solutions to the most treacherous problems facing sustainable development (UN, 2011). In addition, the access to safe drinking water is goal 7C of the United Nation's Millennium Development Goals under the heading of achieving "environmental sustainability" (UN, 2011). The desperation to responsibly utilize this resource is clearly apparent, as water-related issues threaten human societies from the perspective of health, landscape maintenance, food security, anthropocentric and ecocentric welfare, the development of impoverished nations, international relationships and natural resource governance (UN, 2011).

This comparative case study seeks to contribute to the body of knowledge on good water governance, which encompasses a variety of critical issues at the fore of man's current development narrative on planet Earth. More specifically, it zooms into the waterscapes known as estuaries to find out how the relevant actors can work to achieve better water governance systems that are (1) respectable, (2) legitimate, and (3) robust. To do so, it poses the central research question:

Which explanatory factors promote or hinder the development of watershed partnerships in the Biesbosch and the San Francisco estuaries? Furthermore, how can any incongruities with the assessments of theoretical literature be explained?

In order to answer this research question, the following study compares four cases of estuary governance, two found working in the Biesbosch National Park in the Netherlands, and two affiliated with the San Francisco Estuary Partnership in California, USA, to test a number of factors, which both contemporary theoretical and practical research uphold as valuable for sustainable development via partnerships. The questions

that remain are if these findings are generalizable to different areas than they were originally proposed for, and what lessons can be derived from testing these claims. The goal of this work is to aid in environmentally sound decision-making to, hopefully, overcome the ills of unsustainable modern development that affect all natural systems, and most imperatively, those that provide essential ecosystem services that are unalienable for our common future.

As the human community turns its attention towards this daunting task, we are confronted with the foundational conundrum of sustainable development: “development” implies the enlargement, improvement, and growth of societies via the transformation of resources into desirable goods and services, while the word “sustainable” implies constancy and the ability to endure without expansion or contraction. As the world’s resources are mostly finite and fragile, these terms appear to stand in opposition to each other, but those who take a fairly optimistic approach to the care of the world’s environmental future assert that these terms need not be mutually exclusive.

This study is written from an optimistic standpoint with the following sentiment in mind: responsible management of this resource, that is, the promotion of conservation, stewardship and equitable use of water (in estuaries), can succeed in meeting a great deal of society’s current and future needs. The needs of the ecosystem and the needs of people can be coordinated, specifically by avoiding a sole reliance on generalized environmental management schemes, by connecting stakeholders with water resource projects to tailor solutions, by aligning economic activities with the natural processes that take place in the ecosystem, by pragmatically considering technological solutions, and by taking a hands-off approach when necessary (Bernhardt et al., 2006).

An important aspect of achieving sustainable development in a given social or environmental system is having an accurate paradigm regarding the system’s complexity. The term “complexity” refers to the departure of the expected results (created by the mental tools and concepts that people use to decipher the world) from the actual outcome (Holling, 1987). Ecological water systems and the management of these systems is undoubtedly complex due to the limits of our scientific understanding, the high number of variables involved, the non-linear web of interactions that take place within the system, and the openness of the system to the affects of others (Holling, 1987). Holling’s

(1987) in-depth analysis of environmental system complexity suggests that neither the ecosystem nor human society is constant, resilient or simple. Instead nature is evolving through different states of equilibria, and these waves of evolutionary change cause peripheral transformations.

Therefore, in light of this inherent complexity, the limits of time and the meager knowledge of nature and society that scholars have thus far collected, this study does not claim to understand the nuance of estuarine watershed management, nor does it attempt to predict the future state of water given present conditions. Rather, this study seeks to illuminate a small piece of how humans can better manage a specific water system under the guiding principles of our current understanding of “sustainable development”.

1.1 Direction of Study

Scholars of environmental management provide both theoretical backing and experiential evidence that the utilization of partnerships as a method of governance has the potential to be sustainability-promoting by allowing actors to overcome common challenges in achieving the type of coordination that is vital under circumstances where groups with specific interests attempt to carry out integrated environmental projects. These challenges stem from the fact that environmental undertakings often take place in complex arenas, such as in estuaries, where multiple interests must manage a target resource both collectively and sustainably.

This study will investigate the institutional, social and network conditions present in four case studies (two in San Francisco and two in the Biesbosch) and determine the correlation between the success of estuary projects managed via partnerships and the presence of so-called success factors that have been theoretically and experimentally determined by leading scholars of networks and landscape maintenance in the field of governance. The dependent variable, which acts as a measurement against which to evaluate cases' success, is the achievement of partnership “legitimacy, respectability and robustness” (Stenseke, 2009, p. 216). This work is structured by first consulting state-of-the-art background literature on the relevant schools of thought related to partnership governance and then by applying these lessons and the hypotheses generated to practical

subjects in order to draw experimental conclusions, which will supplement theoretical understanding.

Though limited in scope and narrow in focus, this study seeks to add to the body of work disentangling basic problems of operation when speaking of how to undertake a sustainability project via partnerships. The value of this research is that it tests the factors, or conditions, thought necessary to promote the realization of the project goals of specific types of environmental partnerships. Better understanding of environmental partnerships are essential given the deep-seeded disillusionment that many experience in undertaking complex endeavors, where a host of social and environmental factors convolute cohesive action toward a common objective. In short, sustainability undertakings of the type found in this study are integral to environmental welfare, yet they are difficult, cumbersome, and daunting; to progress forward, work must be done to better address the barriers that most commonly thwart potentially beneficial endeavors. Doing so may give future actors a clearer vision of the necessary tools and best practices called for under certain circumstances, which will yield valuable lessons benefiting forthcoming undertakings.

1.2 The Framework and Theoretical Approach

At the highest level of abstraction, the conceptual framework resulting from a survey of theoretical literature will be used as a guiding organizational outline to integrate several academic and practical factors from various domains in a coherent, birds-eye analysis of the action arenas, permitting comparison and evaluation (Ostrom, 1991). Another important organizational tool, Elinor Ostrom's Institutional Analysis and Development (IAD) framework, will be utilized at a level of greater specificity to describe the institutional characteristics influence the independent variables of this analysis. The IAD framework takes four specific variable types into account when evaluating policy processes and outcomes: attributes of the physical world, attributes of the community of actors, incentive-making and incentive-constraining rules, and individual interactions (Ostrom, 1994). From these variables, the action arena (the unit of analysis where activity is concentrated), can be considered by means of the institutional and social

conditions present, respecting the reciprocal effect that these conditions have upon each other in the contexts of the case studies.

While frameworks organize inquiries by identifying variables of interest, theories offer possible pathways of explanation to make sense of real-world phenomenon. Social network theory provides a basis for analyzing the structural characteristics of networks and their consequences for organizational outcomes. The factors that determine the initial structure and ongoing interactions within networks are important components in determining the likelihood of success or failure in partnerships. In this study, Sandstrom and Rova's work on networks is used as the guiding theoretical assumption from which this investigation is launched. Their research proposes that, in general an adaptable, cooperative network is best suited to the steering of environmental resources because of its sensitivity and flexibility, which is necessitated by the dynamism of ecological environments (Sandstrom & Rova, 2010).

Building on this body of theory implicating partnership arrangements and favorable institutional and network contexts as crucial ingredients in estuary management, this study, in addition, will investigate cases by, foremost, following Stenseke's research model on the factors that promote successful environmental resource management, specifically when dealing with partnerships involving local stakeholders. In her study on local participation in cultural landscape maintenance, Stenseke (2009) has identified crucial factors that are paramount to achieving "respectability, legitimacy and robustness" (this study's dependent variable), which she asserts are key to long-term acceptance of (land)scape-based processes and arrangements (p. 216). Certain elements must, therefore, be in place for successful collaborations to occur and to overcome detrimental variables present, which she also identifies, in order for long-term, integrated governance to occur. Though Stenseke's research mainly focuses on the range of partnership types that concern local cultural ties to landscape management, this study will broadly interpret her findings to apply to watershed management with an emphasis on the formation of partnerships between different levels and sectors of stakeholders, which Stenseke argues is integral to resource management in general beyond the confines of the Swedish rural landscapes that she studied.

These three guiding investigative avenues, Stenseke's factors, Sandstrom and Rova's network analysis claims, and Ostrom's IAD framework will be used in concert to answer the central research question by, in addition, answering three sub questions. The sub questions are:

- 1. Do the characteristics of the partnerships in the two case studies yield the expected theoretical result that partnerships promote sustainable activities in estuaries and vice versa? Additionally, which explanatory factors linked to successful partnerships, found in literature, are most applicable to these four case studies?*
- 2. What do the features of the networks observed reveal about the development of partnerships in the case studies to date?*
- 3. What lessons can the Biesbosch's stakeholders involved in building partnerships learn from the experiences in the San Francisco estuary (and vice versa) in order to work toward sustainability in the future?*

We will now turn to the literature to gain insight into possible clues to answer these questions from the theoretical standpoint. The theory will then be utilized in order to construct a model of the expectations of how the partnerships will behave, known as a conceptual framework, and to thereby develop a working hypothesis, an assumption of facts based on the body of knowledge procured from the analytical work of others.

2. Contextual and Theoretical Backgrounds

The following section is composed of a broad literature review that will anchor this study in the context of estuary environments and the theoretical propositions supporting the direction of this research. First, a brief description of the physical characteristics of estuaries will provide scientific classifications of the ecosystems under investigation and will illuminate the fact that diverse types of estuaries necessitate different considerations from a management standpoint. Secondly, an overview of the most relevant theoretical concepts concerning the co-management of natural resources will be given with an emphasis on the governance of common pool resources, critical aspects of participatory resource management, and the social network approach, as these themes inform the underlying premises of Stenseke's and Sandstrom and Rova's works. Lastly, the Institutional Analysis and Development framework is presented in more depth. This

literature review will lead to an explanation of the conceptual model driving this research paper's analysis.

2.1. Estuaries

An estuary is a “semi-enclosed body of water, which has a free connection with the open sea and within which seawater is measurably diluted with fresh water derived from land drainage” (Pritchard, 1967, p. 3). Estuaries can be thought of a transition zone between land and sea, whose features support unique ecology. When speaking of the physical environmental characteristics of an estuary, salinity, mixing and circulation patterns, boundaries formed by geographic and hydrologic features, and the movement of water, are basic similarities that hold true when determining an estuarine area (Pritchard, 1967). It is important to note that since estuaries are a part of coastlines, they cannot constitute an entire coastline alone; rather other aspects of the surrounding coastal geography influence the dynamics of water movement found in the estuary (Pritchard, 1967). Some of the most prevalent factors include tidal activity, whose sources are influenced by river or sea currents plus the wind/water sheltering from other geographical features, and the concentration of mineral salts, whose sources occur from the ocean or land runoff (Pritchard, 1967).

Estuaries can be further classified into four distinct physical types. Drowned river valleys (1) (also known as coastal plains) are widely recognized by geographers as the classical type of estuary found throughout the world, such as in the Rhine's estuaries in the Biesbosch. A sharp drop in chloride concentration in the water demarcates the inland boundaries of this type of estuary, while the breadth of the estuary is confined by tidal breaks or elevation changes that shield the estuary from the effects of the water's movement (Pritchard, 1967). A predictable pattern of salt-fresh water mixing takes place here (Hansen & Rattray, 1966). Fjords (2) are deep, U-shaped basins formed by glaciers, with a shallow sill where estuary features emerge (Pritchard, 1967). Due to the marked differences in the depths at different parts of the fjord's geography, salinity and water activity, which take places in the shallows, are difficult to predict as they are much more sensitive to local conditions above water (Hansen & Rattray, 1966). Bar-built estuaries (3) are those that form as a result of sand barriers, which have built up on the

coastline, often extending outward from beaches. Bar estuaries sometimes have features of drowned river valleys as well because their lower troughs are frequently overtaken by rising sea levels (Pritchard, 1967). Estuaries that do not clearly fit into the other three categories are defined as tectonically produced estuaries (4), which are formed by coastal subsidence or seismic activity, such as in the case of the San Francisco Bay estuary (Pritchard, 1967).

Estuaries can, furthermore, be classified by their salinity. “Salt wedge” estuaries have a strong out flux of fresh water that holds back wall of seawater in curved shape, like in the predominantly fresh-water Biesbosch (Garrison, 1995). In a salt wedge estuary, there is a strong vertical salinity gradient in contrast to the “well-mixed” type estuary, which occurs in more shallow areas (Garrison, 1995). “Partially-mixed” estuaries are hybrids of salt wedge and well-mixed types, both in their salinity gradients and the physical movement of water (Garrison, 1995). The San Francisco Bay estuary is partially mixed. Lastly, reverse estuaries, also called lagoons, are areas of extremely high salt concentration due to the prevalence of evaporation of seawater extending inland combined with a low outflow of river water (Garrison, 1995).

In sum, the various manners of classifying and sub-categorizing types of estuaries shed light on a few important lessons. Firstly, estuaries hold many physical elements in common and can, under certain circumstances, have predictable features. This is useful for the purposes of drawing comparisons. Secondly, estuaries are complex, convergent environments with unique ecology and multiple forms. Thus, an apt conclusion is that research must bear the diversity of estuaries in mind when attempting to make comparisons, and should therefore specify the definitions and boundaries of particular estuaries in question for the purpose of focused research endeavors. Thirdly, due to their highly varied nature, different types of estuaries will foster different interests from stakeholders in terms of recreation, water recruitment, and tourism, for example. The most important message regarding the diversity of estuaries is that all of the uses arising from the natural features of these waterscapes are intimately tied to the complexities of the task of finding the best way to manage these diverse interests for the governance of commonly held resources in the pursuit of sustainable development.

2.2 Governing Common Pool Resources

The basic premise of this study rests upon the assumption that resources can be governed outside of the context of traditional, governmental regimes. This section discusses the breakthroughs in social science made by Elinor Ostrom in her work on the ability of people to successfully manage commons, and links this theory to the unique context of estuaries. Furthermore, the value of partnerships for CPR management is also presented.

2.2.1 *The challenges of estuary management*

Estuaries represent a highly complex, adaptive environmental system, as living and non-living components of the system are interconnected and adjust to external circumstances in an effort to achieve a homeostatic balance (Van Buuren & Gerrits, 2008). From an ecocentric standpoint, estuarine wetlands are critical habitats for birds, waterfowl, fish, various insects and plant species that thrive in the specific environmental conditions provided (Biesbosch, 2010). Much complexity arises due to the fact that the environmental processes controlling the behavior of the system are invisible or not well understood, which, from a management point of view makes estuaries difficult to govern for sustainable development. Currently, both European and American environmental policy officially protects certain wetland zones because of their valuable ecosystem services, including the Biesbosch and parts of the San Francisco Bay estuary watershed (Biesbosch, 2010).

From a social standpoint, the core challenge frequently encountered in the field of sustainable development is implementing an effective governance strategy to contend with various social factors present. Because of its unique characteristic as a merging zone for distinct ecosystems and geographies, estuaries also comprise a space where multiple anthropocentric activities take place. Some of the most common of these are trade, maritime access, transportation, recreation, hunting and fishing, and the construction of flood protection infrastructure (Van Buuren & Gerrits, 2008). A foundational dilemma for stakeholders in estuarine environments is how to manage these complexities of use and perceived value (economic or intrinsic), and how to reconcile the different interests involved to provide an optimal solution. Furthermore, decision-making

must be informed by both the social and the physical system, as the feedback between these two interrelated systems yields important information for reasonable, feasible courses of human intervention (Van Buuren & Gerrits, 2008).

2.2.2 Estuaries as a common pool resource

The social science perspective characterizes the challenges of governing estuarine environments as a cluster of hurdles arising from this waterscape's aspect as a common pool resource. Elinor Ostrom defines "common pool resources" as "the natural resources used by multiple decision-making units" (Ostrom, 1990). The features of a common pool resource are best understood as a core good or system, which may or may not exclude users via socially upheld common property regimes. Common pool resources may have different numbers and types of owners, as well as different rules associated with their use, but are best understood by the characteristic that they can be optimally managed by communal means, though this does not always occur in practice. Estuaries, by virtue of the breadth of their watershed, the difficulty in enforcing any property claims a group or individual may have via physical or sanctioning barriers, and the diversity of stakeholders present, can be thought of as a common pool resource. This is not to say that public or private ownership does not feature in estuaries; on the contrary, the governing of many these waterscapes is partially managed in the traditional sense. However, capturing the entire picture of the requirements for steering an estuary from a sustainability perspective requires a broader definition of the estuary as a resource that encapsulates multiple (riparian) users, and is thus a "commons".

Contrary to the preceding century's conventional academic wisdom regarding goods, services or spaces as under either public or private oversight, new knowledge generated by Elinor Ostrom and the school of Commons Governance has challenged this strict dichotomy, which has consequences for the envisioning of the steering of environmental spaces (Van Laerhoven & Berge, 2011). Whereas it was formerly assumed that individual or consumer-based interests could only manage private goods efficiently (while squandering publically accessible resources) and public goods were to be entrusted exclusively to governmental regulation, Ostrom's work, specifically in the book *Governing the Commons*, demonstrated that citizens could successfully organize

themselves to manage common pool resources or to produce public goods (Van Laerhoven & Berge, 2011). Furthermore Ostrom's approach was revolutionary to the black box of social science because it considered biophysical, sociological and institutional factors in explaining the types of issues that arise in the target commons, and did not rely on conventional understanding of the time to make assumptions about the outcomes of different governance modes.

One of the most prominent challenges of governing a commons is the balancing of multiple interests of various stakeholder groups and the steering of a target area that may not have traditional regulatory divisions. Contemporary sustainable development literature specifically points to partnerships between and amongst the governance pillars (citizens, governments and markets) as a means of progress towards achieving this balance. Kenney et al (2000) defines watershed partnerships as:

Primarily self-directed and locally focused collection of parties usually featuring both private and intergovernmental representatives organized to jointly address water-related issues at the watershed level or a similarly relevant physical scale normally operating outside of traditional governmental process or forums, and typically reliant on collaborative mechanisms of group interaction characterized by open debate, creativity in problem and solution definition, consensus decision-making and voluntary action (p. 2).

Partnerships offer the theoretical advantage of addressing (watershed) problems that are "outside of the scope of centralized regulation, such as habitat destruction and non-point source pollution" (Lubell et al., 2006, p. 149). From an economic point of view, partnerships can utilize policy and management tools in a flexible manner, and respond more quickly and at lower cost than a rigid, bureaucratic process (Lubell et al., 2006).

This shift toward partnership creation has occurred, in large part, because governmental steering, though successful in reducing pollution from distinct sources, has been less successful in managing the consequences of the activities of diverse resource users, across bureaucratic boundaries, that all affect the state of the environment in question (Lubell et al., 2006). In addition, the high costs, uncertainties and administrative lag, and resulting cumulative environmental damage that often accompanies the (mis)management of complex systems, have revealed severe limitations in the ability of

governments to optimally regulate watersheds.

In her elucidation of the emergence of common pool resource governance, Ostrom (1990) explains that this phenomenon is result of the high transaction costs that arise from inefficient property regimes. To Ostrom, common pool governance can be just as or more efficient than traditional modes, as the features of property regimes reflect the tailored choices that actors make based on institutional, natural and social characteristics that they face in an action arena, versus the prescriptive means of control ascribed by traditional modes. She has shown that a well-functioning common pool regime can regulate itself just as efficiently as other socially constructed practices, which has been historically proven in notable common pool regimes such as in Swiss grazing pastures, Spanish and Central American irrigation systems, and Japanese forests, for example (Bromley, 1993).

Lowndes and Skeltcher (1998) claim that partnership creation is growing in the public policy sector amongst both public and private actors for the purpose of facilitating concrete, working relationships that can be formalized and organized. This offers benefits for formulating strategies that are mutually beneficial, which is becoming increasingly difficult in the “fragmented organizational landscape” of public policy administration (Lowndes & Skeltcher, 1998, p. 315). Furthermore, partnerships offer the opportunity for interest groups, marginalized stakeholders and communities to express their opinions regarding issues that affect their lives by bypassing inefficient, maligned, formal political processes.

In summary, the emergence of partnerships in these environments can be attributed to the mutually beneficial solutions for governmental and non-governmental parties¹ resulting in lowered transaction costs and collaborative advantage (Lubell et al., 2006; Lowndes & Skeltcher, 1998). Benefits include: lower economic and time cost, policy innovation, resiliency in response to complexity (due to greater flexibility and less fragmentation), and better possibilities of conflict resolution through the crafting of tailored solutions and the development of local norms (Knowles and Myatt-Bell, 2001, Schneider et al. 2003, Lubell et al. 2006). Approaches in the actual governance of many

¹ Realization of benefits is positively correlated with the escalation of environmental problem severities (Lubell et al., 2006).

estuaries today seem to resonate with current trends in academic understanding, which recognizes Ostrom's groundbreaking work and acknowledges the efficacy of alternative governance modes. In contrast with traditional command-and-control approaches, where governmental bodies held distinct authority over specified environments², numerous stakeholders now actively steer resource management activities, increasingly often in partnership with each other (Lubell et al., 2006).

2.3. Critical Aspects of Participatory Resource Management

It is important to differentiate between the term “partnerships” and “participation” in the context of resource management. While the previous section explains how working within a partnership has theoretical advantages in achieving efficiency and flexibility in resource governance, participation refers to a method by which some partnerships function. This section explains how the concepts of partnership and participation are linked, and the most critical aspects that are considered in contemporary scholarly reviews on the value of participation in resource governance, as this both forms the foundation of Stenseke's assumptions and has shaped this report's case study and research framework selections.

2.3.1 *The participatory approach to resource governance*

“Participation” or the “participatory approach” has become a common battle cry of many sustainability endeavors since the terms' explicit endorsement in the 1991 Convention on Biodiversity (Stenseke, 2008). Some scholars find the roots of the modern participation trend in the 1980's, when central governments were increasingly encouraged by international environmental organizations to involve local, non-government institutions in forestry management, particularly in developing countries with valuable timber resources (Schreckenberget al., 2006). Still others claim that the advent of participation began earlier in the United States in the 1970's as a result of the boom in grassroots

² Lubell et al. (2006) note that top down/command-and-control approaches were originally deemed to be more effective for environmental steering because of the difficulties of coordinating multiple parties (both governmental and non-governmental) due to a high number of externalities.

environmental movements, or even in the 1960's due to the rise of modern environmentalism. Whatever its origins, participation has many contextual forms and uses, but here it refers to the active, inclusive involvement of stakeholders outside of the realm of scientific or governmental hierarchy, which contribute to the democratic steering of natural resources by aligning the objectives of multiple levels of management.

Often the words “local”, “grassroots” or “experiential expertise” feature prominently in a positive context when discussing participation, where the assumption is widely made that the inclusion of local knowledge and involvement in all aspects of resource management are beneficial to both affected stakeholders and the environment in question through the tailoring of governance activities to specific settings. Due to the complexities faced in environmental management in particular, many politicians feel ill-equipped to administer the necessary policy initiatives, and therefore defer to the academic community for their leadership, who are often referred to as “technocrats” (Sherlock et al., 2004). Importantly, participation is thought to close the gap between those in power who call upon “experts” to lead decision-making, and those who are affected by the decisions. Though this concept seems straightforward and sustainability-enhancing, in principle, it has important theoretical implications that must be considered before assumptions can be made concerning its benefit for governance.

As previously mentioned, participation can take on a variety of meanings, and as such, there is no one prescriptive way to enact participation. Its role is highly case-specific, which presents theoretical difficulties when speaking of how to implement participatory strategies to achieve a sustainability goal. One critical issue in cases is in determining who should be involved in participation and if the “whom” is beneficial for sustainability. It is an oversight on the part of researchers to assume that all local participation is helpful, relevant and of good quality, an altruistic assumption often implied in environmental studies. Research must therefore avoid the pitfalls of romanticizing local groups by assuming their imperviousness to outside economic or technological factors, underestimating power dynamics and presupposing their homogeneity in knowledge and purpose on a given subject (Stenseke, 2008; Ostrom et al., 2002). Conversely a purely top-down, expert approach to management can be

insensitive and incomplete. On this note, Arun Agrawal's (2002)³ internationally acclaimed work on the subject asserts that the targets experiencing the effects of power asymmetries have greater rights to determining the features of the environment that directly affect them.

In searching for identifiable trends in the outcomes of participatory approaches, research on cultural landscape management, for example, reveals that local involvement does work well when the boundaries of the resource in question are relatively small and well-defined and when the sustainability goals are specified (Selman, 2004). Tying the theoretical to the practical, the case studies selected in this report operate on a manageable geographic scale with defined challenges, which have led to this report's initial assumption that participation in these contexts is potentially helpful and relevant. Conversely, local participation can be slow and costly for extensive areas, where governments or larger agencies are better suited to handle organizational and decision-making hurdles (Selman, 2004). A more nuanced approach is to combine the two strategies in the right measures according to the context, for which the questions "why", "how", and "for whom?" must be considered in order to avoid long-term negative affects upon relationships within communities, future capacities to collaborate and the inherent rights of local stakeholders (Stenseke, 2008; Ostrom et al., 2002).

The body of contemporary literature on the benefits of participation is inconclusive in its value for sustainability due in part to the fact that the effects of participatory input is highly differentiated according to the cases' contexts and the difficulties in measuring the impact of this steering strategy on sustainable development, including the distribution of benefits within communities and the added quality or value imparted as a result of local input (Schreckenber, 2006). In her study on cultural landscape management, Stenseke (2008) is cautious about expounding upon the unmitigated advantages of participation for her study area, but acknowledges that a degree of local involvement, which can manifest in various levels, from a consultative, remote association to ambitious, grass-roots movements, is invaluable as a counterbalance to differently vested interests, helping to overcome the problem of

³ From Ostrom et. al. 2002.

bounded rationality.

2.3.2 Participation and partnerships

Participation is one mode in which partnerships can be constructed and upheld. In watershed management, often, as will be the case in this study, the institutional design steering this resources is community based, or a combination of community based and bureaucracy based. According to Koehler and Koontz (2008), the environmental arena of watershed management has seen a rapid growth in this type of collaborative approach, where partnerships are made either directly with the participation of local citizenry, or, alternatively, where third parties utilize these stakeholders for their consultative value in decision-making with other partners. These watershed partnerships can draw from members of each of the three pillars of governance, of which Koehler and Koontz (2008) estimate number in the thousands in the United States alone. When it comes to environmental management, the most significant type of partnership that has emerged and rapidly proliferated in recent years occurs between environmental non-profit organizations (NPO) and the government, of which 77% of ongoing environmental partnerships are co-managed in this mode (Nikolic & Koontz, 2007). These partnerships benefit the government by allowing the broadening of public services via a community-oriented medium, which offer public administration greater flexibility and innovation potential. In turn, they benefit non-profit organizations by facilitating access to financial and network resources as well as by lending enhanced external legitimacy (Nikolic & Koontz, 2007). This synergy is described in theoretical political science literature as a fundamental characteristic in the functioning of many modern governments including that of the United States and the Netherlands (Nikolic & Koontz, 2007).

The consequences of participation in watershed partnerships are as follows: much power and mobility is concentrated in the working relationships between non-profit organization and government; the affiliation can be utilized an important channel of public participation on environmental issues because of the willingness, empirically especially on the part of NPO's, to draw upon this type of input. In response to Nikolic and Koontz's suggestion for the need for more NPO-government partnership case studies in future research, this research selects NPO-government partnerships that are focused on

education to be able to (1) make the assumption that the participation-oriented items found amongst Stenseke's criteria can be examined, as local participation is often encouraged in small-scale educational partnerships, (2) make the assumption that all the partnerships selected are well-informed from a variety of information sources generally unavailable to the wider public, representing academic *and* experiential expertise, which encourages an inclusive/favorable point of view on participation (Barnes & Philips, 2000), (3) to be able to make effective comparisons across the case studies, as NPO's dealing in environmental education are relatively buoyant when it comes to budgetary constraints because dips in funding usually do not directly impact the delivery of services as it might in the health or social service sector; thus differences in performance across the case studies is assumed to be less attributable to financial forces and more attributable to the internal functioning of the partnership itself (Nikolic & Koontz, 2007).

In sum, contemporary theoretical literature on watershed partnerships assert that public participation features prominently in the most prolific types of environmental partnerships, which occur between governments and non-profit organizations. Therefore, studies examining this relationship must not ignore the role of participation in understanding the functioning of these partnerships and must also make sure that valid comparisons can be drawn between case studies, as the impact of participation has a variety of implications under even slightly varying contexts.

2.3.3 Participation and common pool resource management

As previously outlined, progress in natural resource management has benefited greatly from the recognition of the effectiveness of local involvement in environmental stewardship, with investigation in CPR management acting as a supporting pillar of this approach to sustainability. An important critique, however, of the application of the principles of CPR to partnerships involving local participation is that theory often only discusses specific situations of small user communities concerning a particular resource, but the complexity of environments necessitates a solution or paradigm that is more generalizable (Zachrisson, 2004).

The diversity mentioned concerning the ecology and geography of estuary watersheds as well as their many potential uses could better be described as a "resource

system” or “multiple-use” versus a single-use resource (Ostrom, 1990). Indeed, resource degradation is more likely to occur in multiple-use environments, despite CPR management strategies, due to conflicts arising about overlapping or conflicting needs, the prevalence of different management regimes, and local political influence on the preferences and access of individuals. For these reasons, according to Murphree (1997), governance and incentive structure must be taken into account when speaking of managing a commons, as interactions between individuals are significantly shaped by existing power arrangement and the structure of incentives that influence decision-making and the navigation of the social/policy landscape. Again, governance refers to the distribution of power outside of the traditional realm of government, allowing for greater responsibility and control to be placed in the hands of others, and incentives refer to the steering of society via policy measures or more subtle methods of social control.

Furthermore, it cannot be assumed that the study communities are homogenous with similar priorities and experiences, which is an identical issue broached in the discussion of the value of local participation in resource management. Even within relatively like communities, members are subdivided according to complicated relationships that are not easily externally deciphered (Ostrom, 2002). It is not enough to assume that communities are capable of steering their own resources without also considering the complexities of the system that they are working within. This requires explicit identification of groups’ social, technological, institutional, cultural, economic and political environments, often lacking in common pool resource research (Zachrisson, 2004).

To address this critique, this study will utilize Ostrom’s IAD framework to specify the variables shaping the action arena to lend greater nuance to the study. Zachrisson (2004) claims that although more attention is being paid to contextual variables in studies of multi-use resources in recent years, there is still not enough focus on the role of power in resource use. Therefore, this study’s emphasis on governance characteristics, in combination with IAD, will strive to elaborate on this knowledge gap.

2.4. The Social Network Approach

The following section describes the theory of the social network approach, used to

decipher the complex relationships investigated in the case studies. First, the background of the social network approach is described, which discusses the motivation for scientists to engage in network research, as well as the most important theoretical assumptions and tools used to understand networks. Then the relevance of networks for governance applications is discussed, where the argument is presented that the network mode of governance is essential to the success of partnerships, and is thus pertinent to this study.

2.4.1 The emergence of the social network approach

Lave and March (1975) asserted that the various scientific disciplines continuously engage in empirical research to be able to speculate about real-world phenomenon. Often, the findings of this kind of research are communicated via a model, which is a simplistic representation of the subject at hand (Lave & March, 1975). The study of social networks takes a model approach to representing events transpiring within and as a result of network behavior. O'Toole and Meier (1999) define a social network as “a pattern of interdependence among social actors in which at least a portion of the links are framed in terms of something other than superior-subordinate relations.” In contrast to hierarchies, or top-down models, networks are composed of multiple formal and informal relationships that are important for their linking capacities both between and across different levels of organization (O'Toole & Meier, 1999).

At its most fundamental, the underlying motivation for social scientists to engage in network research is the following premise: the way groups are organized or structured matters greatly in the determination of future outcomes resulting from the interactions promoted by certain network features. This assumption gives rise to the specific units of study pertinent to social network analysis, namely the concern for how actors, whether at a low or high level of complexity, are linked in a social relationship, and furthermore, what the characteristics of these relationships reveal about the functioning and the capacity of the network itself (Moliterno & Mahoney, 2010).

The social network approach serves as both a descriptor of networks and as a research methodology. Borgatti et al. (2009) assert that the social network perspective has evolved from the need to for social science to tangibly describe societal phenomenon

in a way that resonated with physical scientists' envisioning of mathematical order. O'Toole and Meier (1999) claim that the growing emphasis on interdisciplinary network study emerged from the increasingly wicked issues in the public sphere that necessitated a network approach to problem solving. Both social and physical sciences have sought to explain the formation of networks from the foundational unit, and to be able to make predictions about a network's properties and characteristics based on the information generated from models (Borgatti et al., 2009).

2.4.2 General tools for understanding social networks

Network analysis has a cache of theory and analytical criteria that, though vast given the amount of time and research dedicated to this subject in the past century, can be explained in broad strokes (Borgatti et al., 2009). An important feature of social network analysis stems from its central premise that dyadic (two-sided) relationships are the basic unit of network structures, and that the patterns of these ties should be considered. Hence, social network analysis seeks to explain what different ties mean in the context of the network, and, furthermore, how the presence of multiple (types of) ties influence each other. Borgatti et al. (2009) identify four common types of ties in social science research: similarities, social relations, interactions, and flows. When added together, ties compose network structures, which are the patterns that emerge from a number of multi-nodal relationships. Key concepts in the subject of network structures are the relationships between nodes⁴, the individual characteristics of nodes, and the position of nodes in relation to each other, which cumulatively form an overall picture of a network.

Social network analysis enhances traditional understandings of society. Agranoff and McGuire assert that social networks in public policy have emerged to deal with the problems created by the "hollow state". This concept refers to government that is separated from its output of public goods and services as a consequence of contracting production out to other governments, private parties or NGOs⁵ (Agranoff & McGuire, 2003). In contrast, networks promote exchange, interaction and jointness to achieve the

⁴ Nodes are a single point in a network that denotes an individual unit.

⁵ See New Public Management

same output (Agranoff & McGuire, 2003). Additional academic literature draws complementary conclusions: the creation of networks is a result of the recognition of advantage for social actors, bound by common interest, to link in order to achieve collective goals (O'Toole & Meier, 1999). This statement is in agreement with Ostrom's (1990) premise that collective management of resources occurs, and can be successful, where transaction costs are lowered and specific contextual factors, shared by network actors, are considered; this situation creates mutualism and facilitates cooperation resulting from perceived benefit.

Whereas sociologists have historically assumed that the individual determined his or her personal circumstances, social network analysis acknowledges the reciprocal effect that environments (either physical or purely cognitive) have upon actors and situational outcomes (Borgatti et al., 2009). Borgatti et al. describe this important cornerstone of network analysis as "the most fundamental axiom in social network research ... a node's position in a network determines the opportunities and constraints that it encounters and in this way plays an important role in the node's outcomes" (Borgatti et al., 2009, pp. 893). The strength of this observation is that many varying outcomes can be explained by using the social networking perspective, as it acknowledges the complexities inherent in societies that extend beyond the control of nodes. These consequences, or outcomes, stemming from network variables have become the focus of this branch of social science research, especially concerning questions of the locus of power, the strong or weak bridging of different nodes by various means, and the predictions of network performance.

Network performance is evaluated on the basis of numerous indicators, or social network data. Social network data consist of at least one structural variable measured on a discreet set of actors (Wasserman & Faust, 2004). The type of indicators and the theories that motivate specific directions of inquiry usually determine which variables should be studied and often the appropriate techniques for their collection and measurement (Wasserman & Faust, 2004). Social scientists collect network data by various means, but the most popular procedures include interview, survey, questionnaire, and other qualitative metrics where objective measurements are not possible, which is often the case. This fact of social science research is problematic in the likelihood of

error that occurs when studying the network at specific (usually more individualized) levels, than compared to that of physical science. Social network analysts often rely heavily on self-reported data, which is inherently error prone, though a researcher can find other avenues such as direct observation of the network and/or engaging in large-n studies, for example, to try to reduce uncertainties. However, even when more objective data is available, self-reported data, especially concerning questions of perception, can be a higher quality predictor for research concerning future behavior, an aspect that this research undertaking relies upon (Borgatti et al., 2009). Thus, though social science metrics are often complex and mired in particularities, they are no less valuable than objective, straightforward data in the right context.

2.4.3 Social networks in the context of governance

Since the late 1980's, the concept of governance, or the directing of society via the engagement of the three pillars of market, civil society and government, has featured prominently in strategies to achieve sustainability (Meadowcroft, 2007). The general expert consensus in socio-environmental studies is that a pillar is neither fully equipped, nor solely responsible for managing sustainability concerns alone, and those sustainable solutions can be achieved more efficiently and democratically through this type of steering. There are many methods and combinations of strategies and actors working together that result in a "governance" style regime. For the purpose of this study, the "network mode of governance" is of primary interest (Lowndes & Skelcher, 1998). Lowndes & Skelcher assert that different modes of governance require different approaches for managing interactions. The network mode of governance has a distinct character that should be understood as unique and treated with regard for its individual features when strategizing for governance purposes. As networks have now become the norm in public management, they are important to investigate to gain understanding of this approach to governance (Agranoff & McGuire, 2003).

The network mode of governance is a feature of partnerships that is usually prominent in the early to middle stages of partnership formation and maintenance (Lowndes & Skelcher, 1998). It is a phase of governance that, according to the ideal definition, arises from the ability of actors to identify corresponding interests, where

relationships between parties involved are conducted based on trust, reciprocity and the assumption of mutual gain (Lowndes & Skelcher, 1998). It is highly debatable whether a partnership can survive under conditions of voluntary, network-based cooperation alone, and indeed, contemporary research shows that network models are not straightforward web diagrams (Lowndes & Skelcher, 1998). Instead they can be nestled within hierarchies or feature many subdivisions that function via their own culture of interaction.

The important message here is that when discussing partnerships and networks, it should be clarified that these terms are distinct, not mutually interchangeable and not mutually inclusive. A partnership does not have to be governed via a network, and a network doesn't necessarily have to involve inter-organizational partnerships. McGuire (2002) acknowledges the same complexities found by Lowndes and Skelcher and critiques much current network literature on the basis that it does not take the presence of simultaneous different governance modes and management activities into account and makes too many generalizations about the functioning of networks and partnerships. Therefore, he calls for future research to focus on case studies to achieve the goal of demonstrating the intricate activities of social networks.

In this study, where partnerships are discussed, it is assumed that the network mode of governance is present to some degree (thus trust is an important feature to consider) and that other modes of governance (hierarchical or market-based) may also be present. The network mode of governance is assumed here because of strong findings in public management research that claim that the "underlying presence of a network mode of governance even when other modes [are present]... is key to sustaining [partnership] collaboration" (Lowndes & Skelcher, 1998). Since this study investigates ongoing partnerships, such an assumption is made. At the same time, a case study approach will allow for the possible refutation of these assumptions upon further investigation, as per McGuire's recommendation.

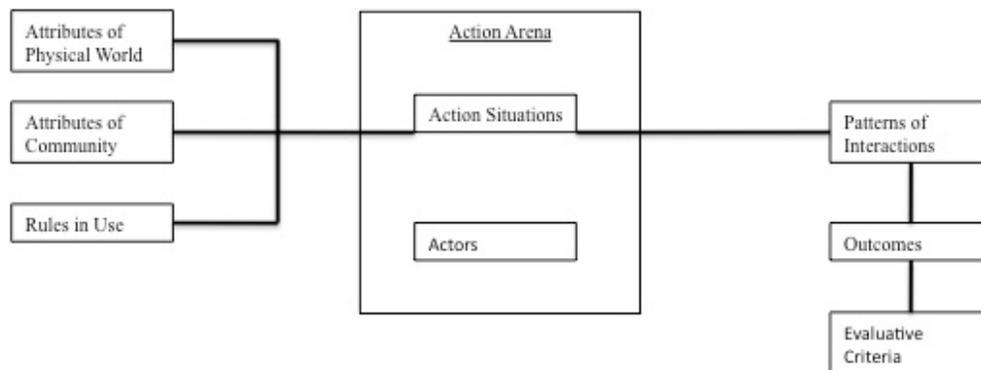
2.5 The IAD Framework

Elinor Ostrom's Institutional Analysis and Development (IAD) framework is a broad organizational model that is compatible with many theories relevant to environmental steering such as collective action theory, game theory, transaction cost theory, and is thus

widely used in the field of environmental policy analysis (Carlsson, 2000). The following information describes the IAD framework, a nested set of components explaining the overt and covert layers of reality, in more detail and how it can be used to understand the four case studies in a systematic manner. Though the conceptualization of this framework is partially derived from some theoretical points described above, as well as from scientific evidence, IAD is in itself not a theory, but rather a way to guide inquiry and also a way to structure information in a practical and thorough manner, which is an important feature for making a study reproducible, refutable and transparent⁶.

Figure 1: The IAD Framework

Institutional Analysis and Development Framework (Ostrom et al. 1994, p. 37)



The IAD framework is “problem-oriented” meaning it specifically seeks to answer questions of how actors convene to solve particular (environmental) challenges and to, more generally, explain the complexities of human behavior under certain circumstances (Carlsson, 2000). The IAD framework has three structural parts: exogenous factors, which describe the system’s external environment (biophysical and material conditions), the action arena, which is where the focal interactions occur, and the outcome, which precipitates from events in the action arena.

⁶ See: 1994 King, Keohane and Verba (KKV), *Designing Social Inquiry: Scientific Inference in Qualitative Research*

Applications of the IAD framework focus on a specific holon⁷ called the “action arena”, which is a place where problems emerge, in this report, the estuaries of the four case study areas. Ostrom subdivides action arenas into two mutually influencing, descriptive components: “action situations”, which describe the interactions of participants, available information, and can include analysis of networks, for example; “actors” describe the preferences of stakeholders, capabilities of actors to handle information and actor behavior, etcetera (Ostrom et al., 1994). To describe the action arena, Ostrom finds three “factors”, or independent variables, which help to identify patterns of interaction. These are “attributes of the physical world”, “attributes of community”, and “rules in use” (Ostrom et al., 1994). The factors tell a story, which is then analyzed via the chosen evaluation criteria, in order to predict/explain outcomes. Zooming in, patterns of interaction can be described in more detail by using seven types of variables: participants, positions, potential outcomes, action-outcome linkages, the control that participants exercise, types of information generated, and costs and benefits assigned to actions and outcomes (Ostrom et al., 1994).

The strength of the IAD framework for this study lies in the use of empirical observations to describe the factors of the action arena. This study’s work aims to build on existing knowledge well as to generate new information by organizing findings about the SFEP and the Biesbosch partnerships according to the IAD framework for the purpose of comparison. To accomplish this, qualitative research must be performed as input for the framework. Another strength of the IAD framework is its scope for conducting multilevel analysis, which is relevant as action arenas are embedded in constellations of activity, incentives, preferences and institutional structures (Carlsson, 2000). The action arenas cannot be understood as isolated cells operating in a vacuum; rather networks and broad, interconnected variables provide more realistic representations of reality. This perspective is especially important to understand in estuaries, as the physical settings themselves represent places of converging social, political and environmental activity.

Going forward, the information on the case studies’ action arenas will be applied to

⁷ A holon is a partial level of a complex system that can simultaneously contain different levels of action and be embedded into a larger systemic hierarchy, which is subject to rules (Koestler, 1973).

“fill in” the discrete components of IAD framework. This step will organize the relevant variables and show their interrelationships, as well as provide contextual institutional information about each case study, which is used in the operationalization of one category of independent variables.

3. Conceptual Framework

In this section, the knowledge gap in contemporary research is first explained to justify the direction of inquiry for this study and to address some of the common criticisms that leading authors express regarding the production of new knowledge in the field. Then, a combination of the theoretical propositions from Stenseke’s and Sandstrom and Rova’s studies are illuminated. The most important distilled lessons, called factors, that have led to the development of this study’s general hypothesis will be described in detail. These elements that form the foundation for the building of the conceptual framework will be presented in this chapter, which will culminate in a hypothesis and a visual representation of the guiding conceptual framework. Importantly, this section illuminates how the undertakings of generating a hypothesis and answering the research and sub questions are informed by literature.

3.1 Knowledge Gap in Research

In contemporary research on environmental partnership governance, there is a focus on analyzing narrow case studies and deriving lessons, which lead to conclusions on that particular arena alone. Due to complexities of environments’ institutional, social and economic contexts, in addition to the high degree of variability inherent in social science, it is a less frequent undertaking to attempt to extract lessons from specific circumstances and to try to test their relevance in other comparable situations. Therefore, this study seeks to test Stenseke’s hypothesis on success factors for Swedish cultural landscape maintenance to assess its applicability for use in other contexts. In other words, are Stenseke’s findings generalizable, at least when it comes to the functioning of partnerships in estuaries?

The results of this research are valuable in that they contribute to the body of

knowledge on the lessons that can be widely utilized for environmental governance, which is an important step for disentangling the common threads of how groups of people operate with relation to the larger scope of resource management. The key questions are: what promotes successful collaboration, what retards otherwise successful collaborations, how can these findings be explained by the institutional context, how can they be explained by network characteristics, and what are the larger scale implications of these findings?

A criticism of policy research often cited in contemporary literature is that too many studies focus on assembling information in a way that is more user-friendly, rather than on creating new knowledge (Bozeman, 1993). In accordance with this critique, this study is interested in generating new information and contributing to the body of work on effective means of estuary governance by standing on the shoulders of previous work to question the hypothesis put forth by Stenseke, and as a supplement, by Sandstrom and Rova.

Imperial and Yandle (2005) identify the narrowness of evaluation criteria in analyzing case studies as a serious problem in contemporary work. Alternatively, they recommend the approach of using multiple types of measurements and techniques to capture the range of complexities present. Therefore, instead of a singular methodological approach, the study will use a combination of tools to evaluate the lead authors' findings' applicability to estuaries in order to draw well-rounded conclusions and to better explain the nuances at work.

There are several other research pitfalls associated with environmental policy studies identified by the literature, which this thesis attempts to overcome. Bozeman (1993) describes the phenomenon of case study work that is reliant upon "wisdom literature", meaning that data is gathered upon impressions and reports of personal experiences rather than methodically via an organized framework. Imperial and Yandle (2005) warn that, like theory-seeking literature, case study investigation requires the use of a framework to encourage a disciplined analysis of the findings, striving towards knowledge aggregation and generalization. Accordingly, the type of loosely structured study Bozeman describes is not firmly rooted in the scientific approach, but rather in the more micro descriptive levels. While this study does not take a macro level approach to

analyzing estuary partnerships, it does take a rigorous, systematic stance to organizing the inquiry and, in line with recommendations by Ostrom (1990) and Imperial and Yandle (2005), will utilize a comparative case study approach in contrast with singular descriptive case studies to draw more robust conclusions and to overcome Bozeman's critique of the lack of practical applicability in "wisdom" studies.

3.2 Stenseke's Propositions Explained

Swedish researcher Marie Stenseke (2008) investigated, via the comparative case study approach, the consequences of local participation in landscape maintenance and has determined critical issues and essential ingredients for understanding and implementing this type of conservation strategy. Her investigations were of case studies that were considered to be successful examples of community involvement in landscape based sustainability projects, from which she compiled information from three distinct categories for explaining outcomes: "successful ingredients, counterproductive aspects and operational difficulties" (Stenseke, 2008). For the purposes of this study, Stenseke's assumptions are utilized as the organizational framework guiding the inquiry. The presence or absence of the above elements, as prescribed by the researcher, will be analyzed to see if the results of the four case studies are consistent with Stenseke's propositions for either success or failure given the existing circumstances.

Stenseke defines the measure of success for partnerships between local stakeholders and other governance actors as the degree of respectability, legitimacy and robustness achieved⁸. The six initial factors that she proposed are prerequisites to successful operations; in other words, we can infer that, according to Stenseke, success cannot fully occur if the following conditions are not present: (1) consistent institutional design, (2) specified and specialized involvement from member participants, (3) well defined, flexible problem definitions, (4) "good" communication, (5) respect for locally generated knowledge, and (6) locally tailored management strategies. In the building of this

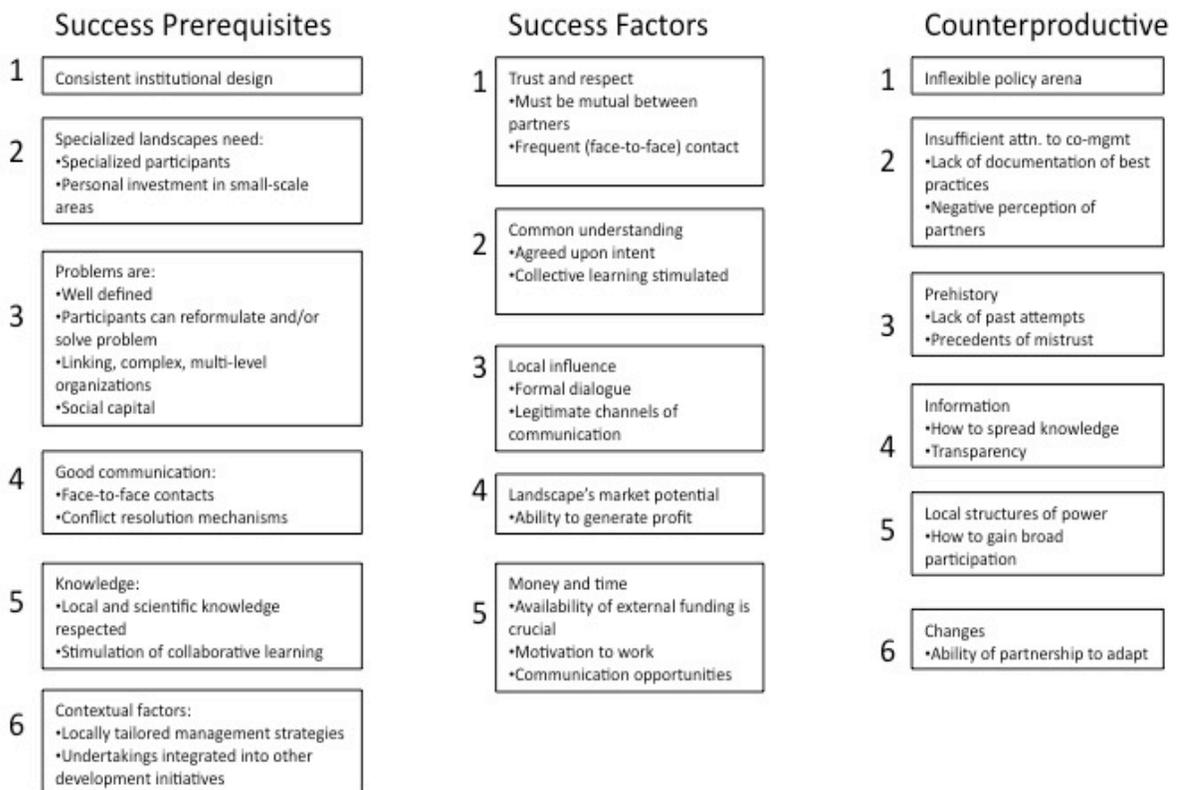
⁸ A possible criticism of Stenseke's work is that she does not operationalize what "respectability, legitimacy and robustness" actually mean. This is a very subjective approach with no real scientific reproducibility. To overcome this difficulty in producing a good parallel study, I will attempt to fully operationalize the outcome variable according to the lead of the state-of-the-art theoretical literature available.

report's analysis, these prerequisites will later feature as important justifications for the operationalization of the independent variables that have been selected.

The findings of her case study investigations led Stenseke to develop a five-factor list to explain the *degree* of success achieved, found in each action arena. They are: (1) trust and respect, (2) common understanding, (3) local influence, (4) market potential, and (5) money and time. In addition, she identified six counterproductive factors barring potential success: (1) inflexible, top-down directives, (2) poor co-management organization, (3) negative prehistory/precedents (4) lack of transparent, accessible information, (5) impenetrable local power arrangements (6) partnerships' inadaptability.

So far, one can visually organize these claims, with more detail on their premises, as follows. Each box contains further information on the crucial points associated with each of the topics:

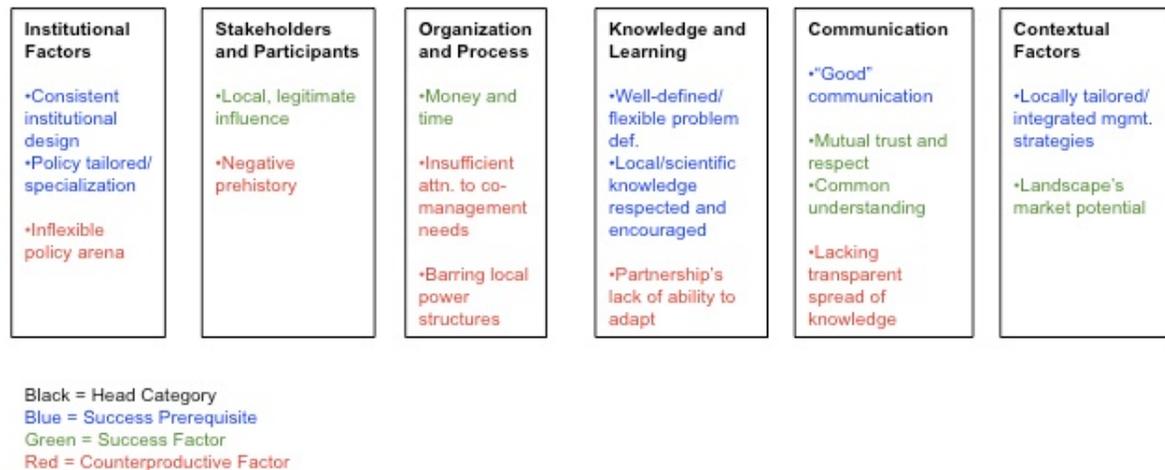
Figure 2: Stenseke's Propositions



The six broad, organizational categories identified by Stenseke to cluster the above

factors are: (1) institutional framework, (2) stakeholders and participants, (3) organization and process, (4) knowledge and learning, (5) communication, and (6) contextual factors. Reorganizing Stenseke's premises into this new categorization yields the following, where the organizational categories contain the relevant points of success prerequisites, success factors and counterproductive factors grouped accordingly.

Figure 3: Stenseke's Factors in Six Organizational Categories



This graphic allows us to more clearly see that every category contains a premise concerning the ongoing functioning of the partnership; thus each factor must be addressed in its own right when investigating the case studies. However, we can also see that the emphasis on each category differs amongst the factors. For example, there are no obvious contextual factors that are automatically termed as counterproductive, nor are there knowledge and learning/institutional factors that can be automatically termed as success-promoting. Additionally, there are no obvious prerequisites to the stakeholders and participants/organization and process categories that are not already categorized amongst the other headings. Thus from the graphic, one can infer that, in the initial stages of partnership, it is pertinent to focus on institutions, knowledge and learning, communication and context. When the partnership is in its growth and maintenance phases, more attention should be paid to stakeholders and participants, organization and process, communication, and to a lesser degree on knowledge and learning and contextual/institutional factors. This categorization will become relevant when operationalizing these six independent variables.

3.3 Sandstrom and Rova's Propositions Explained

Sandstrom and Rova's study on networks is, foremost, interested in the structure, the characteristics and the behavior of networks that promote adaptive governance.

According to the researchers' studies predating their 2010 analysis, the network's structure in an action arena is directly related to the outcomes of various co-management arrangements (Carlsson and Sandstrom, 2008). When it comes to governing common pool resources, like those of an estuary, there are two criteria which are most relevant: (1) network closure, which refers to the level of connectivity of the network via direct links, and (2) network heterogeneity, which refers to the amount of different actors exchanging information across network boundaries (Sandstrom and Rova, 2010).

Sandstrom and Rova make key assumptions associated with these two criteria. First, network closure positively influences the ability of collective action arrangements to succeed by enhancing conflict resolution pathways and by decreasing the transaction costs of interactions (Sandstrom and Rova, 2010). Conversely, low levels of network closure may be inefficient in this capacity (Sandstrom and Rova, 2010). Secondly, network heterogeneity is positively associated with collective arrangements because it is conducive to mobilizing resources, can allow governance networks to utilize diverse knowledge capital, and can distribute risk (Sandstrom and Rova, 2010). On the other hand, a homogenous network may lack new physical and knowledge-based resources, but, on the positive side, still could exhibit more efficient collaboration skills based on the high levels of trust and contact facilitated in well-contained networks where actors share many characteristics (Sandstrom and Rova, 2010). This study follows the lead of Sandstrom and Rova by making the same assumptions that *both* heterogeneity and closure are *positive* for the success of networks in the case studies' partnership arrangements.

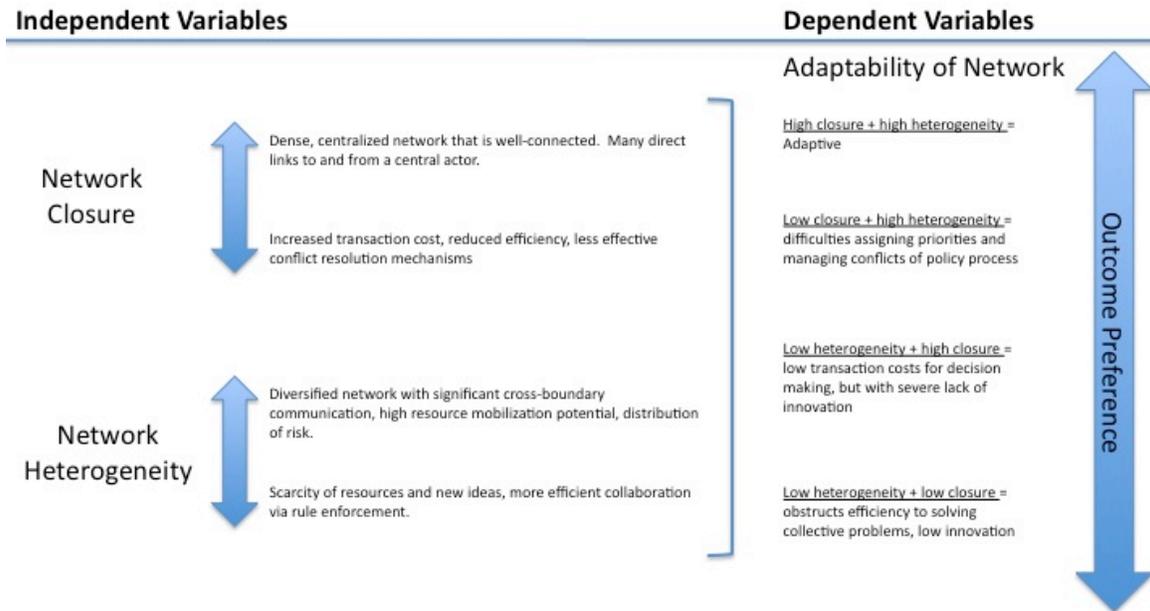
Network closure was measured via the density and centralization of the network, where high levels of each were interpreted as indicators of high network closure (Sandstrom and Rova, 2010). A heterogeneous network was defined as one having many diverse nodes with significant communication flows spanning organizational boundaries (Sandstrom and Rova, 2010). It was found that the hypothesis held consistent with the

results of the investigation, and adaptability, the dependent variable, was more likely to occur with high levels of network closure and heterogeneity.

In order to assess this hypothesis, Sandstrom and Rova (2010) tested a pool of respondents of individuals working within a governance network. The “snowballing” technique was used to identify the network, whereby individual nodes nominated new respondents based on their involvement in the network. This inductive method of identification of the relevant network led to the nodes’ further testing via a questionnaire meant to gather data on the patterns of relationships between individual actors through identification of collaborative partners (Sandstrom and Rova, 2010). Structured interview was also used as a supplementary method. The data collected was then used to generate a model of the network. Sociometric calculations were performed, yielding both qualitative and quantitative data to support their hypothesis claims.

This study repeats Sandstrom and Rova’s sequence of methods to gather and handle data as much as possible, though some feasibility constraints prevent exact duplication. Because it uses Sandstrom and Rova’s claims as a foundation (in addition to Stenseke’s) for the generation of independent variables, efforts will be made to hold the methods constant in order to test whether the claims and findings are relevant for other governance partnerships as well. Sandstrom and Rova’s claims are visually represented below.

Figure 4: Sandstrom and Rova’s Claims



3.4 Toward the Conceptual Model

Taking the claims of Stenseke (2009) and Sandstrom and Rova (2010) into account, a distilled master list of eighteen (18) ideal factors for the promotion of successful governance partnerships was compiled, against which the case studies will be compared.

Table 1: Master List of Eighteen Independent Variables

Factors according to Stenseke (2009)	Consistent institutional design
	Small-scale, local investment in landscape
	Tailored measures
	Well-defined problems that can be reformulated/amended
	“Good”, face-to-face, frequent communication amongst levels
	Decentralization of power
	Market profit potential
	External funding/investment
	Adequate time resources from stakeholders
	Well-documented co-management strategies
	Adaptability and flexibility balanced with resiliency in partnership
Factors	High network density

according to Sandstrom and Rova (2010)	High network centralization
	Diversified network
	Significant cross-boundary communication between organizations/clusters
	Access to information
	Appropriate rule-forming and rule-enforcing mechanisms
	Adaptability of problem definition to correspond with context

According to the authors of the two leading studies, *if the above points are fulfilled, then successful partnerships are more likely to occur than if one or more factors are lacking*. Since some of these factors work synergistically and some work independently, it is up to the discretion of the researcher, given the action arena studied, to determine which factors are more important when assessing the success of a partnership. To illustrate this point, when speaking of the independent variable, density, for example, Sandstrom and Rova (2010) acknowledge that it is impossible to identify standard criteria for interpreting density versus a loosely connected network, nor is it feasible to define cut-off values for an acceptable level of density, as many other contextual factors must be taken into consideration. Friedkin (1981) notes a similar complication by stating that covert contextual factors (such as the presence of cliques in networks, for example) can become an obstacle for interpretation from an external system perspective. Therefore, the case study approach taken in this research is meant to specify the analysis so that a clearer understanding can be made concerning the above independent variables, as they are often fairly open to interpretation. Knowing the people and organizations in more intimate detail is paramount to overcoming the lack of specificity that is often the subject of criticism in purely quantitative studies of social indicators, though objectivity remains, undoubtedly, a goal of good scientific research.

As Stenseke's categorization of the six relevant factors for successful partnership governance is the leading framework of this study, the master list will now be organized according to her headings. In other words, in addition to the claims made by Stenseke, how do Sandstrom and Rova's findings fit into this larger framework, too?

Figure 5: Master List Organized Into Stenseke's Six Categories

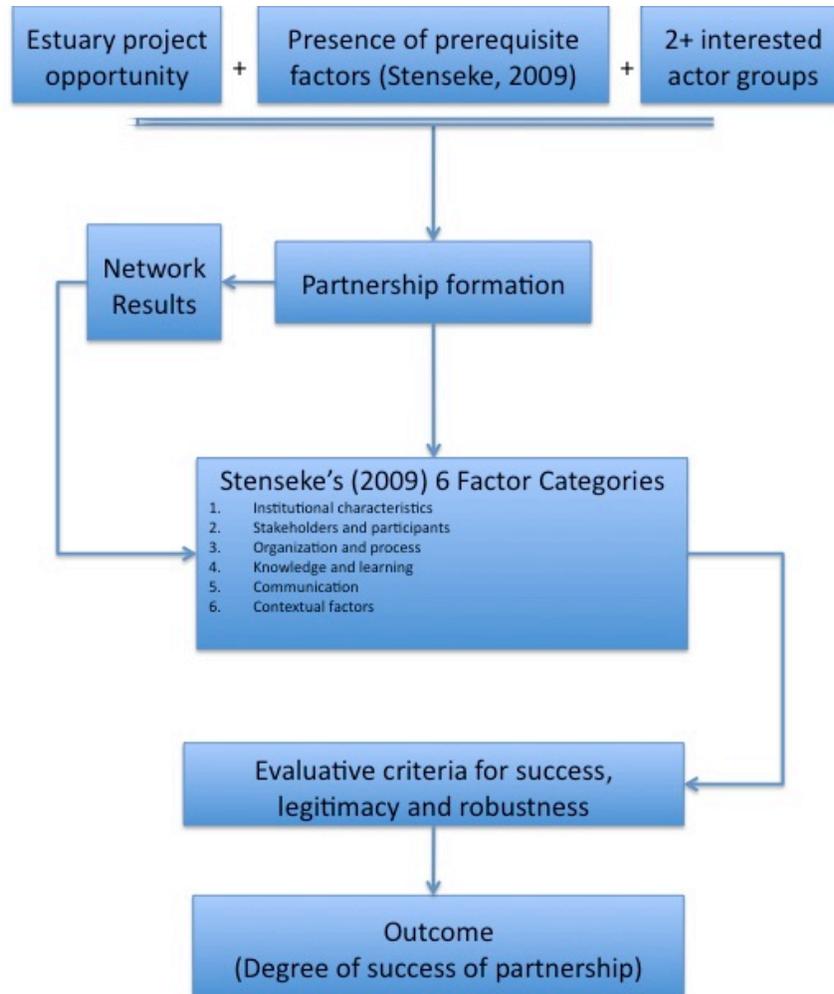
Institutional Factors	Stakeholders and Participants	Organization and Process	Knowledge and Learning	Communication	Contextual Factors
<ul style="list-style-type: none"> •Consistent institutional design •Adequate external funding and investment •Appropriate rule-forming and rule-enforcing mechanisms 	<ul style="list-style-type: none"> •Small scale landscape supported by local investment (financial and non-financial resources) •Adequate time and resources from stakeholders 	<ul style="list-style-type: none"> •Measures are tailored to landscape •Power decentralization •Adaptability and flexibility balanced with resiliency in partnership •High network density •High network centralization •Diversified network 	<ul style="list-style-type: none"> •Well defined problems that can be reformulated and amended •Well-documented co-management strategies •Adequate access to information 	<ul style="list-style-type: none"> •"Good" communication with face-to-face interaction •Significant cross-boundary communication between organizations/ clusters 	<ul style="list-style-type: none"> •Market profit potential •Adaptability of problem definition to correspond with context.

From this re-categorization of the leading 18 factors, a conceptual framework can be constructed. A conceptual framework is a simplistic sketch of the assumptions that the research makes when considering the way that the system in question actually works and furthermore, makes flows and interlinkages more apparent between independent variables, and the phases of progression, from partnership initiation to outcomes. The reasoning behind the generation of the master list, that *all* factors are important for partnership governance to some degree, has led to this study's general hypothesis:

The development and maintenance of watershed partnerships will occur where the proposed theoretical factors of good governance for sustainable development, according to Stenseke's six categories, are present in the action arena. Conversely, partnerships will not occur, or will be weaker, when any or all of these factors are absent.

The conceptual framework below illustrates the reasoning behind this hypothesis:

Figure 6: Conceptual Framework



The framework is structured in a progression from top to bottom, where time flows from the initiation of the partnership to the outcome of partnership activities, determining their success. As previously discussed, Stenseke postulates that certain factors must be in place from the beginning as prerequisites. Because some of the most critical of these points have been included in the 18-factor master list, the framework shows that the importance of the prerequisites carries over into the ongoing partnership after its creation. Therefore, in addition to determining if prerequisites are initially in place, this research emphasizes that some of those factors are unalienable to the ongoing partnership activity. The framework also shows the basic assumption that there must be an environmental situation needing attention and two or more interested parties for an environmental partnership to occur.

The three initiating criteria represented in the conceptual framework then lead to

partnership formation. A network precipitates from this partnership as a matter of course; because this study visualizes partnership interactions in terms of networks, it assumes that this interface will exhibit certain network characteristics. The types of network characteristics expressed are then organized according to Stenseke's six-category list, along with other indicators that can be found by observing the partnership by utilizing methods other than network analysis, such as the application of the IAD framework, for example. The techniques that are applied to study the action arena where the partnership operates will be described in detail in the "methodology" section of this report. In sum, both the qualitative and quantitative aspects of the partnership can be captured by studying the partnership itself along the lines of Stenseke's analysis and via Sandstrom and Rova's network analysis approach, which are then grouped according to the six-category list⁹.

The factors that feature in Stenseke's headline list will form the evaluative criteria portion of the analysis. Ideally, case studies will conform to the factors predictive of success. Variation on conformity is specified as the *degree* of success actually achieved by the cases. If the (unexpected) circumstance occurs where respect, legitimacy and robustness is achieved, but the criteria for success (the factor list) is not met/conformed to, this variation must be explained via contextual, covert or case-specific aspects, which will serve to broaden our knowledge by adding further nuance to the hypotheses of leading authors.

The conceptual framework, thus, forms a bridge between the hypothesis and the actual task of answering the central research question:

Which explanatory factors promote or hinder the development of watershed partnerships in the Biesbosch and the San Francisco estuaries, and how can any incongruities with the assessments of theoretical literature be explained?

In the next section, the methods used to progress through the conceptual framework in order to shed light on the research question and sub questions will be described in more detail.

4. Methodology

⁹ See Figure 5

As previously discussed in section 3.1, one critique of modern approaches to case studies is that evaluation criteria tends to be too narrow and a variety of methodological approaches are often not utilized to the detriment of the quality of study that is produced. To counteract this, this study utilizes three distinct empirical approaches in analyzing how closely the four case studies conform to the master list. They are (1) the use of the IAD framework as a descriptive method, (2) the use of network analysis as a qualitative and quantitative measure and (3) the use of social data via questionnaires and interviews to gain more nuanced qualitative information.

First, in this section, the independent and dependent variables will be operationalized, followed by an explanation of how the experimental methods will be used along these lines. A distinction will be made between those methods used for data collection and those used for analysis. Next, the case study selection will be justified, which is, lastly, concluded by a detailed description of each case study at both a macro and a micro level of focus.

4.1 Operationalization of Variables

The 18-factor master list, assembled from Stenseke and Sandstrom and Rova's claims, forms the body of independent variables to be tested. Because, according to the hypothesis, there is a direct relationship between meeting the conditions proposed and the likelihood of successful partnerships occurring, a central task in this research was to investigate if the case studies indeed conformed to the list and to what extent. To do so, the independent variables had to be operationalized in a way that was consistent with contemporary theoretical and experimental literature.

When deciding how to operationalize the variables (as in what questions to ask), I turned to Stenseke's 5-factor list¹⁰, which determines the degree of success in partnerships, in order to untangle which points to emphasize when trying to determine success indicators. For each variable, a small literature review was conducted to justify an appropriate way to evaluate a, sometimes convoluted, sociological indicator. Glaeser et al., (2000) assert that, in the case of survey or interview questions which aim to find

¹⁰ See Figure 2, column two "Success Factors"

out social information, questions should be both attitudinal and behavioral when possible. In some cases, as duly noted by Sandstrom and Rova (2010), no direct indicator could be found, thus the independent variable necessitated indirect measurement, achieved mainly through conducting interviews and/or by asking certain written supporting questions, which are listed here. For organization's sake, this operationalization procedure is presented in a graphic format below.

Table 2: Operationalization of Eighteen Independent Variables

Research	Ind. Variable	Characteristic	Methods	Supporting Questions
Stenseke (2009)	IV 1 ¹¹	Consistent institutional design	IAD, interview	<i>Does legislature welcome the involvement of partnership stakeholders?</i> <i>For the most part, do environmental management strategies generated by the partnership conflict or integrate with environmental policies/regulations that are already in place?</i>
	IV 2	Small-scale, local investment in landscape	Survey, structured interview	<i>Are local people involved directly with the partnership?</i> <i>Evaluate the following statement: 'Actors in the partnership feel a deep attachment to their cause, so that monetary compensation is less important than accomplishing their goals related to the environment.'</i>
	IV 3	Tailored measures	IAD, survey, structured interview	<i>Are the environmental management strategies that the partnership generates tailored to local environmental conditions, or are they more generally applicable to multiple areas?</i>
	IV 4	Well-defined problems that can be reformulated/amended	Survey, structured interview	<i>Does the partnership have clear objectives against which actors can monitor their personal performance as well as the partnership's performance?</i> <i>Does the partnership agree on certain "best practices" of operation?</i> <i>Evaluate the following statement: 'Members of the partnership accept a problem definition that could change over time.'</i> <i>Are the challenges/problems that the partnership is involved in solving clearly defined?</i> <i>Does the partnership have a mission statement that acts as a guiding light for the partnership's activities?</i>

¹¹ IV is an abbreviation for "independent variable".

	IV 5 ¹²	“Good”, face-to-face, frequent communication amongst levels	Network analysis, survey	<p><i>How much face-to-face contact do you have with other members of the partnership with whom you work most closely?</i></p> <p><i>Evaluate the following statement: ‘Overall, I view the other members in the partnership and the partnership in general as trustworthy.’</i></p> <p><i>Evaluate the following statement: ‘Overall, I believe that the members of the partnership and the partnership in general adhere to an acceptable set of principles and desire to do good.’</i></p> <p><i>Do you regularly communicate with members of the partner organization?</i></p> <p><i>How often do you meet with these regular contacts face-to-face? Please answer separately for partnership contacts and internal organizational contacts.</i></p> <p><i>Does the partnership encourage peer-to-peer learning, “learning-by-doing” where actors with different experience levels try to co-enhance each other’s knowledge? If so, can you name a specific forum where this occurs (i.e. workshops, conferences, team-building activities, etc.)?</i></p> <p><i>To your knowledge, has there been mistrust or major disagreements between the members of the partnership in the past?</i></p> <p><i>In the past, have the members of this partnership worked well together?</i></p> <p><i>Evaluate the following statement: ‘When it comes to the other partnership members with whom I have the most frequent contact, I view these individuals as committed to problem-solving and generally competent.’</i></p>
	IV 6	Decentralization of power	IAD, survey	<p><i>Can the partnership best be described as characterized by an equal level of power between all member actors, or are there multiple layers of power and responsibility</i></p>

¹² Background information: According to Glaeser et al. (2000), standard survey questions DO NOT have the ability to operationalize neither good communication nor trust and respect (as suggested by Stenseke) effectively. However, surveys can evaluate “trustworthiness” as an alternative (Glaeser et al., 2000, pp 841). The researcher acknowledges that these types of indirect survey questions may require extensive interpretation (Glaeser et al., 2000). To lessen the need for interpretation, Tan’s (2009) study on organizational trust was followed, as the researcher employs an indicator for “good” communication in the form of trustworthiness. He defines trust as the willingness of one actor to be vulnerable to the actions of fellow members whose behaviors that person cannot control (Tan, 2009). Tan’s (2009) research illuminated the two most prominent factors indicating trustworthiness, which are the trustee’s perceived level of benevolence and the trustee’s perceived integrity. Therefore survey and interview questions on this subject followed Tan’s (2009) lead in formulating appropriate indicators.

				<p><i>that are shared differently by the parties involved?</i></p> <p><i>Evaluate the following statement: 'Upper levels of management in the organization link their decision-making activities with middle management in their own organizations and their partner's organization.'</i></p> <p><i>Evaluate the following statement: 'Real power in the organization is concentrated in the hands of only a few individuals'</i></p>
	IV 7	Market profit potential	Survey	<p><i>Does the partnership's activities help to promote a profitable aspect of estuaries, which interest one or more of the partners (i.e. recreation, tourism, locally produced goods and services, educational resources)?</i></p>
	IV 8	External funding/investment	IAD, survey	<p><i>Is the partnership funded, at least partially, by an external source?</i></p> <p><i>Evaluate the following statement: 'Actors in the partnership view their monetary compensation for their work as adequate.'</i></p>
	IV 9	Adequate time resources from stakeholders	Survey, structured interview	<p><i>Does the partnership decision-making rely on experience-based and/or locally generated knowledge, scientifically generated knowledge or a combination of the two? Of these options, which, in your opinion is the most valid?</i></p> <p><i>How long have you been involved in the partnership?</i></p>
	IV 10	Well-documented co-management strategies	Survey, interview	<p><i>Are there formal arenas (with officiators) to facilitate inter-party dialogue such as recorded meetings?</i></p>
	IV 11	Adaptability and flexibility balanced with resiliency in partnership	Survey	<p><i>Evaluate the following statement: 'I would characterize the partnership's members and organizational style as flexible in general.'</i></p> <p><i>Evaluate the following statement: 'The partnership would collapse if an organizational disaster happened.'</i></p>
Sandstrom & Rova (2010)	IV 12	High network density	Survey, interview, network analysis	<p><i>Please list the names of the partnership members with whom you work most closely.</i></p> <p><i>Who would you contact in order to discuss topics that involve sustainability concerns within your organization?</i></p>
	IV 13	High network centralization	Survey, interview, network analysis	<p><i>Would you most likely describe the organization of the partnership and its interactions as:</i></p> <p><i>complex and linking</i></p> <p><i>complex and isolated</i></p> <p><i>simple and linking</i></p> <p><i>simple and isolated</i></p> <p><i>Other (Please specify):</i></p> <p><i>Is there one main contact person that most people in the partnership communicate with frequently?</i></p>
	IV 14	Diversified network	Survey, interview	<p><i>Evaluate the following statement: 'Members of the partnership have different backgrounds,</i></p>

				<p><i>opinions and expertise related to the environmental issues of interest.</i></p> <p><i>Evaluate the following statement: 'The diverse interests and experiences of actors involved in the partnership are given equal consideration when it comes to organizational learning and decision-making.'</i></p>
IV 15	Significant cross-boundary communication between organizations/clusters	Survey, interview, network analysis		<p><i>Which characterization best describes your communication with members of the partnership?</i></p> <p><i>remote and infrequent</i></p> <p><i>remote and frequent</i></p> <p><i>in-person and infrequent</i></p> <p><i>in-person and frequent</i></p> <p><i>Combination of the above (please explain):</i></p> <p><i>Are there formal venues for inter/intra-party dialogue?</i></p> <p><i>Do you regularly communicate with members of the partner organization?</i></p> <p><i>How often do you meet with these regular contacts face-to-face? Please answer separately for partnership contacts and internal organizational contacts.</i></p>
IV 16	Access to information	Survey		<p><i>Evaluate the following statement: 'The activities of the partnership, especially when it comes to decision-making, are transparent to the people who are impacted by the decision'</i></p> <p><i>Evaluate the following statement: 'I find it easy to access information that I need to do my job.'</i></p>
IV 17	Appropriate rule-forming and rule-enforcing mechanisms	IAD, Survey, interview		<p><i>Do members view interactions as legitimate (i.e. Fair, in compliance with the law, well-established)?</i></p> <p><i>Does the partnership have agreed-upon conflict resolution and sanctioning mechanisms?</i></p> <p><i>Evaluate the following statement: 'I view the channels of communication and problem resolution mechanisms in the partnership as relatively efficient.'</i></p> <p><i>Evaluate the following statement: 'Conflicts between members of the partnership are easily and quickly resolved.'</i></p>
IV 18	Adaptability of problem definition to correspond with context	Survey, interview		<p><i>Evaluate the following statement: 'Members of the partnership accept a problem definition that could change over time.'</i></p>

By presenting this operationalization procedure in a graphic format, it becomes more obvious that, though these 18 variables are deemed the most important distilled

indicators for partnership success according to the literature, there is greater emphasis on certain areas than on others. This uneven attention regarding the operationalization of the characteristics is justified by the importance placed on these indicators in both the lead authors' studies and in the state-of-the-art literature review. In particular, as mentioned, greater attention was paid to Stenseke's 5-factor success list in order to determine the most crucial points in this lengthy inventory. For example, "trust and respect" and "common understanding" are Stenseke's top two factors, which are highly emphasized in her research; therefore, the corresponding independent variables 4, 5 and 15 (to a lesser extent), have received a due amount of attention as they are deemed to be highly indicative of successful partnership outcomes. Another reason for a greater number of questions in these categories relates to the fact that they are not straightforward in their measurement (see footnote 11 for more detail). By asking a variety of questions about the same variable, care was taken to add greater nuance to the analysis and to guard against hasty conclusions. On the other hand, questions relating to subjects such as the existence of market profit potential are very straightforward and can be answered in a yes/no format, thus requiring lesser detail.

4.2 Experimental Methods

In order to conduct the experimental portion of this research, three distinct empirical methods were utilized. They are (1) the IAD framework analysis, (2) network analysis, and (3) social data collection. The decision was made to use three different methodologies because the 18 variable master list covers a broad range of indicators, which are too diverse to measure by using only one approach. Some indicators are analyzed via the use of multiple methods, while others could be sufficiently answered by using only one. In general, questions regarding institutions were all grouped under IAD, network indicators proposed by Sandstrom and Rova (2010) utilized network analysis, and all investigations of individual independent variables were supported by survey questions, and in some cases where possible, by structured or semi-structured interview in order to gather more specific social data.

As mentioned in the theoretical section of this report, the IAD analysis was carried out to better understand the institutional landscape influencing the partnerships'

characteristics. IAD can be thought of as a map to consistently and systematically organize information about a subject in order to draw conclusions about the consequences of institutional settings for constellations of rules and communities over time. An IAD analysis can be performed on different institutional levels, and can emphasize certain criteria of the framework over others.

To make a consistent comparison, this study executes an IAD analysis on the working level of partnerships, which consists of project leaders within the organization, and those people/rules who interact with them/affect them most directly when it comes to activity in the estuaries. The sketch of the case studies, furthermore, mainly consists of empirical analysis of the institutional setting within which these organizations work, and therefore how the setting affects their progress in the estuaries. Factors that are taken into account are: (1) attributes of the biophysical world, (2) attributes of the community, (3) rules in use, (4) action arena situations (5) outcomes and (6) evaluative criteria. IAD analysis can be performed in extensive depth and detail, but due to the constraints of this report, it should be thought of as a supporting source of information.

Network analysis was performed based on the assumption that network closure and network heterogeneity are the two most important criteria to consider when it comes to governing common pool resources; thus these are the two categories that were measured. Network closure is measured via network density and network centralization, which justifies the operationalization of independent variables 12 and 13. Network heterogeneity is measured based on the amount of different nodes represented in the network, and how frequently cross-boundary links are utilized to facilitate the flow of diverse information, which justifies the operationalization of independent variables 14 and 15. These four independent variables (12, 13, 14, 15) are treated with equal weight and consideration as they are considered to have comparable importance in analyzing networks according to Sandstrom and Rova (2010).

The most prolific method in this study was the analysis of social data. The pursuit of this type of information was especially useful when generating new knowledge through gaining insight into the inner workings, opinions, covert information and behavior revealed by respondents of interviews and surveys. The choice to gather social data via an electronically distributed survey and through structured and semi-structured

telephone and in-person interviews was inspired by the lead authors, Stenseke and Sandstrom and Rova. Stenseke spent an extensive amount of time observing the communities at work in her case studies, and relied heavily on interviews and empirical information generated on-site to inform her analysis. Sandstrom and Rova collected their network data through interviews and questionnaires, which asked sociometric questions to determine the relationships of actors and groups within networks.

The use of interview and survey questions was two-fold: the most obvious employment of this technique was to gain new information to determine conformity to the independent variables; the second use was to reconstruct the network, which was a primary task that had to be completed to find out who should take the survey and to visualize the network in the Pajek program. The technique of inductively reconstructing the relevant network will be described in greater detail in section 4.2.1. In sum, social data analysis forms the cornerstone of new information in this research endeavor, and was chosen as a primary method for its potential to address a broad range of indicators, in the acknowledgement that partnerships are comprised of people with unique, often unpredictable behaviors, and for the sake of consistency in following the lead authors' approaches in testing independent variables.

4.2.1 Data collection methods

Two types of data, quantitative and qualitative, are relevant for this research, however qualitative data comprises the greatest portion, while collection of quantitative data was attempted in order to supply supporting evidence for various network indicators important in determining the case studies' adherence to the independent variables tested.

The data collection method for the majority of the input categories in the IAD framework is relatively straightforward. Desk research was undertaken during the first half of the duration of the investigation to establish the external and action arena characteristics of the case studies. Beginning the research phase with an IAD analysis was a logical choice from a practical standpoint because it allowed for better familiarization with the action arenas before considering relevant questions for surveys and structured interviews. Later in the research phase, the survey/interview data collected acted as supplementary evidence for various IAD categories, mainly pertaining

to patterns of interactions, as this feature was less apparent from publicly available information. This combination approach to data collection is utilized for independent variables 1, 3, 6, 8 and 17.

Data collection for the network indicators took on both qualitative and quantitative features. Qualitatively, the first logical step was to inductively reconstruct the relevant network as a starting point. To do so, the technique used by Sandstrom and Rova (2010), known as “snowballing” was followed. “Snowballing interview technique” is a process whereby an actor of central importance is identified (via desk research, in this case) and that person is asked to nominate others with whom he or she has frequent contact. From there, identified actors can also nominate others until no new names are mentioned, at which time the process is complete (Sandstrom and Rova, 2010). The surveys to determine social data were then distributed to the identified participants in order to gain sociometric information, mainly pertaining to interactions between collaborative partners, of which rule forming networks and ecological knowledge networks are the most important for CPR governance (Sandstrom and Rova, 2010). As such, attention was paid in the operationalization of independent variables 12 and 13 in order to locate these task-specific links. Quantitatively, at the outset, this research attempted to analyze certain network characteristics via mathematical formulas for density and heterogeneity, however the number of participants in this study were too low to yield statistically significant results (n=9); thus this method (except for an estimation of density) does not feature in the analysis portion of the report.

After surveys were distributed and collected, follow-up interviews were conducted with willing respondents. The interviews proceeded in both structured and semi-structured fashions. Initially, interview questions were devised to give greater nuance to the questions already asked in the survey. These are listed below according to their corresponding topics from Stenseke’s six broad organizational categories¹³. Questions were limited to those pertaining to this six-factor list because practical constraints of respecting the time and the attention span of respondents necessitated prioritization of interview inquiries; these six categories consolidate the necessary information about the

¹³ See Figure 3.

overall state of the partnership in a logical manner. The structured interview questions were written, furthermore, to follow-up on relevant points that were difficult to research independently or were cumbersome to ask via a survey.

Table 3: Structured Interview Questions Based on Stenseke's Six Categories

Category	Relevant Interview Questions
Institutional Framework	<p><i>What types of constraints do you most commonly encounter when dealing with local governmental or institutional arrangements?</i></p> <p><i>Do you work closely with local legislature? How do you usually communicate with these individuals?</i></p> <p><i>Are your organization's goals integrated into development plans on a regional and/or national level? If they conflict, how so?</i></p>
Stakeholders and Participants	<p><i>Are diverse types of interests represented in the partnership?</i></p> <p><i>How could a local stakeholder express his point of view to your organization? What is done about it and how is this input received?</i></p> <p><i>Is the profit motive or the value motive most prevalent amongst partnership members?</i></p>
Organization and Process	<p><i>How often do you meet with your closest contacts in the partnership?</i></p> <p><i>How often do you formally meet with members of the partnership? With other stakeholders?</i></p> <p><i>Does someone take recorded minutes of the meeting or note working procedures?</i></p>
Knowledge and Learning	<p><i>In your opinion is scientific knowledge or experienced based knowledge more important to do your job in the estuary?</i></p> <p><i>Do you personally collaborate with stakeholders when it comes to your work?</i></p> <p><i>Does your partnership take an interest in any subject beyond conservation activities?</i></p>
Communication	<p><i>Do you have positive experiences interacting with stakeholders?</i></p> <p><i>How do you most commonly communicate with others in the partnership?</i></p> <p><i>Is information shared freely in the partnership or is this problematic (and why?)</i></p>
Contextual Factors	<p><i>Do you feel a sense of personal investment in the estuary?</i></p> <p><i>What are the main obstacles that you encounter that could/do prevent you from working at an optimal achievement level?</i></p>

Though these structured questions were pre-planned and acted as a guideline for the interview sessions, they took on semi-structured characteristics in practice. Because all interview respondents had completed a survey prior to the interview, some of the structured questions were irrelevant based on their written responses. Therefore they

were omitted from the discussion. Secondly, in all cases, responses to the survey generated new questions due to knowledge gaps that were revealed. Not all of the survey questions were transparent or relevant for the interviewees, so the interview was a time to readdress the original questions and to find out more information about them, especially those questions that were left blank in the survey. This conversation universally led to other off-shoot topics, which were not originally considered in the structured interview, and as a result, not all interview questions were answered by the entire body of participants. Because the responses were not standardized, information gained via interview was used as supplemental, or at least as anecdotal, evidence for the analysis. Its main advantage was that it allowed for a better understanding of the day-to-day experiences of partnership members and revealed some interesting detail that was not originally thought of when formulating the original questions. It also revealed a few incongruities pertaining to the information that is publicly available and the actual proceedings on the ground.

4.2.2 Analytical methods

The application of the IAD framework is intended to sketch the case study scenarios, but not to answer more specific questions regarding the personal interactions of the estuary partnerships. Therefore, analysis of the IAD framework was “zoomed out”, in other words, performed at a more abstract level, whereas more detailed analysis took place in the context of interviews and survey methods. This report’s analysis, where IAD is concerned, is mainly interested in how the rules in use, the biophysical and the community (stakeholder) categories influence the action arena. In this situation, according to Smagjl et al. (2009), the analyst should focus on analyzing the physical outcomes, versus the utility of the outcomes, to obtain greater precision in understanding the actual costs and benefits associated with that outcome. Limiting the analysis to the physical outcomes of the partnership activities, furthermore, allows for a standardized analysis of all of the case studies, instead of an attempt to measure the various perceptions of outcomes held by stakeholders. Such a complex approach is beyond the scope of this report, and therefore the decision was made to look only at unambiguous, objective results of the partnerships when determining the success criteria of the level of

respectability, legitimacy and robustness achieved.

The analysis of network indicators took on a greater level of specificity than IAD. Independent variables 12 through 15 (high network density, high network centralization, diversified network, significant cross-boundary communication between clusters) are the main categories that called for network analysis. In the case of high network density, the goal was to analyze what proportion of all possible links actually existed in the network. The formula to calculate this number (1.0 equaling a perfectly connected network) is $L / [n(n-1) / 2]$, where L is the number of links and n is the number of actors in the network. This formula is most useful for cases where a large number of people are involved, but its value for this research is that it shows how the disconnection of just a few actors in a small group has a proportionately greater impact than disconnection of the same number in a large group (Friedkin, 1981)¹⁴.

Centralization, which refers to the emergence of hubs that connect peripheral actors in a star shape, was a more difficult calculation to integrate into this research due to the small n. Because of this limitation, the decision was made to analyze centralization indirectly by identifying hubs in the network and asking various questions about the ego's communication with other relevant actors to determine if a star shape existed. To support this claim, the reported network was drawn using the Pajek program. In sum, a dense network with many connections that had a star-like shape, focused on one main hub, is construed as a network with a high degree of closure.

Diversified networks and cross boundary exchange were analyzed to measure "network heterogeneity" under the assumption that high network heterogeneity positively correlated with partnership success, especially in combination with high "network closure". Network diversity was measured indirectly by asking sociometric questions of how many stakeholder backgrounds are represented in partnership decision-making. Though Sandstrom and Rova (2010) propose a more mathematically sound way of analyzing diversity, namely the proportion of represented stakeholders compared to the

¹⁴ According to Sandstrom and Rova (2010) there is no standardized value for measuring the utility of density. Therefore assessments must be made on a case-by-case basis taking other contextual factors into account. In terms of this research, the small number of participants made it more crucial for everyone to communicate; thus one or more uncommunicative individuals were considered a great detriment to the overall cohesion of the network.

total possible number of stakeholders, this method here was hindered by the research capacity given the small n. Therefore a decision was made to consider a network diverse if the core actors in the partnership were open to AND inclusive of local and scientific knowledge in decision-making. The ranking (when it comes to including many stakeholders) is as follows: Diverse in first place = open and inclusive, Diverse in second place = not open and inclusive, Diverse in third place = open and not inclusive, Not Diverse = not open and not inclusive. Since there were two specific survey questions, one relating to openness to different knowledge and one relating to inclusiveness of different knowledge, this measurement was obtained based on respondents' negative or affirmative answers.

Cross boundary communication between clusters could not be quantitatively analyzed for the same reasons barring quantitative calculations for other independent variables. To objectively measure cross boundary communication, the decision was made to rank the case study partnerships against each other, with the most frequent and the highest number of communication partners being more desirable than those who had the least. This indicator was determined through, primarily, the interview method. In sum, a network that is open and inclusive to various stakeholders/knowledge types and exhibits a comparably high rate of cross organizational communication is deemed to be more favorable for network heterogeneity, especially in combination with a high degree of closure.

The remainders of the independent variables were answered qualitatively through survey questions. The lead authors of this study, Stenseke (2009) and Sandstrom and Rova (2010), do not give an objective scale for measuring the types of sociometric questions aimed at illuminating the 18 independent variables. This knowledge gap is confirmed by the state-of-the-art literature review discussed at the beginning of this report; indeed, as of 2011 the best course of action for evaluating self-reported data of this nature in a multiple case study scenario is to do so by comparison, in other words, to measure relativity in the level of conformity to the 18 factors found amongst the case study organizations. It is important here to be transparent about the fact that many liberties were taken in interpreting the results of the inquiry given contextual factors, though the effort was made to keep the analysis consistent; the choices are justified

throughout the analytical portion of this research.

Some survey questions were easy to assess from a clear yes/no answer, while others required a greater degree of nuance, sometimes, via freely written short answers by respondents. Yes/no questions were mainly used for those independent variables that were less complicated to operationalize. More complex questions utilized the Likert Scale¹⁵ on a ranking from 1 to 5 to assess varying degrees of agreement or disagreement with a given statement regarding a characteristic of the core organization or the partnership. Though the Likert Scale is usually treated as a tool for statistical analysis, the n was too small to perform any relevant calculations of this sort. Therefore, the function of the Likert Scale here is to understand the nuanced perceptions of each respondent. The decision was made not to use a forced choice scale (an even-numbered Likert Scale) to obtain data because neutrality regarding a concept is also an acceptable answer for the purposes of this study.

After the results of the snowball technique were compiled, the relevant identified individuals were contacted by either telephone or e-mail. This first contact was an opportunity to introduce the research concept and to glean a sense of actors' willingness to participate in the study. If the individual was reachable and willing to lend their time to the study effort, the survey was distributed to the appropriate person electronically. Upon the completion of the survey, an attempt to interview the respondent was made, with the most emphasis put on interviewing the most important ego centers (or hubs) of the identified network.

In order to assimilate the information obtained, each piece of data was ranked on a scale of 1 to 4 (1 = a top performer compared to the other three case studies, 4 = a bottom performer compared to the other three case studies). The total score for a partnership was then ranked against the other total scores from the case studies; the lowest number represented the best performer and the highest number represented the worst performer. The scores were not weighted because it is arbitrary, at this level of research, to try to determine how much weight one category has over another, though obviously there are

¹⁵ The Likert Scale is a one-dimensional scaling method that is used to assess opinions of a respondent regarding a given concept on a number scale, with lowest and highest integers equaling a strong positional opinion on a statement (Trochim, 2006). In the case of this survey, 1 indicates strong agreement and 5 indicates strong disagreement, while 3 is neutral.

contextual factors governing which independent variables weigh more heavily on the outcome. For clarity and consistency in the analysis, a raw score was used. The expectation was that a *lower* number score will correlate to a *higher* degree of respect, legitimacy and robustness.

Since the hypothesis is tested according to the final ranking's agreement with the degree of respect, legitimacy and robustness attained (the outcome variable), this measurement had to also be operationalized in a way that is as standardized as possible. Various strategies exist in current literature to statistically analyze concepts such as legitimacy when speaking of corporate enterprises or political bodies, however these techniques are not appropriate to use in this context, because they rely mainly on amassing media reports and public opinions to generate data. Furthermore, the use of the media as a mechanism for wealthy or powerful stakeholders to disguise issues or distort public opinion makes the media-method of computing legitimacy problematic, as acknowledged by scholars in this field.

Because of the size and scope of the organizations studied in this report, a more low-tech method for measuring the dependent variable had to be devised, as no indication of its measurement was given in Stenseke's work. The information contained within the IAD frameworks was most helpful in this regard, as the physical outcomes of partnership activities acted as evidence for the attainment of respect, legitimacy and robustness. Instead of operationalizing the criteria individually, all three terms were taken as a cluster indicator for the sake of clarity, thus the dependent variable is achieved or falls short altogether. A partnership was deemed to be respectable, legitimate and robust if it (1) attained the goals set forth in planning documents within the proposed time frame, (2) consistently received external funding without internal reasons for the funding ceasing, and (3) did not contract in size or scope over time. Therefore, the indications for achieving respect, legitimacy and robustness are a partnership that has physical outcome success (in the estuary), monetary success, and scalar success.

According to interview respondents, these three categories (physical outcome, monetary and scalar success) are (amongst) the most consistently crucial for sustaining partnership activity, and therefore, it is logical to measure the case studies against these standards, though one could question their generalizeability for other types and scales of

organizations. Imperial and Yandle (2005) contest the use of “physical outcome” in this set of evaluative criteria. They state that a widespread error made in policy analysis is to equate institutional performance with its policy outcomes by making the assumption that the achievement of a policy’s goals equates with a well-functioning institutional setting (Imperial and Yandle, 2005). To overcome this common pitfall, the research will look deeper into the institutional context via the IAD framework to support the body of evidence in a more nuanced way. The acknowledgement should be made here that this particular non-standard operationalization for success, legitimacy and robustness is valid for these four case studies alone, until otherwise tested, and are used because of the confirmation of their internal validity by the relevant stakeholders in an interview setting.

The summary of analytical criteria for the three methodological categories, the final ranking system and the dependent variable are given below in a graphic format:

Table 4: Summary of Methodological and Analytical Approach

Type	Category or Topic	Method	Analysis Criteria
IAD	Framework	Desk research	Physical outcomes of partnership
Network Indicators	Network density	$L / [n(n-1) / 2]$	Density of 1.0 is optimal; variations below 1.0 assessed within context
	Network centralization	Pajek program, snowball technique	Connections that have a star-like shape, focused on one main hub
	Diversified networks	Evaluative criteria: Open to AND inclusive of local and scientific knowledge in decision-making.	1. Open and inclusive, 2. Not open and inclusive, 3. Open and not inclusive, 4. Not open and not inclusive.
	Cross-boundary communication	Interview	1. Most frequent/substantial communication 2. Second most frequent/substantial communication 3. Less frequent/substantial communication 4. Least frequent/substantial communication
Social Indicators	All other IV	Electronic survey (supported by snowball technique)	Likert scale 1-5, yes/no questions, free answer questions
		Interview	Structured interview questions; follow-up on survey questions; anecdotal information to assist in determining contextual information
Final Ranking	IAD + Network Indicators + Social Indicators	Assigning rankings for IAD framework, network analysis, interview, survey	Relative total score
Dependent	Respect, legitimacy	Desk research (see IAD	(1) Attained goals set forth in planning

Variable	and robustness	framework); correlate with final ranking of all case studies.	documents within proposed time frame (2) Consistently received external funding without internal reasons for funding ceasing (3) Did not contract in size or scope over time
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4.3 Methodological Challenges and Constraints

During the initial planning and reading phases of this research, the broad goal to be able to consistently and systematically analyze cases in a comparative context was set forth. In scientific research, the optimal way to achieve this goal is to follow objective procedures of inquiry and analysis, which can be accomplished in a universally understandable way, often through mathematics. As this report deals with social science research, applying statistics can be a valuable tool to accomplish this goal, which was part of the original plan.

One challenge in using statistical methods is that a relatively large n should be examined in order to gain information that is statistically significant. This was not the case for the subjects of this report for various reasons. First, the organizations and partnerships dealt with are smaller than expected after an initial survey of the case studies. In reality, there are just a handful of relevant individuals working on estuary projects, which has various consequences: firstly, the networks of actors tend to be small and secondly, the responses of just a few key actors forms the total body of sociometric information for these case studies. In other words, attempting to perform a statistical analysis from the perspective of a small number of respondents would not only give very skewed results, but it would most likely not be reproducible for other study areas, thus nullifying its generalizeability.

The pool of respondents available was made even smaller by the difficulties encountered in, first, reaching these people, and secondly convincing them to participate in the study. Even when a verbal or written agreement was given to complete the survey, and/or a recommendation to complete the survey was given by a coworker, the response rate was still quite low. It should be acknowledged that, though the relevant individuals in the network are assumed to have been successfully identified, thus giving a good indication of the size of the central networks, ideally more individuals should have

responded to questions about the 18 independent variables. Nothing in this report is a guess or pure speculation; all information that is recorded is justified by the research, however it is incomplete when compared to the initial aims for this study.

Because statistical methods could not be applied in a meaningful way, many work-around decisions were made in terms of the best strategies to operationalize and systematically compare the case studies under the constraints of time, scope and willingness of participants. The way that this was achieved was to rank the cases against each other instead of against an external benchmark. The consequence for this is that the findings are very case specific and are therefore less able to explain phenomenon found in other study areas; however they do add to the body of knowledge about the application of Stenseke and Sandstrom and Rova's frameworks in an experimental setting testing their generalizeability.

4.4. Justification for Case Study Selection

From 1987, following the publication of the WCED report, "Our Common Future"¹⁶, the concept of sustainable development emerged in importance as a broad, linking theme which engenders collective responsibility for the planet's welfare. Since then, a multitude of undertakings at various organizational levels have been enacted and have spawned a new concept of control over our planet's future, governance, which places power in the hands of non-governmental actors in addition to the traditional means of managing natural resources as a strictly government-based task. While some outcomes of the thousands of environmental projects worldwide have been encouraging, they seem to pale in comparison to the vast amount of challenges experienced globally. Despite the frustration and skepticism towards the notion of sustainability that this truth has provoked, the influence of environmentally sensitive development has increased dramatically in the decades following the Brundtland report and now forms part of many governmental policy agendas, international agencies' development frameworks and business organizations' social persona in accordance with the concept of governance (Mebratu, 1998).

¹⁶ Also referred to as the Brundtland Commission or Brundtland report.

Zooming in, four case studies of environmental undertakings of the thousands around the world were chosen to for this comparative analysis. Below, I give an overview of the macro study regions and why they were selected, and an explanation of the individual case study subjects and why they were chosen as well. Practical and methodological considerations guiding these decisions will also be briefly discussed.

4.4.1 *The San Francisco Estuary Partnership*

In the same year that the Brundtland report was released, 1987, the United States government began an initiative called the National Estuary Program, or NEP, to improve the quality of nationally important estuaries in concurrence with the Clean Water Act Section 320, a directive that mandates the Environmental Protection Agency (EPA) to develop plans for “improving or maintain water quality in estuaries” (NEP, 2011). In line with the multifaceted perspective on what constitutes sustainable development, the NEP has a variety of sustainability goals including wildlife protection, the safeguarding of public water resources, and the allowance for recreational activities, to name a few (NEP, 2011). The two priorities of the NEP are conserving habitats and improving water quality. NEP projects are diffused into several smaller undertakings that are involved in a large national agenda. However, these smaller-scale programs take on governance characteristics, as they are realized, to a great extent, by non-governmental agencies and stakeholders, with governmental endorsement through grants and funds.

One important, large scale NEP project is the San Francisco Estuary Partnership, a coalition of non-profit organizations, scientists, citizens and resource-distributing agencies, whose main goals, similar to the NEP’s, are to restore and enhance water quality, to support climate change resiliency, to enhance public knowledge of issues in the estuary, and to protect fish and wildlife habitats in and around the San Francisco Bay Delta Estuary (SEFP, 2011). The partnership strategically shares knowledge, finances and practically based resources to achieve a vision of sustainability in a watershed which is of vital importance to California’s economy from the perspectives of shipping, recreation, agriculture, industry and tourism (SFEP, 2011). With ninety-two diverse partners participating in the SFEP, this partnership is rich in local investment and involvement, and is considered by many to be a successful example of an environmental

sustainability initiative based on their yearly report summary of achievements, which are integral to securing future grants from the EPA. Their most recent report from 2009 shows that they have protected 4,602.10 acres of habitat in that year alone. Of the existing twenty-four ongoing NEP programs in the continental United States and Caribbean, the SFEP ranks fifth in number acres protected, with the NEP's 2009 average being 4,978 per area out of a total of 119,481.90 protected acres that year. The data shows that, with an exception of very high outliers in the southeastern region of the US (which include estuaries of much larger scale than found in San Francisco), the SFEP is performing remarkably well compared to their peer partnerships.

According to Schneider, Lubell, Scholz, Mindruta and Edwardsen (2003), NEP affiliated networks, such as the one found in the SFEP are more robust and better-functioning than their counterparts due to the successes of the regional governance strategies employed by NEP participants. Specifically, the SFEP can attribute their strong position to their utilization of “cooperative solutions to collective action problems” and by wielding the NEP's influence to overcome second-level collective action problems¹⁷ (Lubell et al., 2003). This is accomplished by encouraging broad, inclusive regional integration, incorporating different types of experts into policy discussions and by nurturing the development of several trust-related factors (Schneider et al., 2003, pp 154). Overall, the study guiding this case selection acknowledges the need to explore the systematic functioning of individual agencies affiliated with the larger (SFEP) network to better understand the micro-level impact of policy networks (Schneider et al., 2003). Therefore, the SFEP appears to be a successful example on the surface, which justifies its selection in a comparative analysis where different levels of success are assumed and the goal is to derive lessons of both positive and negative illustrations for future applications.

4.4.1.1 THE BAY INSTITUTE

Located in Novato, California, the Bay Institute, since 1981, has acted as an advocacy and research organization whose mission is to “protect, restore and inspire conservation

¹⁷ Second order or second level collective action problems are those that arise when it comes to establishing trust and confidence in an institutional arrangement. As this process is inherent for the creation and maintenance of institutions, problems like these are fundamental barriers to collective action.

of San Francisco Bay and its watershed from the Sierras to the sea” (Bay, 2011). The Bay Institute approaches conservation from three aspects: scientific research, education and advocacy programs. Each of these strategies work synergistically with the goal of restoring the entire watershed that feeds San Francisco Bay. According to researcher Igor Lacan, Ph.D, the majority of the scientific activity that the Bay Institute engages in relates to upstream water quality and testing in the extended watershed, while education and advocacy activity feature more prominently in the bay catchment itself.

The Bay Institute is a relatively small organization with just six staff members actively engaging in projects. Overall, the organization takes a technical perspective on its activities; accordingly, the most leading current projects concern the analysis water flow in the bay’s watershed, with its most prominent project relating to operationalizing water quality and other factors to eventually create an ecological scorecard. The undertaking of the creation of the ecological scorecard forms the common tie between the Bay Institute and its partnership with the SFEP. Interviews with Bay Institute staff revealed that their work is mainly external to their organization, meaning that they engage in projects in partnership with other core organizations to give peripheral assistance in assisting in the necessary research and generating social/political support. The SFEP-partnered project, thus, is just one example of the types of outsourced assignments that the Bay Institute is involved with.

The Bay Institute was chosen as a case study subject for the following reasons. First, it was intended to only choose organizations with an educational orientation for the reasons of accessibility/openness to research inquiries, for their general positioning as non-profit organizations (partially) assisted by government, and for their relative buoyancy in the provision of services despite market conditions. Secondly, the Bay Institute has a similar number of active participants when compared with all other case studies; each organization that will be examined has fewer than ten core participants. For reasons of feasibility for the study and to achieve accurate comparisons, this element was important to hold constant. Lastly, the Bay Institute was chosen because it is engaging in a current, ongoing partnership project with the SFEP, and is not just a silent or invisible partner. Therefore, upon selection, it was assumed that information from partners would be readily available and prolific due to the project’s status as a current priority within the

organization.

4.4.1.2 CALIFORNIA STATE PARKS FOUNDATION

A relatively large parent organization, the California State Parks Foundation (CSPF) is “the only statewide, nonprofit, independent organization dedicated to protecting, enhancing and advocating for California state parks” (CSPF, 2011). The CSPF divides its activities into regional departments, which this study has narrowed its focus to. The department of interest here is the Northern California section, which deals with special projects in the Bay Area. The mission of the CSPF is three-fold and is: they seek to generate funds for environmental conservation projects, to encourage environmental education through stimulating youth activity and park visitation, and they seek to expand access and recreation within state parks to enhance a sense of community ownership, stewardship and enjoyment of California’s natural ecological resources.

Though there are currently two active projects in the Bay Area in which CSPF is working, only one is being undertaken in partnership with the SFEP. The Candlestick Point restoration project, officially titled “Yosemite Slough Wetlands Restoration Project at Candlestick Point State Recreation Area” is a conservation, community building and youth education-enhancing project that aims at restoring the largest contiguous wetland in the Bay Area. The proposed outcome of this ongoing project is to enhance the ecology and to provide future opportunities for community recreation in the restored space.

Like the Bay Institute, the CSPF has one major ongoing project in partnership with the SFEP. Similarly, they are both educationally oriented and receive partial funding by the government and partial funding from donorship. Also like the Bay Institute, the division of the CSPF has relatively few individuals engaged in the inner workings of the partnership with the SFEP. A major point of difference between the two organizations has to do with their engagement in community stimulation, that being a primary goal for the CSPF, and a secondary goal for the Bay Institute (compared with technical aspects), though this aim features prominently in both agendas.

4.4.2 *The Biesbosch National Park*

1987 was also a significant period in the Netherlands in terms of environmental conservation projects. That year, the Biesbosch region, a network of polders and estuaries that had been, for centuries, managed by Dutch agrarians, was conceptualized as a national park covering the areas of the Sliedrechtse Biesbosch, the Dordtse Biesbosch and the Brabantse Biesbosch (BIP, 2004). In the years following, institutional and management plans have been elaborated upon and culminated in the Biesbosch's official national park designation in 1994, proceeding the formation of the consultative body and national approval of the project in 1991 and 1993 respectively (BIP, 2004). The policy framework under which the Biesbosch consultative body functions is characterized by its focus on conserving green space. Defining green space, forming the Biesbosch action plan, and evaluating the relevance of development plans in the national park are determined through consultation, survey and experiential advice from stakeholders, in what can be termed a partnership-oriented management context (BIP, 2004). The goals of this extensive partnership network are to promote education about the natural features of the Biesbosch to aid in conservation efforts and to promote the multi-use value of the space. These goals are, in many ways, similar to the Biesbosch National Park's counterpart in this study, the San Francisco Estuary Program.

Strategies for future planning in the Biesbosch have evolved since its initiation in 1993 to emphasize flexibility in integrating external and internal developments, in contrast with initial plans to prescriptively manage the landscape (BIP, 2004). Currently, both short and long-term projects are simultaneously undertaken and different levels of management, by different partners, with interim quality evaluations to determine their effectiveness for environmental conservation. The plans are developed in a common contractual agreement between all participating partners in the consultative body, which prevent redundancies and the undermining of efforts by other stakeholder parties as per the 1994 covenant agreement (BIP, 2004). According to the consultative body, this type of coordination is essential to the management of the Biesbosch due to the landscape's embeddedness in local, national and international policy arenas, and due to its value as a natural environment of ecological significance.

Like the SFEP, the Biesbosch National Park is a nationally, and also internationally, endorsed enterprise that functions on governmental assistance. The

Biesbosch, in addition, utilizes the services of partnered organizations to complete projects and to assist in the ongoing development of the park's various programs, though not nearly as many as those who are active in the Bay Area.

The Biesbosch was chosen as an analogous action arena for a variety of reasons. First, the Biesbosch is an area where tourism is highly important, yet must be balanced with the preservation of valuable ecological characteristics inherent to the area. The San Francisco Bay shares a similar problem, in that recreation and commercialism are priority activities, yet there is a strong social consciousness at work that advocates for environmental conservation. Secondly, in a related manner, decisions in Biesbosch's estuary related to planning and use generate a degree of controversy in the local site as a result of the variety of stakeholders present in an overlapping setting. Likewise, polluting enterprises and commercial interests tend to generate friction in the Bay Area, where a recent surge in conservation advocacy activity has occurred in the past decade in response to critical, degrading environmental conditions (Bay, 2011). Therefore, both case studies represent hotspots of contested, anthropocentric activity and converging interests, where a variety of partners are involved in enacting multi-mode governance and a number of special projects.

4.4.2.1 IVN CONSULENTENSCHAP BRABANT

The IVN Consulentenschap Brabant is an independent knowledge agency that assists in advising the informational and educational services of the Biesbosch National Park (Voorlichting en Educatie or V&E). As with all the case studies selected, IVN Consulentenschap Brabant is a non-profit organization that receives partial governmental funding and is geared towards enhancing education. Specific duties of the agency include advising, organizing and coordinating all activities in the national park with regard to educating students, visitors, volunteers, teachers and environmental professionals. To do this, the IVN Consulentenschap Brabant creates the annual V&E planning, project and budgetary program in conjunction with the coordinators/steering board of the national park. They also create and distribute written and electronically published material about Biesbosch activities relating to community activism and education. Furthermore, they involve local schools in hands-on experiences in the

Biesbosch's natural setting, and they educate volunteers and guides working within the national park. The guiding themes of this organization are biodiversity, landscape maintenance, sustainability and water.

Like the California State Parks Foundation, the IVN Consulentenschap Brabant is one regional division of eleven, belonging to its parent organization IVN, Vereniging Voor Natuur en Milieueducatie. For the purposes of this research, investigation was limited to the IVN Consulentenschap Brabant as it is the most active in the Biesbosch National Park in terms of undertaking partnership projects in the area. The IVN Consulentenschap Brabant also has a comparable, limited number of people working on Biesbosch projects within their office, which is in line with the case analogues. Another important similarity to the other case studies is that this organization takes a strong stance on the value of partnerships within the community, the collaboration with local individuals and the broadening of knowledge through the inclusion of many types of input. The major current project tie between the Biesbosch National Park and the IVN Consulentenschap Brabant is the Wijde Biesbosch education project (Educatie Wijde Biesbosch), though extensive collaboration also takes place outside of formal projects due to the IVN's ongoing consultancy function.

4.4.2.2 STEP

STEP represents a slightly different partner aspect in that STEP (the Sustainable Tourism in Estuary Parks) is a temporary project funded in large part by the European Union, or more specifically, by the European InterReg 2 Seas Program, which draws its budget from the European Regional Development Fund (ERDF). The duration of the project is from 2007, when it was proposed, until its scheduled termination in 2012.

During its active period, STEP's goals are to develop sustainable tourism in three ecologically prominent areas: The Biesbosch National Park, The Broads National Park in England, and the Polders of Kruibeke in Belgium. More specifically, STEP seeks to refine the concept of sustainable tourism and to implement various public-private cooperative strategies to develop the sustainable tourism industry. Development of tourism in a way that is compatible with conservation aims to overcome current problems of estuarine visitation in the focus areas, which are (1) the difficulty of supervision in

areas accessed only by water, and (2) the need for stricter protection of these fragile ecological zones under the European Natura 2000 measure. To accomplish these goals, STEP designs and tests innovative forms of visitor management, stimulates the market and educational sector to participate in formulating and implementing sustainability strategies, and empowers multi-level stakeholders through communication, workshops, written material and various forms of publicity.

Though the general thematic approach is the same in all three focus areas, the goals within the Biesbosch are specified, with an emphasis on the mobility of tourists. Aspects of transportation are heavily addressed, from the creation of sustainable ferry links and charging stations for boats, to the building new transit paths for hikers, cyclists and kayakers. Innovation in sustainable tourism is also taken into account, with specific goals for the improvement of the visitors' center building and its monitoring capacity, and the development, testing and implementation of sustainable products and services (though these are, as of summer 2011, unspecified in public records).

While the timeline of operation for STEP is not as long as that of the other three partners, the most important features for comparison are still present. STEP is highly involved in education, whether it concerns the involvement of academics in the innovation and implementation side, or the provision of Biesbosch information to tourists and schools. Secondly, the size of STEP is a comparable factor as well, that holds consistent with the other case study areas. Third, STEP is highly involved in working within partnerships to accomplish their goals in the short term, and in joining stakeholders to maintain ongoing, long-term projects. Currently, STEP is partnered with two main organizations acting in the Biesbosch: the Natuur-en Recreatieschap De Hollandse Biesbosch (a lead partner), and Stichting Beheer Nationaal Park De Biesbosch, Netherlands, which now collectively form the Partnerschap Nationaal Park De Biesbosch.

5. Analysis

In this chapter, the four case study areas will be analyzed according to the combined approach discussed in the methodology section. Each section will be dedicated to one case study, and the analysis will be broken down into six categories following Stenseke's six broad organizational themes, which encompass the 18 independent variable master

list as shown in Figure 6 below: (1) Institutional framework, (2) stakeholders and participants, (3) organization and process (4) knowledge and learning (5) communication (6) contextual factors.

Figure 5: Master List Organized Into Stenseke's Six Categories

Institutional Factors	Stakeholders and Participants	Organization and Process	Knowledge and Learning	Communication	Contextual Factors
<ul style="list-style-type: none"> •Consistent institutional design •Adequate external funding and investment •Appropriate rule-forming and rule-enforcing mechanisms 	<ul style="list-style-type: none"> •Small scale landscape supported by local investment (financial and non-financial resources) •Adequate time and resources from stakeholders 	<ul style="list-style-type: none"> •Measures are tailored to landscape •Power decentralization •Adaptability and flexibility balanced with resiliency in partnership •High network density •High network centralization •Diversified network 	<ul style="list-style-type: none"> •Well defined problems that can be reformulated and amended •Well-documented co-management strategies •Adequate access to information 	<ul style="list-style-type: none"> •"Good" communication with face-to-face interaction •Significant cross-boundary communication between organizations/ clusters 	<ul style="list-style-type: none"> •Market profit potential •Adaptability of problem definition to correspond with context.

5.1 Analysis of the Bay Institute

5.1.1 *Institutional factors*

In the operationalization of the 18 independent variables, five utilize the IAD framework as a means to assess their status in the case studies. They are: *IV 1 (consistent institutional design)*, *IV 3 (tailored policies/specific measures)*, *IV 6 (decentralization of power)*, *IV 8 (external funding and investment)* and *IV 17 (appropriate rule forming and rule enforcing mechanisms)*.

Turning the attention to Figure 6 above, one will notice IV 1, IV 8 and IV 17 are grouped under the general heading of "Institutional Factors", whereas IV 3 and 6 feature in "Organization and Process". Because all independent variables also use secondary or tertiary methods in their assessment, the primary method of IAD will apply to 1, 8 and 17 and secondarily to 3 and 6. In the following section, the IAD framework will be specifically directed at these five different variables, and as such it will be carried out within the boundaries of answering the variables only; it is by no means exhaustive, but

aims to provide the facts relevant for the parameters of the analysis. Afterwards, an interim conclusion will be made, which sheds light on the status of the variables in the Bay Institute according to the findings of the IAD methodology. The same format to present the interim conclusions will be repeated after the analysis of each category to give an increasingly detailed profile of the case study.

5.1.1.1 BIOPHYSICAL CONDITIONS

The physical setting in which the Bay Institute operates is widespread and complex. Its activities concern the entire watershed of the northern region of California; therefore one of its project target areas is the San Francisco Bay and its tributaries, spanning 9,204 square miles (EPA, 2011). The focal area for projects related to the SFEP is shown below in the illustration of the main watershed (the extensive watershed encompasses a majority of the state of California according to some sources)¹⁸:

Figure 7: The San Francisco Estuary



Within the San Francisco Bay, the most critical feature of its ecological characteristics affecting the institutional arena is that this water zone is under severe threat from polluting sources. As the largest estuary on the western coast of the United States, composed of 17 different waterbodies, the Bay supplies economic goods to

¹⁸ Source: U.S. Environmental Protection Agency, 2011.

businesses, provides areas where recreation takes place, features in the educational programs of regional schools and universities, is a major source of water for the agricultural and urban areas of much of California, and is a scenic zone of environmental heritage and ecological importance (Bay, 2005). Thus the causes and effects of pollution, the most prevalent being mercury, PCBs, chlordane, dieldrin, DDT, dioxin and furan (in descending order of severity) should not be underestimated (EPA, 2011).

Currently¹⁹, the watershed is classified as “impaired” by the EPA, a definition that the Bay Institute has specified in recent years in connection with projects undertaken in partnership with the SFEP, namely the Ecological Scorecard, which was used to rate the San Francisco Bay in 2005 appraisals. Though the lower part of the estuary is healthier compared to its northern counterpart, some of the negative inputs are mitigated because of the marine dominant tides in the area. The upper part of the Bay is severely threatened, however. According to the Ecological Scorecard, the levels of plankton supporting the food chain are extremely low and collapsing, and fish populations and the quality of these animals for consumption, despite some restoration earlier in the decade, are returning to “critically low levels” (Bay, 2005). Loss of habitat is also a significant problem according to the institute, with the grim prediction that at current rates, it will take 150 years to reach restoration goals in the watershed (Bay, 2005). Of the eight environmental indicators indexed in the Ecological Scorecard, only shellfish are performing well by increasing their population in the northern reaches (Bay, 2005). In the long term, the only positive prediction for the future of the watershed is some improvement in the levels of toxic compounds found in the immediate ecosystem (Bay, 2005).

Illuminating the facts most pertinent to the independent variables, it is fairly clear that specifying measures to such a geographically widespread area is challenging. Whereas greater progress might be achieved for individual projects with a micro-level approach such as those often undertaken by research universities, the Bay Institute is focused on the breadth of the watershed, choosing projects in a piecemeal way with many different courses of action instead of localizing its efforts.

¹⁹ The most recent obtainable data is from 2006.

5.1.1.2 ATTRIBUTES OF THE COMMUNITY

The relevant community of the Bay Institute is comprised of its internal staff and the related partners supporting its undertakings. Interviews with key respondents reveal that the institute is self-described as “flat”, as opposed to hierarchically organized. They are also self-described as “small”, employing only a few researchers and communicating with a very limited number of people with regards to their partnership activities with the SFEP. As a small, flat organization, not aimed at generating new research, but rather at surveying existing academic and agency literature, its internal staff interacts very little with each other. Each person works in relative isolation on projects and sources information outside of the organization to accomplish their tasks. Certainly, one can speculate that power is decentralized.

Behavioral norms within the Bay Institute dictate that, though the relationships and trust are self-reported as superficially positive, in reality, actors know very little about the others’ role in the Institute. Interview responses show that respondents were unable to describe what other indirect colleagues do in greater detail. This feature may be due to the fact that the Bay Institute has divided its activities into two major tracks: one deals with water flows and quality in the rivers and deltas, and the other deals with the Bay restoration programs. Because each researcher or advocate acts, primarily, as his or her own boss, and business travel is common, face-to-face contact is very limited in the community.

There is also a clear divide between the lengths of time that Bay Institute contributors have been involved in the organization. Of the five researchers working in program development or scientific data acquisition, two have recently joined in 2011, suggesting a recent reshuffling in the organization. The remaining three have been involved with the Institute for several decades, though all of these actors also work in other external consultancy or research functions, thus it is unknown what proportion of their time they dedicate to Bay Institute projects. Though all colleagues hold at least an American Bachelor’s degree, they come from different academic backgrounds and are vastly ranging in age and expertise. It is, therefore, speculative how much common understanding can be generated amongst actors with limited communication, different

working demands and different histories within the organization. Of all of the participants in the Bay Institute network, only two are, in any way, involved in projects undertaken in partnership with the SFEP. Of the three original scientists involved in undertaking the SFEP-Bay Institute project for Ecological Scorecards in 2003, only one remains, while the status of the undertaking is considered ongoing.

The most important common belief within the Bay Institute is the trust in legitimacy and necessity of both scientific knowledge and experiential –based expertise from the collaborating public, although there seems to be a strong preference for scientific knowledge in the Ecological Scorecard project.

5.1.1.3 RULES IN USE

The policy context under which the Bay Institute operates is within the CALFED Bay-Delta Program, which was an ambitious initiative on the part of California legislatures to integrate adaptive environmental and collaborative strategies in order to manage this area's watersheds, the San Francisco Bay and the Sacramento-San Joaquin Delta (Kallis, 2009).

The CALFED, from 1994, was an attempt to coordinate stakeholders previously divided amongst north-south, agriculturalists-urbanists, preservationist-capitalist lines to end California's century-long "water wars" over the use of the watershed, culminating in the Bay-Delta Accord (Kallis, 2009). Though the CALFED officially disbanded in 2007 (except for the Science Program) due to general discontentment with the lack of progress in projects, the rules in use at this time are relevant to the Bay Institute-SFEP partnership because it is during this period that their main collaboration took place. Presently, in 2011, there are no new concrete projects on the horizon for this partnership, besides the refinement of initiatives conceptualized and executed during the CALFED period. In addition, some of the Bay Institute's projects are relevant for the CALFED Science Program, which is still active.

There are various important legacies inherited from the CALFED period that still hold true today, which have consequences for the policy arena at present. The issues raised from 1994-2007 considered key to the watershed were water quality, ecosystem health, levee stability and water supply; these remain priority items (Kallis, 2009).

Secondly SFEP, in response to impending environmental crises of low water supply and failing water quality²⁰, created a partnership between businesses, agriculturalists, scientific research agencies and development interests to create a coherent plan to preserve the Bay's resource integrity (Kallis, 2009). The Bay Institute was included in this initiative, in addition to further efforts by the SFEP around the same time period to coordinate regular meetings in order to stimulate collaborative institutional learning (Kallis, 2009).

One of the most important legacies, as noted by Kallis et al, in UC Berkeley's study on the failure of the CALFED measures, was that proceedings took on an "ad-hoc interagency, mixed group" characteristic run by "sub-committees", which was detrimental to proceedings, and contributed to the creation of "soft policies" in contrast with the more transformative programs required (Kallis, 2009, pp 634). This misstep is, in large part, due to the fact that the CALFED never had clear goals or agreed-upon means of project achievement or a coherent problem definition, thus resulting in a severe lack of cohesiveness (Kallis, 2009).

As of 2009, the governor of California, Arnold Schwarzenegger, ordered the commencement of the "Delta Visioning Process", an attempt to revise the CALFED program and to come up with a new collaborative environmental strategy for the Bay-Delta. It is imperative to understand that the CALFED was an experiment, and the Delta Visioning is an amendment for this experiment in collaborative governance and adaptive management. Criticism from scholars suggests that this new direction in California water policy does not address the shortcomings of previous failures, namely the overreliance on informal, inter-party collaboration and its ability to stimulate innovation without the involvement of proper governmental support, investment and legitimacy (Kallis, 2009).

In sum, though the name is different, the policy environment remains the same: California's legislative arena is still burdened with a lack of direction, aggravated by entrenched patterns of interaction between agencies, lack of staffing and budgetary resources, and contradictions between state and federal policies. The constraints

²⁰ New legislation under the Clean Water Act and the Endangered Species Act demanded reduced salinity and a marked decrease in free toxic contaminants in 1992 during the Clinton Administration. This was also a driving force behind the SFEP's initiatives in the early 90's.

resulting from the disjointedness of the rules in use and other policy hindrances are evident in the style of partnership collaboration between the SFEP and the Bay Institute, but they are also mediated by the trust-based relationships discussed in the following sections.

From the analysis of this portion of the IAD framework, it becomes clearer that the decentralization of power is precedent amongst Bay area working partners due to patterns of interactions founded upon collaborative governance, for better or for worse. Secondly, there is much evidence of inconsistent institutional design and the lack of coherent and specific measures in the general policy context under which the partnership functions, which makes the rule-forming and rule enforcing mechanisms also suspect due to the lack of specification of the goals for the allocation of resources in the watershed. Lastly, as discovered by means of interview and a general overview of public news in the past five years, California is in a budgetary crisis, which leaves limited funding available for special environmental projects, like those of the Bay Institute; thus governmental funding most likely plays an unstable role in the financial support of Bay Institute (as evidenced from interviews), though its backing of the SFEP may be somewhat more reliable because of its endorsement through the EPA's National Estuary Program.

5.1.1.4 ACTION ARENA

Here, the action arena refers to the conceptual space where action takes place through the decisions, behaviors, and experiences of actors. The relevant actors are the Bay Institute members involved in the partnership along with their contacts at the SFEP that are involved in executing partnership projects. Currently, there are two contacts on the Bay Institute side and one contact on the SFEP side.

The main contact from the Bay Institute is the director of the River and Delta program, who was directly involved in negotiating the legislative agreements that were foundational to the CALFED program, such as the Bay-Delta accord to the San Joaquin River Restoration Settlement. The individual is currently involved in defining new direction for the new Delta Visioning process as a self-described "leader in the environmental community", and has a stake in promoting the Ecological Scorecard program in this application, one project that he oversees at the Bay Institute (Bay

Institute, 2011). He also served on the Board of Directors for the San Francisco Estuary Institute, which is currently an important third partner for the Ecological Scorecard program along with the SFEP. His motivation is the responsible allocation of water, favoring ecological conservation above agricultural or industrial progress. From this profile, it is evident that the Bay Institute's main contact hub for the SFEP has years of history and experience in promoting the agenda to shape California's delta and estuary policy and is active in promoting ecocentric stewardship projects at this juncture of institutional change.

The secondary contact at the Bay Institute is a scientist with three decades of experience working on profiling the state's water resources to generate information that has been used in policy decisions for restoration projects. He is also especially active in community work, supporting museums and educational outreach concerning California's hydrological systems. The contact also has external connections, as he works as a freelance consultant for environmental groups geared towards watershed restoration. His motivation is the improvement and preservation of various water systems and advocating for these measures via the contribution of scientific research. He, along with the primary contact at the Bay Institute, was involved in the CALFED program partnerships' activities in advocating for specific water-related policy decisions and has many decades of experience, informational access and relationships built up in the Bay area.

On the SFEP side, the project contact is a financial manager with over two decades²¹ of experience working on projects that have received funding through the Clean Water Act. The ecological scorecard is one such item; currently, the California Department of Water Resources funds the project, where it is listed as an ongoing venture (SFEP, 2011). Alongside managing partnership related communication with parties involved with the ecological scorecard, she works to secure more funding for these and similar undertakings. Her work is unalienable for the partnership's future with regards to a multitude of ongoing ventures, as her work proposes, secures and allocates funds that are vital to the progress of projects in the estuary. A fundamental aspect of her role is to

²¹ While it is unknown what her future plans are, this contact is nearing retirement age (she is 63). After she is no longer working with the SFEP as a contract manager, there is no clear indication of who will follow-up on this project.

utilize the data, in part provided by the Bay Institute, to be able to generate governmentally sponsored support.

5.1.1.5 OUTCOMES

The fact that all three partnership contacts have decades of experience working on the same types of environmental projects in the same area has significant consequences. Upon researching and observing the Water Forum in the Bay area, an official forum for dialogue between environmentalists, water agency representatives and other political advocates, Connick and Innes (2008) remarked that social capital and the development of informal relationships greatly impacted the outcome results of collaborative networking. They stated:

While this social capital and the personal and professional networks undoubtedly had many small impacts on both attitudes and actions of participants inside and outside the dialogue, it also translated into potent political capital. The trust and relationships built in the CALFED process meant that all the important and otherwise opposing players jointly developed and publicly supported two major statewide ballot propositions designed to raise nearly \$3 billion dollars for environmental restoration, water quality improvement and water use efficiency projects, and water supply facilities (Connick & Innes, 2008, pp 16).

In sum the shared values, norms, understandings and durable relationships founded upon years of collaboration and shared history affect the partnership actors today in profound ways that are meaningful for generating actual outcomes. Connick and Innes' seven-year study illuminates that because the innovative, collaborative effort spearheaded by the SFEP was entrenched in the principles of participatory governance, the role of interpersonal relationships formed a backbone that was fundamental to the events and outcomes of the projects, as much work was accomplished in informal arenas, behind the scenes.

A possible benefit of this norm in the culture of working relationships within the partnership is its adaptability. A drawback of the CALFED/Delta Visioning policy environment mentioned in this analysis is that there were few clear written goals or codified measures that gained formal acceptance from all parties. However, this obstacle permits greater adaptation of the partnership to expand their problem definition and to reach acceptable alternative solutions. Additionally, because the SFEP-led policy process

is founded on collaboration and local involvement, there is a greater likelihood of envisioning program tailoring/specification, compared to a different situation that is subject to more rigid regulations and precedents. Thus the relatively informal, relationship-based, experimental governance undertaking that characterizes the estuary's management has both costs and benefits, whose expression depends upon the securing of sufficient funding, the management of project goals and timelines, and the tailoring of solutions to meet the expectations of diverse stakeholders.

5.1.1.6 EVALUATIVE CRITERIA

Because this study seeks to evaluate the respect, legitimacy and robustness associated with partnerships rather than individual institutions or policies, the evaluative criteria is limited to the indicators that have been operationalized for determining the dependent variable. Again, the relevant indicators for the application of the IAD framework are: *IV 1 (consistent institutional design), IV 3 (tailored policies/specific measures), IV 6 (decentralization of power), IV 8 (external funding and investment) and IV 17 (appropriate rule forming and rule enforcing mechanisms)*. The interim evaluation is as follows:

IV 1: There is evidence to suggest a lack of consistency in institutional design. Characterized by a tumultuous past and an uncertain future, the policies and institutional arrangements that determine the state of water resources in California have been subject to different programs that have been unsuccessful in standardizing problem definitions, developing coherent projects and sustaining agreement on contentious issues. The future of the Delta Visioning program is uncertain as the unstable legacy of the CALFED endures.

IV 3: While there are many opportunities and a potential to develop tailored policies as a result of the flexible, adaptive character of SFEP partnerships, there have been, thus far, a lack of these types of initiatives. The outcome of the Ecological Scorecard project is a set of eight indicators, called the San Francisco Bay Index, that are meant to evaluate the quality of the entire watershed, thus it is meant to have a broad application. Its application for the San Francisco Estuary, however, has led to the recognition of the need to tailor projects to geographic-specific needs that are apparent as

a result of the evaluation.

IV 6: As the partnership was founded upon the principles of adaptive, collaborative governance, it is fair to say that power is decentralized in this context. Also, internally, the Bay Institute operates in a decentralized manner, at times to the detriment of coherence and the building of common understanding between its staff.

IV 8: External governmental funding for the partnership is secured on the SFEP side from the Department of Water Resources. Both organizations, in addition, receive other types of funding from private sources, this being a primary source of income for the Bay Institute. As of the most recent publication of financial records in 2007, 34.3% are received from government contracts and grants, 28.5% from corporations and foundations, and 17.8% from individual donation, altogether composing the majority of funds available (1,251,631 USD) (Bay, 2011). Though there is funding available, interviews conducted at the Bay Institute suggest that more financial resources should be available to projects.

IV 17: In line with the evaluation of the lack of institutional consistency, it is unclear whether there are appropriate rule forming and rule enforcing mechanisms for various reasons. First, rules are created in order to manage behavior in a way that is consistent with institutional or social structures. In the case of the action arena, there is little interparty consensus concerning the Bay's policies. Also, as illuminated by Connick and Innes (2008), rule formation and rule enforcement may have reduced validity in this context because much meaningful decision-making and action takes place in an informal context. While there are forums for official political discussion and collaboration, these, too, according to the researchers, are not rigidly structured or presided over. However, according to survey data collected, the response is clear that there are appropriate rule-forming and rule enforcing mechanisms in place.

Interim evaluations of the Bay Institute:

Table 5: Bay Institute- Institutional factors

Independent Variable	Conclusion
IV 1: Consistent institutional design	No
IV 3: Tailored/specified policies	Somewhat
IV 6: Decentralized power	Yes

IV 8: External funding	Yes
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Unclear, Affirmative according to survey results.

5.1.2 Stakeholders and participants

The germane independent variables in this broad category are: *IV 2 (small-scale, local investment in landscape)* and *IV 9 (adequate time resources from stakeholders)*. For both topics, data was collected by means of an electronic survey and structured interview questions. In this case, only one key respondent wished to participate in the study, so all data is from this individual source involved with the ecological scorecard project.

IV 2 and 9 were operationalized with the following survey and interview questions. The answers to these questions are presented below:

Table 6: Bay Institute Survey/Interview on Stakeholders and Participants

Independent Variable	Questions	Answers
IV 2: Small-scale, local investment in landscape	<i>Are local people involved directly with the partnership?</i>	Yes
	<i>Evaluate the following statement: 'Actors in the partnership feel a deep attachment to their cause, so that monetary compensation is less important than accomplishing their goals related to the environment.'</i>	Neither agree nor disagree
IV 9: adequate time resources from stakeholders	<i>Does the partnership decision-making rely on experience-based and/or locally generated knowledge, scientifically generated knowledge or a combination of the two? Of these options, which, in your opinion is the most valid?</i>	A combination of both; scientifically generated is most valid.
	<i>How long have you been involved in the partnership?</i>	6 months

Related ²²	<i>Are diverse types of interests represented in the partnership?</i>	Yes
	<i>How could a local stakeholder express his point of view to your organization? What is done about it and how is this input received?</i>	“State of the Estuary” conferences held every two years by SFEP. Stakeholder can contact Institute directly. Action depends on the issue.
	<i>Is the profit motive or the value motive most prevalent amongst partnership members?</i>	Value-driven

The survey and interview results reveal that local people are directly involved in the partnership, which has been confirmed by the IAD analysis as well, as collaborative input from diverse stakeholder groups and individuals forms an ideological backbone for this partnership. The respondent gave an answer of 3 (neither agree nor disagree) on the Likert Scale regarding the depth of attachment that stakeholders feel for their environmental goals. This answer may or may not be representative of the situation, however, because the respondent mainly deals with data collection for the Ecological Scorecard project, and has little to do with external stakeholders on a regular basis. Additionally, the respondent was hired in early 2011, which limits his personal experiences with this matter.

Also consistent with the IAD analysis, the survey shows that both scientific and locally generated knowledge are considered valid and useful for the partnership, though, as is expected, scientific knowledge is deemed more valuable to the partnership as it is currently focused on a specific project that is generated from a set of scientific indicators.

The “State of the Estuary” conferences, organized and held every two years by the SFEP, was named in the interview and survey as the official forum for communication between partnership actors as well as for other interested stakeholders, though informal communication takes place on a regular basis outside of this forum. In the case that a stakeholder wished to express his or her point of view to the organization, the respondent

²² These questions were taken from those asked during the structured interview process, which relates to both independent variables 2 and 9, as they are aimed at the general category of “Stakeholders and Participants”.

indicated that the Bay Institute was open to written and telephone inquiries, though was unsure about any official documentation procedures or follow-up protocols.

The respondent, furthermore, stated that the prevalent motivation for partnership actors to engage in estuary projects was value-driven as opposed to profit driven. During the interview, he explained that the key actors in the partnership have been involved in tense political activities for decades concerning the watershed and had, what he believed, was personal drive, as a result of the perceived intrinsic value of the estuarine environment.

Table 7: Bay Institute Institutional Factors + Stakeholder and Participants

Independent Variable	Conclusion
IV 1: Consistent institutional design	No
IV 2: Small-scale, local investment in landscape	Yes, somewhat weak
IV 3: Tailored/specified policies	Somewhat
IV 6: Decentralized power	Yes
IV 8: External funding	Yes
IV 9: Adequate time resources from stakeholders	Yes internally; unknown externally
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Unclear, Affirmative according to survey results.

5.1.3 Organization and process

The independent variables measured in this general category are:

IV 3 (measures are tailored to landscape), IV 6 (power decentralization), IV 11 (adaptability and flexibility balanced with resiliency in partnership), IV 12 (high network density), IV 13 (high network centralization), and IV 14 (diversified network).

IV 3 and 6 have already been discussed in section 5.1.1 during the IAD analysis; however, these topics are supplemented by survey and structured interview questions (in the case of IV 3) to give more nuance, as it is incomplete to rely on an external perspective alone to answer complex issues. All independent variables in this section are, furthermore, analyzed via a survey, however, 12 and 13 also utilize network analysis methods to explain their role in the context of the Bay Institute partnership. Before the network indicators are presented, the results of the survey and interview questions for the

“organization and process” independent variables are given below:

Table 8: Bay Institute Survey/Interview on Organization and Process

Independent Variable	Questions	Answers
IV 3 Tailored measures	<i>Are the environmental management strategies that the partnership generates tailored to local environmental conditions, or are they more generally applicable to multiple areas?</i>	Locally tailored
IV 6 Decentralization of power	<i>Can the partnership best be described as characterized by an equal level of power between all member actors, or are there multiple layers of power and responsibility that are shared differently by the parties involved?</i>	Flat organization, other
	<i>Evaluate the following statement: ‘Upper levels of management in the organization link their decision-making activities with middle management in their own organizations and their partner’s organization.’</i>	3, Neither agree nor disagree
	<i>Evaluate the following statement: ‘Real power in the organization is concentrated in the hands of only a few individuals’.</i>	3, Neither agree nor disagree
IV 11 Adaptability and flexibility balanced with resiliency in partnership	<i>Evaluate the following statement: ‘I would characterize the partnership’s members and organizational style as flexible in general.’</i>	3, Neither agree nor disagree
	<i>Evaluate the following statement: ‘The partnership would collapse if an organizational disaster happened.’</i>	3, Neither agree nor disagree
IV 12 High network density	<i>Please list the names of the partnership members with whom you work most closely.</i>	Peter Vorster, Gary Bobker
	<i>Who would you contact in order to discuss topics that involve sustainability concerns within your organization?</i>	Gary Bobker
IV 13 High network centralization	<i>Would you most likely describe the organization of the partnership and its interactions as: complex and linking complex and isolated simple and linking simple and isolated Other (Please specify):</i>	Complex and linking

IV 13 High network centralization	<i>Other (Please specify):</i>	Complex and linking	
	<i>Is there one main contact person that most people in the partnership communicate with frequently?</i>	No	
IV 14 Diversified network	<i>Evaluate the following statement: 'Members of the partnership have different backgrounds, opinions and expertise related to the environmental issues of interest.'</i>	1, Strongly agree	
	<i>Evaluate the following statement: 'The diverse interests and experiences of actors involved in the partnership are given equal consideration when it comes to organizational learning and decision-making.'</i>	3, Neither agree nor disagree	
Related	<i>How often do you meet with your closest contacts in the partnership?</i>	Very rarely, most communication is not in person	
	<i>How often do you formally meet with members of the partnership? With other stakeholders?</i>	Almost never	
	<i>Does someone take recorded minutes of the meeting or note working procedures?</i>	Yes during the State of the Estuary conferences, no during other informal meetings	

The survey assessment of IV 3 contradicts the findings of the IAD analysis. The conclusion that may be drawn from this is that, though the internal organization strives to tailor solutions to the local policy or physical environment, a poorly defined institutional arena and the geographical breadth of the watershed limit the initiative. However the survey assessment of IV 6 is relatively consistent with the IAD findings. Here, the features of a small, flat organization are apparent, as the respondent views members' activities as disjointed, as they do not relate or depend upon one another. This feature is a result of the widely different tracks of operation within the Bay Institute and the fact that the hierarchy Board of Directors functions in a different capacity than the actual researchers and political advocates. The Board of Directors take on a steering role that is invested in practical matters of finance, employment, publicity and higher level interaction, as opposed to a top-down decision-making role that determines projects.

These projects are led by the researchers, of which there are few. Therefore it is clear why the respondent feels that power, while certainly wielded by some members, is manifested in different significant ways depending on the function of the individual.

For reasons related to the perception that power is somewhat decentralized, the adaptability/flexibility versus the resiliency of the organization is also not clear-cut. While the IAD analysis perceives the partnership characteristics as conducive to adaptability and flexibility, the respondent's answer concerned the internal organizational environment of the Institute. From this perspective, the respondent perceives the organization as possessing an equal amount of both qualities. He explained in the interview that he feels that project undertakings and internal functioning are well-balanced in terms of the flexibility they exhibit in overcoming frequent challenges and resiliency, in that the organization is 30 years old, despite significant past occurrences that have threatened internal stability. The caveat to this claim is that the respondent indicated uncertainty over the consequences of an internal disaster for the future of the organization. This could be attributed to the fact that he has only been with the organization for six months, and therefore does not have the experience to fully answer the question.

Independent variables 12, and 13 are better explained by network analysis, but certain important facts can be gleaned by the survey answers. From the respondent's answers, it is clear that, though he works closely on the ecological scorecard project, he doesn't have much contact with the SFEP on the matter. Instead, the scientists working within the organization with the exception of the two main, long-standing, contacts mentioned here (and in the IAD analysis) communicate primarily internally, with very little external business. Thus, clear hubs emerge in the network with contact concentrated through these two individuals. This has consequences for the efficiency of communication. While, on one hand this arrangement is favorable for the network's centralization, the network is not very dense. The lack of cross-boundary exchange between the majority of partnership members means that fewer trust-based relationships can be fostered, though those in place are robust due to long-standing relationships spanning decades and many shared experiences. This point is evident in the respondent's answer of neither agreement nor disagreement concerning the favoritism placed upon the

experiences of all partnership members. It seems as though trust and seniority play an important role in decision-making. Therefore the quality and the consideration of communication between partnership hubs might be greater due to past history.

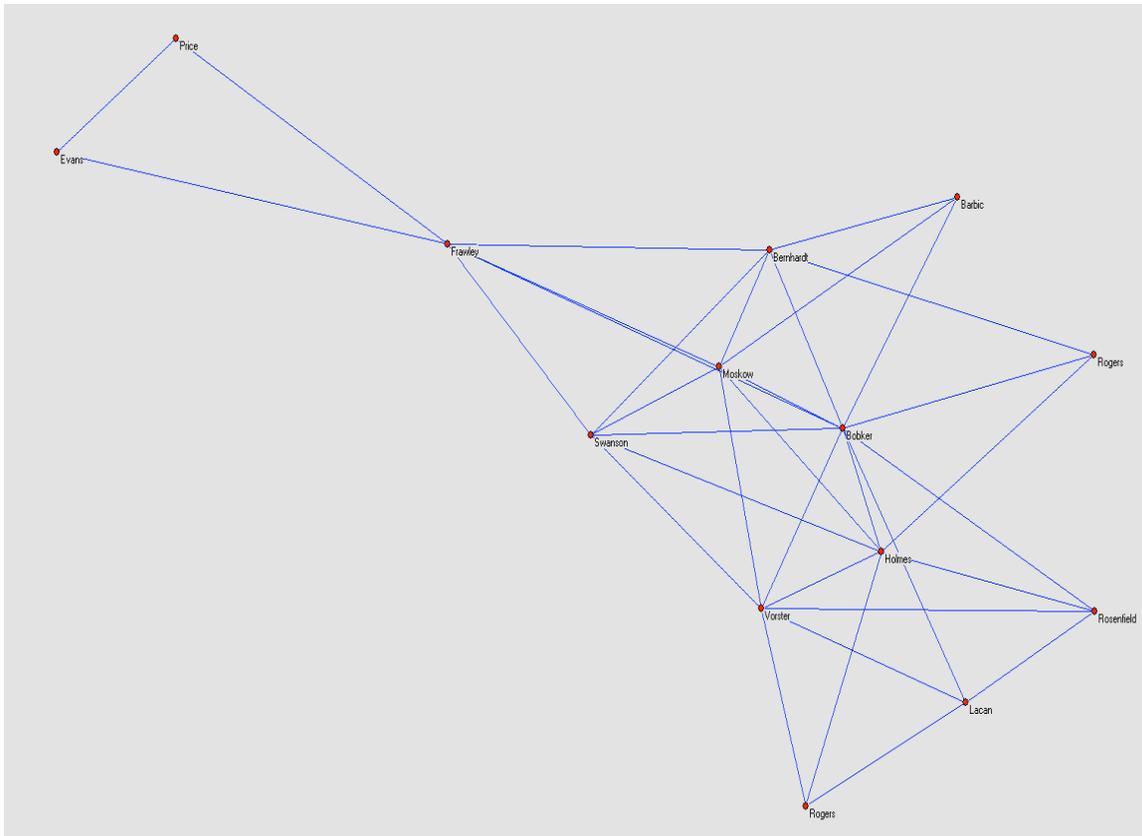
Interestingly, there was a major contradiction between the respondent's answers and the actual depiction of the network. He stated that there is no one main contact person through which all partnership members communicate. One interpretation of this answer is that there are, instead, two main hubs, which was found to be probable given the fact that two senior members are involved in the partnership project on the Bay Institute side. Supplementary interview data supports survey data on the topic of communication: it seems to be lacking in the day-to-day activity of this organization, unless communication is essential to the job function of the actor.

In the case of IV 14, the existence of a diversified network, though there is clearly an abundance of diverse inputs and experiences available to the network, these resources are only moderately used. When asked about the Institute's openness and inclusiveness on the input of external stakeholders, the respondent answered that they were open but not necessarily inclusive, though in principle the partnership is inclusive of participatory knowledge- a legacy of CALFED. In sum, it ranks in the low-secondary/high-tertiary position for the criteria determining network diversity (open and somewhat/not inclusive).

5.1.3.1 NETWORK ANALYSIS OF ORGANIZATION AND PROCESS VARIABLES

To begin the network analysis, a visualization of the Bay Institute's internal network was drawn using Pajek software. The nodes were organized using the Fruchterman-Reingold Algorithm, which is useful for visualizing undirected networks, as it aesthetically spreads the graph, minimizes crossings and places the most well connected nodes in central positions.

Figure 8: Bay Institute Network



In the identified internal network, there were a total of 14 nodes. Of these nodes, only two are connected with the Bay Institute (Bobker and Vorster). These two contacts are also relatively well connected with both the executive and scientific staff of the Bay Institute. However, looking at this network drawing, there are two more hubs, Holmes and Moskow, however they are not considered informational hubs that are essential for the partnership, as they are part of the executive operational staff of the Bay Institute. Their roles are in communication with program and financial directors. In addition, Holmes is the director of another track, which does not have a cooperative project with the SFEP. Therefore, though they appear to be well connected, it is not the relevant type of connectivity for this study. If one removes all of the individuals that are irrelevant for the partnership, Bobker and Vorster emerge as clear hubs in a relative star shape, leading to the conclusion that the relevant network is centralized according to the operationalization of IV 13.

IV 12, network density, was calculated using the formula $L/[n(n-1)/2]$. There are 32 links (counting each edge once as it is undirected) and $n=14$. Therefore density is $32/[14(14-1)/2] = .35$. The network is connected to 35 percent of its maximum potential.

Altogether, the interim results are:

Table 9: Bay Institute- Institutional Factors + Stakeholder and Participants + Organization and Process

Independent Variable	Conclusion
IV 1: Consistent institutional design	No
IV 2: Small-scale, local investment in landscape	Yes, somewhat weak
IV 3: Tailored/specified policies	Somewhat
IV 6: Decentralized power	Yes
IV 8: External funding	Yes
IV 9: Adequate time resources from stakeholders	Yes internally; unknown externally
IV 11: Adaptability/flexibility balanced with resiliency	Yes
IV 12: Network density	.35
IV 13: Network centralization	Yes
IV 14: Network diversity	3 rd rank
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Unclear, Affirmative according to survey results.

5.1.4 Knowledge and learning

The relevant independent variables for this category are: *IV 4 (well defined problems, can be reformulated/amended)*, *IV 10 (documented co-management strategies)*, and *IV 16 (access to information)*. All of these variables were measured using sociometric indicators, collected via survey and interview. The questions/answers to determine the status of these variables are given below.

Table 10: Bay Institute Survey/Interview on Knowledge and Learning

Independent Variable	Questions	Answers
IV 4 Well-defined problems that can be	<i>Does the partnership have clear objectives against which actors can monitor their personal performance as well as the partnership's performance?</i>	No

reformulated/ amended		No
	<i>Does the partnership agree on certain “best practices” of operation?</i>	No
	<i>Evaluate the following statement: ‘Members of the partnership accept a problem definition that could change over time.’</i>	3, Neither agree nor disagree
	<i>Are the challenges/problems that the partnership is involved in solving clearly defined?</i>	No
	<i>Does the partnership have a mission statement that acts as a guiding light for the partnership’s activities?</i>	Yes
IV 10 Well- documented co- management strategies	<i>Are there formal arenas (with officiators) to facilitate inter-party dialogue such as recorded meetings?</i>	Yes, (State of the Estuary meetings)
IV 16 Access to information	<i>Evaluate the following statement: ‘The activities of the partnership, especially when it comes to decision-making, are transparent to the people who are impacted by the decision’</i>	3, Neither agree nor disagree
	<i>Evaluate the following statement: ‘I find it easy to access information that I need to do my job.’</i>	2, Somewhat agree
Related	<i>In your opinion is scientific knowledge or experienced based knowledge more important to do your job in the estuary?</i>	Scientific knowledge
	<i>Do you personally collaborate with stakeholders when it comes to your work?</i>	No
	<i>Does your partnership take an interest in any subject beyond conservation activities</i>	Yes, educational programs

Concerning IV 4, it seems as though the problems are not well defined, nor are the expectations of partnership actors clear. This finding is consistent with the IAD analysis, as a major downfall of the CALFED program was deemed to be a lack of direction, agreement or consistency concerning the use of water resources. This pattern can be seen in the partnership interaction between the Bay Institute and SFEP at present. Though the partnership and the individual organizations have mission statements, they

are very broad and grandiose, acting as more as an external description for the aims of the organization, but not as an internal roadmap.

IV 10 is fulfilled by the State of the Estuary meetings, though this is concerning because these forums only take place once every two years. This amount seems insufficient to keep up with issues and communication in a way that can be documented to enhance stakeholder learning and to progress in ongoing projects in a broadly inclusive manner.

IV 16 produced mixed, weak results. The respondent did not feel that the activities and decision-making processes that took place in the partnership were particularly transparent. This is problematic, as one of the supporting principles of both organizations, especially the SFEP, is the inclusion of a range of actors in a participatory governance arrangement. This criterion certainly cannot be met if there is doubt about the transparency of internal affairs to directly impacted stakeholders. Additionally, the respondent felt that necessary information was somewhat accessible, but indicated that the type of work he does (related to Ecological Scorecards and measuring water flow) was highly convoluted and necessitated a wide range of information. Thus, access to information, in this case, is not so much hindered by a lack of transparency as it is by high levels of complexity.

Furthermore, the interview questions confirm previous findings. As the respondent is working in a technical capacity, he favors scientific knowledge more strongly and has little to no contact with stakeholders. The Aquarium of the Bay program was mentioned as the primary educational initiative undertaken by the Bay Institute, although he reconfirmed that the partnership activity at this time was only concentrated on the ecological scorecard.

The appended interim results are:

Table 11: Bay Institute- Institutional Factors + Stakeholder and Participants + Organization and Process + Knowledge and Learning

Independent Variable	Conclusion
IV 1: Consistent institutional design	No
IV 2: Small-scale, local	Yes, somewhat weak

investment in landscape	
IV 3: Tailored/specified policies	Somewhat
IV 4: Well defined problems that can be reformulated/amended	No
IV 6: Decentralized power	Yes
IV 8: External funding	Yes
IV 9: Adequate time resources from stakeholders	Yes internally; unknown externally
IV 10: Well documented co-management strategies	Somewhat, but probably insufficient
IV 11: Adaptability/flexibility balanced with resiliency	Yes
IV 12: Network density	.35
IV 13: Network centralization	Yes
IV 14: Network diversity	3 rd rank
IV 16: Access to information	Moderate
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Unclear, Affirmative according to survey results.

5.1.5 Communication

The variables pertinent to this category are: *IV 5 (“good” communication with face-to-face interaction)* and *IV 15 (significant cross-boundary communication between organizational clusters)*. The results from the network diagram support the analysis of the primary methods, survey and interview, in finding the applicability of these two factors.

Table 12: Bay Institute Survey/Interview on Communication

Independent Variable	Questions	Answers
IV 5 Good communication with face-to-face interactions	<i>How much face-to-face contact do you have with other members of the partnership with whom you work most closely?</i>	5, Very infrequently or never
	<i>Evaluate the following statement: ‘Overall, I view the other members in the partnership and the partnership in general as trustworthy.’</i>	1, Strongly agree
	<i>Evaluate the following statement: ‘Overall, I believe that the members of the partnership and the partnership in general adhere to an acceptable set of principles and desire to do good.’</i>	1, Strongly agree
	<i>Does the partnership encourage peer-to-peer learning, “learning-by-doing” where actors</i>	Peer-to-peer learning is encouraged

	<i>with different experience levels try to co-enhance each other's knowledge? If so, can you name a specific forum where this occurs (i.e. workshops, conferences, team-building activities, etc.)?</i>	
	<i>To your knowledge, has there been mistrust or major disagreements between the members of the partnership in the past?</i>	No
	<i>In the past, have the members of this partnership worked well together?</i>	Yes
	<i>Evaluate the following statement: 'When it comes to the other partnership members with whom I have the most frequent contact, I view these individuals as committed to problem-solving and generally competent.'</i>	1, Strongly agree
	<i>Evaluate the following statement: 'To my knowledge, actors in the partnership view interactions with each other as legitimate (i.e. in compliance with the laws, fair, well-established).'</i>	1, Strongly agree
IV 15 Significant cross-boundary communication between organizational clusters	<i>Do you regularly communicate with members of the partner organization?</i>	No
	<i>How often do you meet with these regular contacts face-to-face? Please answer separately for partnership contacts and internal organizational contacts.</i>	Never with external. A few (3) times per week internally
	<i>Which characterization best describes your communication with members of the partnership? remote and infrequent remote and frequent in-person and infrequent in-person and frequent Combination of the above (please explain):</i>	Remote and infrequent
	<i>Are there formal venues for inter/intra-party dialogue?</i>	State of the Estuary conferences
Related	<i>Is information shared freely in the partnership or is this problematic (and why?)</i>	Somewhat freely, but doesn't know if information is purposely withheld.
	<i>Do you have positive experiences interacting with stakeholders?</i>	Not applicable
	<i>How do you most commonly communicate with others in the partnership?</i>	E-mail

Concerning IV 5, it may be wise to be skeptical with regards to the respondent's reported levels of trust, legitimacy and respect towards the partners and the other members of the organization. He repeatedly answered that he has little to no regular contact with other partnership members working on the ecological scorecard project and that he almost never meets with them face-to-face. In fact, it is doubtful if he has ever met the external partners or other stakeholders, as State of the Estuary conferences are held every two years and he has, to date, only been involved with the partnership for six months.

In a related manner IV 15 also seems somewhat insufficient to achieve robust common goals. As a principal researcher on the ecological scorecard project, it was surprising that the respondent never meets with or communicates with partners, and only does so with internal staff a few times per week. Though he reports that peer-to-peer learning is encouraged, this is probably only a politically correct answer, as he could not name a forum/example for this, neither during the survey nor interview process. Furthermore, he describes his position as "remote" in relation to the partnership, which is also reflected in his physical orientation in the network diagram.

Despite these factors, the respondent reports a very high level of the factors conducive to trust building, which, according to theoretical literature, must be developed and maintained through experience, quality communication and common ground. Communication, and the cooperation that it brings, therefore, seems to be superficially present, but probably lacking for many members in reality.

The appended interim results are:

Table 13: Bay Institute- Institutional Factors + Stakeholder and Participants + Organization and Process + Knowledge and Learning + Communication

Independent Variable	Conclusion
IV 1: Consistent institutional design	No
IV 2: Small-scale, local investment in landscape	Yes, somewhat weak
IV 3: Tailored/specified policies	Somewhat
IV 4: Well defined problems that can be reformulated/amended	No
IV 5: "Good" communication with face-to-face interactions	Insufficient

IV 6: Decentralized power	Yes
IV 8: External funding	Yes
IV 9: Adequate time resources from stakeholders	Yes internally; unknown externally
IV 10: Well documented co-management strategies	Somewhat, but probably insufficient
IV 11: Adaptability/flexibility balanced with resiliency	Yes
IV 12: Network density	.35
IV 13: Network centralization	Yes
IV 14: Network diversity	3 rd rank
IV 15: Significant cross-boundary communication	Insufficient
IV 16: Access to information	Moderate
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Unclear, Affirmative according to survey results.

5.1.6 Contextual factors

Perhaps the most straightforward of all the independent variables, *IV 7 (market profit potential)* and *IV 18 (adaptability of problem definition to correspond with context)*, were measured using the survey and interview techniques with basic yes/no questions. The questions and answers for these variables, plus related interview questions are presented below.

Table 14: Bay Institute Survey/Interview on Contextual Factors

Independent Variable	Questions	Answers
IV 7: market profit potential	<i>Does the partnership's activities help to promote a profitable aspect of estuaries, which interest one or more of the partners (i.e. recreation, tourism, locally produced goods and services, educational resources)?</i>	Yes
IV 18: adaptability of problem definition to correspond with context	<i>Evaluate the following statement: 'Members of the partnership accept a problem definition that could change over time.'</i>	3, Neither agree nor disagree
Related	<i>Do you feel a sense of personal investment in the estuary?</i>	Yes

	<i>What are the main obstacles that you encounter that could/do prevent you from working at an optimal achievement level?</i>	Access to information, time resources
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Whereas IV 7 is very clear, the partnership's activities promote other profitable aspects in the area (namely education), IV 18 is somewhat more difficult to interpret. Referring back to the institutional and knowledge/learning factors discussed, there is no clear, agreed upon problem definition in the first place; therefore accepting a changing or adaptable definition is not readily achieved. The respondent's answer makes sense when one considers the circumstances under which the partnership operates, because though he asserts that the partnership's estuary work is tailored to local conditions, in reality they are engaging in broad undertakings that do not specify the applicability of the project to different contexts shaped by the priorities and goals of stakeholder activities in the estuary. To clarify, the Ecological Scorecard project defines one objective, which is conservation, but does not prioritize ecological indicators according to the state of the estuary that one wishes to achieve.

The interview questions reveal more information, which supports previous findings. He commented that time and the access to information are obstacles in completing his work. As the Ecological Scorecard is a new undertaking, and the problem definition is not clearly defined, the problem may not be the access to information, but rather the focus on the types of information necessary. These factors considered, it would serve this partnership well to clearly define the (flexible) direction of their work beyond the short-term, rigid goals of project achievement.

The aggregated interim results are:

Table 15: Bay Institute- Institutional Factors + Stakeholder and Participants + Organization and Process + Knowledge and Learning + Communication + Contextual Factors

Independent Variable	Conclusion
IV 1: Consistent institutional design	No
IV 2: Small-scale, local investment in landscape	Yes, somewhat weak
IV 3: Tailored/specified policies	Somewhat

IV 4: Well defined problems that can be reformulated/amended	No
IV 5: “Good” communication with face-to-face interactions	Insufficient
IV 6: Decentralized power	Yes
IV 7: Market profit potential	Yes
IV 8: External funding	Yes
IV 9: Adequate time resources from stakeholders	Yes internally; unknown externally
IV 10: Well documented co-management strategies	Somewhat, but probably insufficient
IV 11: Adaptability/flexibility balanced with resiliency	Yes
IV 12: Network density	.35
IV 13: Network centralization	Yes
IV 14: Network diversity	3 rd rank
IV 15: Significant cross-boundary communication	Insufficient
IV 16: Access to information	Moderate
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Unclear, Affirmative according to survey results.
IV 18: Adaptability of problem definition to correspond with context	No

5.2 Analysis of the California State Parks Foundation

In the analysis of the California State Parks Foundation (CSPF), this report zooms in to focus only on the projects undertaken in partnership with the SFEP. In actuality, the CSPF is a very large organization extending across the entire state and this fact alone has consequences for micro scale operations, as will be illuminated in the IAD framework. For the sake of consistency, only one main CSPF-SFEP project (Candlestick Point) and its accessory activities will be discussed in this analysis. This undertaking is labeled as an ongoing project for the Bay area working division of CSPF, which is more germane for this report than closed projects. Bear in mind, however, unlike the Bay Institute, the CSPF and the SFEP have a more equal partnership, as both organizations garner a significant amount of funding and sponsorships, and can, therefore, mutually engage in projects of a larger scope.

5.2.1 *Institutional factors*

Identical to the Bay Institute analysis, the independent variables considered here are: *IV 1 (consistent institutional design)*, *IV 3 (tailored policies/specific measures)*, *IV 6 (decentralization of power)*, *IV 8 (external funding and investment)* and *IV 17 (appropriate rule forming and rule enforcing mechanisms)*. Though the Bay Institute and CSPF operate within the same broad institutional and biophysical environment (refer to section 5.1.1), the IAD framework components will focus on specifying those elements critical for the Candlestick Point restoration project.

5.2.1.1 BIOPHYSICAL CONDITIONS

Yosemite Slough at Candlestick Point State Recreation Area, located in the western part of San Francisco, is the locus of a major forthcoming restoration undertaking. Covering 31 acres, the area is, at present, a brownfield²³, but was, historically, part of the ecologically rich tidal marshes and mudflats characteristic of the San Francisco Bay Estuary (SFEP, 2011). Like the biophysical threats reported in the discussion of the Bay Institute, non-point source pollution is the major environmental factor necessitating restoration work. Some of the most distinct polluting activities stem from landfills, industrial contamination and illegal dumping (SFEP, 2011). Combined with soil erosion, wastewater overflows have also severely affected water quality in Yosemite Slough, with adverse impacts for wildlife and fisheries (SFEP, 2011).

Because only a small portion of the area remains tidally influenced, due to erosion and sedimentation, the most acute ecological issues cannot be mitigated by ocean outflows, and therefore necessitates human intervention to restore an environmentally significant zone that has, in the past, acted as a haven for biodiversity in the estuary. Also of interest for the CSPF is the water quality's compromising of park planning and recreational opportunities, which are organizational incentives for promoting profitable aspects of conservation activities. These factors have resulted in the project becoming the CSPF's largest current fundraising effort, garnering \$13.2 million for the first phase of work on the north shore, one of the most threatened areas due to the lack of marine

²³ Refers to an abandoned industrial, commercial or waste area that may be suitable for reclaimed use, but must be thoroughly cleaned and restored due to possible contamination from past uses (EPA, 2011).

flow, which is scheduled to begin in the summer of 2011 (CSPF, 2011).

The goal of the project, in conceptualization phases since 2003, is to create the largest contiguous wetland in the San Francisco area, which has benefits to the entire bay, including the prevention of erosion along the city's shoreline and the alleviation of unfairly distributed water quality impacts on the Bayview-Hunter's Point community (CSPF, 2011). Undertaken in many phases over a multi-year period with a total of 12 partners, some specific project activities are to remove structures/debris/contaminated soil, re-plant the area with native species, to connect hiking trails and to build an information center serving park visitors. These developments are meant for the improvement of recreation/tourism; another environmental goal is to create two isolated havens to encourage the nesting of seabirds, and to restore certain wetlands to catch and filter polluted run-off water (SFEP, 2011).

5.2.1.2 ATTRIBUTES OF THE COMMUNITY

The relevant community of the California State Parks Foundation is comprised of its internal staff in the Northern California office and the related partners at the SFEP supporting its undertakings. In contrast to the Bay Institute, the CSPF is more hierarchically organized, though the number of staff is small. The Northern California office is the CSPF's headquarters; therefore more people (with an administrative or press function) are physically located in the office than actually work on the Candlestick Point project. The fact that the project staff has a higher level of personal access to colleagues that may assist their work means that this office is better equipped to attain their goals from a logistical point of view than an office whose network is more isolated. However, interviews with two respondents from CSPF reveal that the core staff of the project is often not in the office and travels frequently for work. This was confirmed by the difficulty of reaching key informants by telephone or work e-mail.

The main function of the actors, as self-described by the principle respondent for CSPF, is to advocate for and to raise money for different types of capital projects benefiting the state parks. Of the twenty-three actors working in this location, three are directly active in mobilizing resources and coordinating activities for the Candlestick Point project; it is unknown how many people are peripherally involved, or whose work

supports the practical, multifaceted aspects of this undertaking. For feasibility reasons, the three central actors at the CSPF and their two main contacts at the SFEP are considered in this analysis. Thus far, these actors on the CSPF side have been involved in fundraising, project feasibility/planning studies, marketing and lobbying, as ground hasn't yet been broken at Candlestick Point (as of mid 2011). Therefore, the activities considered in this study are limited to what has already been accomplished within the partnership context and cannot yet comment on the future development of the Candlestick Point project.

5.2.1.3 RULES IN USE

The policy context under which the California State Parks Foundation operates is identical to that of the Bay Institute. However, because of the scope and scale of the CSPF's activities and the nature of the partnership with SFEP, there are important aspects of nuance that greatly affect the outcomes of their ventures.

Due to the high level of finances involved in undertaking large-scale projects like the Candlestick Point project, there is a far greater reliance on government funding for the significant resources needed. To gain this level of support, organizations apply to the U.S. Environmental Protection Agency for grants and/or loans, where money is given if certain environmental and planning conditions are fulfilled. This application process is lengthy and complicated in Region 9, the Pacific Southwest, and much supporting evidence of feasibility, benefit and advocacy for undertakings is needed to secure money. Four types of grants are applicable to the Candlestick Point project (with a 20% non-governmental match required, which generally comes from corporations and private/individual donations): Job Training grants capped at \$200,000 per year, Brownfields Assessment grants capped at \$1,000,000 per year, Brownfields Revolving Loan Fund capped at \$1,000,000 over five years and Brownfields Cleanup grant capped at \$200,000 over three years (EPA, 2011).

On a lower governmental level, funds can also come from the San Francisco Bay Area Water Quality Improvement Fund, which is a pool of money specified for projects in the Bay area that prioritize addressing issues of invasive species management, reduction of trash/debris in waterways, wetland restoration, storm water management in

urban areas, reduction of main hazardous pollutants identified by the EPA, and mitigating the effects of climate change on water quality (EPA, 2011).

The common thread between all of these topics is that, in order to gain funding, the projects must demonstrate innovative approaches through the use of experimentation or new technologies (EPA, 2011). Furthermore, for Water Quality Improvement Fund grants, there is a priority placed upon projects whose solutions are generalizable or applicable to other areas outside of the San Francisco Bay watershed, with the goal of expanding current knowledge and protocols of watershed clean-up strategies (EPA, 2011).

5.2.1.4 ACTION ARENA

The relevant actors in the action arena are the CSPF members involved in the partnership along with their contacts at the SFEP that are involved in supporting the core organization's project. Currently, there are three relevant contacts on the CSPF side and two contacts on the SFEP side working on gaining grants and support, largely from the Bay Area Water Quality Improvement Fund, by innovatively harnessing established policies.

One such set of rules is that developed by the SFEP called the Comprehensive Conservation and Management Plan (CCMP). At present, the CSPF is working in partnership with the SFEP to gain funding from the EPA through the innovative application of the CCMP. The partners collaborate on important aspects that need to be proven and in place in order to secure grants. In addition, the SFEP, now part of the National Estuary Program, an EPA sub-program, acts as a primary advocate of CSPF in legislative settings in order to gain money for the project. In order to qualify for funding under Section 501(c)(4) of the Internal Revenue Code, the organization may not engage in lobbying activities, which are defined in Section 3 of the Lobby Disclosure Act of 1995 (EPA, 2011). Therefore, in addition to the project requirements to gain funding, a partner on behalf of the CSPF must perform any lobbying done; it is in this active promoting capacity that the relationship with SFEP is essential.

As part of the grant reporting protocol, the CSPF is required to show that adequate project monitoring systems are in place and that the necessary steps to achieve project

goals have been taken. Therefore, though the SEFP is not involved in the planning or design of the Candlestick Point/Yosemite Slough Wetlands Restoration project, it plays a key role in the grant procurement process, aiding in supporting and executing grant prerequisite components.

Besides acting as a government agency liaison, the SFEP is also instrumental in increasing public and lawmakers' awareness of projects like those undertaken by the CSPF concerning wetlands restoration and estuary health, which complements their own mission of achieving long-term sustainability in the San Francisco Estuary. They accomplish this via the facilitation of stakeholder collaboration and the promotion of adaptive governance for estuary steering, consistent with their foundational organizational principles (See section 5.1).

The overarching theme that dominates partnership activities amongst these two organizations is reaching and maintaining a specified level of water quality²⁴. What makes this a priority above all the other problematic issues in the estuary? This is attributable to a variety of sources: first, the main funding supplier for the project is the San Francisco Bay Area Water Quality Improvement Fund; second, the principle issue for the SFEP (as evidenced by one of the top indicators on the Ecological Scorecard project) is water quality; third, the two main project contacts for CSPF at SFEP also work for the San Francisco Bay Regional Water Quality Control Board, and therefore play a role in emphasizing certain project goals in order to attain grants.

The Water Quality Control Board, has, in the past, been instrumental in securing funding for the Candlestick Point project through legal action and rule enforcement, demanding paid retribution to the CSPF for damaging water quality on their sites. A pertinent illustration of this is the 2006 order (on behalf of the Water Board) for the San Francisco International Airport to pay for water quality clean-up feasibility studies at Candlestick Point and the payment of \$4 million additional dollars to restore 12 acres of wetland on account of pollution (Water Board, 2011).

In sum, though SFEP does not actively engage in the practical aspects of project

²⁴ Bays and Estuaries Policy: Resolutions 74-43. 95-84, entitled "Water Quality Control Policy for the Enclosed Bays and Estuaries of California; adopted in 1974 and amended in 1995. This policy details the guidelines and principles for avoiding water degradation, preserving ecological services, and provides standards for water quality (SWRCB, 2011).

execution, they play an instrumental role in partnership with the CSPF to navigate the complexities of securing governmental funding, in working together to develop acceptable, innovative strategies for accomplishing project goals in accordance with the institutional and political context, and in advocating for the rights and interests of water quality-related projects affecting sustainability in the estuary.

5.2.1.5 OUTCOMES

Despite a seemingly favorable partnership arrangement, with a great deal of secured and potential funds for high-profile projects, the tempestuous political climate and institutional instability in California has had, and will continue to have, dire consequences upon the outcomes of projects undertaken by the CSPF, including those in partnership with the SFEP.

In 2009, as a result of financial strain on California's economy, Governor Schwarzenegger made \$60 million cuts to the state's budget, resulting in the (at least partial) closure of 60 state parks and the decrease in service and facilities in 90 others out of a total of 278 parks, plus the cancellation of \$1.3 billion in planned maintenance projects (CSPF, 2011). In 2010, the governor proposed the restoration of these funds via an increase in auto registration taxes²⁵ and profits from oil drilling off California's coast, but these measures never came to pass (CSPF, 2011). In early 2011, lawmakers again cut \$22 million from state parks, which included projected system-wide closures of 25% of the remaining parks, threatening projects like Candlestick Point (CSPF, 2011).

These dire outcomes and the upset that budget cuts have created within California have resulted in a possible opportunity for partnerships and joint ventures to save state parks. Assembly Bill 42 (Huffman) went to vote at the Senate Natural Resources and Water Committee and was unanimously passed (CSPF, 2011). AB 42 allows the control of state parks, currently under the Department of Parks and Recreation, to enter into an operating relationship with any other U.S. agencies for the care, maintenance, administration and control over lands for the benefit of upholding the state park system (AB 42, 2011).

²⁵ Proposition 21 advocated an additional \$18 to motor vehicle registration to increase state revenue by a projected \$500 million, \$250 million of which would be dedicated to state parks and wildlife conservation.

As this report was being drafted, AB 42 went to vote at the Senate Appropriations and passed unanimously 9-0 on July 11, 2011 (AB 42, 2011). Though it is too soon to perceive tangible outcomes from this decision, it provides an opportunity for the partnership between the CSPF and the SFEP to dramatically transform in order to ensure the project's future.

5.2.1.6 EVALUATIVE CRITERIA

Revisiting the relevant indicators for the application of the IAD framework: *IV 1 (consistent institutional design)*, *IV 3 (tailored policies/specific measures)*, *IV 6 (decentralization of power)*, *IV 8 (external funding and investment)* and *IV 17 (appropriate rule forming and rule enforcing mechanisms)* will be considered in the first interim evaluation.

IV 1: For the same reasons listed in the analysis of the Bay Institute, it is fairly suspect that institutional design has some major inconsistencies stemming from the CALFED era. An additional matter of complication for the California State Parks Foundation is the convoluted issue of gaining governmental funding for large-scale restoration projects. While the policies for this endeavor have long been in place by the EPA and associated water funds, the application/grant process is long and complex, which is why it is very advantageous for CSPF to partner with SFEP.

In terms of matters of state, the California budget crisis has had unsettling effects on many state parks, resulting in wide-spread closures and stunting of services, which have been inconsistent with the promises made by government to improve California's financial situation to, in part, ensure the continuation of beloved state services such as those pertaining to conservation efforts. In reality, the outcome has been increasing uncertainty and deficits.

Therefore, one can conclude that the environment under which the CSPF-SFEP partnership takes place is one with an inconsistent institutional design. The consistency of internal institutional design is merely speculative, however as the CSPF is a long-standing organization whose revenue has actually increased in the past year despite financial upset in the state; one may infer that internal operations are running as smoothly as possible given the circumstances (CSPF, 2011).

IV 3: A main requirement of the San Francisco Bay Area Water Quality Improvement Funds grant proposal/acquisition process is that prospective recipients prove that projects have tailored, innovative solutions, and that they, furthermore, demonstrate that these strategies can be adapted to apply to different environments. With this requirement in mind, one can assume that, as the Candlestick Point project has received funding, that measures are appropriately specific, as they are deemed effective by EPA standards. The answer given by the key respondent to this survey question corroborates this conclusion.

IV 6: The determination of decentralization of power was not a straightforward prospect. From the IAD framework, it is clear that there are many layers of power amongst the partnership members due to the widely different activities/processes in the project undertaken by the relevant actors. As the CSPF is involved in the more practical side and the SFEP is involved in the funding and political side of the project, it is difficult to perceive where the locus of power lies in the partnership. A similar problem is faced when trying to determine where power is concentrated internally within the two organizations. Upon reviewing the interview and survey results from the key respondent, a similar conclusion was reached by her as well. She explained that there are “multiple layers of power [found both within the organization and in the partnership] that can be somewhat imbalanced.” When asked if upper levels of management link their decision-making to middle levels, she neither agreed nor disagreed. The identical answer was given when asked if real power was concentrated in the hands of a few individuals. Therefore, as all three of the survey answers are consistent with each other and with the IAD analysis results; the conclusion is drawn that a moderate level of power decentralization applies.

IV 8: As discussed in this section, the partnership is highly active –and successful– in procuring external funding, though the majority of funds from the CSPF side come from park membership dues and corporate donations, totaling 63% of revenue as of the 2010 fiscal year (CSPF, 2011).

IV 17: The same situation as faced by the Bay Institute applies to this case. The lack of agreed-upon goals, priorities and fund allocation makes it difficult to craft and enforce rules amongst institutional actors without the constant challenging of decision-

making bodies, as is the case in the San Francisco Bay area. The survey responses elaborate on this point revealed by the IAD analysis: while members of the partnership view their interactions with each other as fair and legitimate, with efficient channels of communication, they do not have agreed-upon conflict resolution and sanctioning mechanisms. As a result, conflicts, as reported by the respondent are not necessarily easy to resolve when they do arise. This is a case where, although factors of trust and respect may be in place, a possible lack of common understanding can compromise cooperation.

The interim conclusions for institutional factors are:

Figure 16: CSPF- Institutional Factors

Independent Variable	Conclusion
IV 1: Consistent institutional design	No external, unknown internal
IV 3: Tailored/specified policies	Yes
IV 6: Decentralized power	Mixed
IV 8: External funding	Yes
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Unclear, Mixed according to survey results.

5.2.2 Stakeholders and participants

The germane independent variables in this broad category are: *IV 2 (small-scale, local investment in landscape)* and *IV 9 (adequate time resources from stakeholders)*. Survey and interview methods were used to acquire the data for these points. Only one key respondent participated in answering survey questions, however, beneficially, she was also identified as the actor of central importance in the partnership on the CSPF side. Therefore, her survey answers reflect a depth of experience important in gaining reliable results.

Table 17: CSPF Survey/Interview on Stakeholders and Participants

Independent Variable	Questions	Answers
IV 2: Small-scale, local investment in landscape	<i>Are local people involved directly with the partnership?</i>	Yes

	<i>Evaluate the following statement: 'Actors in the partnership feel a deep attachment to their cause, so that monetary compensation is less important than accomplishing their goals related to the environment.'</i>	Somewhat agree
IV 9: adequate time resources from stakeholders	<i>Does the partnership decision-making rely on experience-based and/or locally generated knowledge, scientifically generated knowledge or a combination of the two? Of these options, which, in your opinion is the most valid?</i>	A combination of both; one is not more valid than another.
	<i>How long have you been involved in the partnership?</i>	3 years
Related	<i>Are diverse types of interests represented in the partnership?</i>	Neither agree nor disagree
	<i>How could a local stakeholder express his point of view to your organization? What is done about it and how is this input received?</i>	"State of the Estuary" conferences. Stakeholder can contact organization directly via member services. Action depends on the issue.
	<i>Is the profit motive or the value motive most prevalent amongst partnership members?</i>	Value-driven

IV 2: As expected, the respondent answered that local people are directly involved in the partnership. This feature is important on both sides of the partnership, as the SFEP is founded upon principles of local, adaptive governance and the CSPF is a public-service oriented organization, whose priorities are to conserve nature for the benefit of citizen enjoyment, in addition to environmental goals. Stakeholders play an important role in shaping the policies and projects of the CSPF.

The organization is highly involved in promoting education in schools and in vocational avenues by providing job training for environmentally related positions in forestry, clean-up and publicity, and by recruiting volunteers for the various state park functions. Numerous campaigns in the Bay Area run by the CSPF call upon citizen opinion and participation, such as the Bay Youth Program, which involves children in after-school, science-based training, and work programs to restore the environment (CSPF, 2011). The program actively works to promote stewardship and volunteerism in the community (CSPF, 2011). Other outreach and service programs that welcome public

involvement are the Outdoor Youth Connection, Famcamp, Junior Ranger and Junior Lifeguards, Hidden Story Series, and the Packard Summer Enrichment Program (CSPF, 2011).

When asked about the level of attachment that partnership members feel for their cause, the respondent stated that she “somewhat agreed” with the assessment that money is of secondary importance in light of the deep principles inspiring the work. Though it may be a labor of love, the partnerships are still a place of work and business for actors, thus it would be unexpected for members to place no importance upon monetary compensation. Still, the sentiment reveals a level of commitment to the cause of estuary restoration that is apparent in the heated political protests/demonstrations recently in the news, which were organized by the CSPF to raise awareness for their plight in overcoming severe budget cuts. Overall, there seems to be indications of ideological dedication to environmentalism and social service common amongst the main partnership actors.

Like the Bay Institute, the CSPF views a combination of local and scientific knowledge as equally valid, as both play a role in decision-making. This result is consistent with expectations because, though the organization clearly values local public and tribal input for their activities, many of their undertakings, especially on a large-scale restoration project like Candlestick Point, are highly technical in nature. The project planning, site testing and feasibility studies required to secure funding and move ahead with the restoration necessitate the involvement of environmental specialists and engineers to lend legitimacy and expertise to undertakings, especially from the governments’ point of view. Therefore, depending on the context of the situation, different types of knowledge are valued within the CSPF.

Also, in common with the Bay Institute, the State of the Estuary conference was listed as the primary formal forum where a diversity of opinions could be expressed. In contrast to the Bay Institute, however, the CSPF engages in many other instances of public participation, simply due to the fact that they are an organization in service of the public; the public pays optional membership dues to the state parks, along with taxes, and the parks, in return, engage in public dialogue as they are an institution of the people.

In interpreting interview answers to the question “are different types of interests represented in the partnership”, one can perceive the answer, neither agreeing nor disagreeing, in two possible ways. First, because the interests of CSPF and SFEP coordinate and integrate well with each other, different interests do not need to be represented in order for cooperation to occur. Secondly, the answer alludes to the rigidity of the goals and principles of the CSPF, that is, environmental conservation and the promotion of state parks as a California legacy. These areas can never be privatized and a very limited number of activities can take place on them, therefore other interests have no place in the discussion.

The interim conclusions are:

Table 18: CSPF- Institutional Factors + Stakeholders and Participants

Independent Variable	Conclusion
IV 1: Consistent institutional design	No external, unknown internal
IV 2: Small-scale, local investment in landscape	Yes
IV 3: Tailored/specified policies	Yes
IV 6: Decentralized power	Mixed
IV 8: External funding	Yes
IV 9: Adequate time resources from stakeholders	Yes
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Unclear, Mixed according to survey results.

5.1.3 Organization and process

The independent variables measured in this general category are:

IV 3 (measures are tailored to landscape), IV 6 (power decentralization), IV 11 (adaptability and flexibility balanced with resiliency in partnership), IV 12 (high network density), IV 13 (high network centralization), and IV 14 (diversified network).

Before the network indicators are presented, specifically for IV 12 and 13, the results of the survey and interview questions for the “organization and process” independent variables are given below along with a more detailed discussion on the information acquired:

Table 19: CSPF Survey/Interview on Organization and Process

Independent Variable	Questions	Answers
IV 3 Tailored measures	<i>Are the environmental management strategies that the partnership generates tailored to local environmental conditions, or are they more generally applicable to multiple areas?</i>	Locally tailored
IV 6 Decentralization of power	<i>Can the partnership best be described as characterized by an equal level of power between all member actors, or are there multiple layers of power and responsibility that are shared differently by the parties involved?</i>	Multiple layers of power that can be somewhat imbalanced
	<i>Evaluate the following statement: 'Upper levels of management in the organization link their decision-making activities with middle management in their own organizations and their partner's organization.'</i>	3, Neither agree nor disagree
	<i>Evaluate the following statement: 'Real power in the organization is concentrated in the hands of only a few individuals'.</i>	3, Neither agree nor disagree
IV 11 Adaptability and flexibility balanced with resiliency in partnership	<i>Evaluate the following statement: 'I would characterize the partnership's members and organizational style as flexible in general.'</i>	2, Somewhat agree
	<i>Evaluate the following statement: 'The partnership would collapse if an organizational disaster happened.'</i>	3, Neither agree nor disagree
IV 12 High network density	<i>Please list the names of the partnership members with whom you work most closely.</i>	Xavier Fernandez Contract officer (name unspecified)
	<i>Who would you contact in order to discuss topics that involve sustainability concerns within your organization?</i>	Xavier Fernandez Elizabeth Goldstein
IV 13 High network centralization	<i>Would you most likely describe the organization of the partnership and its interactions as: complex and linking complex and isolated simple and linking simple and isolated Other (Please specify):</i>	Complex and linking

	<i>Is there one main contact person that most people in the partnership communicate with frequently?</i>	Contract officer	
IV 14 Diversified network	<i>Evaluate the following statement: 'Members of the partnership have different backgrounds, opinions and expertise related to the environmental issues of interest.'</i>	2, Somewhat agree	
	<i>Evaluate the following statement: 'The diverse interests and experiences of actors involved in the partnership are given equal consideration when it comes to organizational learning and decision-making.'</i>	3, Neither agree nor disagree	
Related	<i>How often do you meet with your closest contacts in the partnership?</i>	On average two times per month	
	<i>How often do you formally meet with members of the partnership? With other stakeholders?</i>	A few times per year	
	<i>Does someone take recorded minutes of the meeting or note working procedures?</i>	Yes during the State of the Estuary conferences, no during other informal meetings	

IV 11 questions how flexible the respondent perceives the partnership's organizational style to be. She answered that the partnership is somewhat flexible; from this statement it is fair to assume that there is more flexibility than rigidity, which is appropriate given the highly unpredictable institutional setting discussed in the IAD analysis. An organization or partnership that was rigid may not be able to adapt to new legislation adopted every voting cycle that directly affects the level of funding, the regulations and the climate of public opinion that influence large-scale projects in particular. The assertion that the partnership is somewhat flexible is therefore, congruent with the demands of the action arena. The extent of flexibility exhibited by the partnership is called into question when asked about the buoyancy of the arrangement if an organizational disaster were to occur. Of course, when there is no precedent for organizational disaster within a partnership arrangement, it is difficult to predict the consequences of such an event. The fact that there is no history of mistrust or catastrophe, in combination with the highly unpredictable working environment influencing the partnership, may explain the respondent's uncertainty here.

The results of the snowballing method and the network mapping revealed that there were approximately five main actors involved in partnership projects between the CSPF and the SFEP, including the respondent herself. This number was confirmed via the survey, as the respondent states that the number of partners + internal actors with whom she regularly communicates for project-related activities is less than or equal to 5. Internally, communication occurs on average of a few times per week and externally (with partner actors), communication occurs about twice per month. This amount seems quite low for such a large scale project, but is explained by the fact that the SFEP is one of many partners working on the Candlestick Point restoration with CSPF, and, furthermore, that their involvement has less to do with practical matters that require regular follow-up. Grant proposals and advocacy work take a great deal of time, so it makes sense that contact is not sought after for routine communications as efforts are, instead extended, toward processes taking several months before progress is made.

The respondent answered that the partnership's interactions with each other are 'complex and linking'. This statement is validated by the results of the IAD analysis because the partnership's activities themselves are complicated by the conditions of the action arena and the demands placed upon projects seeking funding and approval. It is important that the partnership members translate decision-making to actions that are well researched, popular, integrated into the environment and inclusive of many stakeholders, as public service organizations like the CSPF are constantly subject to public and governmental scrutiny.

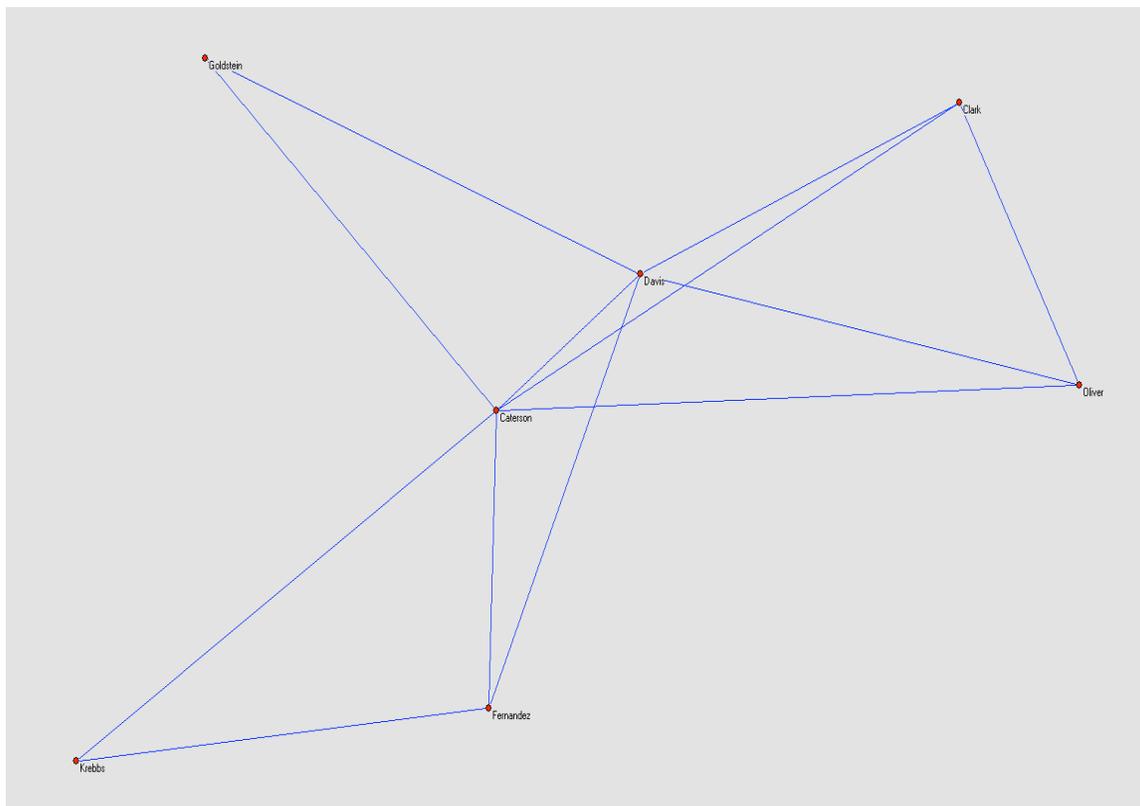
In order to accomplish this goal, it seems advantageous to incorporate the diverse experiences of partnership actors in decision-making and organizational learning. However, the respondent neither agreed nor disagreed with the statement that equal consideration is given to a variety of participants. This answer may be partially explained by the fact that, due to the stringency of governmental funding requirements, there is a great emphasis placed on the legitimacy of certain types of knowledge and activities within defined parameters. This one-sidedness is counterbalanced by the relatively heterogeneous backgrounds and experiences of the small number of individuals actively working on the partnership project; diverse input is already represented by default. Therefore, the partnership network is not necessarily open to diverse inputs, but

they are inclusive as a result of the characteristics of relevant actors. This ranks in second place on the scale of open and inclusiveness, above the Bay Institute.

5.2.3.1 NETWORK ANALYSIS OF ORGANIZATION AND PROCESS VARIABLES

Independent variables 12 and 13 utilized network analysis methods in their interpretation. The depiction of the small network (with Fruchterman-Reingold energy) created in the Pajek program, are shown below:

Figure 9: CSPF Network



Though five nodes were identified in the relevant network, two others from the CSPF side (Goldstein and Oliver) were included because they were also mentioned to

play a role in advising and coordinating activities related to sustainable development, and whose input is requested should specific sustainability challenges arise during the project.

Two main hubs are apparent from the network diagram above. Caterson was identified as the central actor, as she is the project manager, and is one of the only points of contact to the central actor on the SFEP side (Fernandez). In addition Clark, a site analyst, is well connected to the CSPF and to Fernandez on the SFEP side because she is instrumental in supplying necessary information needed for the grant procedure.

The network has a star-like shape, which fulfills the criteria for a centralized network, IV 13. The star shape centered on Clark appears to be relevant by only observing the network diagram, but in actuality her communication with other nodes is far more limited on the Candlestick Point project than Caterson's. Caterson is, not only more connected, but also has a broader, coordinating role that orchestrates activity between the other six nodes.

The network density (IV 12) is: $L/[n(n-1)/2] = 12/[7(6)/2] = .57$. The network is 57% connected when compared to the maximum level of connectivity achievable.

The interim conclusions are:

Table 20: CSPF- Institutional Factors + Stakeholders and Participants + Organization and Process

Independent Variable	Conclusion
IV 1: Consistent institutional design	No external, unknown internal
IV 2: Small-scale, local investment in landscape	Yes
IV 3: Tailored/specified policies	Yes
IV 6: Decentralized power	Mixed
IV 8: External funding	Yes
IV 9: Adequate time resources from stakeholders	Yes
IV 11: Adaptability/flexibility balanced with resiliency	Somewhat flexible
IV 12: Network density	.57
IV 13: Network centralization	Yes
IV 14: Diversified network	2 nd rank
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Unclear, Mixed according to survey results.

5.2.4 Knowledge and learning

The relevant independent variables for this category are: *IV 4 (well defined problems, can be reformulated/amended)*, *IV 10 (documented co-management strategies)*, and *IV 16 (access to information)*. All of these variables were measured using sociometric indicators, collected via survey and interview. The questions/answers to determine the status of these variables are given below.

Table 21: CSPF Survey/Interview on Knowledge and Learning

Independent Variable	Questions	Answers
IV 4 Well-defined problems that can be reformulated/amended	<i>Does the partnership have clear objectives against which actors can monitor their personal performance as well as the partnership's performance?</i>	No
	<i>Does the partnership agree on certain "best practices" of operation?</i>	Yes
	<i>Evaluate the following statement: 'Members of the partnership accept a problem definition that could change over time.'</i>	3, Neither agree nor disagree
	<i>Are the challenges/problems that the partnership is involved in solving clearly defined?</i>	Yes
	<i>Does the partnership have a mission statement that acts as a guiding light for the partnership's activities?</i>	Yes
IV 10 Well-documented co-management strategies	<i>Are there formal arenas (with officiators) to facilitate inter-party dialogue such as recorded meetings?</i>	State of the Estuary conferences
IV 16 Access to information	<i>Evaluate the following statement: 'The activities of the partnership, especially when it comes to decision-making, are transparent to the people who are impacted by the decision'</i>	3, Neither agree nor disagree
	<i>Evaluate the following statement: 'I find it easy to access information that I need to do my job.'</i>	Yes
Related	<i>In your opinion is scientific knowledge or experienced based knowledge more important to do your job in the estuary?</i>	Both are equally important, combination

	<i>Do you personally collaborate with stakeholders when it comes to your work?</i>	Very rarely
	<i>Does your partnership take an interest in any subject beyond conservation activities</i>	Yes, educational programs, publishing, volunteer and job training programs, scholarship funds

IV 4 concerns the presence of well-defined problems that can be reformulated and amended. In contrast to what one might surmise from the contentious nature of defining objectives in the use of estuary resources, the problems, according to the respondent, are well defined. This answer may be clarified by the fact that the improvement of water quality is a primary objective of the SFEP, the EPA and the Water Board, which are all integral in achieving the support for the Candlestick Point Recreation project. Therefore, though not all stakeholders agree on a problem definition, the relevant actors for this specific project have clear priorities, which are unlikely to change over time.

Because partnership goals and priorities seem relatively consistent, it makes sense the mission statement is defined and that certain best practices of operation are agreed upon, as is the case here. The discrepancy is that there are no standards against which to compare these best practices; if there are best practices, surely there should be a scale separating acceptable from unacceptable procedures or operations.

The conditions of IV 10 are identical to those found in the Bay Institute: formal arenas for stakeholder collaboration exist, but they are not frequent enough. To add nuance to this claim, since the CSPF is involved in public service, it does convene open meetings to promote its education, vocational, volunteer and recreational programs as well as to organize political demonstrations or to discuss park-related environmental issues that concern the public. Though these may not be considered to be “formal” meetings by the respondent, they do increase contact between the internal staff of the organization and local stakeholders, and therefore are useful for improving communication, though not necessarily the documentation of successful co-management strategies.

Though information is often given to the public in various forms, the respondent is neutral with regards to the degree of transparency afforded. As decision-making in the parks is highly regulated by governmental bodies, choices are often made outside of the context of stakeholder collaboration. Recent dissatisfaction with budget cuts, which threaten the parks' future, however, have met with venom, as the CSPF's publications have been very vocal in denouncing the irresponsible decisions to drastically reduce program funding.

The interim conclusions are presented below:

Table 22: CSPF- Institutional Factors + Stakeholders and Participants + Organization and Process + Knowledge and Learning

Independent Variable	Conclusion
IV 1: Consistent institutional design	No externally, unknown internally
IV 2: Small-scale, local investment in landscape	Yes
IV 3: Tailored/specified policies	Yes
IV 4: Well-defined problems that can be reformulated/amended	Mostly affirmative, some inconsistencies
IV 6: Decentralized power	Mixed
IV 8: External funding	Yes
IV 9: Adequate time resources from stakeholders	Yes
IV 10: Well-documented co-management strategies	No
IV 11: Adaptability/flexibility balanced with resiliency	Somewhat flexible
IV 12: Network density	.57
IV 13: Network centralization	Yes
IV 14: Diversified network	2 nd rank
IV 16: Access to information	Internally accessible, externally somewhat inaccessible
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Unclear, Mixed according to survey results.

5.2.5 Communication

The variables pertinent to this category are: *IV 5 ("good" communication with face-to-face interaction)* and *IV 15 (significant cross-boundary communication between*

organizational clusters). The results from the network diagram support the analysis of the primary methods, survey and interview, in finding the applicability of these two factors.

Table 23: CSPF Survey/Interview on Communication

Independent Variable	Questions	Answers
IV 5 Good communication with face-to-face interactions	<i>How much face-to-face contact do you have with other members of the partnership with whom you work most closely?</i>	4, Infrequently
	<i>Evaluate the following statement: 'Overall, I view the other members in the partnership and the partnership in general as trustworthy.'</i>	1, Strongly agree
	<i>Evaluate the following statement: 'Overall, I believe that the members of the partnership and the partnership in general adhere to an acceptable set of principles and desire to do good.'</i>	1, Strongly agree
	<i>Does the partnership encourage peer-to-peer learning, "learning-by-doing" where actors with different experience levels try to co-enhance each other's knowledge? If so, can you name a specific forum where this occurs (i.e. workshops, conferences, team-building activities, etc.)?</i>	Peer-to-peer learning is encouraged
	<i>To your knowledge, has there been mistrust or major disagreements between the members of the partnership in the past?</i>	No
	<i>In the past, have the members of this partnership worked well together?</i>	Yes
	<i>Evaluate the following statement: 'When it comes to the other partnership members with whom I have the most frequent contact, I view these individuals as committed to problem-solving and generally competent.'</i>	1, Strongly agree
	<i>Evaluate the following statement: 'To my knowledge, actors in the partnership view interactions with each other as legitimate (i.e. in compliance with the laws, fair, well-established).'</i>	1, Strongly agree
IV 15 Significant	<i>Do you regularly communicate with members of the partner organization?</i>	Other, no

cross-boundary communication between organizational clusters	<i>How often do you meet with these regular contacts face-to-face? Please answer separately for partnership contacts and internal organizational contacts.</i>	On average two times per month
	<i>Which characterization best describes your communication with members of the partnership? remote and infrequent remote and frequent in-person and infrequent in-person and frequent Combination of the above (please explain):</i>	In person and frequent
	<i>Are there formal venues for inter/intra-party dialogue?</i>	Yes
Related	<i>Is information shared freely in the partnership or is this problematic (and why?)</i>	Freely shared
	<i>Do you have positive experiences interacting with stakeholders?</i>	Yes
	<i>How do you most commonly communicate with others in the partnership?</i>	E-mail

A few inconsistencies were identified from the survey responses given. For IV 5, good communication, the respondent establishes that trust and perceived legitimacy positively influence the partnership. There are no histories of conflict and there is a sense that partner members are competent and professional according to this individual. As she has been involved in the partnership for three years, there is enough time and experience to validate her statements. Another positive point in the partnership is that peer-to-peer learning is encouraged, which seems beneficial to the partnership due to the need to integrate project plans into fragile environments with many stakeholders and challenging policy arrangements. A lack of learning and cooperation would certainly hinder this task.

A discrepancy in the answers arises when asked about the frequency of communication (IV 15). In one instance, the respondent claims that she has infrequent face-to-face contact with other members (this is mostly done by e-mail), yet characterizes her communication with members of the partnership as “in person and frequent”. There is no way to explain this discrepancy other than a human error in answering. The other

evidence points to infrequent in person contact with a moderate level of remote contact as a more accurate characterization of communication for this partnership.

The interim conclusions are:

Table 24: CSPF- Institutional Factors + Stakeholders and Participants + Organization and Process + Knowledge and Learning + Communication

Independent Variable	Conclusion
IV 1: Consistent institutional design	No externally, unknown internally
IV 2: Small-scale, local investment in landscape	Yes
IV 3: Tailored/specified policies	Yes
IV 4: Well-defined problems that can be reformulated/amended	Mostly affirmative, some inconsistencies
IV 5: Good communication with face-to-face interaction	Indications of successful cooperation, but lacking in face-to-face contact
IV 6: Decentralized power	Mixed
IV 8: External funding	Yes
IV 9: Adequate time resources from stakeholders	Yes
IV 10: Well-documented co-management strategies	No
IV 11: Adaptability/flexibility balanced with resiliency	Somewhat flexible
IV 12: Network density	.57
IV 13: Network centralization	Yes
IV 14: Diversified network	2 nd rank
IV 15: Significant cross-boundary communication	No
IV 16: Access to information	Internally accessible, externally somewhat inaccessible
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Unclear, Mixed according to survey results.

5.2.6 Contextual factors

The two variables of interest, determined by survey and interview methods, are *IV 7 (market profit potential)* and *IV 18 (adaptability of problem definition to correspond with context)*.

Table 25: CSPF Survey/Interview on Contextual Factors

Independent Variable	Questions	Answers
IV 7: market profit potential	<i>Does the partnership's activities help to promote a profitable aspect of estuaries, which interest one or more of the partners (i.e. recreation, tourism, locally produced goods and services, educational resources)?</i>	Yes
IV 18: adaptability of problem definition to correspond with context	<i>Evaluate the following statement: 'Members of the partnership accept a problem definition that could change over time.'</i>	3, Neither agree nor disagree
Related	<i>Do you feel a sense of personal investment in the estuary?</i>	Yes
	<i>What are the main obstacles that you encounter that could/do prevent you from working at an optimal achievement level?</i>	Not answered

The overall message that can be gleaned from these two independent variables is one that reinforces previous findings. The partnership's activities do help to promote profitable aspects of the estuary, which have been discussed. The sense of value, ownership and personal investment that stakeholders and partners seem to feel for projects that are inspired by grassroots activism, such as the restoration of the Candlestick Point area (in connection with imbalanced burdens on water quality borne by nearby communities), lend a facet of stakeholder involvement and commitment that is unique to environmental projects that rely on the mobilization of groups of people.

While members do not accept a problem definition that could change over time, the problem definition of poor water quality does not necessarily need to adapt to the context, as it is a chronic problem in the entire watershed, which, according to the Ecological Scorecard is predicted to decline in the coming years. Unless the problem is solved, it remains an important issue, especially for the parties most interested in the Candlestick Point restoration project.

The aggregated interim conclusions are:

Table 26: CSPF- Institutional Factors + Stakeholders and Participants + Organization and Process + Knowledge and Learning + Communication + Contextual Factors

Independent Variable	Conclusion
IV 1: Consistent institutional design	No externally, unknown internally
IV 2: Small-scale, local investment in landscape	Yes
IV 3: Tailored/specified policies	Yes
IV 4: Well-defined problems that can be reformulated/amended	Mostly affirmative, some inconsistencies
IV 5: Good communication with face-to-face interaction	Indications of successful cooperation, but lacking in face-to-face contact
IV 6: Decentralized power	Mixed
IV 8: External funding	Yes
IV 7: Market profit potential	Yes
IV 9: Adequate time resources from stakeholders	Yes
IV 10: Well-documented co-management strategies	No
IV 11: Adaptability/flexibility balanced with resiliency	Somewhat flexible
IV 12: Network density	.57
IV 13: Network centralization	Yes
IV 14: Diversified network	2 nd rank
IV 15: Significant cross-boundary communication	No
IV 16: Access to information	Internally accessible, externally somewhat inaccessible
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Unclear, Mixed according to survey results.
IV 18: Adaptability of problem definition to correspond with context	No

5.3 Analysis of IVN Consulentenschap Brabant

Due to the differences in the nature of the partnership between IVN Consulentenschap Brabant and the Biesbosch National Park, the considerations made in the analysis will take this relationship into account to explain variations that arise. IVN performs several functions in the partnership. On one hand, they advise and oversee ongoing projects by coordinating actors in broad terms, but not necessarily working directly on physical ventures, and on the other hand, some IVN actors are involved in physical projects that are highly specific and are not engaged in the broader scope of the Biesbosch. Therefore the IVN's role in the national park is much more diverse than that of the two Bay area

case studies, ranging from communication with political parties, to designing annual development plans, to organizing field trips for school children. This feature complicates the analysis, and these points of divergence or variation, and their consequences, will be illuminated throughout the following section. However, for the sake of consistency in the analysis, only one main partnership project (with an educational component) will be emphasized, and the extenuating conditions of the partnership will be used as supplemental evidence for the success or failure of the partnership's conformity to ideal criteria of the independent variables.

5.3.1 *Institutional factors*

The independent variables considered here are: *IV 1 (consistent institutional design)*, *IV 3 (tailored policies/specific measures)*, *IV 6 (decentralization of power)*, *IV 8 (external funding and investment)* and *IV 17 (appropriate rule forming and rule enforcing mechanisms)*. The institutional framework under consideration is that which concerns the Biesbosch National Park Region I and Region II, called the Wijde Biesbosch, which includes nine districts and nine reconstruction territories. Lasting seven years, from the time period 2008 until 2015, there have been numerous large development projects planned in the Wijde Biesbosch, under the thematic headings: water and damming, biodiversity, landscape development, tourism and recreation, cultural history, and ecology.

These themes have inspired educational projects in the Biesbosch, including the one under consideration spearheaded by the IVN, called the NME, which stands for the Natuur en Milieueducatie (basisonderwijs), translated to Nature and Environmental Education for primary school. The project seeks to educate children about the thematic goals for sustainability in the Biesbosch with a structured curriculum that includes field trips and course modules. The role of the IVN Consulentenschap Brabant (hereafter the IVNCB) in this capacity is to coordinate learning resources, including guides, museums and hands-on experience opportunities in the Biesbosch area, to enrich local environmental education.

5.3.1.1 BIOPHYSICAL CONDITIONS

As a primarily man-made, reclaimed landscape/waterscape situated next to the busiest metropolitan region in the Netherlands, the Randstad, the Biesbosch is a unique wetland that is valuable for its ecological services, recreation, education and tourism opportunities. The geographical region of the Wijde Biesbosch encompasses the National Park, known as Region I, and the extension of the park's associated environmental constituents, known as Region II, which was added in 2009. The total region is physically located between the boundaries formed by the highways A15/A27/A16/A59. The area is officially under the jurisdiction of six provinces and two municipalities covering 400 square kilometers. Surrounding the actual park, which consists of flat marsh or woodland landscapes and three freshwater reservoirs, lie several small villages, agricultural land and the city of Dordrecht (STEP, 2011).

The Biesbosch is a physical arena for the convergence of various natural and man made features. It is located at the juncture of the Rhine and Meuse delta and is a haven for native plants and animals, like the beaver (STEP, 2011). On the ocean side, it is part of the Atlantic coastline, whose marine ecosystem influences the features of the Biesbosch where it converges with seawater (though the Biesbosch is freshwater dominant). Finally, the Biesbosch is an area of ecological heritage, representing the Dutch people's complicated relationship with waterbodies throughout their history. Therefore, the biophysical aspects of the estuary are more than physical characteristics, but a representative imprint of the environment on society, whose features have consequences for human interactions today.

The biophysical conditions of the Biesbosch present several challenges to current cooperative initiatives. First, the Biesbosch is composed of several small landmasses that are separated by waterways that are often only accessible by boat. Secondly, the physical borders formed by rivers and crowded highways hinder travel in the region between different parts of the extended Biesbosch (STEP, 2011). Thirdly, the administrative delineations between the various municipalities/provinces hinder cooperation, as all these areas have their own policies, stakeholders and visions for activities and projects in the Biesbosch (STEP, 2011).

As of 2010, the two formerly separate management authorities in the park, the Natuur en Recreatieschap de Hollandse Biesbosch and the Recreatieschap Nationaal Park

De Biesbosch, merged to form the Partnerschap Nationaal Park de Biesbosch, which has improved past precedents of weak administrative cooperation and has partially ameliorated the obstacles presented by the physical boundaries in the region through the promotion of stronger communication and a unified policy environment where the national park is concerned (STEP, 2011). However, the municipal borders still apply to the section of the broad Biesbosch region that is not under the immediate authority of the Biesbosch National Park. Attempts to foster coordination in this larger region is undertaken by partnerships such as the Wijde Biesbosch and the NME project to engage stakeholders in a learning environment focused on common sustainability themes with features and examples unique to the biophysical conditions of the Biesbosch.

Figure 10²⁶: The Biesbosch



5.3.1.2 ATTRIBUTES OF THE COMMUNITY

²⁶ Source: Google Maps

Though one relevant community for this analysis is the small group of actors involved in the partnership, this section of the IAD analysis should also talk about the wider community of stakeholders involved in the Biesbosch as the program NME Wijde Biesbosch directly concerns the participation of these individuals and their engagement in the project.

The community of stakeholders is made up of 235,000 residents in the Biesbosch area, who inhabit the city of Dordrecht and, to a lesser extent, the smaller towns and villages of the countryside all with demographics similar to the rest of the Netherlands excluding the main cities (STEP, 2011). While the number of available jobs has been stable for many years, sustainable development in the Biesbosch may offer more career opportunities for the community and enrich the local economy, as the park attracts approximately 1.5 million visitors per year, making recreational, educational and eco jobs a potentially profitable venture, both financially and environmentally speaking (STEP, 2011).

The community of actors within the IVNCB who work on the NME project in the Wijde Biesbosch is a very small group of individuals with unique characteristics. The project leader for the undertaking is an individual who has been working in the field for about a decade. His work experiences prior to joining the IVN were neither environmentally nor educationally oriented, but a passion for the environment and public service led to his choice of career change. This sentiment seems to be a prevalent one within the IVNCB. Interview experiences and spending time speaking to other members of the organization gave insight into a casual working environment with actors from a wide variety of backgrounds, experience levels and age groups, though all are Dutch. A common theme felt amongst the organization was a genuine commitment to projects that prioritized the environment, above other factors such as the pay scale or working conditions.

5.3.1.3 RULES IN USE

The relevant set of rules that will be discussed here are those that pertain to the NME project directly, as there are many layers of complicated policies in the Wijde Biesbosch due to the multiple jurisdictions present (composed of 15 steering parties in total),

amongst other factors that are not fully transparent at this research depth; thus a complete analysis is beyond the scope of this paper.

The Biesbosch is officially a dedicated Natura 2000 site according to the European Commission, which is under the policy legislation of the Habitats Directive that establishes special areas of conservation to better protect and manage threatened ecological zones for the benefit of vulnerable species (Natura, 2011). Under this directive, the Netherlands is responsible for managing its own site, with different governance levels collaborating on enhancing environmental protection. As a member of the Natura 2000 network, the Biesbosch is entitled to some funding from the European Commission but is also under strict regulation against certain activities that are potentially damaging to the habitat (Natura, 2011).

The most recent set of rules, valid for a period of ten years, which determines the policies of the Biesbosch, was presented in 2004 by the consultative body (overlegorgaan) (Biesbosch, 2011). This assembly works with a well-represented stakeholder committee whose main function is to provide local knowledge and input in advising decision-making (Brabant, 2011). Because the Biesbosch is a natural reserve, and is protected under Natura 2000, the rules and policies jointly decided upon must, foremost, not interfere with nature as well as fulfill stakeholder objectives. Though education is listed as a secondary goal for the Biesbosch advancement plan after landscape development (according to the province of Noord-Brabant), it is an undertaking that can be well integrated into the existing policies in the area.

The NME program, established by the Dutch government in 2009, a cooperative undertaking between the Ministries of Education, Education Culture and Science, and Infrastructure and Environment, is meant to supplement the year 2000's Sustainable Development Education program (known as ESD) which promotes governance coalitions associated with the "people, planet, profit" theme (NME, 2011). NME is geared toward coordinating local municipal governments, citizens, and environmental education programs to bring a broad range of learning activities to stakeholders.

5.3.1.4 ACTION ARENA

The NME project at the IVN originally began as an assignment from a partner organization, Wijde Biesbosch, who provided funding for the coordination of a structured student curriculum that incorporated the land development themes prioritized in their organization, which promotes the unique natural and cultural features of the region in different ways.

The curriculum is determined by NME policy, which was designed in consideration of studies conducted by the KLB Bureau (a social research organization) that investigated the desirable contents of such a program according to the demands of public opinion and existing knowledge gaps (NME, 2011). According to the KLB, as NME programs and policies are difficult to implement with municipal diffusion alone, it was determined that partnerships are necessary to overcome the obstacles of space, time and priority to integrate environmental learning into mainstream educational curriculum (NME, 2011). Therefore, the IVN's Wijde Biesbosch education program links schools with various activities in the Biesbosch to offer unique, hands-on opportunities that supplement and complement general curriculum for 12-14 year olds.

Presently assignments are also fielded by the IVN from various other educational institutions. Commonly the IVN project coordinator attends "Marktplaats Voor Cultuureducatie" (Market Place for Cultural Education) meetings in different district locations where project services are requested by schools on a contract basis. The most frequented locations with the majority of contact/assignments are the local municipalities of Werkendam, Wouderichem and Aalburg. Excursions are often coordinated in cooperation with the Molenstichting Noord-Brabant (Windmill Foundation of Noord-Brabant) and the Brabantse Landschap (Brabant Landscape) organization.

The IVN also makes bids to schools in order to gain a place in their curriculum. All projects are done on a case-by-case basis, meaning that there is no standard period of time that a partnership with a school should last, nor are there strict guidelines for the teaching material as the NME is not officially embedded in the National Park's agenda nor in general school curriculum. Presently, the IVN's Educatie Wijde Biesbosch program assembles lesson packets and interactive products for schools to choose from to allow for a customizable experience with the goal of securing a firmer footing in schools in the future, which depends on better standardization of institutional arrangements.

5.3.1.5 OUTCOMES

The IVN's Educatie Wijde Biesbosch program is in nascent stages, launched only three years ago. According to the KLB bureau's assessment of the performance of NME programs in Dutch educational institutions, the programs are still low on the priority list for schools and stakeholders, though a majority (75%) strongly approve of the idea. Surprisingly, a lack of finance does not seem to be a main obstacle barring robust participation. Instead, the KLB cites the following factors as a cause for low program demand: the unwillingness of local governments to follow national counsel for the extension of educational programs beyond the norm, a lack of knowledge amongst NME-affiliated organizations about the proper way to execute policies, a general lack of openness of NME organizations to accept new project partners in helping to disseminate their programs for fear of further institutional complication, the lack of the necessary number of employees and a general lack of support structures to advise those executing NME policy (KLB, 2011). According to the independent surveyor, NME programs, like that of the IVN need much more time and experience to better navigate the action arena to ensure future achievement of project goals.

Currently, the Educatie Wijde Biesbosch program has the potential to reach 30 schools in the Noord-Brabant region. Of this total, 40% (12) are involved in the program at present. The short-term goals for the project are to increase involvement by an additional 40% this year, and to have reached 100% participation by 2013. Is this projected outcome too optimistic? Possibly, says the project leader, given a number of obstacles in addition to those already identified by the KLB. These challenges will be discussed in further detail in the following sections analyzing other independent variables. In addition to the aforementioned participation goals, the project is also interested in broadening its involvement to include recreation and hospitality, though these plans were not specified during the interview.

5.3.1.6 EVALUATIVE CRITERIA

IV 1 (consistent institutional design), IV 3 (tailored policies/specific measures), IV 6 (decentralization of power), IV 8 (external funding and investment) and IV 17 (appropriate rule forming and rule enforcing mechanisms) will be considered in the first interim evaluation.

IV 1: From the evidence gathered in the IAD framework, the institutional design does not seem to be consistent. On one hand, the national government has endorsed environmental education since 1988, sustainability education since 2000, and the complementary NME program since 2009. In addition, the Dutch government supports a number of sites protected under the auspices of Natura 2000, yet educational programs giving hands on experiences in the environment are not part of fully standardized curriculum. Even more puzzling is the fact that the Wijde Biesbosch educational agenda is not embedded into the Biesbosch National Park agenda. One obstacle described by the central coordinator of the project was the constant negotiation for space and time that IVN makes with its partners. Constant concessions due to a lack of embeddedness and inconsistent institutional design leads to mismatched expectations between partner organizations and much uncertainty, which hinders the progression of the project both in logistics and in morale.

IV 3: While there are tailored policies and specific measures in place that ensure the support of the Biesbosch's natural environment, the lack of specificity of the policy space that NME occupies greatly affects the project, as discussed in the case of IV 1. Additionally, another pervasive challenge faced by the IVNCB is contending with a wide number of different local governments whose schools do (or potentially could) take part in the Educatie Wijde Biesbosch project. Currently, participation is not a "must", it is a suggestion, and as such there is little external motivation for schools to increase their involvement.

IV 6: Because of the consultative functions that the IVN fulfills, their relationship in the partnership is unique. While the IVN itself is an organization with an internal hierarchy, the respondents characterize the nature of projects and assignments as "remote and complex" meaning that workers concentrate on a specific task that they are involved in and do not rely on a hierarchy to drive their progress. According to workers at the IVN, the hierarchy that exists does not have bearing on actual working relationships. At

the Biesbosch, there is relatively no real hierarchy in existence. The IVN claims that this is both beneficial and problematic, as collaboration is encouraged, yet difficult to enforce/motivate actions under circumstances where it may be necessary.

IV 8: There is external funding for the project and for the IVN itself. Funding for the project is garnered primarily through the schools payment of participation fees for the program, and the 800,000 Euros per year received from the Ministry of Economie Landbouw en Innovatie (Economy, Development and Innovation), the province of Noord-Brabant, and the Stadsbosbeheer (National Forestry Services) to pay for projects and the stimulation of new partnerships/improvement of existing cooperations. Because the actors claim that this amount is very limited, they actively seek investors to supplement their current moneys.

IV 17: This independent variable was unclear from the analysis of the IAD framework alone. While rule forming and rule enforcing mechanisms are certainly present in the institutional setting, they seem to compete with each other when it comes to projects like the Educatie Wijde Biesbosch due to the amount of overlapping jurisdictions. When it comes to the specific project, Educatie Wijde Biesbosch, according to survey results from multiple respondents at the IVNCB, no agreed upon mechanisms are in place.

The first set of interim conclusions are:

Table 27: IVNCB- Institutional Factors

Independent Variable	Conclusion
IV 1: Consistent institutional design	No
IV 3: Tailored/specified policies	Lack of specificity on the local level
IV 6: Decentralized power	Yes
IV 8: External funding	Yes
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	No

5.3.2 Stakeholders and participants

The germane independent variables in this broad category are: *IV 2 (small-scale, local investment in landscape)* and *IV 9 (adequate time resources from stakeholders)*. Three

key respondents from the IVNCB participated in the interview and survey process. They are the general director of Biesbosch programs, the project leader of the Educatie Wijde Biesbosch and a project manager for Biesbosch activities. These three individuals are the actors of central importance for the case study, and their answers reflect a high degree of relevant, (probably) reliable insider knowledge. The following independent variables were answered using this information. Since there were three responses to each question, all answers are presented.

Table 28: IVNCB Survey/Interview on Stakeholders and Participants

Independent Variable	Questions	Answers
IV 2: Small-scale, local investment in landscape	<i>Are local people involved directly with the partnership?</i>	Yes
	<i>Evaluate the following statement: 'Actors in the partnership feel a deep attachment to their cause, so that monetary compensation is less important than accomplishing their goals related to the environment.'</i>	Somewhat agree/ strongly agree
IV 9: adequate time resources from stakeholders	<i>Does the partnership decision-making rely on experience-based and/or locally generated knowledge, scientifically generated knowledge or a combination of the two? Of these options, which, in your opinion is the most valid?</i>	A combination of both; one is not more valid than another.
	<i>How long have you been involved in the partnership?</i>	3 years, 1.5 years, 10 years
Related	<i>Are diverse types of interests represented in the partnership?</i>	Somewhat agree
	<i>How could a local stakeholder express his point of view to your organization? What is done about it and how is this input received?</i>	School beurs, local council meetings, IVN directly, Ratelaar
	<i>Is the profit motive or the value motive most prevalent amongst partnership members?</i>	Both

Local people play a highly important role in the partnership, from their input in meetings coordinating activities in the Wijde Biesbosch to the determination of the desired school curriculum, the partnership between the IVNCB and the Biesbosch

National Park is founded upon involving the public in activities to bring them closer to nature, an experience which demands frequent input and evaluation of stakeholder satisfaction.

While diverse interests are represented in the partnership, they are not always represented equally, as explained during the interview. Larger, more powerful organizations or cities (such as Dordrecht) have an excessive amount of money and control, especially compared to smaller municipalities or local partner organizations. The respondent explained that there is a problem with fairness in the balance of power and interests that often presents challenges in representing different stakeholders and relevant parties.

Members of the IVN side of the partnership disagree about the level of personal investment that partners feel pertaining to their cause in the estuary. The project leader assumes the highest level of attachment, whereas the others believe that other actors are only somewhat attached. This discrepancy may be explained by the type of work that each respondent does with regards to the project. The project leader is highly active in interacting with stakeholders and in bidding the Educatie Wijde Biesbosch program to schools and administrators. The others have a more remote roll, interacting less with stakeholders. Perhaps the differences can be attributed to the fact that respondents may have answered the question based on their *own* feelings, and did not answer the question based on the feelings of others. Whether or not this theory is valid, the answers the respondents gave to the survey questions are consistent with the answers that they gave regarding their personal sense of investment in the estuary partnership and its projects.

Like the other case studies, the partnership's projects rely on a combination of local and scientific knowledge to make decisions, both of which are perceived as valid. However, in the IVN, there is a slight bias toward the validity of local knowledge above scientific knowledge, especially from respondents who work most closely with stakeholders on a regular basis.

The interim conclusions are:

Table 29: IVNCB- Institutional Factors + Stakeholders and Participants

Independent Variable	Conclusion
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IV 1: Consistent institutional design	No
IV 2: Small-scale local investment landscape	Yes
IV 3: Tailored/specified policies	Lack of specificity on the local level
IV 6: Decentralized power	Yes
IV 8: External funding	Yes
IV 9: Adequate time resources from stakeholders	Yes (speculative)
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	No

5.3.3 Organization and process

The independent variables measured in this general category are:

IV 3 (measures are tailored to landscape), IV 6 (power decentralization), IV 11 (adaptability and flexibility balanced with resiliency in partnership), IV 12 (high network density), IV 13 (high network centralization), and IV 14 (diversified network). The answers given by the three respondents are presented in the table below. Variables 3, 6, 11, and 14 will be answered by survey and interview data, and 12 and 13 will be dealt with separately using network analysis. Conflicting answers received during the interview or the survey process will be listed and discussed in further detail.

Table 30: IVNCB Survey/Interview on Organization and Process

Independent Variable	Questions	Answers
IV 3 Tailored measures	<i>Are the environmental management strategies that the partnership generates tailored to local environmental conditions, or are they more generally applicable to multiple areas?</i>	Central respondents: generally applicable Other respondents: locally tailored
IV 6 Decentralization of power	<i>Can the partnership best be described as characterized by an equal level of power between all member actors, or are there multiple layers of power and responsibility that are shared differently by the parties involved?</i>	Multiple layers of power that can be somewhat imbalanced
	<i>Evaluate the following statement: 'Upper levels of management in the organization link their decision-making activities with middle management in their own organizations and their partner's organization.'</i>	Central respondents: neither agree nor disagree (elaboration on response: not linked) Other respondents: somewhat agree

	<i>Evaluate the following statement: 'Real power in the organization is concentrated in the hands of only a few individuals'.</i>	Somewhat agree	
IV 11 Adaptability and flexibility balanced with resiliency in partnership	<i>Evaluate the following statement: 'I would characterize the partnership's members and organizational style as flexible in general.'</i>	Central respondents: 2, somewhat agree Other respondents: 1, strongly agree	
	<i>Evaluate the following statement: 'The partnership would collapse if an organizational disaster happened.'</i>	Somewhat agree	
IV 12 High network density	<i>Please list the names of the partnership members with whom you work most closely.</i>	Ido de Haan, Rob Vereiken, Marianne den Braven, Dick Verheijen, Peter van Beek, Dick Elings, Lisette Colijn, Francis Witmer, Jeffrey Raymakers, Jose de Jonge	
	<i>Who would you contact in order to discuss topics that involve sustainability concerns within your organization?</i>	Marianne den Braven Peter van Beek Mascha Brouwer Wim Ruis	
IV 13 High network centralization	<i>Would you most likely describe the organization of the partnership and its interactions as: complex and linking complex and isolated simple and linking simple and isolated Other (Please specify):</i>	Central respondents: complex and isolated Other respondents: simple and linking	
	<i>Is there one main contact person that most people in the partnership communicate with frequently?</i>	Ido de Haan Rob Vereiken (secondary) Marianne den Braven (external)	
IV 14 Diversified network	<i>Evaluate the following statement: 'Members of the partnership have different backgrounds, opinions and expertise related to the environmental issues of interest.'</i>	Central respondents, strongly agree Other respondents: 4, somewhat disagree	
	<i>Evaluate the following statement: 'The diverse interests and experiences of actors involved in the partnership are given equal consideration when it comes to organizational learning and decision-making.'</i>	Central respondents: 4, somewhat disagree Other respondents: 2, somewhat agree	
Related	<i>How often do you meet with your closest contacts in the partnership?</i>	Central respondents: Meets internally on a daily basis, communicates with partners weekly	

		Other respondents: Meets internally on a weekly basis, meets with partners seldom
	<i>How often do you formally meet with members of the partnership? With other stakeholders?</i>	No formal arenas designated, most common meetings are in schoolbeurs. Designated meetings held 6x per year, usually is a teleconference. No formal meetings with stakeholders outside of city council settings. Many unrecorded meetings
	<i>Does someone take recorded minutes of the meeting or note working procedures?</i>	No

Clearly from the survey and interview responses given, the participants at the IVNCB did not agree on many of the points raised. In fact, their answers are widely varying and often directly contradict each other. Some of these dissimilarities in opinion were clarified during the interview, but some could not be rationalized as the different experiences of these individuals have led them to perceive the partnership in sometimes quite divergent ways.

Beginning with IV 3, the IAD analysis recognized a lack of policy specificity on the local level; indeed, the central respondent (the individual in charge of the Educatie Wijde Biesbosch project) corroborated this presumption. However, secondary respondents perceive policies and partnership activities as locally tailored. This discrepancy may be clarified by the fact that the central respondent is actively involved in making the program broad enough to integrate well into all schools' educational programs, whereas the other respondents' roles are more concerned with actual developments within the Biesbosch and do not try to promote the NME program outside of the estuary. Their activities are, instead, geared towards stimulating stakeholders and businesses within a defined local area instead of in the wider public (with the exception of the promotion of tourism, which falls under the category of supporting local businesses).

IV 6: As previously mentioned, there is a prominent imbalance of power in decision-making in Biesbosch estuary programs due to the money and influence wielded, in part, by large neighboring cities. However, another contradiction arises when answering whether decision-making in upper management was linked to middle

management in the partnership. At first the central respondent “neither agreed or disagreed” with this premise, but later revised his answer (during the interview) to strongly disagree, claiming that they were not linked. However, other respondents both answered in “somewhat agree[ment]” with the same statement. When questioned further, the other respondents feel that there is overall collaboration and linkage within the organization and the partnership itself.

The bridge between these two conflicting answers is that the central respondent feels that the decisions are unlinked because “upper” management (if such a body exists in the organization) deals with completely different tasks than project leaders and associates. Therefore decisions are often made in isolation. This is not in total disagreement with the group of opposing respondents because they, too, say that upper management makes a different set of decisions, however they feel that their program objectives are integrated into decision-making, and therefore characterizes the interaction as link-promoting. Both agree that “real power” is somewhat concentrated in the hands of a few individuals, which is not an uncommon finding across a great deal of organizations and does not necessarily detract from the efficacy of interlinking between upper and middle management.

The central respondent characterized the partnership’s flexibility as “somewhat flexible”. He attributed this to the fact that the solutions and implementation strategies in the Educatie Wijde Biesbosch program must be flexible, and are, indeed constantly adapting. However, he says that the main goal and theme of the program always stay the same. In contrast, the definition of sustainability that resonates within the Biesbosch National Park (and its internal programs) changes very often, but the strategies to improve the Biesbosch stay the same for a long period of time, which lasts at least ten years during which time the policies, whose (partial) contents and implementation strategies, remain valid. In addition, budgets and new plans are made on a yearly basis to complement the ten-year packages and require much advance preparation and

cooperation (as well as strict budgetary management), and are therefore, not very flexible once formally submitted²⁷.

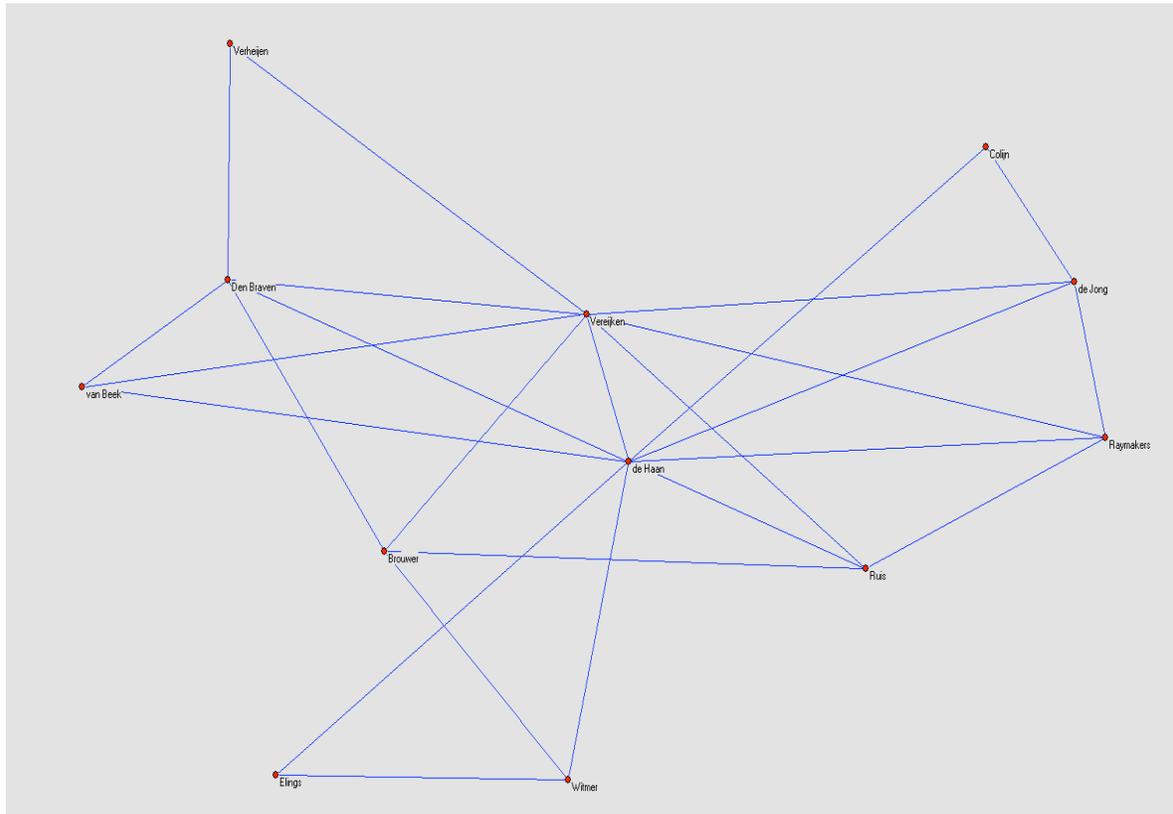
IV 14 also yielded conflicting answers. On one hand, the central respondent strongly agreed that partners bring different backgrounds, opinions and expertise to the table, whereas the coordinator of the Biesbosch program disagreed and claimed that there was relatively little difference in partners' paradigm (no answer was obtained from the third respondent). This difference may be attributed to the respondents' answering according to their own experiences instead of answering as an objective third party. Whereas the central actor is regularly involved in interacting with stakeholders and in trying to coordinate a diverse range of resources to use as teaching aids, the coordinator is mainly engaged in tasks that have to do with the general educational management within the Biesbosch National Park, where his partner interaction includes regulatory bodies, government officials and other program coordinators, who are all invested in the governance of the Biesbosch. The differences in the perception of the consideration of multiple opinions in a decision-making context are identical and may also be explained by the above logic. Thus, vastly different working environments possibly clarify the opposing responses. In analyzing the diversity of the network, the response of the central actor is prioritized as well as the results of the IAD analysis. These two pieces of data reveal that there are a diversity of actors that contribute input to the decision-making processes in the partnership.

5.3.3.1 NETWORK ANALYSIS OF ORGANIZATION AND PROCESS VARIABLES

Independent variables 12 and 13 utilized network analysis methods in their interpretation. The depiction of the small network (with Fruchterman-Reingold energy) created in the Pajek program, are shown below:

²⁷ On the other hand, at least one other respondent characterizes the partnership, in general, as very flexible. There is a one-point difference in the responses on the Likert scale, which does not warrant an in-depth explanation of small variations on the answer.

Figure 11: IVNCB Network



Though the frequency of communication is not represented in this network drawing, it is important to note that the central hub, de Haan, also reported the highest number of regular communications with stakeholders and others in the network, stating that he exchanges information with regular contacts on a daily basis. Therefore, though ties are shown between other members of the network, one should consider those emanating from the central actor as more robust due to their regularity.

In viewing the network drawing, one can see a star shape emerge around the center, and it can therefore be considered centralized (IV 13). Vereijken is also an individual who is well connected in the network (a secondary hub of communication), which makes sense as he is the general coordinator for the national park's education activities. Accordingly, he has self-reported the second highest frequency of communication with others in the network.

The difference in this drawing compared to the previous two case studies is that this one also lists actors who are outside of the IVN and the Biesbosch National Park, but who belong to the partnership by virtue of the fact that many associations are represented within the national park as it is a shared, rather than closed, domain. Furthermore, de Haan and Vereijken's work in the Biesbosch Park/Wijde Biesbosch involves others that are not technically part of the "partnership" between the IVN and the Biesbosch National Park, but whose involvement determines the projects that the IVN decides to take on in partnership with the national park.

The network density (IV 12) is: $L/[n(n-1)/2] = 24/[12(11)/2] = .36$.

The interim conclusions are:

Table 31: IVNCB- Institutional Factors + Stakeholders and Participants + Organization and Process

Independent Variable	Conclusion
IV 1: Consistent institutional design	No
IV 2: Small-scale local investment landscape	Yes
IV 3: Tailored/specified policies	Lack of specificity on the local level
IV 6: Decentralized power	Yes
IV 8: External funding	Yes
IV 9: Adequate time resources from stakeholders	Yes (speculative)
IV 11: Adaptability and flexibility balanced with resiliency	Mixed
IV 12: Network density	.36
IV 13: Network centralization	Yes
IV 14: Diversified network	Open and inclusive (1 st rank)
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	No

5.3.4 Knowledge and learning

The relevant independent variables for this category are: *IV 4 (well defined problems, can be reformulated/amended)*, *IV 10 (documented co-management strategies)*, and *IV 16 (access to information)*. All of these variables were measured using sociometric

indicators, collected via survey and interview. The questions/answers to determine the status of these variables are given below.

Table 32: IVNCB Survey/Interview on Knowledge and Learning

Independent Variable	Questions	Answers
IV 4 Well-defined problems that can be reformulated/amended	<i>Does the partnership have clear objectives against which actors can monitor their personal performance as well as the partnership's performance?</i>	No
	<i>Does the partnership agree on certain "best practices" of operation?</i>	No
	<i>Evaluate the following statement: 'Members of the partnership accept a problem definition that could change over time.'</i>	Central respondent: 2, somewhat agree Other respondents: 3, neither agree nor disagree; 4, somewhat disagree
	<i>Are the challenges/problems that the partnership is involved in solving clearly defined?</i>	Yes
	<i>Does the partnership have a mission statement that acts as a guiding light for the partnership's activities?</i>	Yes
IV 10 Well-documented co-management strategies	<i>Are there formal arenas (with officiators) to facilitate inter-party dialogue such as recorded meetings?</i>	No
IV 16 Access to information	<i>Evaluate the following statement: 'The activities of the partnership, especially when it comes to decision-making, are transparent to the people who are impacted by the decision'</i>	Central respondent: 1, strongly agree Other respondents 2. Somewhat agree; 3, neither agree nor disagree
	<i>Evaluate the following statement: 'I find it easy to access information that I need to do my job.'</i>	Central respondent: 4, somewhat disagree Other respondents: 4, somewhat disagree; 2, somewhat agree
Related	<i>In your opinion is scientific knowledge or experienced based knowledge more important to do your job in the estuary?</i>	Central respondent: local knowledge Other respondents: a combination of local and scientific
	<i>Do you personally collaborate with stakeholders when it comes to your work?</i>	Central respondent: yes Other respondents: rarely or never

	<i>Does your partnership take an interest in any subject beyond conservation activities</i>	Yes
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Much like the previous survey questions discussed, the “knowledge and learning” variables present contradicting information from the three respondents, all of which work in the IVNCB²⁸. Beginning with IV 4, the respondents agreed upon the items that required yes/no answers, however when the respondent was free to choose nuances in the answer, the results differed. All agreed that there are no clearly defined objectives for a standard of personal performances and, correspondingly, no best practices of operation. In conjunction with the fact that there are no formal arenas to facilitate stakeholder dialogue, and that there are no recorded documents outlining the methods for collaborating with these groups, one can assume that the criteria for IV 10 is also insufficient. These findings corroborate those of the IAD analysis of the lack of institutional consistency, because clarity on accepted procedures, operations and policy would lessen the kind of ad-hoc problem solving that the central respondent claims is common in his job.

IV 16 also presented challenges in finding a consistent answer amongst respondents. There was no agreement on the level of transparency afforded to stakeholders, which may be attributable to the proximity in which the respondents work with stakeholders. The more removed an IVN actor is from collaborating with the public directly, the less his answer reflected confidence in the level of information transmitted to stakeholders. Similarly, the more regular contact the individual has with stakeholders, the less likely he was to answer that finding information to do his job is easy.

The interim conclusions are:

²⁸ The following analysis should be prefaced by the general conclusion that the vastly differing roles held by these three actors possibly account for the discrepancies in their answers, as previously explained, because they may have responded to survey questions from their own perspective/job experience instead of looking at the partnership from a more neutral, overall standpoint. Whereas some survey questions have specified the instances where individuals should answer from a personal point of view, most ask questions about the organization in general to try to prevent this type of confusion.

Table 33: IVNCB- Institutional Factors + Stakeholders and Participants + Organization and Process + Knowledge and Learning

Independent Variable	Conclusion
IV 1: Consistent institutional design	No
IV 2: Small-scale local investment landscape	Yes
IV 3: Tailored/specified policies	Lack of specificity on the local level
IV 4: Well-defined problems that can be reformulated/amended	Defined, but not easy to amend.
IV 6: Decentralized power	Yes
IV 8: External funding	Yes
IV 9: Adequate time resources from stakeholders	Yes (speculative)
IV 10: Well-documented co-management strategies	No
IV 11: Adaptability and flexibility balanced with resiliency	Mixed
IV 12: Network density	.36
IV 13: Network centralization	Yes
IV 14: Diversified network	Open and inclusive (1 st rank)
IV 16: Access to information	Mixed, depending on type of job
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	No

5.3.5 Communication

The variables pertinent to this category are: *IV 5 (“good” communication with face-to-face interaction)* and *IV 15 (significant cross-boundary communication between organizational clusters)*, which will use results from the network diagram to supplement the analysis done by way of survey and interview.

Table 34: IVNCB Survey/Interview on Communication

Independent Variable	Questions	Answers
IV 5 Good communication with face-to-face interactions	<i>How much face-to-face contact do you have with other members of the partnership with whom you work most closely?</i>	Central respondent: sometimes on a daily basis (mainly for internal), weekly external Other respondents: very infrequently or never
	<i>Evaluate the following statement: ‘Overall, I view the other members in the partnership and the partnership in general as trustworthy.’</i>	1, strongly agree

	<i>Evaluate the following statement: 'Overall, I believe that the members of the partnership and the partnership in general adhere to an acceptable set of principles and desire to do good.'</i>	1, strongly agree
	<i>Does the partnership encourage peer-to-peer learning, "learning-by-doing" where actors with different experience levels try to co-enhance each other's knowledge? If so, can you name a specific forum where this occurs (i.e. workshops, conferences, team-building activities, etc.)?</i>	Peer-to-peer learning is not encouraged
	<i>To your knowledge, has there been mistrust or major disagreements between the members of the partnership in the past?</i>	No
	<i>In the past, have the members of this partnership worked well together?</i>	Central respondent: question does not apply because the partnership has no past history. Other respondents: yes
	<i>Evaluate the following statement: 'When it comes to the other partnership members with whom I have the most frequent contact, I view these individuals as committed to problem-solving and generally competent.'</i>	Central respondent and other: strongly agree Other respondent: neither agree nor disagree
	<i>Evaluate the following statement: 'To my knowledge, actors in the partnership view interactions with each other as legitimate (i.e. in compliance with the laws, fair, well-established).'</i>	1, strongly agree
IV 15 Significant cross-boundary communication between organizational clusters	<i>Do you regularly communicate with members of the partner organization?</i>	Central respondent and other respondent: yes Other respondent: no
	<i>How often do you meet with these regular contacts face-to-face? Please answer separately for partnership contacts and internal organizational contacts.</i>	Central respondent: internal daily, external weekly Other respondent (1): weekly internally, vary rarely or never externally Other respondent (2) weekly internally, 6x per year externally
	<i>Which characterization best describes your communication with members of the partnership? remote and infrequent remote and frequent in-person and infrequent in-person and frequent Combination of the above (please explain):</i>	Central respondent: in person and frequent Other respondent (1): remote and infrequent Other respondent (2) remote and frequent

	<i>Are there formal venues for inter/intra-party dialogue?</i>	No
Related	<i>Is information shared freely in the partnership or is this problematic (and why?)</i>	Freely shared
	<i>Do you have positive experiences interacting with stakeholders?</i>	Mostly (no further elaboration)
	<i>How do you most commonly communicate with others in the partnership?</i>	Telephone or e-mail

The quality of communication between partners seems to be mixed. Not only are the hubs well-connected, the main hub also seems to have frequent, in-person contact with stakeholders and (sometimes) with partners. He stated in an interview that he meets more often with stakeholders than with partners; he would characterize partner meetings as relatively infrequent and stakeholder meetings as relatively frequent in comparison with each other. Contrastingly, other relevant members on the IVN side of the network seem to have significantly less communication, very often never meeting with stakeholders and only with partners very infrequently, a maximum of six times per year.

Levels of trust seem to have been moderately affected by this communication frequency. While high levels of perceived reliability and legitimacy are reported, the actors, in an interview, stated that there is not a sense of trust established because the partnership is very young. There was some disagreement regarding the level of competence exhibited by partner members, two respondents feeling strongly confident, and one neither agreeing nor disagreeing. In situations where no past history is established, according to Imperial and Yandle (2005) the willingness of partners to invest more time, energy and funds into building their relationships in the new network is low. The key to building up rapport is to prove capability through multiple instances of successful collaboration (Imperial & Yandle, 2005). Since there is no history, there are no success stories yet; therefore it is feasible that partners are unsure about the others' competency. The lack of formal spaces of interparty dialogue plus the lack of specific documentation on successful co-management strategies best practices, and acceptable procedures and expectations makes the task of trust-building difficult, especially amongst partners where the majority of the members rarely communicate face-to-face.

The interim conclusions are:

Table 35: IVNCB- Institutional Factors + Stakeholders and Participants + Organization and Process + Knowledge and Learning + Communication

Independent Variable	Conclusion
IV 1: Consistent institutional design	No
IV 2: Small-scale local investment landscape	Yes
IV 3: Tailored/specified policies	Lack of specificity on the local level
IV 4: Well-defined problems that can be reformulated/amended	Defined, but not easy to amend.
IV 5: "Good" communication with frequent face-to-face interaction	No for the majority, yes for the central hub
IV 6: Decentralized power	Yes
IV 8: External funding	Yes
IV 9: Adequate time resources from stakeholders	Yes (speculative)
IV 10: Well-documented co-management strategies	No
IV 11: Adaptability and flexibility balanced with resiliency	Mixed
IV 12: Network density	.36
IV 13: Network centralization	Yes
IV 14: Diversified network	Open and inclusive (1 st rank)
IV 15: Significant cross-boundary communication between organizational clusters	No
IV 16: Access to information	Mixed, depending on type of job
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	No

5.3.6 Contextual factors

The two variables of interest, determined by survey and interview methods, are *IV 7 (market profit potential)* and *IV 18 (adaptability of problem definition to correspond with context)*.

Table 36: IVNCB Survey/Interview on Contextual factors

Independent Variable	Questions	Answers

IV 7: market profit potential	<i>Does the partnership's activities help to promote a profitable aspect of estuaries, which interest one or more of the partners (i.e. recreation, tourism, locally produced goods and services, educational resources)?</i>	Yes
IV 18: adaptability of problem definition to correspond with context	<i>Evaluate the following statement: 'Members of the partnership accept a problem definition that could change over time.'</i>	Central actor: 4, somewhat disagree Other actors: 2, somewhat agree
Related	<i>Do you feel a sense of personal investment in the estuary?</i>	Yes
	<i>What are the main obstacles that you encounter that could/do prevent you from working at an optimal achievement level?</i>	1. Motivating other partners 2. Lack of certainty about project continuity 3. Problem of fairness in balance of power /interests esp. in policies within the Biesbosch National Park

There was some disagreement between the ability of the problem definition to change over time. Although all survey respondents agreed that the problems that the project deals with are clearly defined, the central actor perceives flexibility in the possible solutions, but not in the definition of the problem itself. On the other hand, the other actors see the idea of sustainability as a moving target that they are faced with in other aspects of projects within the Biesbosch that they are more closely associated with. Therefore, the discrepancy in answer is related to the projects that the respondents spend the majority of their time working on. The central actor has answered in relation to the Educatie Wijde Biesbosch project, whereas the other two have answered with regards to Biesbosch National Park-specific programs.

Though the actors all reported a sense of personal investment and commitment to the estuary cause, they also expressed frustration at a number of obstacles that they regularly encountered. First, the central actor explained that the education, time and financial resources that he has at his disposal are too limited to easily execute the program goals. He also explained that it is difficult to motivate schools to dedicate two hours per week to their program. Frequently, trade-offs must be made between the available time that the program has within the schools curriculum, and the choice for

activities that will inspire interest and enthusiasm from participants. He often feels as though the quality of information that is transmitted is compromised by the willingness of schools and students to fully engage in the program's activities.

A second obstacle mentioned is the lack of certainty about project continuity. The program is still in its developmental phases and must prove itself as it is not yet established nor integrated into the Biesbosch's National Park agenda, specifically in the Voorlichting en Educatie (V&E) branch. Consequently, there is no guarantee that the project will last or that contracts will be renewed with participating schools.

Third, the imbalance of power previously mentioned, which results from the influence of large or wealthy cities exerting pressure on steering bodies, is an obstacle to creating fair and transparent policy. These powerful groups sometimes pay the salaries of organizations working in the Biesbosch, which creates bias of interest and gives them advantages in determining several aspects of the park's advancement. This obstacle applies mainly to the coordinator of Biesbosch educational projects, but its consequences affect the entire working relationship of the IVN-Biesbosch National Park partnership.

The aggregated conclusions for this case study are:

Table 37: IVNCB- Institutional Factors + Stakeholders and Participants + Organization and Process + Knowledge and Learning + Communication

Independent Variable	Conclusion
IV 1: Consistent institutional design	No
IV 2: Small-scale local investment landscape	Yes
IV 3: Tailored/specified policies	Lack of specificity on the local level
IV 4: Well-defined problems that can be reformulated/amended	Defined, but not easy to amend.
IV 5: "Good" communication with frequent face-to-face interaction	No for the majority, yes for the central hub
IV 6: Decentralized power	Yes
IV 7: Market profit potential	Yes
IV 8: External funding	Yes
IV 9: Adequate time resources from stakeholders	Yes (speculative)
IV 10: Well-documented co-management strategies	No
IV 11: Adaptability and flexibility balanced with	Mixed

resiliency	
IV 12: Network density	.36
IV 13: Network centralization	Yes
IV 14: Diversified network	Open and inclusive (1 st rank)
IV 15: Significant cross-boundary communication between organizational clusters	No
IV 16: Access to information	Mixed, depending on type of job
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	No
IV 18: Adaptability of problem definition to correspond with context	No

5.4 Analysis of STEP

The STEP (Sustainable Tourism in Estuary Parks) organization differs from the other case studies because it is a project in itself, an international cooperation program, set up temporarily by the European Union's branch of Regional Development to support the agenda for sustainable and competitive tourism officially launched in 2007 (directive COM(2007) 621). The priorities of the European Union in promoting this undertaking are to facilitate "sustainable destination management, the integration of sustainability concerns of businesses, and in raising awareness of sustainability amongst tourists" (Europa, 2011)²⁹. The STEP program is one of many short-term undertakings that contributes to achieving the "convergence" objective, which is the promotion of cohesion and fair distribution of wealth through the integration of various European territories in the creation of sustainable jobs, infrastructure, support for small and medium sized businesses and technical innovations (Europa, 2011).

In an effort to build European community knowledge and share best practices on the implementation of sustainable tourism, the directive declared that the Commission will "actively support" among others the "cooperation between universities, research institutes, public and private observatories, tourism education and transnational training" (Europa, 2011). This type of collaboration is represented by the partnership between STEP and the Biesbosch National Park.

²⁹ http://europa.eu/legislation_summaries/environment/sustainable_development/110132_en.htm

Therefore the STEP program is simultaneously a working organization, a project and a partner in the Biesbosch area. The total program itself is the focal unit of analysis, in contrast to the other case studies where one educationally oriented project was selected out of many. Instead, here, the Dutch branch of STEP is solely focused on working in partnership with the Biesbosch on a number of strategies to promote sustainable tourism, with an undercurrent of education, by utilizing many channels relevant to the industry.

5.4.1 *Institutional factors*

The independent variables considered here are: *IV 1 (consistent institutional design)*, *IV 3 (tailored policies/specific measures)*, *IV 6 (decentralization of power)*, *IV 8 (external funding and investment)* and *IV 17 (appropriate rule forming and rule enforcing mechanisms)*. The institutional framework under consideration is that which concerns the activities of STEP in the Biesbosch National Park. As STEP is a EU program working within a small area, the consequences for the institutional factors vary greatly from those where only regional or local policy is of interest.

5.4.1.1 BIOPHYSICAL CONDITIONS

The biophysical conditions discussed in the previous IAD framework for IVN apply to this case as well, with the exception that STEP does not function in the territory labeled “Wijde Biesbosch”, but rather is focused within the boundaries of the Biesbosch National Park itself, an area of 7100 hectares (Biesbosch, 2011). Relevant to this analysis are the biophysical details of the park that are of primary concern for STEP. This section will zoom in on these factors.

Natural and man-made developments in the Biesbosch have made the area far more attractive for tourist purposes than ever before (STEP, 2011). Amongst these are the flooding of the upper parts of the estuary, the creation of Brabant on Sea (a cooperatively designed water park created in 2008), the recreational and natural reserve spaces built and connected in the Drechtsteden area (set to complete in 2013), and a variety of natural improvement projects undertaken by the Wijde Biesbosch partnership (STEP, 2011). The core challenge of the STEP project is to maintain zoning between the

natural areas and the man-made/development areas to preserve the Biesbosch's undisturbed environment as much as possible while still allowing for abundant tourist visitation.

Due to, in particular, man-induced flooding in the park, the balance has tipped from an emphasis on the land-based activities surrounding the estuary, to water-based activities within the estuary. The focal biophysical conditions for STEP is, therefore, on the waterways of the Biesbosch, as these are seen as the routes of transportation and the natural buffer zones, yet are also the areas whose misuse can translate into environmental consequences for the Biesbosch. Currently, there is a lack of regulation on boats and mooring rights, which has led to boat traffic infringing upon the strictly protected, delicate water-locked islands of the estuary (STEP, 2011).

These flood-plain forests are important habitats for beavers, reintroduced in 1988, the field vole and various migratory and non-migratory birds, especially the heron (Gemeente Dordrecht, 2011). They are relatively young in successive character and are dominated by stinging nettles, some reed species (although this was greatly reduced with the purposeful flooding of the Biesbosch) and willows (Gemeente Dordrecht, 2011). Unique features of the Biesbosch's environment include the presence of triangular club rush and marsh marigold, which is not found in such abundance anywhere else on earth (Gemeente Dordrecht, 2011). As Natura 2000 officially protects the Biesbosch, it is imperative, under the directive's terms that the natural environment not be disturbed in any way that threatens the established ecosystem. Therefore, the biophysical conditions, especially those present in and around waterways, are a challenge, which STEP must contend with and within which its programs must integrate.

5.4.1.2 ATTRIBUTES OF THE COMMUNITY

The community of tourists that the Biesbosch serves annually totals to 1.5 million at present. Of this total, half a million visit the Biesbosch National park each year, with 85% of tourists traveling to the Hollandse Biesbosch Recreation Area (STEP, 2011). As one of the goals of the EU's sustainable tourism directive is to increase tourism for the benefit of local stakeholders, STEP caters to attracting and managing a sizeable number of people, however they only serve a small variety, with 92% of tourists (43% water

based and 57% land based) coming from either the Zuid-Holland or Noord-Brabant provinces (STEP, 2011).

The proximity to a preserved natural space makes the Biesbosch an attractive and accessible destination to Dutch tourists, however it is unpopular for people coming from abroad. From an institutional point of view, this fact simplifies STEP's task, as educational resources, communication and marketing are executed within the Dutch context and in a relatively small, homogenous area.

The internal community within STEP is composed of all Dutch members from a variety of different associations and organizations in the Netherlands. STEP's staff is, therefore, a collection of different individuals that simultaneously belong to other networks, which is beneficial in terms of the variety of resources, contacts and experiences that members contribute. The members of STEP are situated in two different offices (which, according to the primary respondent, is sometimes an obstacle for communication). The two locations are the Natuur-en Reecreatieschap De Hollandse Biesbosch (the Nature and Recreation Assembly of the Hollandse Biesbosch) in the city of Dordrecht, and the Stichting Beheer Nationaal Park De Biesbosch (the Foundation for the Management of the Biesbosch National Park) in the city of Den Bosch. In addition, two individual members are part of the permanent staff of the park. Together, they have formed a partnership, called Partnerschap Nationaal Park de Biesbosch, with the other steering members of the Biesbosch National Park, including four municipalities, two provinces and the National Forestry Service (Staatsbosbeheer) to jointly undertake the STEP project.

5.4.1.3 RULES IN USE

The STEP project has to comply with a number of different layers of European Union policies in order to guarantee their funding and project continuation. The most important of these are described below.

The current applicable policies for the sustainable development of estuaries in the European Union are founded upon the EU's 2000 recommendation (2000/60/AC) Water Framework Directive, and the 2002 recommendation (2002/413/EC) for the assessment

and implementation of Integrated Coastal Zone Management Framework in European Member States.

The Water Framework Directive details the objectives for sustainable water management in rivers, basins and estuaries to achieve “good ecological and chemical status” by “preventing and reducing pollution, promoting sustainable water usage, improving aquatic ecosystems, and mitigating the effects of floods and droughts” (Europa, 2011). The directive ordered member states to identify and categorize all of their watersheds and analyze their characteristics, use and human impact and to create comprehensive management plans subject to periodic revision. The current applicable cycle of planning is from 2009-2015 (Europa, 2011).

The Integrated Coastal Zone Management Framework details the principles of sustainability prioritized by the Commission including the protection of the coastal environment, the management of climate change risk, the promotion of cultural heritage, job creation, accessibility for tourists, and improved cohesion between vulnerable stakeholder communities and Member States (Europa, 2011). The framework emphasizes the principles of adaptive management, a flexible approach to environmental governance, in Member States taking stock of and executing strategies for coastal zone management.

Projects like STEP, generated from assessments made according to the above-mentioned frameworks, are supported by the “Agenda for Sustainable and Competitive European Tourism”, described earlier in this section, and are (partially) financed by the European Regional Development Fund (ERDF). The ERDF prioritizes certain projects for funding, based on the adherence of the projects objectives to the ERDF’s recommendations for the current direction of European development.

One priority recommendation is the creation of cross-boarder cooperation programs that have specific branches regulating sectors of cooperative initiatives. The InterReg³⁰ IVA 2 Seas encourages socio-economic cooperation on development initiatives in the coastal regions shown below. This regulation currently supplies 5.4 billion Euros to 52 programs, including STEP (Armstrong, 2011).

³⁰ InterReg stands for “International Regulation”.

The action arena in this case is the planning and execution of STEP strategies to enhance sustainable tourism in the Biesbosch. The actors involved are both the STEP internal staff and local stakeholders, with whom STEP actively collaborates. Because STEP is a temporary partnership and its members are collected from different existing organizations, their time is split between STEP projects and their own organizations' undertakings. It is unknown what kinds of consequences this has for workers' investment in the projects or how much of their total working time is spent on STEP related undertakings.

Stakeholders are represented in the partnerships' decision-making because official meetings are held twice per year to discuss sustainable development progress and to decide future objectives in the national park related to the facilitation of tourism. These actions are linked to the outcomes because, since the partnership is only active for a short period, time schedules for implementation must produce results before the project terminates. Thus stakeholder involvement has a greater level of immediate tangible benefit than other organizations that are not under as much pressure to produce short-term results.

This collaborative initiative with stakeholders serves dual functions in the partnership. First, because the goal is to increase tourism, stakeholder collaborators act as a focus group and provide insider knowledge about the needs of visitors and perceived shortcomings of the park's policies and facilities, information which is not as accessible if the partnership simply performed their own sustainability evaluations in isolation. Secondly, by involving stakeholders in the project process, they are fulfilling goals put forth by the related EU directives to encourage sustainable tourism for the purpose of (amongst others) spreading knowledge to the public. STEP also encourages collaboration from public participants through the launching of various design and innovation projects, especially amongst schools, where creative solutions for certain sustainability challenges are sought for the dual purpose of widening the pool of knowledge and for the edification of the general public.

STEP feels that one effective way to improve tourism to the Biesbosch National Park is to cultivate a sense of ownership amongst target audiences. In sum, they actively facilitate stakeholder investment in the landscape through these types of collaborative

measures to ensure that tourists are well-informed of the recreational opportunities available to them, can offer their input about necessary amenities that are lacking, reveal policy inconsistencies or areas that need improvement, and contribute to the creativity of actual projects executed in the Biesbosch to fulfill the aim of tailoring solutions to the local environment and to local visitors. The STEP project is, therefore, geared towards specificity in its project implementation, though the regulations and policies that they are subject to are often nested within very high levels of government regulation.

The amount of information available to the public about STEP projects is relatively unknown as are the costs and benefits to stakeholders of certain actions. At the beginning of this research project, it was extremely challenging to find information about STEP and their current activities. Their main communicative device, their website, had very little information contained in it (it was unfinished and under construction), there was no official contact phone number, and they had not yet distributed any official printed communication to the public such as pamphlets or brochures. Interviews with two members of STEP had revealed that they were working on these marketing materials as of Spring 2011. Since the close of the research phase of this report, much more information is available to the wider public, however it seems as though it has happened late in the project phase (which is set to end in 2012), thus it may not have an ideally useful effect on the outcomes. Lessons learned for future projects may be to implement marketing and advertising measures earlier in the process in order to gain support and momentum during the duration of the planning and implementation phases.

5.4.1.5 OUTCOMES

The main outcomes of the partnership so far have been progress on certain tangible projects in combination with plans for implementing solutions to identified problems, called the “Strategy and Action Plan” (STEP, 2011). Though the STEP collaboration project officially ends in 2012, the period for the implementation of the strategies set

forth are from 2012 to 2017. The tangible achievements thus far are as follows, grouped according to the five main strategic categories of the STEP program³²:

1. In order to fulfill the goal of offering a unique experience to visitors, STEP has facilitated arrangements between local entrepreneurs and the Staatsbosbeheer to organize guided tours to more remote locations in the Biesbosch. Also, they have organized a hospitality training course for local business owners to improve their service to tourists.

2. To boost awareness of sustainability by highlighting the historical and natural qualities of the Biesbosch, STEP has added information to sign postings on hiking trails, the park's website (and their own), and in the museums.

3. To improve visitor's facilities and to strengthen the identity of the Biesbosch as a tourist destination, STEP has drafted a plan for the development of the Noordwaard and the Nieuwe Dordtse Biesbosch, which are new recreational areas open to visitation.

Secondly, the organization has created an inventory of target groups, relevant stakeholders and the available amenities in the park's immediate vicinity. They have, furthermore, connected entry paths to the Biesbosch with the national cycling map (knooppuntensysteem), which guides bicyclists in the area along scenic or recreational routes throughout the Netherlands with periodic sign postings.

4. To encourage sustainable behavior amongst visitors within the park, STEP helped to implement a zoning plan created in 2008, though this plan is in need of revision. They are currently researching the possibilities for sensitively expanding and monitoring water sports in the area.

5. To enlarge brand awareness in the Biesbosch STEP has worked with the VVV to develop a pamphlet guide to the park and its activities/events, and has set up a Biesbosch newspaper. The website is still under construction.

5.4.1.6 EVALUATIVE CRITERIA

The relevant independent variables partially analyzed by way of the IAD framework are:

³² The source of the following information is derived from the Strategic Action Plan, which can be found at [http://www.step-projects.eu/uploads/website%20documents/Strategy%20and%20action%20plan%2017%20mei%202011%20\(draft%20version\).pdf](http://www.step-projects.eu/uploads/website%20documents/Strategy%20and%20action%20plan%2017%20mei%202011%20(draft%20version).pdf). The five points are a summary of the detailed information provided here.

IV 1 (consistent institutional design), IV 3 (tailored policies/specific measures), IV 6 (decentralization of power), IV 8 (external funding and investment) and IV 17 (appropriate rule forming and rule enforcing mechanisms).

The consistency of institutional design (IV 1) surrounding the STEP project is mixed, but leans towards consistency due to its regulation by the European Union. The EU's policies and recommendations that have called for projects of this sort are consistent and have been part of the European sustainable development planning at least since 2000. Furthermore, Natura 2000 is consistent with its recommendations and its application to the Biesbosch, although many challenges to STEP are presented by the need to comply with the strict no-damage policy of Natura 2000 and the call for greater public engagement in the people-planet-profit premise called for by the EU. The summary of this dichotomy is rooted in the definition of sustainable development: it is difficult to reconcile conservation with the idea of progress in the Western sense of the word. Another possible difficulty facing step is the coordination of a multitude of partners from different jurisdictions and municipalities, though the organization itself has not mentioned this point as problematic in their interviews.

IV 3, tailored policies and specific measures, is one of the main objectives of the STEP project. According to the results of the IAD analysis, STEP purposefully involves stakeholders in decision-making and studies in order to achieve this goal. Furthermore, because the Biesbosch is a relatively small area with a unique, specific ecosystem, STEP has the opportunity to focus their strategic plans on a micro level.

Power in STEP is decentralized (IV 6). There is no one main steering body identified as the collaboration takes place between many different entities, each of which have their own management structures in place. There is a director position in STEP organization, but there is no higher chain of command from which decisions emanate. Decisions are made in a collective manner. This is in keeping with STEP's prioritization of collaborative relationships and stakeholder involvement, which was confirmed by interview.

External funding and investment (IV 8) is secured for the duration of the STEP project. Half of the funding is derived from the ERDF via the InterReg IVA 2 Seas scheme, and the other half is matched by donation and partner investment, although the

proportions of non governmental investment are not transparent to the public at this time. The EU restricts the types of partners that can invest, but STEP appears to be in full compliance with these regulations.

Besides the rule forming and rule enforcing mechanisms (IV 17) associated with the EU that apply to STEP, the organization has no internal processes for this. Therefore the results are mixed as the mechanisms are in place on a macro level but not on a micro level. Two STEP staff members corroborated this information via the survey.

The interim conclusions based on the analysis from the IAD framework are as follows:

Table 38: STEP- Institutional Factors

Independent Variable	Conclusion
IV 1: Consistent institutional design	Mixed, mainly yes
IV 3: Tailored/specified policies	Yes
IV 6: Decentralized power	Yes
IV 8: External funding	Yes
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Yes at macro level, no at micro level

5.4.2 Stakeholders and participants

The germane independent variables in this broad category are: *IV 2 (small-scale, local investment in landscape)* and *IV 9 (adequate time resources from stakeholders)*. Two key respondents from STEP participated in the interview and survey process. The two respondents collaborated on one survey, which is why only one answer is given for each question. One of these individuals was identified as a central hub of communication in the network and is an individual who is also in frequent contact with other Biesbosch partnerships, such as the one to which IVN belongs.

Table 39: STEP Survey/Interview on Stakeholders and Participants

Independent Variable	Questions	Answers

IV 2: Small-scale, local investment in landscape	<i>Are local people involved directly with the partnership?</i>	No
	<i>Evaluate the following statement: 'Actors in the partnership feel a deep attachment to their cause, so that monetary compensation is less important than accomplishing their goals related to the environment.'</i>	3, Neither agree nor disagree
IV 9: adequate time resources from stakeholders	<i>Does the partnership decision-making rely on experience-based and/or locally generated knowledge, scientifically generated knowledge or a combination of the two? Of these options, which, in your opinion is the most valid?</i>	Combination of local and scientific
	<i>How long have you been involved in the partnership?</i>	2011
Related	<i>Are diverse types of interests represented in the partnership?</i>	Yes
	<i>How could a local stakeholder express his point of view to your organization? What is done about it and how is this input received?</i>	Bi-annual stakeholder meetings
	<i>Is the profit motive or the value motive most prevalent amongst partnership members?</i>	Profit motive

A disparity was found between the respondents' answers for IV 2 and the conclusions of the IAD analysis. The respondents answered that local people are not directly involved in the partnership, yet they stated in an interview that the partnership meets with local stakeholders as an important part of their planning agenda. This difference was later clarified, in that the respondents interpreted the question as asking if local persons were part of the core membership of STEP.

Like the other case study examples, consistently with expectations, the respondents answered that a combination of local and scientific knowledge was used and that both are seen as equally valid. This claim is supported by the evidence found in the IAD analysis, yet in practice, it seems as though the preponderance of attention is given to local knowledge in STEP projects because the aim is to serve tourists and local stakeholders based on their wants and needs.

When asked how long the respondents had been involved in the partnership, they answered that they were both involved from the beginning in 2011. This information is

inconsistent with information found in the IAD analysis that states that the STEP project officially began in 2009. In addition, there is evidence that some projects were already started in 2010 or even earlier. This inconsistent information is difficult to explain, but one speculation could be that STEP did not start working closely with the Biesbosch National Park until January 2011, or that projects did not take effect until 2011.

According to the interview results, diverse types of interests are represented in the partnership by virtue of stakeholder collaboration and the fact that step partners originate from different organizations. Collaborators include, among others, businesses and entrepreneurs, tourists, farmers, conservationists, environmental consultants and government workers. Because local stakeholder meetings are only held bi-annually, the majority of the decision-making is steered by those represented in the partnership directly, however it is clear that an effort is made to integrate many sources of information in bolstering tourism in the area.

As enhancement in sustainable eco tourism is STEP's main goal, it makes sense that increasing profit is the number one motive, though environmental sensitivity is the undercurrent of all activities. This explains the respondents' hesitation to claim that intrinsic value of the landscape is more important than profit when it comes to the estuary projects (See IV 2, question 2).

The interim conclusions are as follows:

Table 40: STEP- Institutional Factors + Stakeholders and Participants

Independent Variable	Conclusion
IV 1: Consistent institutional design	Mixed, mainly yes
IV 2: Small-scale local investment in landscape	Mostly
IV 3: Tailored/specified policies	Yes
IV 6: Decentralized power	Yes
IV 8: External funding	Yes
IV 9: Adequate time resources from stakeholders	Mixed, mainly yes
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Yes at macro level, no at micro level

5.4.3 Organization and process

The independent variables measured in this general category are:

IV 3 (measures are tailored to landscape), IV 6 (power decentralization), IV 11 (adaptability and flexibility balanced with resiliency in partnership), IV 12 (high network density), IV 13 (high network centralization), and IV 14 (diversified network). The answers given by the three respondents are presented in the table below. Variables 3, 6, 11, and 14 will be answered by survey and interview data, and 12 and 13 will be dealt with separately using network analysis.

Table 41: STEP Survey/Interview on Organization and Process

Independent Variable	Questions	Answers
IV 3 Tailored measures	<i>Are the environmental management strategies that the partnership generates tailored to local environmental conditions, or are they more generally applicable to multiple areas?</i>	Locally tailored
IV 6 Decentralization of power	<i>Can the partnership best be described as characterized by an equal level of power between all member actors, or are there multiple layers of power and responsibility that are shared differently by the parties involved?</i>	Multiple layers of power that can be somewhat imbalanced
	<i>Evaluate the following statement: 'Upper levels of management in the organization link their decision-making activities with middle management in their own organizations and their partner's organization.'</i>	2, somewhat agree
	<i>Evaluate the following statement: 'Real power in the organization is concentrated in the hands of only a few individuals.'</i>	2, somewhat agree
IV 11 Adaptability and flexibility balanced with resiliency in partnership	<i>Evaluate the following statement: 'I would characterize the partnership's members and organizational style as flexible in general.'</i>	3, neither agree nor disagree
	<i>Evaluate the following statement: 'The partnership would collapse if an organizational disaster happened.'</i>	3, neither agree nor disagree
IV 12 High network density	<i>Please list the names of the partnership members with whom you work most closely.</i>	Not answered
	<i>Who would you contact in order to discuss topics that involve sustainability concerns within your organization?</i>	Not answered

IV 13 High network centralization	<i>Would you most likely describe the organization of the partnership and its interactions as: complex and linking complex and isolated simple and linking simple and isolated Other (Please specify):</i>	Complex and linking	
	<i>Is there one main contact person that most people in the partnership communicate with frequently?</i>	Marianne den Braven Dick Verheijen	
IV 14 Diversified network	<i>Evaluate the following statement: 'Members of the partnership have different backgrounds, opinions and expertise related to the environmental issues of interest.'</i>	2, somewhat agree	
	<i>Evaluate the following statement: 'The diverse interests and experiences of actors involved in the partnership are given equal consideration when it comes to organizational learning and decision-making.'</i>	3, neither agree nor disagree	
Related	<i>How often do you meet with your closest contacts in the partnership?</i>	Internally every 2-4 times per month; externally 4-6 times per year	
	<i>How often do you formally meet with members of the partnership? With other stakeholders?</i>	6 times per year with members of the partnership; 2 times per year with external stakeholders	
	<i>Does someone take recorded minutes of the meeting or note working procedures?</i>	No	

The evaluations of IV 3 and 6 via the survey and interview were mostly consistent with the findings procured from the IAD analysis. The main nuances that emerged were in the balance of power in the partnership. According to the respondents, “multiple layers of power that can be somewhat imbalanced” characterize the partnership. Therefore, even though power is decentralized, some groups that are represented in STEP are more powerful than others. The real power was said to “somewhat” lie in the hands of just a few individuals, which would lead an analyst to believe that the organization is centralized in their power structure. However this is not the case; thus the speculation can be made that a few members hold a high degree of unofficial sway in the process of collective decision-making. This explanation is also confirmed from the IVN’s

explanation of the imbalance of power felt in their partnership with the Biesbosch National Park and its affiliates.

The results of IV 14, the presence of a diversified network, are related to the findings of IV 3 and 6. Though many different groups are (to a lesser or greater extent) involved in the partnership, the issue of an imbalance of power and the difference in consideration given to each representative somewhat reduces the benefits experienced from a truly diverse network.

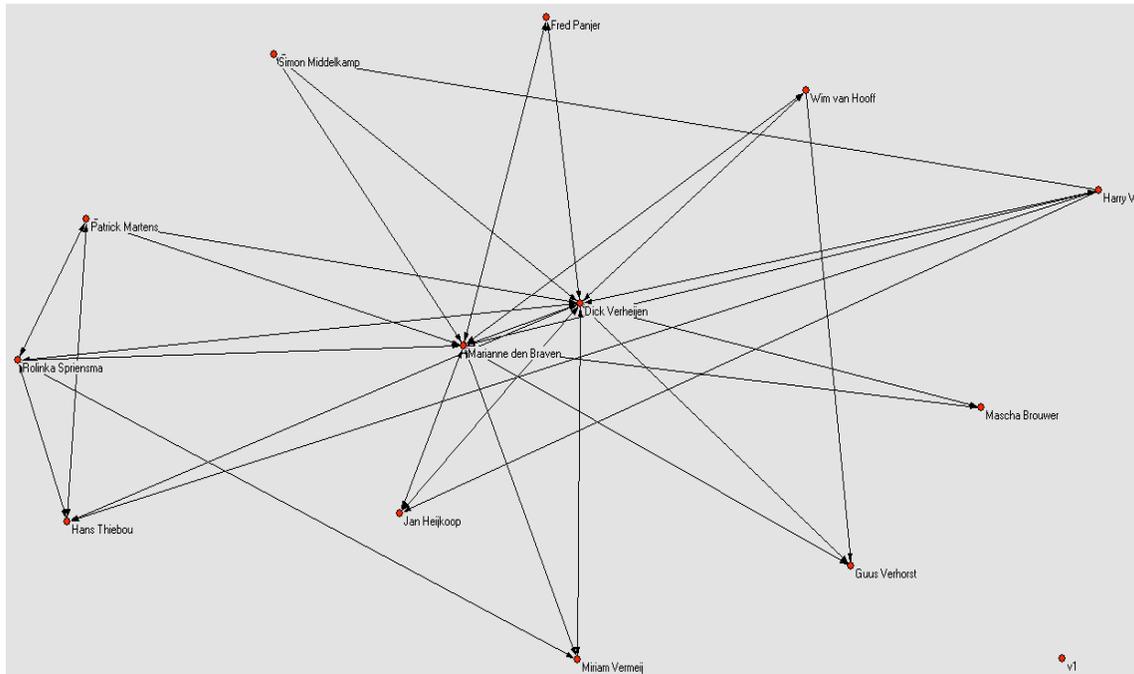
IV 11: The fact that the partnership was not identified as particularly flexible or rigid, static or adaptable is probably the result of the fact that it is a temporary partnership set up to achieve one principle goal. Because an expiry timeline is set, there is not a great deal of emphasis placed on long-term viability strategies. Furthermore as STEP is a collection of members from different sectors, simultaneously working in other functions, one could expect that contact with internal members is not made on a daily basis, but rather one to two times per week as reported. Externally, their meetings with stakeholders and other partners seems to be on par with comparable cases, meeting once every three to four months. This information was corroborated by the IVN, who also has one member working with STEP frequently. The six annual meetings referred to in the IVN case study are also these six annual meetings mentioned by STEP, which mainly have to do with developing strategies for executing yearly plans in the Biesbosch National Park.

5.4.3.1 NETWORK ANALYSIS OF ORGANIZATION AND PROCESS VARIABLES

Independent variables 12 and 13 utilized network analysis methods in their interpretation. The depiction of the small network (with Fruchterman-Reingold energy) created in the Pajek program, are shown below. Directionality in this network drawing is depicted to show that hubs receive much in-coming communication but are often not directly related to the projects of each of the nodes, as some of the STEP members are engaged in contacting sites in England and Flanders. Therefore a node may communicate

information back to a hub regularly, but the hubs work mainly on coordinating projects in the Biesbosch at present.

Figure 13: STEP Network



Two hubs were identified, den Braven, who is the coordinator of Biesbosch visitors' centers, and Verheijen, who is the director of STEP. The drawing is corroborated by the responses given in the survey regarding the main contacts for the network. On average, these hubs communicate with their nodes about once per week in the Biesbosch and once per month in Flanders and England. A clear star shape emerges around these two hubs, (den Braven is the most well-connected) which gives a positive indication for the network's centrality (IV 13).

The network density (IV 12) is: $L/[n(n-1)/2] = 32/[13(12)/2] = .41$ or 41% connectivity out of the maximum possible.

The interim conclusions are:

Table 42: STEP- Institutional Factors + Stakeholders and Participants + Organization and Process

Independent Variable	Conclusion
IV 1: Consistent institutional design	Mixed, mainly yes
IV 2: Small-scale local investment in landscape	Mostly
IV 3: Tailored/specified policies	Yes
IV 6: Decentralized power	Yes, but power is not equal
IV 8: External funding	Yes
IV 9: Adequate time resources from stakeholders	Mixed, mainly yes
IV 11: Adaptability and flexibility balanced with resiliency	Unknown, possibly no
IV 12: Density	.41
IV 13: High network centralization	Yes
IV 14: Diversified network	Somewhat open, somewhat inclusive (rank 2-3)
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Yes at macro level, no at micro level

5.3.4 Knowledge and learning

The relevant independent variables for this category are: *IV 4 (well defined problems, can be reformulated/amended)*, *IV 10 (documented co-management strategies)*, and *IV 16 (access to information)*. All of these variables were measured using sociometric indicators, collected via survey and interview; questions and answers are shown below.

Table 43: STEP Survey/Interview on Knowledge and Learning

Independent Variable	Questions	Answers
IV 4 Well-defined problems that can be reformulated/amended	<i>Does the partnership have clear objectives against which actors can monitor their personal performance as well as the partnership's performance?</i>	No
	<i>Does the partnership agree on certain "best practices" of operation?</i>	Yes
	<i>Evaluate the following statement: 'Members of the partnership accept a problem definition that could change over time.'</i>	2, Somewhat agree

	<i>Are the challenges/problems that the partnership is involved in solving clearly defined?</i>	No
	<i>Does the partnership have a mission statement that acts as a guiding light for the partnership's activities?</i>	No
IV 10 Well-documented co-management strategies	<i>Are there formal arenas (with officiators) to facilitate inter-party dialogue such as recorded meetings?</i>	No
IV 16 Access to information	<i>Evaluate the following statement: 'The activities of the partnership, especially when it comes to decision-making, are transparent to the people who are impacted by the decision'</i>	2, somewhat agree
	<i>Evaluate the following statement: 'I find it easy to access information that I need to do my job.'</i>	2, somewhat agree
Related	<i>In your opinion is scientific knowledge or experienced based knowledge more important to do your job in the estuary?</i>	Experience based knowledge
	<i>Do you personally collaborate with stakeholders when it comes to your work?</i>	Yes for principal respondent, no for secondary respondent.
	<i>Does your partnership take an interest in any subject beyond conservation activities</i>	Yes

The analysis of IV 4 revealed that problems in the estuary are not well defined. Because there is not set route to attaining the goals established by STEP, there is a great deal of problem discovery as the project unfolds. Therefore, it is fitting that members somewhat accept a problem definition that could change over time, as the demands of tourists are also expected to change over time. It is, however, problematic that the partnership has no mission statement nor set of standards to adhere to monitor their performance against, though they do have “best practices” of operation that are derived from the directives that they are subject to under the EU. Under these conditions, it would make sense that a level of internal monitoring should take place to ensure compliance with the goals of the program, but this is not the case.

STEP falls short in the category of documentation of co-management strategies (IV 10). There are no formal meeting venues with recorded minutes, which seems

problematic given the fact that their goals are not clearly defined and seem to evolve regularly as new issues emerge. Formal documentation would be of great use to STEP to demonstrate, on the record, stakeholder concerns and to also show, in a structured way, how the project has worked to implement the actions that were motivated by the collaborative process. Despite the lack of documentation, STEP asserts that decisions are relatively transparent to stakeholders, which seems contradictory given the fact that written information on STEP undertakings has only been recently made available to the public (IV 16). However it may be that “stakeholders”, to the respondent, means a smaller group of individuals involved in face-to-face communication with the members of STEP, in which case information can be transmitted by word of mouth.

The interim conclusions are:

Table 44: STEP Institutional Factors + Stakeholders and Participants + Organization and Process + Knowledge and Learning

Independent Variable	Conclusion
IV 1: Consistent institutional design	Mixed, mainly yes
IV 2: Small-scale local investment in landscape	Mostly
IV 3: Tailored/specified policies	Yes
IV 4: Well-defined problems that can be reformulated/amended	Problems are undefined, flexible approach taken
IV 6: Decentralized power	Yes, but power is not equal
IV 8: External funding	Yes
IV 9: Adequate time resources from stakeholders	Mixed, mainly yes
IV 10: Well-documented co-management strategies	No
IV 11: Adaptability and flexibility balanced with resiliency	Unknown, possibly no
IV 12: Density	.41
IV 13: High network centralization	Yes
IV 14: Diversified network	Somewhat open, somewhat inclusive (rank 2-3)
IV 16: Access to information	Mixed, mainly yes
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Yes at macro level, no at micro level

5.4.5 Communication

The variables pertinent to this category are: *IV 5 (“good” communication with face-to-face interaction)* and *IV 15 (significant cross-boundary communication between organizational clusters)*, which will use results from the network diagram to supplement the analysis done by way of survey and interview.

Table 45: STEP Survey/Interview on Communication

Independent Variable	Questions	Answers
IV 5 Good communication with face-to-face interactions	<i>How much face-to-face contact do you have with other members of the partnership with whom you work most closely?</i>	1 x per week
	<i>Evaluate the following statement: ‘Overall, I view the other members in the partnership and the partnership in general as trustworthy.’</i>	2, somewhat agree
	<i>Evaluate the following statement: ‘Overall, I believe that the members of the partnership and the partnership in general adhere to an acceptable set of principles and desire to do good.’</i>	2, somewhat agree
	<i>Does the partnership encourage peer-to-peer learning, “learning-by-doing” where actors with different experience levels try to co-enhance each other’s knowledge? If so, can you name a specific forum where this occurs (i.e. workshops, conferences, team-building activities, etc.)?</i>	Peer-to-peer learning is not encouraged
	<i>To your knowledge, has there been mistrust or major disagreements between the members of the partnership in the past?</i>	No
	<i>In the past, have the members of this partnership worked well together?</i>	Yes
	<i>Evaluate the following statement: ‘When it comes to the other partnership members with whom I have the most frequent contact, I view these individuals as committed to problem-solving and generally competent.’</i>	2, somewhat agree
	<i>Evaluate the following statement: ‘To my knowledge, actors in the partnership view interactions with each other as legitimate (i.e. in compliance with the laws, fair, well-established).’</i>	1, strongly agree

IV 15 Significant cross-boundary communication between organizational clusters	<i>Do you regularly communicate with members of the partner organization?</i>	With some regularity
	<i>How often do you meet with these regular contacts face-to-face? Please answer separately for partnership contacts and internal organizational contacts.</i>	Internally 1 x per week Externally 4-6 x per year
	<i>Which characterization best describes your communication with members of the partnership? remote and infrequent remote and frequent in-person and infrequent in-person and frequent Combination of the above (please explain):</i>	Remote and frequent
	<i>Are there formal venues for inter/intra-party dialogue?</i>	No, except the 6x yearly meetings
Related	<i>Is information shared freely in the partnership or is this problematic (and why?)</i>	Freely shared
	<i>Do you have positive experiences interacting with stakeholders?</i>	Yes
	<i>How do you most commonly communicate with others in the partnership?</i>	Telephone or e-mail (mainly e-mail).

Communication (IV 5) between STEP partnership members seems somewhat strained. While other members were mainly perceived by the respondent as trustworthy, competent, and desiring to do good, there was hesitation in fully agreeing with this sentiment. Upon further questioning, it was revealed that there is, in fact, a set of procedures for conflict resolution, but this mediation does not always happen easily, quickly or efficiently. This detail may explain why the respondents do not have full confidence in their fellow partnership members, as a result of past experiences during the duration of the project thus far. The hesitation cannot, in any case, be attributed to experiences before the start of the partnership, as it was indicated that there is no negative pre history associated with other members.

While significant cross-boundary communication (IV 15) does take place between hubs and other nodes, as demonstrated in the network diagram, the interview revealed that most other non-central partnership members communicate very infrequently. Average communication amongst partners is once per week with the two hubs and twice

per month with the closest contacts. More distant contacts are very rarely engaged. This level of communication seems insufficient, as the bulk of the work that STEP does is meant to be collaborative. It is unknown how much the unique conditions of the partnership as a temporary project affect the level of communication and the prioritization of STEP activities.

The interim conclusions are:

Table 46: STEP- Institutional Factors + Stakeholders and Participants + Organization and Process + Knowledge and Learning + Communication

Independent Variable	Conclusion
IV 1: Consistent institutional design	Mixed, mainly yes
IV 2: Small-scale local investment in landscape	Mostly
IV 3: Tailored/specified policies	Yes
IV 4: Well-defined problems that can be reformulated/amended	Problems are undefined, flexible approach taken
IV 5: "Good" communication with face-to-face interaction	Possibly insufficient
IV 6: Decentralized power	Yes, but power is not equal
IV 8: External funding	Yes
IV 9: Adequate time resources from stakeholders	Mixed, mainly yes
IV 10: Well-documented co-management strategies	No
IV 11: Adaptability and flexibility balanced with resiliency	Unknown, possibly no
IV 12: Density	.41
IV 13: High network centralization	Yes
IV 14: Diversified network	Somewhat open, somewhat inclusive (rank 2-3)
IV 15: Significant cross-boundary communication	Insufficient
IV 16: Access to information	Mixed, mainly yes
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Yes at macro level, no at micro level

5.4.6 Contextual factors

The two variables of interest, determined by survey and interview methods, are *IV 7 (market profit potential)* and *IV 18 (adaptability of problem definition to correspond with context)*.

Table 47: STEP Survey/Interview on Contextual Factors

Independent Variable	Questions	Answers
IV 7: market profit potential	<i>Does the partnership's activities help to promote a profitable aspect of estuaries, which interest one or more of the partners (i.e. recreation, tourism, locally produced goods and services, educational resources)?</i>	Yes
IV 18: adaptability of problem definition to correspond with context	<i>Evaluate the following statement: 'Members of the partnership accept a problem definition that could change over time.'</i>	2, somewhat agree
Related	<i>Do you feel a sense of personal investment in the estuary?</i>	Yes
	<i>What are the main obstacles that you encounter that could/do prevent you from working at an optimal achievement level?</i>	Trying to coordinate a large array of people with other commitments and responsibilities. Keeping good communication between the two offices.

The results of IV 7 and IV 18 have been confirmed by previous analysis. The respondents answered in a manner consistent with the findings of the IAD analysis, that coordinating a large variety of people, especially when spread out between two different offices in Dordrecht and in Den Bosch, presents problems for working efficiently together, especially because it hinders frequent face-to-face contact.

From the previous section, it is apparent that the level and quality of communication in STEP is probably insufficient to optimally achieve their goals. Therefore a recommendation going forward is for STEP to consolidate their offices if possible to work in the same space and to hold regular meetings to coordinate their activities, at least on a weekly basis. This way, partners can demonstrate to each other

that STEP projects feature on their priority list and will help to facilitate trust in partners and their level of competence/commitment.

The aggregated interim conclusions are:

Table 48: STEP- Institutional Factors + Stakeholders and Participants + Organization and Process + Knowledge and Learning + Communication + Contextual Factors

Independent Variable	Conclusion
IV 1: Consistent institutional design	Mixed, mainly yes
IV 2: Small-scale local investment in landscape	Mostly
IV 3: Tailored/specified policies	Yes
IV 4: Well-defined problems that can be reformulated/amended	Problems are undefined, flexible approach taken
IV 5: "Good" communication with face-to-face interaction	Possibly insufficient
IV 6: Decentralized power	Yes, but power is not equal
IV 7: Market profit potential	Yes
IV 8: External funding	Yes
IV 9: Adequate time resources from stakeholders	Mixed, mainly yes
IV 10: Well-documented co-management strategies	No
IV 11: Adaptability and flexibility balanced with resiliency	Unknown, possibly no
IV 12: Density	.41
IV 13: High network centralization	Yes
IV 14: Diversified network	Somewhat open, somewhat inclusive (rank 2-3).
IV 15: Significant cross-boundary communication	Insufficient
IV 16: Access to information	Mixed, mainly yes
IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Yes at macro level, no at micro level
IV 18: Adaptability of problem definition to correspond with context	Yes

6. Discussion

The following principle section will reflect upon the information gained from the previous analysis of the four case studies. The results of the aggregated interim conclusions will be presented side-by-side and compared to rank their conformity with

the ideal state of each of 18 independent variables proposed by Stenseke and Sandstrom and Rova. A ranking of 1 indicates the highest level of conformity for an independent variable (in comparison to the other case studies) and 4 indicates the lowest level of conformity. The case study with the lowest score, denoting the most ideal partnership, is expected to have achieved the highest level of “respect, legitimacy and robustness”, which is the dependent variable. The dependent variable will be assessed by the following three criteria of the partnership:

- (1) Attained the goals set forth in planning documents within the proposed time frame
- (2) Consistently received external funding without internal reasons for the funding ceasing
- (3) Did not contract in size or scope over time.

Later in the discussion, the differences between main and side issues will be identified. The remaining questions, or knowledge gaps, will also be illuminated, with an emphasis on possible future directions of research. Finally, the research question and sub questions will be answered.

6.1 Synthesis of Analysis

The aggregated interim results from each of the four case studies are as follows. In the left hand column, a ranking is given on a scale of 1-4. This score was derived by comparing each independent variable to that of the peer case studies and assigning a value from 1 through 4 (in orange), 1 representing the best performer according to the ideal (as proposed by Stenseke and Sandstrom and Rova), and 4 representing the bottom performer. In the case that two or more case studies have the same result for an independent variable, the ranking of their scores will be assigned based on how well they conform to the ideal model regardless of the result of their peers. It is feasible that each case study could achieve a ranking of “1” for a given variable if they all match the ideal model in that category. In other words, a tied score is allowed. For certain independent variables, the nuances discussed in the analysis will play a role in determining ranking if the result isn’t clear-cut. Therefore, certain liberties are taken in assigning rankings for reasons that are more complex than the results represented in the chart below.

The bottom column in the chart (in green) represents the sum of the total score. Please note that the total score does not represent the organization's conformity to the ideal partnership; it represents how well the partnership performed *compared* to its peers. The number itself is not significant alone, but must be interpreted in relation to the other case studies. According to the hypothesis put forth at the beginning of this report, the expectation is that the case study with the lowest score (meaning the highest number of top rankings) will achieve the highest degree of success, legitimacy and robustness, the dependent variable.

One drawback of this system is that the score is not weighted given the relative importance of each category. This point will be elaborated on further in the following section, differentiating main and side issues. Further research opportunities may be found in investigating this aspect: which of the independent variables weigh most heavily on the outcome, and how can organizations use this information to improve their partnerships efficiently?

Table 49: Ranking of the Four Case Studies

Case Study 1: Bay Institute Ranking	Independent Variable	Conclusion
3	IV 1: Consistent institutional design	No
3	IV 2: Small-scale, local investment in landscape	Yes, somewhat weak
3	IV 3: Tailored/specified policies	Somewhat
4	IV 4: Well defined problems that can be reformulated/amended	No
4	IV 5: "Good" communication with face-to-face interactions	Insufficient
1	IV 6: Decentralized power	Yes
1	IV 7: Market profit potential	Yes
1	IV 8: External funding	Yes
3	IV 9: Adequate time resources from stakeholders	Yes internally; unknown externally
1	IV 10: Well documented co-management strategies	Somewhat, but probably insufficient
1	IV 11: Adaptability/flexibility balanced with resiliency	Yes
4	IV 12: Network density	.35
1	IV 13: Network centralization	Yes
4	IV 14: Network diversity	3 rd rank
1	IV 15: Significant cross-boundary	Insufficient

	communication	
4	IV 16: Access to information	Moderate
1	IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Unclear, Affirmative according to survey results.
2	IV 18: Adaptability of problem definition to correspond with context	No
TOTAL SCORE = 42		
Case Study 2: California State Parks Foundation Ranking	Independent Variable	Conclusion
2	IV 1: Consistent institutional design	No externally, unknown internally
1	IV 2: Small-scale, local investment in landscape	Yes
2	IV 3: Tailored/specified policies	Yes
1	IV 4: Well-defined problems that can be reformulated/amended	Mostly affirmative, some inconsistencies
1	IV 5: Good communication with face-to-face interaction	Indications of successful cooperation, but lacking in face-to-face contact
3	IV 6: Decentralized power	Mixed
1	IV 8: External funding	Yes
1	IV 7: Market profit potential	Yes
1	IV 9: Adequate time resources from stakeholders	Yes
2	IV 10: Well-documented co-management strategies	No
2	IV 11: Adaptability/flexibility balanced with resiliency	Somewhat flexible
1	IV 12: Network density	.57
1	IV 13: Network centralization	Yes
2	IV 14: Diversified network	2 nd rank
2	IV 15: Significant cross-boundary communication	No
3	IV 16: Access to information	Internally accessible, externally somewhat inaccessible
3	IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Unclear, Mixed according to survey results.
2	IV 18: Adaptability of problem definition to correspond with context	No
TOTAL SCORE = 31		
Case Study 3: IVN Consulentenschap Brabant Ranking	Independent Variable	Conclusion
3	IV 1: Consistent institutional design	No
1	IV 2: Small-scale local investment landscape	Yes

4	IV 3: Tailored/specified policies	Lack of specificity on the local level
3	IV 4: Well-defined problems that can be reformulated/amended	Defined, but not easy to amend.
1	IV 5: "Good" communication with frequent face-to-face interaction	No for the majority, yes for the central hub
1	IV 6: Decentralized power	Yes
1	IV 7: Market profit potential	Yes
1	IV 8: External funding	Yes
2	IV 9: Adequate time resources from stakeholders	Yes (speculative)
2	IV 10: Well-documented co-management strategies	No
3	IV 11: Adaptability and flexibility balanced with resiliency	Mixed
3	IV 12: Network density	.36
1	IV 13: Network centralization	Yes
1	IV 14: Diversified network	Open and inclusive (1 st rank)
2	IV 15: Significant cross-boundary communication between organizational clusters	No
2	IV 16: Access to information	Mixed, depending on type of job
4	IV 17: Appropriate rule-forming/rule-enforcing mechanisms	No
2	IV 18: Adaptability of problem definition to correspond with context	No
TOTAL SCORE = 37		
Case Study 4: STEP	Independent Variable	Conclusion
Ranking		
1	IV 1: Consistent institutional design	Mixed, mainly yes
2	IV 2: Small-scale local investment in landscape	Mostly
1	IV 3: Tailored/specified policies	Yes
2	IV 4: Well-defined problems that can be reformulated/amended	Problems are undefined, flexible approach taken
3	IV 5: "Good" communication with face-to-face interaction	Possibly insufficient
2	IV 6: Decentralized power	Yes, but power is not equal
1	IV 7: Market profit potential	Yes
1	IV 8: External funding	Yes
3	IV 9: Adequate time resources from stakeholders	Mixed, mainly yes
2	IV 10: Well-documented co-management strategies	No
4	IV 11: Adaptability and flexibility balanced with	Unknown, possibly no

	resiliency	
2	IV 12: Density	.41
1	IV 13: High network centralization	Yes
3	IV 14: Diversified network	Somewhat open, somewhat inclusive (rank 2-3).
1	IV 15: Significant cross-boundary communication	Insufficient
1	IV 16: Access to information	Mixed, mainly yes
2	IV 17: Appropriate rule-forming/rule-enforcing mechanisms	Yes at macro level, no at micro level
1	IV 18: Adaptability of problem definition to correspond with context	Yes
TOTAL SCORE = 33		

According to the results of this aggregated ranking table, the California State Parks Foundation is the top performer (31), STEP is the second best (33), IVN Consulentenschap Brabant ranks third (37), and the Bay Institute is last (42). To determine whether the ranking of the case studies correlates with the expected level of achievement of the dependent variable, the three operationalizing criteria will be applied to each case study along with a short discussion on possible explanations for variations in the outcome.

6.1.1 *Outcome of the Bay Institute*

The Bay Institute was the bottom performer of all the case studies. Their main challenges were in group communication and cohesion. Very little contact was made inter-organizationally and with the external partner. This problem was partially due to the fact that the organization is split into specialty functions, which do not intermingle; it, therefore, does not take sufficient advantage of the diverse network that they have access to. Furthermore, their activities with their remote partner, the SFEP, was limited to just one project that had experienced some delays. Lastly, their partnership project, the Ecological Scorecard, though a useful tool in technical/conservation activities, does not involve local participation nor does it stimulate the stakeholder community; it too is remote and scientific, and does little to promote local investment or personal ownership of the estuary in the community. Projects in the past taken on with the SFEP to stimulate local participation have ended in 2007.

While the Bay Institute is highly active in promoting education and environmental stewardship via their museum/aquarium work and other projects including their involvement in influencing legislative decisions in favor of estuary conservation, they do not fully utilize their connections to the SFEP in this capacity when compared to an organization like the CSPF, who leans on the SFEP to gain social and governmental recognition for their cause. The strength of the social capital that the Bay Institute has built up with members of the SFEP as a result of high levels of trust and shared past experiences are an extremely valuable resource. The conclusion is that the Bay Institute has the opportunity to access much more potential by strengthening their partnership with the SFEP by involving them in their other activities; they can also improve internal organizational functioning by increasing the frequency and quality of communication to achieve cohesion and better sharing of information.

Does the Bay Institute conform to the indicators of success, legitimacy and robustness? Because they have achieved the lowest total score from their independent variable ranking, it is expected that their level of conformity to the dependent variable will be the least of their peer case studies. As Imperial and Yandle (2005) advised, the achievement of physical outcomes are not as important as the internal functioning of the partnership when determining partnership success, thus this will be taken into consideration. The indicators are:

- (1) Attained the goals set forth in planning documents within the proposed time frame
- (2) Consistently received external funding without internal reasons for the funding ceasing
- (3) Did not contract in size or scope over time.

The Bay Institute has not yet completed the Ecological Scorecard project, which is listed as “ongoing”. No specific information can be found regarding a proposed timeline for project completion. Though the scorecard has been used to generate at least two environmental reports since its initial development in 2003, it is still undergoing refinement (Bay, 2011). In 2003, the Bay Institute proposed plans to specify the Ecological Scorecard’s indicators for the three distinct environmental regions in the San Francisco Bay watershed “in the coming years” but so far, eight years on, this has not

happened. Therefore, it is speculative whether the Bay Institute has attained its goals set forth in the planning document within the proposed time frame, as there is no concrete timeline available to the public.

The Bay Institute has consistently received external funding without internal reasons for the funding ceasing. They acknowledge, however, that the funding is perhaps insufficient to achieve their goals. One possible avenue for achieving more funding is to work with the SFEP more closely to secure more financial resources by taking on projects that can be supported by specialized EPA programs and grants. So far, their projects are funded in part by the Department of Water Resources, but there are probably more opportunities available to them.

The Bay Institute may have contracted in employment number recently. Evidence indicates a reshuffling of staff in the past few years, but this is only speculation and could not be confirmed by interview. In terms of scope, the organization has been prolific in recent years, especially in the areas of petitioning to conserve threatened habitats and to reform outdated California water policy, in the development of the Aquarium of the Bay as a non-profit center of learning and public heritage, and in the STRAW campaign for habitat restoration. Budget reports indicate a slight growth in monetary assets (Bay, 2011). When considering the Bay Institute as a whole, it seems, overall, highly invested in public involvement and undertaking multidisciplinary approaches to estuary conservation, but when viewing its partnership with the SFEP in isolation, the results are different from its overall performance. The SFEP partnership connection is not as robust as it could be, but this fact does not sink the organization's entire performance because it is diversified in other areas of estuary work.

The Bay Institute has (1) probably not achieved a final result on the Ecological Scorecard project within a reasonable time frame, (2) has received consistent internal funding but may have untapped opportunities to utilize the SFEP to achieve more financial resources, and (3) has experienced a slight growth in the organization, primarily due to its activities not in connection with the SFEP.

6.1.2 Outcome of the California State Parks Foundation

The California State Parks Foundation was the top performer of all the case studies. Its

strengths lie in the engagement of the public in cultivating environmental stewardship through conservation activities, which involve stakeholder participation. The Candlestick Point Restoration project, undertaken in partnership with the SFEP, is an example of how scientific and local knowledge can be effectively combined to make strides towards sustainable development. Though the SFEP's involvement in the project is mainly related to advocacy tasks and procuring grants through various governmental channels, the CSPF seems to utilize this partnership to its advantages, helping to ensure project continuation despite a rocky political climate where historically-available government funding is severely threatened.

The areas of identified weaknesses within the CSPF were mainly related to conflict resolution and rule enforcement, and consistency in formulating flexible problem definitions. Part of these challenges can be attributed to the lack of consistent institutional setting, complex policies and to a variety of conflicting, multi-level stakeholders influencing events the action arena. Given the tumultuous circumstances, the CSPF's partnership projects seems to be performing remarkably well, which is, in part, attributable to the funding and support garnered with the SFEP's involvement.

Because the project is ongoing, and not physically begun as of early Summer 2011, it is impossible to say if the partnership has achieved their goals within their proposed time frame, which is scheduled to end in Spring 2013. One important short-term goal was to break ground in the summer of 2011 on the Candlestick Point Recreation project. A check on the CSPF's website as of July 2011 reveals that groundbreaking on phase 1 was set to begin on June 20, 2011, but there is no accessible information to confirm that this actually happened. Recent reports on the website indicate that the Candlestick Point Recreation Area, the site of the project, is slated for closure in 2012, but the CSPF has declared that the project will continue in light of the public and political support garnered, as well as the substantial funding which is in place and can carry the undertaking onwards. It is unknown how much the budget cuts/closures have affected the timeline of this project.

The CSPF has not consistently received external funding from the government. California State parks are awarded moneys by the state government annually to protect California's environmental heritage and to ensure the preservation of green space in

accordance with the law. However, budgetary constraints have substantially cut funding by 22 million USD, which has resulted in mass closures of many parks. This is not a consequence of internal problems with the state parks, but rather internal problems with the state government. Despite this factor, the budgetary reports showed a very slight growth in monetary assets, which may be, in part, attributable to SFEP involvement, though the SFEP is only partnered with one branch of the entire State Parks system. The budget reports refer to the entire system.

In a related manner, the CSPF has contracted in size due to the forced closures of nearly half of the state parks. Public support for initiatives to save state parks have been met with enthusiasm by small, informed groups, but has failed to spark state-wide mobilization, which is evident from the recent failure of the proposed 2010 California vehicle tax to restore funding to the parks.

In sum, the CSPF-SFEP partnership is (1) assumed to be on track in terms of their timeline, (2) has received a great deal of funding, though not from stable government sources as was the case in the past, and (3) has contracted in size and scope, though these shortcomings are unrelated to the internal functioning of the organization. The partnership relationship seems to serve an essential function because it is instrumental in securing and maintaining funding for the top-priority project at the CSPF, and has made project continuation more likely against the odds of a hostile institutional environment. Therefore, though the outcomes are in question, the partnership seems to be well utilized and advantageous so far.

6.1.3 Outcome of the IVN Consulentenschap Brabant

The IVN Consulentenschap Brabant is the second weakest performer in its partnership endeavors as compared to the other case studies. The main challenges faced by the IVNCB and their partnership relationship with the Biesbosch National park are related to the lack of a consistent institutional environment, where many overlapping policies, jurisdictions and stakeholder demands compromise a straightforward path to project goal achievement. Though this factor is not a consequence of the internal working environment at the IVN, various steps could be made within the partnership to help the situation.

One of the main obstacles identified by the IVNCB was an uncertainty of project continuation due to the lack of embeddedness of the Educatie Wijde Biesbosch's curriculum or program packages in schools. Though this is not generally under the control of the Biesbosch National Park, they do have control over embedding the program's curriculum into their own policies within the V&E, which is currently an unexplored avenue of progress. Under such an arrangement, the Educatie Wijde Biesbosch program would have more security in the guarantee of project continuation and could improve their external legitimacy with schools by securing a place within a national park's education services. Thus, instead of working on a purely contractual basis with schools, the project could also work on a continuous basis with park visitors and enhance the hands-on learning opportunities that the park currently offers. Such an arrangement would also help to tailor the project's program specificity to the Biesbosch National Park in addition to the educational resources that it provides pertaining to the Wijde Biesbosch.

Because the project is new, proposed and started in 2008-2009, it has not had enough opportunity to prove itself to surrounding educational institutions. According to internal timelines, the program plans to reach all eligible schools in the Wijde Biesbosch area by the end of 2012, which, according to the project leader, might be an overly ambitious goal. Therefore, it is important to explore the avenue of embedding the program into the national park's agenda to give it access to a wider range of participants and to bolster its image in the area, which can help in the attainment of timeline goals (1).

The IVNCB continues to receive consistent external governmental funding (2), and claims that there are enough financial resources available so that money is not a main obstacle in achieving program goals.

In the past year, the program has expanded in size and scope (3), adding schools and developing relationships via various networking activities. Though the project's growth is slow (according to the project leader), it has not contracted, although the main issue of assurance in continuity prevents secure long-term planning and contributes to a hesitation to invest resources into the project, which could enhance its progress.

In sum, the project may (1) still achieve its desired timeline milestones (though this is very uncertain), (2) has continued to receive external funding, and (3) has not

contracted in size or scope, though the solutions to the main obstacles that could ameliorate slow, tentative progress are still unexplored and should be taken on in partnership with the Biesbosch National Park, as this is a valuable resource of legitimacy, connectivity with potential local participants, and institutional stability.

6.1.4 Outcome of STEP

The STEP partnership was the second best performer compared to the other case studies. While this partnership is oriented purely on one temporary project package, its internal machinery is similar to the features of the other case studies in that it has a network that brings together members of the collaboration, Parkschap Nationaal Park de Biesbosch, to work on the development of sustainable tourism through many small, interrelated projects. Strengths of this partnership are in the holistic approach that it takes to actively involve stakeholders in their research and implementation process (though they could be consulted more in actual-decision making). This approach has led the partners to be flexible in their problem definition, which is beneficial as it supports the inclusion of locally generated knowledge in addition to scientific knowledge. Furthermore, the projects are tailored to the local landscape and are designed to be ecologically sensitive while fulfilling a niche for profit potential.

In contrast, STEP's communication could be much improved upon. While the network is centralized, many members fail to communicate with any significant frequency, which underutilizes the valuable resource of high network diversity. The lack of communication, in combination with the program's two centers of operation, could exacerbate the lack of trust and mutual confidence sensed amongst partnership members, which may also be stimulated by the covert imbalances of power within the partnership revealed by the respondents. In the future, combining offices in one location and arranging further formal meeting times to discuss progress and future actions could stimulate more frequent and face-to-face contact, potentially helping to overcome some of the main hindrances to a more productive partnership.

Because the partnership is temporary and set to end in 2012, it is unknown whether the projects will be achieved in the given time frame (1). Currently no information on short-term project achievement is given, besides that which states that a

number of tangible developments have already been completed, along with detailed plans for future actions. An interesting note is that the STEP website was under construction until recently, mid-2011, which is perhaps late given the short time frame in which they must market their projects to encourage local involvement and support. However, the evidence points to the conclusion that STEP is on track to reach their proposed goals.

Throughout its existence, STEP has consistently received funding (2). Because its funding depends on compliance with EU regulations and the approval of their planning, it is assumed that STEP is working within this framework in the time allotted.

It is unknown if STEP has increased in size or scope during the duration of the project. Currently, no budget reports are available to the public. However, the positive evidence of goal achievement and the involvement of STEP in various, diverse aspects of the park related to tourism such as education, water sports, land hikes, and food service suggest that the project is broadening in scope; STEP is now looking toward expanding hotel accommodation and dining options as future venues to explore to augment tourist options. They are also examining improving the accessibility of gateways to the Biesbosch. Therefore, their holistic approach to enhancing sustainable tourism has naturally led to the project's broader scope and necessary increase in size as more working parts are incorporated.

In sum, STEP (1) seems to be on target in their goal achievement, (2) is consistently funded and (3) seems to be increasing in size and scope, though an improvement in communication has the potential to enhance their productivity and the ties between partnership members for the future.

6.1.5 Results

According to the hypothesis presented earlier in this research endeavor, a higher-ranking case study should correspond with a higher degree of conformity to the factors determining the achievement of success, legitimacy and robustness. The criteria listed in the expected and actual results are:

- (1) Attained the goals set forth in planning documents within the proposed time frame
- (2) Consistently received external funding without internal reasons for the funding

ceasing

(3) Did not contract in size or scope over time.

The aggregated results of the four case studies' expected versus actual conformity to the criteria of the outcome variable are presented below, labeled low, medium or high based on their relative achievement³³:

Table 50: Expected Versus Actual Results of Case Studies

Case Study	Rank	Expected Result	Actual Result
Bay Institute	4	(1) Low (2) Low (3) Low	(1) Low-Medium (2) High (3) High
California State Parks Foundation	1	(1) High (2) High (3) High	(1) High-Medium (2) Low (3) Low
IVN Consulentenschap Brabant	3	(1) Medium – Low (2) Medium – Low (3) Medium – Low	(1) Medium (2) High (3) Medium
STEP	2	(1) Medium – High (2) Medium – High (3) Medium - High	(1) Medium-High (2) High (3) Medium

6.2 Main and Side Issues

Reflecting on the original proposals of Stenske and Sandstrom and Rova, neither author differentiates between main and side issues, though Stenske gives clues that she considers the factors of “trust and respect” and “common understanding” as the most important. All of the 18 independent variables studied in this report were deemed to have a critical effect upon the dependent variable, but different nuances were found that push certain factors to the forefront as predictors for partnership viability, and certain others were found to have little to no impact under the circumstances of the four case studies. The most important factors were found to be variables corresponding with the quality and

³³ It is important to note that a great deal of interpretation was used in deriving these results, thus they are not purely objective:

frequency of communication, with the consistency of the institutional landscape, and with the adaptability and flexibility of the partnership.

The majority of problems in all four case studies were rooted in insufficient communication. Lack of communication led to untapped network resources such as diversity of experience and knowledge, contact with relevant stakeholders and trust building amongst partnership members. Where communication was low, there was consistently low group cohesion reported, which is counterproductive in partnerships.

Inconsistency in the institutional landscape was found to frequently lead to difficult conditions for facilitating progress in partnership projects. In both San Francisco case studies, the incoherent policy arena inherited from the CALFED era has impacted the types of projects undertaken by each organization. Furthermore, organizations like the Bay Institute have dedicated a great deal of time and resources to advocating for better environmental policies, and fighting an outdated system, where resources could have been more fruitfully spent prioritizing projects, like the Ecological Scorecard, had staff not been so hindered by current unsuitable regulations. The general observation made regarding the institutional setting is that the more inconsistencies and obstacles there are, the less a partnership can work on achieving project goals in a straightforward, efficient manner. Therefore, this factor is a very important predictor of partnership success.

Finally, the adaptability and flexibility of the partnership was identified as another critical factor. In the example of the CSPF, the partnership's high degree of adaptability has assisted them in, thus far, overcoming budgetary obstacles that may have disintegrated other undertakings. In the case of the IVNCB, a high degree of flexibility has allowed them to tailor their curriculum to local landscapes and the desires of schools to be able to more successfully market the *Educatie Wijde Biesbosch* program, which is especially crucial in the early stages of the project. Now, a high degree of adaptability and flexibility on the part of the Biesbosch National Park would serve both partners well in allowing the *Educatie Wijde Biesbosch* program to integrate into the park's agenda.

In contrast, factors such as well-documented co-management strategies, the potential for profit, appropriate rule-forming and rule enforcing mechanisms, and high network centralization seemed to have no bearing upon these particular case studies, but

that could also be due to the fact that these factors were relatively consistent across all four partnerships; thus their effects may have cancelled each other out because they were held constant.

6.3 Remaining Knowledge Gaps

Both the shortcomings of this study's approach to answering the research question and observations made during the course of the investigation have revealed a number of knowledge gaps that present possible avenues of future research.

Though this report is intended to be as objective as possible, as with much qualitative analysis, a certain degree of judgment and interpretation factors into the study. Another complication arises from the issue that, although efforts were made to standardize the types of case studies chosen, they are all very different organizations, so for certain independent variables it is arbitrary to make comparisons.

As an outside researcher, it was also difficult to understand organizations and institutional settings as their patterns of interactions, policies and working environment were mired in a great deal of complexity and layers of information. While efforts were made to decipher these intricacies, this researcher acknowledges the limitations of her current depth of understanding in accurately representing the case study partnerships.

A final weakness of this study is in the operationalization of the dependent variable. Stenseke (2009) gave no mention of how to define respect, legitimacy and robustness in a way that could be measured and reproduced; therefore liberties were taken in establishing assessable criteria, which was done under consultation with the case study organizations. Therefore, a limitation of reproducing this investigation using different case studies is that the operationalization of the dependent variable may be unsuitable. A recommendation for future research is, therefore, to give more attention to the conditions of respect, legitimacy and robustness that can be measured without the analysis of mass media coverage or widespread public opinion, as this route isn't feasible (or always applicable) for this type of small-scale analysis.

Another topic of further study should be to investigate those variables that were deemed less important in determining partnership success. As previously mentioned, these factors were relatively identical throughout all four case studies, their effects were

not noticeable, but it is unknown if this is due to their relative unimportance as independent variables or due to the mutual cancelling effect that they had on the analysis because they were coincidentally constant. To find this out, future research should investigate cases where these variables differed to determine if they are indeed important in determining partnership success. A related possible direction of future research is in determining the relative importance of each of the variables, which would refine the scoring method used in this study to weight independent variables in determining the final ranking. Adding further nuance to the method would allow for fairer comparisons to be made by differentiating between main and side issues.

6.4 *Answering the research question*

The research question and sub-questions proposed at the beginning of this report were:

Which explanatory factors promote or hinder the development of watershed partnerships in the Biesbosch and the San Francisco estuaries? Furthermore, how can any incongruities with the assessments of theoretical literature be explained?

1. Do the characteristics of the partnerships in the two case studies yield the expected theoretical result that partnerships promote sustainable activities in estuaries and vice versa? Additionally, which explanatory factors linked to successful partnerships, found in literature, are most applicable to these four case studies?

2. What do the features of the networks observed reveal about the development of partnerships in the case studies to date?

3. What lessons can the Biesbosch's stakeholders involved in building partnerships learn from the experiences in the San Francisco estuary (and vice versa) in order to work toward sustainability in the future?

Below, an explanation is given relating specifically to each of the sub-questions. The main research question is answered throughout, especially in the detailed description presented for sub-question 1. Overall, the explanatory factors (independent variables) identified by Stenseke and Sandstrom and Rova were found to have a bearing on predicting outcomes for partnership success based on the operationalization of respect, legitimacy and robustness. Taken as a package, the ranking of the 18 independent

variables correlated with how well the partnership performed in executing the projects selected, though it is problematic to view the raw score as representative of the internal conditions of the partnership. In actuality, contextual factors were highly important in explaining the differences between expected and actual outcomes. If one was to only consider performance of respect, legitimacy and robustness, the wrong conclusions would be drawn about the actual success of the partnership, as the expression of some factors were convoluted by external circumstances. Therefore, this ranking is not foolproof nor should it be taken out of context. Instead it is best served as a device to supplement an analysis of a partnership, but cannot as a predictor on its own.

1. The results derived from the operationalization of the dependent variable did not fully conform to the expectations of the hypothesis, however some divergences can be explained by examining the factors unique to the partnership's situation. In the case of the Bay Institute, it was expected to have little to no growth and not receive consistent external funding, however this was not the case. The result is likely a consequence of the prolific activities that it is involved in outside of the partnership context of the SFEP. Upon examining the SFEP partnership activities alone, it receives inadequate (as reported by the main respondent) funding for the Ecological Scorecard project, and there is little progress currently underway in broadening the scope of the partnership. Furthermore, the Ecological Scorecard is still under construction and future plans to finalize it and broaden its use in the watershed are undefined. Therefore, when taken in the correct, specific context, the outcomes of the Bay Institute's partnership performance are in line with the expected results according to the hypothesis.

In the case of the CSPF the availability of consistent external funding and the size/scope of the organization was expected to be highly consistent or to increase. This was not the case, however, but the responsibility for these developments does not lie within the CSPF or the partnership. In fact, the partnership has been successful enough to combat the source of funding cuts and instability, the California State government. The argument could be made that a truly successful organization would not have been subject to budget cuts or closures because of the efficacy of their programs, however the priorities of the state are such that recreation, education and nature are relatively low on

the priority list, which has been proven a number of times with systematic budget cuts to all three of these sectors. Therefore, though the actual conditions of the dependent variable are not met as expected, the circumstances are such that the partnership has proven to be highly successful despite possibly devastating conditions. Thus the top ranking in partnership success may be warranted.

In the case of the IVNCB, it was expected that funding for the project may be inconsistent, however this was not the case. Stable funding is attributable to the fact that the parent organization, IVN, is widespread, active and successful in environmental consultancy, and that the government endorses NME related educational programs. Given this, it would seem that the *Educatie Wijde Biesbosch* program would be more successful, but the abundance of funding does not overcome the main barriers to success which are the lack of embeddedness of the program's curricula in school and/or the Biesboch National Park's V&E, and the uncertain future of the project, which is a constant factor tarnishing enthusiasm and progress within the organization. Therefore, the lower ranking of the IVNCB's partnership is warranted because the necessary support isn't in place, despite funding, to yield very prosperous results.

For the most part, STEP's performance conformed to expectations, but scored higher than initially predicted in the category of consistent funding. The abundance of consistent funding is explained by the fact that STEP receives part of its budget upfront from the ERDF/InterReg IVA 2 Seas and support is guaranteed for the duration of the project if certain guidelines are met. There has been no internal reason for the EU to retract funding, thus it has remained consistent. The 50% donor matching is also assumed to be in place as this is one of the preconditions for receiving grants from the EU for this type of project. When taking into account that funding is an all-or-nothing situation for the STEP project, the rest of the results approximately fit with the predictions of the hypothesis.

For all case studies, the most important factors determining success were found to be independent variables corresponding with the quality and frequency of communication, with the consistency of the institutional landscape, and with the adaptability and flexibility of the partnership. Though Stenseke's study emphasizes trust/respect and common understanding as factors of greatest importance for her case

studies on Swedish cultural landscape maintenance, this was not the case in the estuaries. This difference can be explained by the fact that trust and respect and common understanding were contentious issues in situations where Swedish agrarians, whose cultural heritage was tied to the land, were (more or less) forced to interact with external governmental and market-based organizations. These exchanges could not be fruitful without a high level of trust/respect and common understanding. However, in the case of the estuaries, the relevant partnership actors are from more similar backgrounds and have alike goals; therefore trust/respect and common understanding are already somewhat in place. In this case, the most vulnerable arena is the working relationships facilitated in the partnership, which depend on robust communication and the ability of the partnership to adapt to changing conditions. The consistency of the institutional setting is undoubtedly essential under ideal circumstances, but this is usually not under the direct control of partnership members.

2. Because of the small n of actors, both in the total staff of the partnerships and amongst those members who participated in this study, it was not possible to derive statistically significant conclusions, which are most pertinent to a network analysis. Therefore, only two network analysis methods, the calculation of network density, and the visual assessment of network centrality could be used in this study.

Network density was found to directly correlate with the overall conformity of the case study to the 18 independent variables. The top performer also had the highest network density, the second best performer had the second highest network density, the third had the third highest, and the bottom performer also had the least dense network. Network centrality was not found to have a significant bearing on network performance, though this could be attributable to the fact that all of the networks observed seemed to be centralized; their effects on the outcome possibly neutralized each other in the analysis. As network density plus network centrality are two factors that collectively denote network closure, Sandstrom and Rova's hypothesis, that network closure facilitated successful networks for partnership arrangement, was partially validated (barring questions of the relevance of network centrality).

As indicators for network heterogeneity were found to be moderate to weak for all the case studies investigated, because cross-boundary communication was often stifled, and adaptability and flexibility/resiliency were often difficult to identify, the importance of high network heterogeneity for partnership governance remains unverified in this report. However, low levels of network heterogeneity were found to be detrimental to the functioning of the partnership, which leads to an inference that the opposite case may be true as well. Further testing to show the benefits of network heterogeneity in partnerships is needed. A relevant caveat for this conclusion is that the exact methods that were used by Sandstrom and Rova in carrying out their experiments could not be reproduced in this study for feasibility reasons, thus the conclusions drawn cannot be directly compared to those made by Sandstrom and Rova to validate or refute their hypothesis.

Though traditional network analysis methods could not be used in determining the presence of a diversified network or significant cross-boundary communication, information obtained from observing and studying the partnership networks was used to recognize them in the case studies. While most of the networks studied were diverse and provided much opportunity for peer-to-peer learning and the enhancement of social capital, much of the potential of these networks was underutilized, mainly as a result of poor communication and the lack of cross-boundary contact or information-sharing. In most of the networks, face-to-face meetings with partners rarely occurred, or sometimes never occurred. In the majority of organizations, the frequency of these meetings was insufficient to reap the benefits of network diversity. An important lesson learned from studying the networks of these case study partnerships is that “good” communication has the potential to strengthen network activity, but is an underutilized means of improving partnership performance. Conversely, neglecting communication can damage a partnership by eroding trust, stagnating creativity and enthusiasm for projects, and can reduce peer-to-peer monitoring, which has a negative effect on productivity.

3. An important lesson about sustainability that this research project has reinforced is that sustainable development is highly context dependent. Because there is no one set definition of sustainable development, nor is there a prescriptive means for achieving this ideal goal, it is perhaps unfruitful to try to derive lessons for sustainability from case

study areas that widely differ in many ways. Instead, a more germane exercise may be to ponder what the two case studies in San Francisco and the two case studies in the Biesbosch can learn from each other.

The main lesson that the CSPF can illustrate for the Bay Institute is that they should use the partnership with the SFEP to their greater advantage by working together to acquire more project funding. They should also engage in undertakings that garner the government's support by adhering to the EPA/NEP project goals. This will give the Bay Institute a greater chance of securing adequate money for future projects, which may reduce their project time lines and allow them to work more prolifically on physical undertakings in the estuary instead of concentrating their efforts on political battles, though these are also undoubtedly important for achieving sustainability given California's tumultuous water policy history.

One of the reasons that the STEP project has proven to be successful thus far is because their agenda is embedded into their partner's, the Biesbosch. By coordinating the activities and goals of STEP with the yearly action plan proposed and implemented in the national park, barriers to project implementation are reduced and a greater network of assistance in task realization is accessed. For future sustainability though the promotion of education to occur, the Biesbosch should include the *Educatie Wijde Biesbosch* program in their yearly plans in the V&E branch so that the program has a foothold in a consistent institutional setting.

STEP can also derive lessons from IVNCB's *Educatie Wijde Biesbosch* program. The program directly involves stakeholders in frequent meetings, much more so than STEP. The result is that the educational program is much more flexible and receptive to stakeholder wants and needs, which has been an important factor in its program achievement thus far. In contrast STEP, at the moment, communicates with stakeholders, but only on a seemingly superficial level, as real power is imbalanced in the hands of a few internal partnership members and stakeholders are not adequately taken into account when it comes to decision-making. Opening the partnership to more frequent, serious input from other stakeholders may enrich STEP's ideas and strategies for project implementation, will enhance their transparency as an organization, and will aid in the adherence to the EU principles for sustainable development.

7. Conclusion

Going forward, the environment is in urgent need of care and attention to combat the effects of human carelessness with the earth's finite resources. Since the mass awareness of environmental decline began in 1962 with Carson's *Silent Spring*, activists have heeded the call to action, and have inspired governments, markets and citizens alike to follow in their lead to protect current and future generations. The arrangements arising from the mobilization of these three pillars in steering (environmental) decision-making, known as governance, presents unique opportunities to utilize the resources and attributes contained in these groups to promote advantageous outcomes, supporting people, the planet, and the ability to achieve profit. Partnerships between non-profit organizations and government-affiliated organizations are one arena where many environmental undertakings have emerged, especially since the release of the Brundtland report in 1987. This research initiative has sought to find an explanation to the simple question, what are the building blocks for a good environmental partnership?

This query was refined into a main research question with three associated sub-questions:

Which explanatory factors promote or hinder the development of watershed partnerships in the Biesbosch and the San Francisco estuaries? Furthermore, how can any incongruities with the assessments of theoretical literature be explained?

1. Do the characteristics of the partnerships in the two case studies yield the expected theoretical result that partnerships promote sustainable activities in estuaries and vice versa? Additionally, which explanatory factors linked to successful partnerships, found in literature, are most applicable to these four case studies?

2. What do the features of the networks observed reveal about the development of partnerships in the case studies to date?

3. What lessons can the Biesbosch's stakeholders involved in building partnerships learn from the experiences in the San Francisco estuary (and vice versa) in order to work toward sustainability in the future?

To answer these questions, first an evaluation of the relevant contemporary literature was conducted, which revealed the theoretical conditions for successful partnerships. From this literature review, two lead studies were chosen, one from Stenseke, which detailed the prerequisites, success conditions and counterproductive factors associated with cultural landscape conservation projects, and from Sandstrom and Rova, who illuminated the network attributes necessary to promote adaptive governance. Each of these two studies listed a number of variables that they claimed were critical in determining partnership or network outcomes. The factor lists from the two studies was combined in a master list of 18 independent variables that were tested in four case studies, selected for their presence in estuaries and their educationally-oriented project focus, using various network and sociometric methodologies. Upon testing each variable in the case studies, rankings were assigned to show the level of relative conformity to the master list of independent variables. The hypothesis proposed was that a higher level of conformity to the ideal state of the 18 independent variables will correlate with a higher level of partnership respect, legitimacy and robustness (the dependent variable), and vice versa.

Overall the findings, including the results of the network analysis, were relatively consistent with the expected outcome, but only when the context of the partnership was taken into consideration in the synthesis of the results. A researcher with experience in the history and working environment of an organization or partnership could disentangle the rankings to rationalize their complicity with the hypothesis, however an objective observer could not draw the correct conclusions about the functioning of the partnership by relying on just the results of the ranking's correlation with the dependent variable alone. Therefore, this system needs to be refined to figure out which independent variables are most important in determining partnership success and robustness, which may improve the framework's accuracy in predicting partnership outcomes; also further work should be done to operationalize the dependent variable in a more generalizable way.

This report, from the outset, has taken an optimistic approach to the notion of sustainable development, specifically that strides toward responsible resource management, conservation and environmental stewardship can be made while also

meeting a great deal of society's current and future needs. While environmental partnerships are just one strategy to achieve this tremendous undertaking, it is a powerful tool in the human arsenal that unites collective entities in the common goal of bettering the world. By increasing our understanding of how partnerships work in the real world, we can more clearly envision the means to achieving sustainable environmental governance in support of the hope that present and future generations of all species have equal opportunities to thrive on planet Earth.

8. References

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