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Using the Net-Map Tool for Analyzing Collaborative Governance for Improved  
Ecosystem Service Provision in Cultural Landscapes: The Case of a Citizen  
Foundation in the Biosphere Reserve Spreewald, Germany.

Master Degree Thesis in Integrated Natural Resource Management

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## Abstract

Cultural landscapes are important for biodiversity conservation and can deliver a variety of ecological and cultural services essential for human identity. Institutional structures require to be aligned to ecosystem functions in order to sustain the proper service provision. This study analyzes a collaborative governance approach using the citizen foundation *Bürgerstiftung Kulturlandschaft Spreewald* located in the *Biosphere Reserve Spreewald* in Germany.

Therefore, quantitative and qualitative data were collected for a social network analysis with the innovative *Net-Map Tool* method.

The results indicate that the main collaborating actors successfully manage the cultural landscape, especially with the improvement of ecosystem service provision. The actors are interdependent and are led by decision-making boards of the citizen foundation. Information is shared between all actors, while personal connections frequently add to formal channels. Few conflicts result from the hierarchical decision-making process, but are assumed to not jeopardize the collective action because the trust network forms a stable base. The philanthropic character of a citizen foundation is reflected by motivations of the actors to collaborate, as well as the actors that benefit the most from the collaboration. The challenges faced by the *Bürgerstiftung Kulturlandschaft Spreewald* are typical for citizen foundations in general. The challenges concern long-term financing of the citizen foundation with donations and funds, permanent employment of office staff, marketing, communication, leadership and overlapping of actors' roles. Further research is needed to compare the results of this study with similar governance approaches.

**Keywords:** Civil-public-private Partnerships, Social-ecological Systems, Biosphere Stewardship, Social Network Analysis, Net-Map Tool

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## List of Abbreviations

BKS	Bürgerstiftung Kulturlandschaft Spreewald (Citizen Foundation)
BKSN	Bürgerstiftung Kulturlandschaft Spreewald Network
cf.	confer
EAFRD	European Agricultural Fund for Rural Development
e.g.	exempli gratia
ES	Ecosystem Services
et al.	et alii
EU	European Union
i.e.	id est
LEADER	Liaison entre actions de développement de l'économie rurale
LfU	Office for Environment Brandenburg
NABU	Nature and Biodiversity Conservation Union
NGO	Non-governmental Organization
SNA	Social Network Analysis
UNB	Lower Conservation Authority
U.S.	United States of America

## 1. Introduction

Since the 1950s, ecosystem services (ES) have been degrading worldwide by nearly two-thirds alongside the declining state of ecosystems and biodiversity due to human-induced stresses. Data published by the *European Environment Agency* determine that most ES in Europe are either in a mixed status or in a degraded status (EEA 2015).

Cultural landscapes all over Europe are one type of ecosystem. They provide a variety of ecological and cultural services as an essential basis for human identity and living. But the structure of cultural landscapes is not static. Humans continuously shape, change and influence cultural landscapes for their own purposes and needs. Cultural landscapes are results of these ongoing processes of social development. Various regions developed typical cultural landscapes for which they are known for all over the world. In the present day, landscape shaping processes are significantly accelerated and overlapping which leads to severe transformations of cultural landscapes. The essential driving forces behind visual and structural changes of cultural landscapes are energy production, agricultural policy, demographic change and climate change (SCHMIDT et al. 2011).

Changing a cultural landscape also affects the ES delivery. The protection of cultural landscapes is essential to the maintenance and restoration of certain ES and supporting biodiversity. ES are important for economic and human well-being (SUKHDEV et al. 2014), for example; provision of food and drinking water, regulation of the climate, water supply, and documentation of the history of cultural development (SCHMIDT et al. 2011).

The management of ES is challenging because governance models which are social systems manage ecological systems that provide ES. Social and ecological systems typically differ in scale. If the scale of management and the scale(s) of the ecological processes of the ecosystem are not aligned, a mismatch<sup>1</sup> can arise (CUMMING et al. 2006). Mismatches decrease the resilience of social-ecological system, and reduce ES provision for human welfare (CUMMING et al. 2006). An ecological system that is influenced by a social system is named a social-ecological system (ERNSTSON et al. 2010). One mismatch can also result from governance gaps. A governance gap is the

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<sup>1</sup> The terms: mismatch and misfit are used interchangeable.

absence of institutions for a social-ecological system component or link (EKSTROM & YOUNG 2009).

Research on institutional misfits has already been conducted (e.g. Vatn & Vedeld 2012; Young 2002; Ekstrom & Young 2009; Cox 2012). Results suggests that the solution of institutional misfits usually require a change of the institutional structure (CUMMING et al. 2006; EKSTROM & YOUNG 2009). Research done by Muradian and Rival (2012) indicates that mixed governance models are a better fit to govern ES than pure market-based or hierarchical governance models. That is due to ES frequently being *common goods* and inheriting an intrinsic complexity that further adds challenges to their governance.

A recent trend from government based to multi-actor governance is recognizable (LOFT et al. 2015). One governance structure that includes multiple actors is collaborative governance. This form of governance developed in the last few decades. Collaborative governance is defined throughout this study as “[...] *the processes and structures of public policy decision making and management that engage people constructively across the boundaries of public agencies, levels of government, and/or the public, private and civic spheres in order to carry out a public purpose that could not otherwise be accomplished.*” (EMERSON et al. 2011, p. 2). Collaborative governance is a form of community management that is based on cooperation (VATN 2010), as well as collective action (OSTROM 1990).

There is currently a lack of evidence that collaborative governance improves ES provision more than hierarchical or market-based approaches (KOONTZ & THOMAS 2006). More case studies are needed on existing collaborative governance approaches managing ecosystems to examine the abilities of such structures. The analysis of functioning collaborative governance systems can give recommendations to stakeholders. This would support specific policies as well as administrative processes that facilitate development of governance structures.

The aim of this study is to analyze a collaborative governance approach for improved ES delivery. This is done with a case study in the *Biosphere Reserve Spreewald* in Germany. The collaborative governance approach is a citizen foundation named: *Bürgerstiftung Kulturlandschaft Spreewald* (BKS) that improves ES delivery by conserving the cultural landscape of the Spreewald region.



This study is conducted under cooperation from the *Leibniz-Center for Agricultural Landscape Research (ZALF)* in the context of the project: *Civil-Public-Private-Partnerships (cp<sup>3</sup>)*. This project focuses on collaborative governance approaches for policy innovation to enhance biodiversity and delivery of ES in agricultural landscapes<sup>2</sup>.

The main research question of this study is: “*How does collaborative governance for improved ecosystem service provision take place in the case of the Bürgerstiftung Kulturlandschaft Spreewald?*”.

To answer the main research question, the following sub-questions will be answered:

1. *What are currently the most relevant actors?*
2. *How are actors interlinked in terms of money flows, information sharing, conflict relations and trust relations?*
3. *What are the motivations of actors to collaborate with the other actors?*
4. *What degree of influence does each actor have within the BKS?*
5. *What amount of benefit does each actor gain by collaborating?*
6. *What are past and future challenges of the citizen foundation?*

This study is structured as follows: Chapter 2 begins with a description of the study area and study case. In Chapter 3, the theoretical background concerning ES provision and governance is presented along with the characteristics of a citizen foundation. Chapter 4 explains the *Net-Map Tool* method and how it is used to answer the research questions stated above. Chapter 5 presents the results of this study, and Chapter 6 discusses the results and method. Chapter 7 is the conclusion which summarizes this study’s findings.

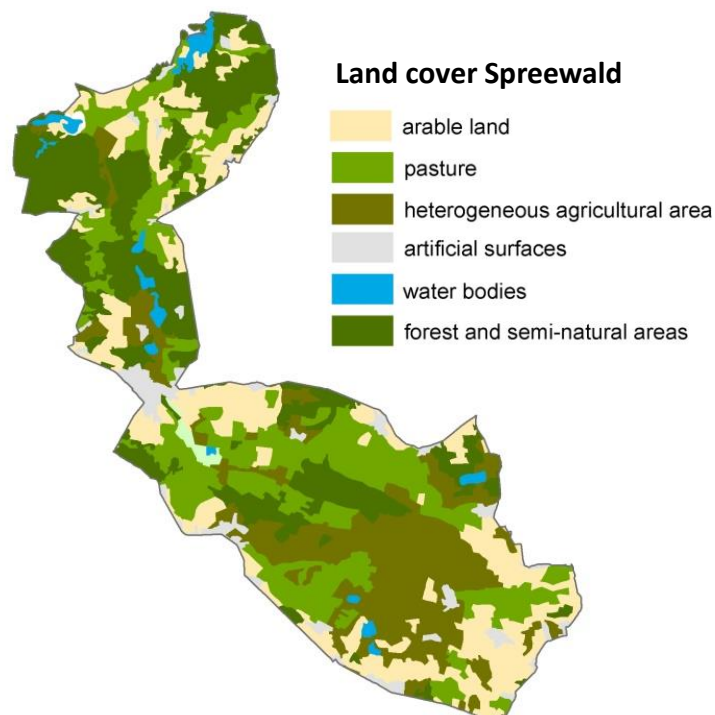
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<sup>2</sup> This information is taken from the homepage of the cp<sup>3</sup> project. Available online: <http://cp3-project.eu/> [Date accessed: 29/11/2016].

## 2. Case Study

### 2.1. Study Area: Biosphere Reserve Spreewald in Germany

The *Biosphere Reserve Spreewald* is located in the southeast part of the federal state Brandenburg. It partially covers the counties of Dahme-Spreewald, Oberspreewald-Lausitz and Spree-Neiße (MLUL 2002). Its location is roughly at the middle of the Spree River and is 55 kilometers in length and up to 15 kilometers in width. The area is interwoven by approximately 300 small navigable channels with a total length of 1,575 kilometers. Figure 1 displays the shape and land coverage of the *Biosphere Reserve Spreewald* (MLUL 2012). The region is famous for its unique culture and landscape that is influenced by the Sorbs and Wends, who have settled in the Lausitz area since the 6<sup>th</sup> century. These minorities managed to maintain their unique language and culture despite of various attempts of assimilation throughout history (GVBl. I, p. 294). The cultural landscape characteristics for the Spreewald region is a mosaic of small-sized agricultural fields, grasslands, ditches, woodlands interrupted by streams, and typical settlement structures (MLUL 2002, 2012).



**Figure 1: Shape and Land Coverage of the Biosphere Reserve Spreewald**  
(Source: cp<sup>3</sup> Case Study Fact Sheet<sup>3</sup>.)

<sup>3</sup> Available online: <http://cp3-project.eu/> [Date accessed: 29/02/2017].

The *Biosphere Reserve Spreewald* is divided into three zones: (1) a core zone, (2) a maintenance zone, and (3) a development zone. The development zone is further divided in two subzones: a zone of harmonic cultural landscape and a regeneration zone. The core zone and maintenance zone are protected under the highest German protection category named the *Nature Reserve of Central Importance* whereas the development zone is designated as a *Landscape Protection Area*. The entire area is protected under the EU conservation network *NATURA 2000*, including both *Flora Fauna Habitat* as well as *Special Protected Area*.

The typical mosaic-like landscape can be found in the maintenance zone because the core zone is protected against human intervention and agriculture. Almost all (i.e. 95 percent) agricultural production in this zone is organic farming. In 2004, local farmers and the biosphere administration started an initiative that supports agriculture free from genetic modification (PETSCHICK 2006). The large number of organic farms is remarkable and they provide advanced soil fertility as well as high biodiversity when compared to other regions. For instance, 1,227 wild flora taxa and 3,498 fauna species can be found in the *Biosphere Reserve Spreewald*, many of which are endangered. The development zone has the most residential areas, commercial tourism and agricultural practices (MLUL 2012).

The cultural landscape of the Spreewald supports biodiversity and provides various ES for the economy and human welfare. ES can be classified in four categories: (1) provisioning services, (2) regulating services, (3) habitat or supporting services, and (4) cultural services (cf. Chapter 3.1) (SUKHDEV et al. 2010). ES in the *Biosphere Reserve Spreewald* include: (1) delivery of products like timber, food, fodder and fiber, (2) plant pollination, climate regulation, and water regulation, (3) provision of habitat and maintenance of genetic diversity, and (4) aesthetic values for people, preservation of tradition and culture. Water regulation is especially important for the region because all habitat types are influenced by water (MLUL 2012; SUKHDEV et al. 2010).

The various small water channels are traditionally used for transportation around the region. Products like hay and cattle are moved in barges from one point to the other. Leisure activities such as canoeing for tourists has increased rapidly in the present day. Consequently, the service sector and tourism are more important for the regional economy in the modern day than the agricultural sector (MLUL 2012). Visitor surveys demonstrate that “*nature*”, “*silence*” and “*originality*” (MLUL 2012, p. 30) are the

primary reasons why tourists want to visit the region. With that in mind, the conservation of the natural and cultural landscape is necessary to sustain tourism.

Currently, more than half of the biosphere reserves' area is still used for agricultural production (BIOSPHÄRENRESERVAT SPREEWALD 2017) but small-size agriculture in the Spreewald region is not economically viable. One attempt to support local farmers was the establishment of a brand named *Dachmarke Spreewald* which offers food free from genetic modification. The brand offers for example, foods such as *Spreewald gherkins*, a local variety of horseradish, milk and linseed oil (PETSCHICK 2006; SPREEWALDVEREIN E.V. 2016).

Most farmers generally depend on public funding to continue agricultural production (BIOSPHÄRENRESERVAT SPREEWALD 2017). One instance of public funding by the state of Brandenburg are the *Individual Conservation Contracts* between farmers and the biosphere reserve administration. Many of these contracts were created containing topics like: mowing of orchid meadows, use of soil conservation techniques for moist meadows, wood management, and planting new meadow orchards. This public funding has decreased steadily since 2004.

Small-sized agriculture has been disappearing due to demographic changes, agricultural policies and dwindling public funds. Out of approximately 34,000 people in the region, most reside in the city of Lübben and the city of Lübbenau. The population has been steadily decreasing due to emigration of primarily young people which has caused the population to be at an older average age. The younger generations of the Spreewald typically do not take over family farms due to the poor economic prospects of agricultural work. This puts the cultural landscape shaped by small-sized agriculture at risk to vanish. The various projects of the biosphere reserve and the founding of the BKS are all attempts to counteract the cultural landscape's loss (MLUL 2012).

## 2.2. Study Case: Bürgerstiftung Kulturlandschaft Spreewald

In 2007, the citizen foundation *Bürgerstiftung Kulturlandschaft Spreewald* was founded to support traditional small-size agriculture that shapes the cultural landscape of Spreewald (MLUL 2012). Since 2007 it is possible to give funds and donations to the citizen foundation that can be used against tax liability (BKS 2016). The *LEADER Plus* projects from 2005 and 2006 showed that a citizen foundation is the best option that allows the inclusion of local citizens in cultural landscape protection. The BKS is located in the city of Lübbenau, and their mission statement is: “*Sustainable increase and conservation of the human-shaped cultural and natural landscape of the Spreewald [...]*” (BKS 2007, p. 1). The mission statement also includes: maintenance of the cultural landscape, environmental protection, education, and preservation of tradition as well as culture. The BKS aims to attract and engage as many donors (e.g. individuals, businesses, associations, local or state authorities) as possible in order to reach their mission statement’s goals. All donations are tax-deductible as well (BKS 2007).

The citizen foundation has carried out and promoted various projects since 2007. Current projects are the *Spreewald Grassland Share*, the *Meadow Orchard Stradow*, the *Wasserschlagwiese* and *Spreewald Foundation-Honey*. The *Spreewald Grassland Share* is a project that secures maintenance of grassland areas that are important for environment, climate protection, and supporting biodiversity. Farmers are no longer able to maintain the grassland areas on their own because it is unprofitable. The project supports further mowing of the grasslands because public funding is not sufficient to cover all areas. In the *Meadow Orchard Stradow* project, people can sponsor a tree from the specific meadow orchard in Stradow. Next to the grassland areas, meadow orchards and marshlands are typical parts of the Spreewald’s cultural landscape. The *Meadow Orchard Stradow* project and the *Wasserschlagwiese* project are both aimed to ensure the continued existence of these landscape elements. The *Spreewald Foundation-Honey* project is in cooperation with Spreewald’s local beekeepers. The BKS analyzes the honey samples through the *Bee Research Institute Hohen Neuenhof*. The analysis provides information about the biodiversity of flowering plants as well as the pollination service of bees. The sale of the honey also serves as advertisement for the citizen foundation (BKS 2016).

The BKS is designed in the legal form of a German citizen foundation (§§80 BGB) where a statute determines the actions and structure of the organization. A citizen

foundation is mainly three parts; a Board, an Advisory Board, and a Foundations Assembly. The statute assigns responsibilities, duties, sets standards for decision-making, sets standards for the electoral procedure, determines the investment of assets and grants, regulates the frequency and organization of meetings, lays out the procedure for a potential modification of the mission statement, and oversees the potential closure of the citizen foundation. Furthermore, the statute articulates that the BKS is a charitable, non-profit organization that uses funds solely to fulfil their mission. The objective of the citizen foundation is stated in the mission statement.

Volunteers that assist the BKS are entitled to compensation but not a formal salary. The first Board and Advisory Board were both staffed with individuals from the founding donors. Since then, the Advisory Board elects a new Board every three years and holds elections for itself every five years (BKS 2007). Currently the Board is made up by five members and the Advisory Board consists of nine members (BKS 2016). Individuals can be re-elected an unlimited number of times, however there is always a possibility of removal due to special circumstances. It is impossible to be a part of both departments at the same time. The Board manages the current operations and assets while the Advisory Boards is in charge of allocating funds and supervising the Boards' activities. The Foundations Assembly occurs once a year and consists of all the founders who get informed of past and future activities of the BKS by the Board and the Advisory Board (BKS 2007).

### 3. Theory

This chapter provides the theoretical background that is needed for the discussion of the results in Chapter 6. The background consists of the sections: (1) Ecosystem Services, (2) Ecosystem Service Classification as Goods, (3) Governance of Ecosystem Services, (4) Governance Structures, (5) Collective Action, and (6) Citizen Foundations.

#### 3.1. Ecosystem Services

By conserving the cultural landscape of the Spreewald region, the BKS improves the delivery of ES. ES are flows of benefits from natural systems to social systems as well as flows of value from natural capital to human societies (SUKHDEV et al. 2010). Natural capital is the natural environment that sustains life on Earth by providing goods and services which are the basis for human activities and well-being (COSTANZA & DALY 1992).

The *Millennium Ecosystem Assessment* (2005) assessed the human impact on the environment, and categorized ES into four categories. The categories and examples of ES are displayed in Table 1 (MEA 2005; SUKHDEV et al. 2010). Other classification schemes treat supporting services as part of a broader category of regulating services (HAINES-YOUNG & POTSCHIN 2011).

*Table 1: Categorization of Ecosystem Services*

Categories of ES	Example of ES
<b>Provisioning Services</b>	<ul style="list-style-type: none"> <li>• Fresh Water</li> <li>• Food/medical Raw Materials</li> <li>• Crops</li> </ul>
<b>Regulating Services</b>	<ul style="list-style-type: none"> <li>• Filtration of Pollutants</li> <li>• Climate and Air Quality Regulation</li> <li>• Plant Pollination</li> </ul>
<b>Cultural Services</b>	<ul style="list-style-type: none"> <li>• Recreational Values</li> <li>• Tourism</li> <li>• Education</li> </ul>
<b>Supporting Services</b>	<ul style="list-style-type: none"> <li>• Soil formation</li> <li>• Maintenance of Genetic Diversity</li> <li>• Photosynthesis</li> </ul>

(Source: SUKHDEV et al. 2010)

The placement of biodiversity and ES are still disputed. Biodiversity is variety and variability of life on Earth as well as a critical component of natural capital (MARTIN-LOPEZ et al. 2009; SUKHDEV et al. 2010). Ecosystems are part of biodiversity next to diversity of species and genes (SUKHDEV et al. 2010). There is an ongoing discussion as

to whether or not biodiversity is (or should be understood as) an ecosystem service (MACE et al. 2012). In the *Economics of Ecosystems and Biodiversity (TEEB) reports*, biodiversity occurs in all four categories: (1) as provisioning service because biodiversity provides for instance plant species that are used for medicine, (2) as regulating services because biodiversity and ecosystem resilience are interlinked, (3) as supporting service because genetic diversity distinguishes for instance gene pools, and (4) as cultural service because biodiversity is important for tourism (SUKHDEV et al. 2014).

Agricultural landscapes – like the cultural landscape of the Spreewald – do not just deliver various ES, but also depend on ES provided by nature. Agricultural management practices define the amount of ES as or disservices a landscape emits. Disservices are for instance: greenhouse gas emission, biodiversity loss or sedimentation of waterways (DALE & POLASKY 2007; POWER 2010). Furthermore, functioning of (agricultural) ecosystems is affected by changes in environmental conditions (e.g. climate change) and ecosystem health. The resilience of an ecosystem determines the capacity to sustain functioning as well as ES delivery under fluctuating conditions (SUKHDEV et al. 2010).

### 3.2. Classification of Ecosystem Services as Goods

The provision of ES is interlinked with the attributes excludability and rivalry (or subtractability)<sup>4</sup> of goods and services. These attributes allow a categorization of ES into the four general types of goods displayed in Table 2 (COSTANZA 2008; OECD 2013; OSTROM et al. 1994).

*Table 2: Classification of Goods*

		Rivalry	
		Non-rival	Rival
Exclusion	Difficult	<b>(Pure) Public Good</b>	<b>Common-Pool Resources<sup>5</sup></b>
	Easy	<b>Club Good<sup>6</sup></b>	<b>Private Good</b>

<sup>4</sup> Depending on sources, rivalry can also be defined as subtractability (COSTANZA 2008; OECD 2013; OSTROM et al. 1994).

<sup>5</sup> If a *common-pool resource* is not owned by anyone, it is an *open access resource* (OECD 2013).

<sup>6</sup> *Club goods* are also named *toll goods*, because the term *club good* can be misleading (OECD 2013).



(Source: Own Adaptation from OSTROM et al. 1994; OECD 2013, p. 21.)

Landscape is a *pure public good* because no one can effectively be excluded from it, and the use by one individual does not reduce availability for other individuals (OECD 2013). ES can belong in all kinds of categories. For instance, some provisioning services are *private goods*, while others are *open access resources*. Furthermore, some recreational services are *club goods* (COSTANZA 2008). But in general ES tend to belong to the categories of *common-pool resources* or *public goods* even if property rights of the delivering ecosystem are defined (MURADIAN & RIVAL 2012).

Depending on their category some ES are less likely to be supplied, or even depend on governmental support to be provided at all. *Private goods* are usually provided without governmental support, as high rivalry as well as exclusion mechanisms make delivery profitable for suppliers (COSTANZA 2008). The provision of *club goods* is likely up to a congestion point because it is easy to exclude other beneficiaries from unauthorized use. After reaching the congestion point *club goods* are highly rival. In contrast, provision of ES classified as *common-pool resources* as well as *public goods* is usually not sustained without governmental intervention. Lack of exclusion mechanisms puts *common-pool resources* under a high risk of overexploitation (OECD 2013). This situation is known as *Tragedy of the Commons*. A situation in which users of a *common-pool resource* deplete a resource if all users act rational. But as all users prefer an outcome that sustains the resource, they have to undertake collective action (HARDIN 1968). Governmental solutions to prevent overexploitation can be privatization, governmental control, or community management (OSTROM 1990). Delivery of *public goods* usually requires governmental support because non-excludability of *public goods* causes a *Free Rider Problem* that makes provision of *public goods* unattractive for suppliers. A *Free Rider Problem* can occur if individuals benefit from a good but do not pay for it. That makes provision unprofitable for suppliers, and can cause an undersupply of a particular good (OECD 2013).

### **3.3. Governance of Ecosystem Services**

The governance of ES is difficult due to a few different reasons. Loft et al. (2015) distinguishes them into four categories: (1) institutions, policy mixes and property rights, (2) balancing actors' interests and values, (3) generating knowledge and providing information, and (4) designing inclusive and adaptive processes.

It is challenging to define a governance model that fits to the social-ecological context of ES because ES are ecological systems, while governance models are social systems (CUMMING et al. 2006). A social system is defined as an interdependent relationship that individuals form with each other, while an ecological system is an interdependent system of biological units. Nevertheless, both systems can contain interactive subsystems (ANDERIES et al. 2004). Mismatches between social and ecological systems can occur on a spatial, temporal, or functional scale. For instance, ES can be spilled-over onto other spatial scales (e.g. pollination services) (ERNSTSON et al. 2010), or management of an ecosystem is unsustainable in the long-term (i.e. temporal mismatch) (LUDWIG et al. 1993), or a governance gap causes a functional misfit (EKSTROM & YOUNG 2009). Consequences of mismatches cause decreases in social-ecological resilience as well as lower provision of ES for human welfare (CUMMING et al. 2006; ERNSTSON et al. 2010). To solve the mismatches, the institutional structure usually has to be changed (COX 2012; CUMMING et al. 2006).

### **3.4. Governance Structures**

In literature, different definitions of governance can be found (e.g. LYNN et al. 2001; STOKER 1998). This study understands governance as the processes of interaction that lead to decisions between actors involved in a collective problem. Included in governance are creation of norms, rules, and institutions to make decisions (HUFTY 2011). The three governance structures are: (1) hierarchies, (2) markets, and (3) community management. These three governance structures are ideal types, in reality hybrid forms usually appear. Hierarchical systems depend on command-and-control, market-based systems on voluntary exchange, and community management on cooperation between actors (VATN 2010). Actors included in governance structures can be (1) economic actors, (2) political actors, and (3) civil society actors. Economic actors hold rights to use productive resources. Political actors define property rights, use rights, and rules for political processes. Civil society actors ensure democratic legitimacy of political action as well as define a normative basis for society. Actor forms are thereby not mutually exclusive (VATN 2015).

Market structures are commonly most effective in provision of *private goods* but least effective in provision of ES. This is because most ES are *common-pool resources* or *public goods*, and their provision requires high transaction costs for coordination of

collective action (MURADIAN & RIVAL 2012). Hierarchical systems are better suited for provision of *public goods*. The network structure of community management is most applicable to coordinate issues where market systems fail, and hierarchical systems are not flexible enough (POWELL 1990).

Since the 1990s, environmental governance shifts from public hierarchies to multi-sector collaborative management. That reflects today's changing environmental and social conditions (KOONTZ & THOMAS 2006). The focus of this study is collaborative governance in which civil, private and public actors work together to meet a public purpose (EMERSON et al. 2011). This public purpose can for instance be the solution of an ecological dilemma, like the conservation of the Spreewald's cultural landscape (GERLAK & HEIKKILA 2006). Pre-conditions for effective collaborative governance are (1) leadership, (2) consequential incentives, (3) interdependence, and (4) uncertainty (EMERSON et al. 2011). A leader is needed to start collective action, and unite actors that are not able to solve a common dilemma individually. The availability of grants (e.g. for landscape maintenance) can for instance act as consequential incentive to start and uphold collaboration.

Proponents of collaborative governance argue that it reduces conflicts, increases trust among participants, enhances capacity of the community to address problems, leads to more durable solutions, and improves natural resource conditions (U.S. GAO 2008). An argument against collaborative governance is that it tends to lead to least-common-denominator solutions, especially if decisions require consensus among participants (COGLIANESE 1999).

### **3.5. Collective Action**

Collective action is action undertaken by a group of people to achieve a common goal. It can start led top-down by government, or led bottom-up by for instance farmers or other individuals. Social dilemmas like Hardin's (1968) *Tragedy of the Commons*, or the provision of the *Spreewald's* cultural landscape require collective action because they cannot be solved individually. Many farmers, or other participants of a group that undertake collective action, have to cooperate to create an agricultural landscape (OECD 2013).

Barriers that can prevent collective action from happening are for example the *Free Rider Problem*, high transaction costs and skeptical behavior. Different scholars (BALAND & PLATTEAU 1996; OSTROM 1990; WADE 1988) identified factors that are necessary for collective action which are: (1) resource system characteristics, (2) group characteristics, (3) institutional arrangements, and (4) external environment (AGRAWAL 2001).

Groups that provide agri-environmental goods usually include farmers that are in charge of labor and equipment. Other group members can be individuals, organizations, NGOs or local authorities. These other group members usually deliver knowledge, experience, connections and support to the group. Support includes for instance planning and organizing of activities, communication, and administrative work. Moreover, government can also be part of the group that undertakes collective action and can contribute public funding (OECD 2013). On the one hand, collective action solves a social dilemma (e.g. provision of a *good*), however on the other hand, members of the group that undertake collective action benefit from knowledge sharing (HODGE & READER 2007) and social capital building (DAVIES et al. 2004). In this study, social capital is understood as defined by Lin: As an “[...] *investment in social relations with expected returns.*” (Lin 1999, p. 30). The base for collective action are trust and cooperation because they avoid monitoring which in turn reduces transaction costs (PRETTY & SMITH 2004). When a collective action group gains legal status and formal arrangements, it can strengthen the financial basis and establish strong institutions (OECD 2013). A legal form for a group is for example a citizen foundation.

### **3.6. Citizen Foundations**

Citizen foundations can constitute as one example of a collaborative governance approach. The German form of a citizen foundation is common since the middle of the 1990s, and inspired by the U.S. model: community foundation (HINTERHUBER 2005). For the interpretation of the results, it is necessary to mention the legal structure of German citizen foundations. But this section is not a discourse of legal regulations, only characteristics relevant for this study are mentioned.

A general definition of citizen foundations is still missing. This study refers to the definition of the *Association of German Foundations*. According to this definition,

citizen foundations have ten characteristics. They are formalized (1) philanthropic institutions, that are (2) generally founded by various founders, they are (3) politically and economically independent, (4) bound to a geographically defined territory, (5) continuously build up capital endowment, (6) pursue a broadly defined mission (operational and/or promotional), (7) give grants to projects, (8) aim for civic involvement with public projects and public relations, (9) can coordinate a network of regional non-profit organizations, and a (10) participatory and transparent working process is governed by multi-sectoral local boards (i.e. Board and Advisory Board) reflecting a community (BDS 2000).

A citizen foundation shares characteristics with classic foundations and also with associations. A foundation is an organization that aims to fulfil a mission defined by the initiators of the foundation. In contrast to associations, foundations have a continuous capital endowment (SCHWERTMANN 2002). Associations are groups of individuals who voluntarily enter into an agreement to accomplish a purpose. In Germany, associations can be either economic associations (§22 BGB) or non-economic associations (§21 BGB).

Foundations and citizen foundations are bound under the same paragraph in civil law (§§80 ff. BGB). The difference between classical foundations and citizen foundations is a participatory element of citizen foundations that is visible throughout all activities. Already in the founding process, citizen foundations tend to include various individuals that want to support their community. The group of equal founding donors, finance the founding process of the citizen foundation. Ideally this group represents a wide variety of founders from all spheres of society. In contrast, a classic foundation generally acquires assets from one donor that defines mission statement and inner structure (KRIKSER & MATZDORF 2015; SCHMIED 2005; SCHWERTMANN 2002). At a later stage, the participatory element of citizen foundations allows individuals to obtain a position of a founder. After donating a defined amount of money, a founder gets included into the Foundations Assembly (GREGORY & LINDBACH 2010).

Citizen foundations are usually represented by three parts: (1) Board, (2) Advisory Board and (3) Foundations Assembly. In contrast, classic foundations are usually just governed by two boards (HINTERHUBER 2005). The Board is the part that manages the foundation, while the Advisory Board supervises the decisions (SCHMIED 2005). The Foundations Assembly is usually a gathering of founders, but sometimes also donors

and/or even volunteers. The Foundations Assembly can be compared to a members' assembly of associations. Both allow participation (GREGORY & LINDBACH 2010; SCHWERTMANN 2002), but participants in a citizen foundation are not "members" included in an opinion-shaping process like in associations. In most citizen foundations, the Foundations Assembly is not included in the decision-making process and is merely just informed about activities (HINTERHUBER 2005; SCHMIED 2005).

Depending on the citizen foundation, the degree of participation and decision-making processes can be allocated differently between the three parts. A statute defines the organizational structures which can be hierarchical or heterarchical but both forms are not mutually exclusive (WEBER & WEBER 1988). The structure in a hierarchical organized system is defined clearly while the structure in a heterarchical system is defined poorly and stays flexible (BAECKER 1999). A hierarchy is structured like a pyramid and tasks are assigned vertically (HERBST 1976). Members who are higher up in the structure make decisions from the top-down. In contrast, decisions made in a heterarchy structure are made by any of the participants (i.e. horizontal) (BAECKER 1999). Hierarchical structures define organizational boundaries, clear tasks, and communication channels. In contrast, heterarchical structures define these features much less, and the features can change continuously (AHRENS 2011; HERBST 1976).

The statute formalizes the aim of the citizen foundation as the mission statement. Defining the mission statement at the beginning of a citizen foundation is a difficult task. Broad mission statements can attract more potential founders and donors, overly broad mission statements are not legally accepted (SCHMIED 2005). This is because an overly broad mission statement would allow all the parts of a citizen foundation to have a decision-making process like associations (RAWERT & SCHLOSSHAN 2004).

The statute defines the electoral progress of a citizen foundation. The different options are: (1) The Board defines itself and its following successors, and elects the Advisory Board. (2) The Advisory Board defines itself as well as the following successors, and elects the Board. Or (3) the Founders Assembly elects the Advisory Board, and the Advisory Board elects the Board. Advantage of option (1) is that the Board has the most experience and the highest competence to elect the Advisory Board. The problem with this option is that the Board defines its own controlling part. Option (2) is just advantageous when the statute defines the characteristics potential candidates must possess. For example, people who have had experience within the field outlined in the

mission statement would be good candidates for the Advisory Board. Without that clearly defined, unqualified individuals can be elected onto the Advisory Board. Option (3) is advantageous because it gives highest degree of power to members of the Founders Assembly. Once again, a clear definition for potential candidates is required (SCHMIED 2005).

A study by Krikser (2013) identified that a Board commonly includes a lawyer, a banker, and a local authority well-connected with the community. Generally, the well-connected individual inherits the role of a leader within the foundation and keeps the foundation running. It is often difficult to replace this leader when he retires because the individual may possess certain skills that his successor would not be able to fulfil at the citizen foundation.

An additional topic a statute defines is the mode of operation. A foundation can be either (1) operational, (2) promotional, or (3) both (ADOLFF 2005). Operational foundations carry out their own projects, while promotional foundations support third parties that carry out projects (BDS (ed.) 2014). The modes of operation result in different administrative tasks and the amount of office work for each option. A foundation that works solely as promotional or always has the same donors, has less office work than an operational foundation with varying donors and projects. Because of that, these foundations have additional issues to consider. For instance, financing the office staff and/or acquisition of supplementary expertise for further development of the foundation (ADOLFF 2005). Besides the general challenge of finding and keeping donors, permanent employment of staff is a frequent challenge for German citizen foundations (KRIKSER 2013).

The motivation for donors to donate is usually due to willingness to do good for their local community, building social capital, networking, and improving their social acknowledgment (KRIKSER 2013). But participating in a citizen foundation doesn't just comprise of money donation (SCHMIED 2005), but also contribution of time and ideas as volunteers (SCHMIED 2002). Participating in a citizen foundation allows individuals to take over social responsibility, and form a part of civil society (HINTERHUBER 2005).

## 4. Methodology

To answer the research questions for this study, a social network analysis (SNA) of the citizen foundation: *Bürgerstiftung Kulturlandschaft Spreewald* (BKS) was conducted. A SNA is the process of studying social structures by assessing resource exchange and relations between actors. Thereby, an actor designates for instance an individual person, a group, an institution, or a whole organization (HAYTHORNTHWAITE 1996).

Advantages of a SNA are that during the assessment of social relations, actors can be identified as important for the governance even if they do not hold formal authority. It was expected to identify informal links in the networks because collaborative governance crucially depends on social relations and not just formal positions (CARLSSON 1996; SABATIER 1986).

For data collection, this study used the new *Net-Map Tool* interview method by Schiffer and Hauck (2010). This form of social network mapping integrates the collection of social network data with an assessment of actors' attributes, as well as a qualitative data collection. The method allows to draw multiple networks of actors with formal and informal links, as well as complex governance situations. Additionally, the method facilitates a learning and knowledge exchange between interviewed actors. This specific method was suitable for the study due to its advantages of low cost material, feasibility without high-tech equipment, and output of a precise description of complex dynamic structures within an actor-network. On top of that, the method allowed to collect actors' attributes and supplementary qualitative data which were considered beneficial for analysis. The *Net-Map Tool* method was chosen over classical SNA methods because they primarily deliver quantitative data.

The data for SNA were measured as perceptions by individual actors involved in the social network (MARSDEN 1990). Consequently, the collected data depended on the interviewees perspectives, and could have come out with bias (LELEA et al. 2014). During data collection, it was considered that biased views could potentially distort data collection. If the view of a single interviewee varied from others, further explanation was asked for to ensure the validity of the collected data. Additionally, the number of interviews was not pre-determined. The interview process continued until they delivered new information and insight. Moreover, an additional expert interview was conducted after the *Net-Map Tool* interviews to validate the collected data as well as to discuss the data in a broader context.



## 4.1. Data Collection

Data collection for this study required some preliminary steps. The first step was to get an understanding of the *Net-Map Tool* method. For this reason, a three-day workshop in Müncheberg at the *Leibniz-Centre for Agricultural Landscape Research (ZALF)* was participated in March of 2016.

The second step was to prepare a list of actors involved with the citizen foundation to identify prospective interview participants. The information available on the homepage of the citizen foundation ([http://www.spreewaldstiftung.de/front\\_content.php](http://www.spreewaldstiftung.de/front_content.php)) helped to identify the actors. To verify the list of actors and to add additional unidentified actors, a board member from the citizen foundation was consulted. It was decided that the list of actors would be kept open during all interviews, making it possible for interviewees to add more actors at any time.

The third step was to have the guidelines and questions for the *Net-Map Tool* interviews prepared. The guidelines served as instructions during the *Net-Map Tool* interviews. This was necessary to verify that every interview followed the same procedure to ensure the consistency of the method, and to increase the reliability of the results (BOYCE & NEALE 2006).

The fourth step was to collect the material needed for the interviews. The material included large sheets of white paper, post-it notes, color markers, board game pieces, audio-recorders, and “Thank-You” gifts (i.e. chocolate) for interviewees.

The final step was to pre-test the method. The first pre-test resulted in optimization of guidelines and equipment. Optimizations included adjustment of guidelines to a duration of approximately 60 minutes as well as assigning different colors for the various questions in order to guarantee smooth data analysis. The final pre-test of the interview method took place in May 2016 in Berlin. The pre-test interview was scheduled over e-mail with an interviewee who represents one of the actors. The interview went well, and no further adjustments of guidelines were required. The only adjustment needed was to alter the assigned color for one of the interview questions. Due to the fact that none of the interview questions were altered after the pre-test, the pre-test results could also be included within the analysis.

Between June and October 2016, eight *Net-Map Tool* interviews took place. Guidelines for these interviews can be found in Appendix 1. Interview participants were selected

depending on which actor they represented. It was assumed that the selected interviewees reflected the general opinion of the actor they represented. Table 3 lists all actors and how many interview participants represented this actor. It turned out that several interviewees represented more than one actor of the citizen foundation. That made it possible to cover multiple actors with one interview.

**Table 3: Numbers of Interviewees Representing an Actor**

Actors' Names	Numbers of Interviewees Representing an Actor
Foundation	3
Founders	3
Touristic Service Providers	2
Donors	2
Biosphere Reserve Administration	3
Landowners	1
Contractors	1
Volunteers	1
Spreewaldverein	2
Associations	2
Municipal Administration	1
Projects	4
Citizens	3
Foundation Supervision Authority	0

(Source: Own Elaboration.)

Overall, the interviews covered all but one actor. The only actor not covered by any interview was the *Foundation Supervision Authority*. This actor was not interviewed because it was assumed to not have enough knowledge about the other actors of the citizen foundation.

Most interviews were arranged over the phone (i.e. two in person) and generally took place at the interviewees' homes or offices. The duration of the interviews ranged between half an hour and two and a half hours. All interviews were conducted in German. Each interview required a specific travel plan because the interviewees lived and worked all over the Spreewald area. Travel was done mainly by train and bicycling.

The interviews followed the defined sequence of steps along with the interview guidelines. At the beginning of each interview, a big sheet of white paper was placed in between the interviewee and the interviewer, and a printed version of the guidelines was handed to the interviewee. The purpose and method of the interview was thoroughly explained. Each interviewee was asked for their consent to audio-record the interview and were made aware that their responses would be kept anonymous. Eight of the nine interviewees consented to audio-recording because one interviewee was uncomfortable

with being recorded. After these initial steps were completed, the interview process began. During the interviews, the interviewer used consistent terminology to prevent misunderstandings and this allowed for easy comparison with other interviewees' answers.

In response to the first question, interviewees named all involved actors they perceived as currently relevant. The interviewer wrote the names on post-it notes and arranged them in a circle on the sheet of paper. Follow-up questions explained actors' roles and positions. Because the list of actors was not defined and limited, naming and numbering of identified BKS actors varied between interviews.

To construct four Net-Maps, links between the actors were assessed. The links were assessed separately but followed the same procedure. While it was theoretically possible to separate the four links, in reality they are interrelated. For instance, money or information would not have been given to someone without trust. This interrelation was disregarded during assessment and further analysis.

To assess the links, the interviewer asked the question about the existence of a link between one actor and all other actors. This inquiry began with one actor in the circle of post-it notes and continued around the circle with all the other actors. The interviewees identified links and the interviewer drew the links between the post-it notes. For each assessed link, a different color marker was used. Arrows were added to depict the direction of the links. Mutual exchange between two actors lead to arrows being drawn at both ends of the links. If two actors were connected by multiple links, an additional arrow was added on the existing line with the respective link color. Sometimes additional questions were asked that explained the links and delivered qualitative data for interpretation. For instance, if links between actors were missing, an additional question assured that this was purposeful and not a simple oversight. Due to time constraints, it was not possible to assess the relation of trust in one of the nine interviews.

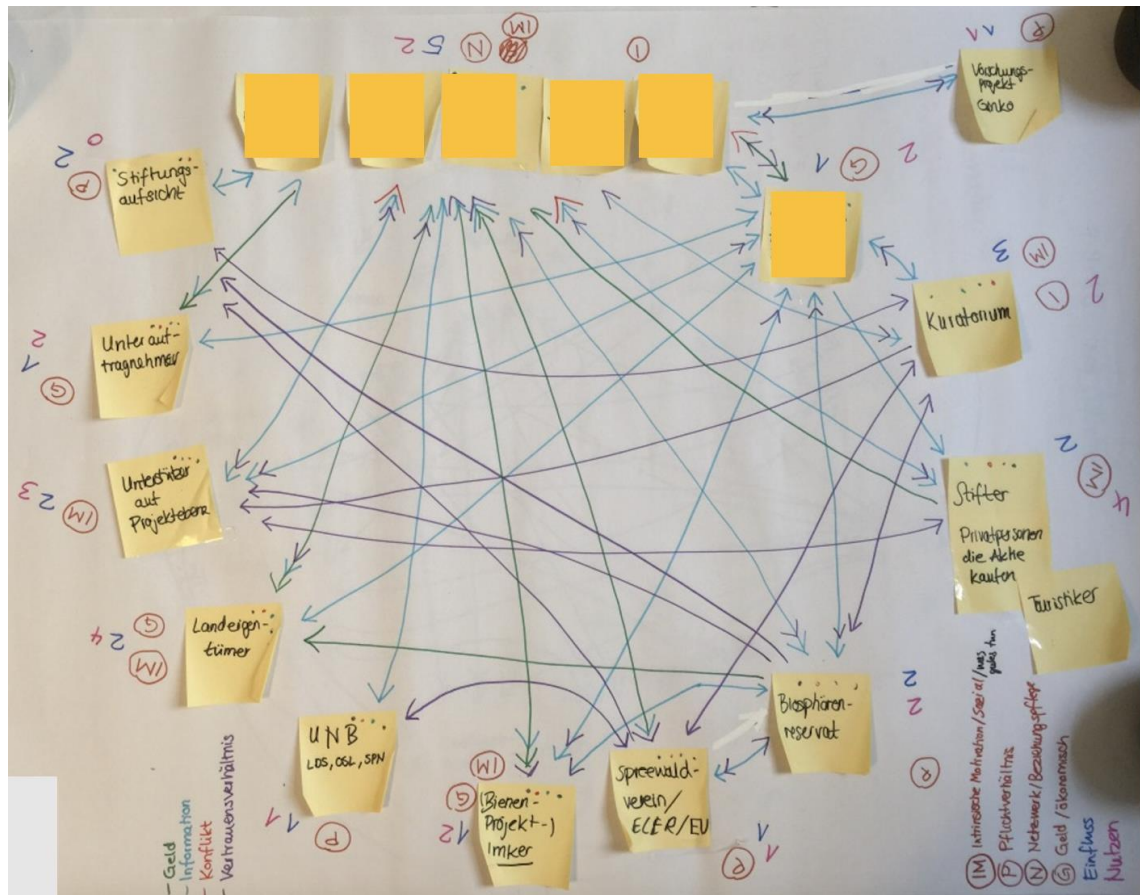
To specify actors' motivations to participate in the citizen foundation, data were collected in a specific way. The interviewees freely chose motivations and assigned them to actors. The motivations were not predefined to avoid bias. An exclusive icon was assigned for each identified motivation. A legend was provided on the sheet of paper that explains the icons. Next to the post-it notes, motivation icons were drawn depending on what motivations the interviewees identified for the depicted BKS actors.

Thereby the number of motivations per actor was not limited as the existence of one motivation was assumed to not compromise the existence of another motivation.

The inquiry of the perceived degree of influence, and amount of benefit for each BKS actor was conducted separately but in a similar way. The interviewees were asked to stack small board game pieces forming towers that defined the influence/benefit of the actors. A maximum of five board game pieces could be stacked on top of each other. Zero pieces reflected non-existent influence/benefit, whereas five stacked board game pieces represented the highest possible influence/benefit. If the interviewee did not immediately explain the different heights of stacks, additional questions were asked in order to get an explanation for the interpretation. The heights of the towers were recorded in defined colors on the actors' post-it notes.

The final interview questions were about past and future challenges of the citizen foundation. Those responses were just audio-recorded without any sort of depiction on the Net-Maps.

At the end of each interview, the legend on the sheet of paper was finalized. The legend explained all segments of the newly created Net-Map. The dates, the locations, and the interviewees' names were all written on the sheet of paper to prevent any mix-ups during the process of data analysis. Photos were taken of the Net-Maps (e.g. Figure 2) to save the gathered data. After the interview, a verbal 'Thank You' for time and effort was mentioned, and a small gift of chocolate was given from the interviewer to the interviewee.



**Figure 2: Photo of one Net-Map (Anonymized)**  
(Source: Photo by Anika Hirt.)

After the nine *Net-Map Tool* interviews, one additional expert interview was conducted in October 2016. This interview took place without any defined guidelines. The interviewee was a knowledgeable expert on foundations and civil society. During the interview, the newly collected data were presented to the expert with the expectation to get assistance with interpreting the data. Furthermore, the expert explained the general characteristics of a citizen foundation as well as the differences between foundations and associations. Specific problems like general challenges of citizen foundations, typical characteristics of citizen foundations, and development options of the BKS were disputed. The expert recommended further literature. This interview was used as additional resource. It added to the results and the discussion of this study, indicated as: EI (EI = Expert Interview).

## 4.2. Data Preparation and Analysis

Data preparation started with the transcription of the eight recorded interviews. For transcription, the software *f4* was used (<https://www.audiotranskription.de/english>). On the one hand, the interview transcripts added to the quantitative data in form of the nine constructed Net-Maps. On the other hand, a qualitative data analysis was undertaken with the transcripts. To make the sources transparent, the transcripts of each interviewee were numbered from one to nine. These numbers were used to quote the interviews in the results (e.g. I1 = Interview 1). Quotes said in German were translated into English.

The main actors were identified from the nine interviews since no official document listing all involved actors was available. As the list of actors was kept open during all the interviews, the number of identified actors varied between seven and 18. The term BKS actors was used to summarize the main actors that are included in the four assessed networks. The four assessed networks are summarized by the term BKSNs.

With the help of the transcripts, identical BKS actors referred to by different names were identified. Sometimes identified BKS actors were summed up or divided into more actors (Appendix 2), resulting in 22 different BKS actors (Appendix 3). It was assumed that BKS actors who were identified only a single time by one interviewee were unimportant for the BKSNs. Because they were currently not active enough to be significant for more than one interviewee. These BKS actors were neglected in the further analysis. Table 4 lists the 14 main BKS actors and abbreviations used in some tables and graphs.

**Table 4: Main BKS Actors and Abbreviations**

Actors	Abbreviations
Foundation	Foundation
Founders	Founders
Touristic Service Providers	Touristic_Ser_Prov
Donors	Donors
Biosphere Reserve Administration	Biosphere_Adm
Landowners	Landowners
Contractors	Contractors
Volunteers	Volunteers
Spreewaldverein	Spreewaldverein
Associations	Associations
Municipal Administration	Municipal_Adm
Projects	Projects
Citizens	Citizens
Foundation Supervision Authority	Foundation_Sup_Authority

(Source: Own Elaboration.)

To categorize the BKS actors into the three spheres of society, special criteria was determined. This was done to verify that BKS actors from all three spheres of society are included in the collaborative governance approach. The defined criteria are depicted in Table 5.

*Table 5: Criteria of Spheres of Society*

Spheres of Society	Criteria
<b>Civil</b>	Individuals or groups that make no profit, and do not belong to any state institution (KALDOR 2003).
<b>Private</b>	Private individuals or groups that are profit oriented, not controlled by the state, and do not belong in any state institution. A private actor can for instance, range from an individual to a firm (THIEL 2008).
<b>Public</b>	Individuals or groups that are (national, state, or local) governmental bodies or authorities with a legally coercive quality. For instance, an official, a governmental agency or a legislature (ANDERSON 2010).

(Source: Own Elaboration.)

In 35 excel spreadsheets (\*.xlsx) individual adjacency matrixes were created. An adjacency matrix is a square matrix that can be used to define a finite graph. To create the matrices, the BKS actors' abbreviations and information about the assessed links were entered into the excel sheets. 35 spreadsheets were needed to prepare one spreadsheet per assessed link in one of the nine interviews.

In the end, each adjacency matrix displayed the actors' names in the first row and the first column. Thereby, actors in the first column of an adjacency matrix represented the origin of a link, while actors in the first row represented the receiving actors of a link. Existing links between BKS actors were coded as **1** while absent links were coded as **0**. Per individual adjacency matrixes, a maximum of 182 links could be identified (i.e. the number of actors multiplied by the number of actors minus one). Going through the transcripts revealed that a single money flow and twelve conflict relations were redundant for this study. These links were not entered into the adjacency matrices and are listed in Table 6.

**Table 6: Neglected Links**





<b>Neglected Money Flow between:</b>	<b>Reason for Neglect:</b>
<i>Citizens and Touristic_Ser_Prov</i>	Not related to the citizen foundation.
<b>Neglected Conflict Relations between:</b>	<b>Reasons for Neglects:</b>
<i>Touristic_Ser_Prov and Foundation</i>	Conflict just exists between <i>Donors</i> and <i>Founders</i> and <i>Foundation</i> .
<i>Spreewaldverein and Foundation</i>	Conflict just exists between <i>Associations</i> and <i>Foundation</i> .
<i>Landowners and Foundation</i>	Existed in the past but got solved already.
<i>Landowners and Biosphere_Adm</i>	Not related to the citizen foundation.
<i>Touristic Service Providers and Biosphere_Adm</i>	Not related to the citizen foundation.
<i>Contractors and Biosphere_Adm</i>	Not related to the citizen foundation.
<i>Touristic_Ser_Prov and Foundation</i>	Not related to the citizen foundation.
<i>Touristic_Ser_Prov and Contractors</i>	Not related to the citizen foundation.
<i>Touristic_Ser_Prov and Landowners</i>	Not related to the citizen foundation.
<i>Touristic_Ser_Prov and Municipality_Adm</i>	Not related to the citizen foundation.
<i>Landowner and Biosphere_Adm</i>	Not related to the citizen foundation.
<i>Contractor and Biosphere_Adm</i>	Not related to the citizen foundation.

(Source: Own Elaboration.)

After the 35 individual adjacency matrices were summed up, they culminated into four aggregated adjacency matrices, one for each link (Appendix 4). If an BKS actor was not mentioned during an interview, links were coded as **0** representing the absence of the link. As the aggregated adjacency matrixes now contained the sum of nine individual networks, the coded links varied between **0** and **9**.

With the four aggregated adjacency matrixes, graphs were created that visualized the BKSNs. In the graphs, BKS actors were visualized as nodes and links between the actors are visualized as ties (BUTTS 2008). The visualization was created with the freely available visualization tool *NetDraw* (<https://sites.google.com/site/netdrawsoftware/>). *NetDraw* led to four independent BKSNs visualizations. Each of the four BKSNs represented one network inquired during the interviews: BKS of money flows, BKS of information sharing, BKS of conflict relations, and BKS of trust relations. The definition of different node symbols allowed to visualize the BKS actors' spheres of society within the BKSs (see Table 7).

**Table 7: Defined Symbols for Spheres of Society**

<b>Symbol</b>	<b>Sphere of Society</b>
	Civil
	Private
	Public
	More than one possibility.

(Source: Own Preparation.)



Moreover, the tie strengths were visualized in the BKSNs. While the individual adjacency matrices contained unweighted ties, the aggregated adjacency matrixes contained weighted ties. Unweighted ties varied between **0** and **1** representing an existent or absent link. Weighted ties varied between **0** and the number of times a link was mentioned during all nine *Net-Map Tool* interviews. Tie strengths display the weight of a tie. Tie strengths were visualized with the size of the ties; thicker ties were identified more often.

Furthermore, arrows were used to indicate the direction of the directed ties. Ties can be directed or undirected. The ties in the BKSNs were directed because they were not bonded and could exist only in one direction (HANNEMAN & RIDDLE 2005). To interpret the four BKSNs, their relevance for this study was determined and listed in Table 8.

**Table 8: Assessed BKSNs**

<b>Network Name</b>	<b>Description of Links</b>	<b>Relevance</b>
<b>Money Network</b>	Money flow between the actors.	Understanding the transfer of money within the BKS. Identifying the actors' importance for the money flow.
<b>Information Network</b>	Information sharing within the network.	Understanding the spread of information within the network. Identification of the actors with the most information and control of information.
<b>Conflict Network</b>	Conflict relations between actors.	Understanding existing conflicts. Identification of actors that are in conflicting situations.
<b>Trust Network</b>	Network of relationships based on trust.	Understanding the trust relations between the actors. Assessing the trust basis of the collaborative action.

(Source: Own Elaboration.)

It was assumed that directions and strengths of links signify differences and similarities in relationships between BKS actors (HANNEMAN & RIDDLE 2005; HAYTHORNTHTWAITE 1996; JACKSON 2008). The tie strengths were assumed to reflect the significance of a link. This assumption was based on the premise that significant ties were more familiar to the interviewees, and thus would be mentioned more frequently. The ties that were mentioned the most are assumed to depict the main interactions in the networks and determined the actors' positions within the BKSNs. If a node had no connection to any other nodes in the network, it is called an isolate. Isolated actors could be disconnected in one network but at the same time be connected in one of the other BKSNs.

To additionally calculate and visualize SNA measures that defined BKS actors' positions in the four BKSNs, the freely available software *UCINET 6*

(<https://sites.google.com/site/ucinetsoftware/home>) was used (BORGATTI et al. 2002). The calculated measurements are described in Table 9.

**Table 9: Measurements Assessed for the BKSNs**

Measurement	Description of Measurement
<b>In-degree Centrality</b>	Number of ties directed to the node (BORGATTI & LI 2009).
<b>Out-degree Centrality</b>	Number of ties the node directs to other nodes (BORGATTI & LI 2009).
<b>Betweenness Centrality</b>	Extent to which a node lies between other nodes in the network. Importance of a node in terms of connecting other nodes (BORGATTI & LI 2009; JACKSON 2008).
<b>Node Value</b>	The sum of all incoming and outgoing ties of one node in a network.
<b>Tie Strength</b>	Significance of a tie. Number of times a tie was mentioned during the interviews.
<b>Density</b>	The number of links divided by the number of nodes (BODIN et al. 2006).
<b>Cliques</b>	Sub-structure within a network. Every node of the sub-structure is connected to all other nodes of the sub-structure (HANNEMAN & RIDDLE 2005).

(Source: Own Elaboration.)

Not all measurements were calculated and visualized for all four BKSNs. Because money and information are flows of recourses from one actor to another, conflict and trust are relations that exist between actors. Money and information flows consist of a certain amount of money or information that moves from one actor to the other. In contrast, social relations exist continuously between actors and do not move between them (BORGATTI & LI 2009). Due to that betweenness centrality was considered just important for flows, as relations between actors continuously existed. It was assumed that it is more important for relations to exist at all, but not important to have a position between other nodes. In contrast, density was just considered important for relations not flows. Because flows move and do not continuously exist. Cliques within a network were just calculated for the trust network. The identification of cliques within the other three networks was assumed to not show any relevant information for this study. Appendix 5 lists all measurements calculated for the BKSNs separately.

The calculated measurements were assumed to reveal the positions of the BKS actors in the BKSns. Thereby, it was assumed that the measurements have different meanings in

all four BKSNs. Table 10 lists all calculated network measurements and their meaning in each network.

*Table 10 (Part 1): Meaning of Measurements in the BKSNs*

Measurements	Meanings in Specific Networks
<b>Money Network</b>	
<b>In-degree Centrality</b>	Amount of incoming money flows to an actor. Actors with high in-degree centrality are assumed to perform a task or activity in return for the money flow. It is important to note that if an actor gets money and distributes it again, or if an actor ends up with money. Actors that redistribute money are assumed to have high influence on the money exchange within the BKS.
<b>Out-degree Centrality</b>	Amount of outgoing money flows. Actors with a high out-degree centrality are assumed to be the benefactors of the BKS.
<b>Betweenness Centrality</b>	Positions between other actors are assumed to indicate influence on the money flow, and importance in the money network. Because actors with high betweenness centrality are in exchange with many other actors, and can influence the money flows significantly (HANNEMAN & RIDDLE 2005).
<b>Node Value</b>	Amount of incoming and outgoing money flows of an actor. Money can be given and received at the same time by one actor because actors can simply transfer money in the network.
<b>Tie Strength</b>	Reveals the significance of a money flow.
<b>Information Network</b>	
<b>In-degree Centrality</b>	Amount of incoming information flows. Actors with a high in-degree centrality are assumed to receive a high amount of information about the project work of the BKS, and are exposed to information (HAYTHORNTHWAITE 1996).
<b>Out-degree Centrality</b>	Amount of outgoing information flows. Actors with high out-degree centrality are assumed to control and spread information about the project work of the BKS (HAYTHORNTHWAITE 1996).
<b>Betweenness Centrality</b>	Positions between other actors are assumed to indicate influence on the information flow, and importance in the BKS of information sharing.
<b>Node Value</b>	Amount of information an actor possesses (BORGATTI & LI 2009). In contrast to money information does normally not pass the same node multiple times (BORGATTI 2005).
<b>Tie Strength</b>	Reveals the significance and frequency of an information flow.

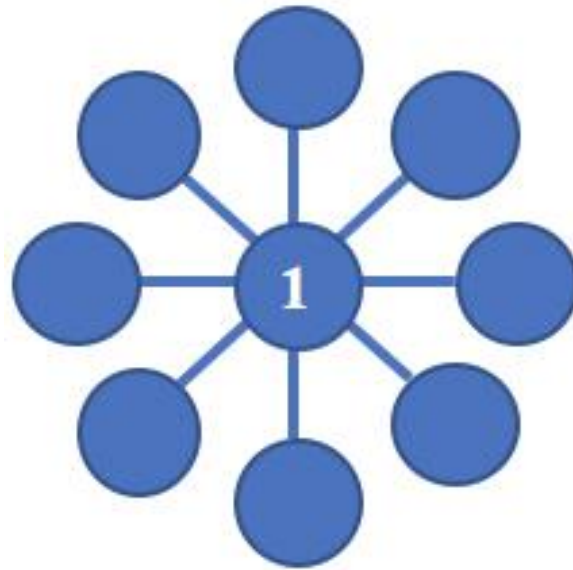
(Source: Own Elaboration.)

*Table 10 (Part 2): Meaning of Measurements in the BKSNs*

Measurements	Meanings in Specific Networks
<b>Conflict Network</b>	
<b>In-degree Centrality</b>	Amount of incoming conflicts. Actors with a high in-degree centrality are assumed to cause trouble for another actor with a certain behavior or action. Conflicts can be both sided or one sided, apparent from the directions of a conflict.
<b>Out-degree Centrality</b>	Amount of outgoing conflicts. Actors with high out-degree centrality are assumed to be troubled by a certain behavior or action of another actor.
<b>Node Value</b>	Indicates the sum of all conflicts an actor faces.
<b>Tie Strength</b>	Reveals the significance of a conflict.
<b>Density</b>	It is assumed that high density in the conflict network fosters feelings of distrust and jeopardizes collective action (BODIN & CRONA 2009).
<b>Trust Network</b>	
<b>In-degree Centrality</b>	Amount of incoming trust. Actors with a high in-degree centrality are assumed to be trusted by many other actors.
<b>Out-degree Centrality</b>	Amount of outgoing trust. Actors with high out-degree centrality are assumed to trust many other actors.
<b>Node Value</b>	Indicates the amount of bundled trust of an actor.
<b>Tie Strength</b>	Reveals the significance of a trust relation.
<b>Density</b>	Density in the trust network points out that the actors trust each other and have confidence in each other. A high density of trust relations is expected to indicate that the conflicts between the BKS actors do not foster feelings of distrust, and do not jeopardizing the collective action (BODIN & CRONA 2009).
<b>Cliques</b>	A clique builds a perfectly connected sub-structure (i.e. highest density) within the BKS of trust relations. Cliques have the highest density of trust in all members of the clique. It is assumed that actors included in many cliques form the core of the BKS of trust, and the base for collective action (EVERETT & BORGATTI 1998; HANNEMAN & RIDDLE 2005).

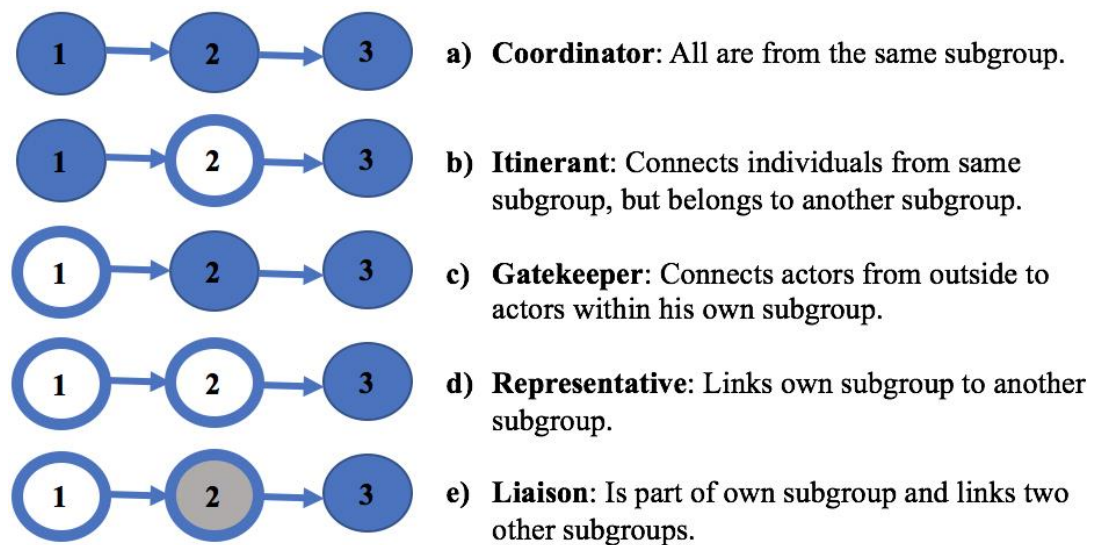
(Source: Own Elaboration.)

To illustrate how the measurements can be visualized in network graphs, three examples are depicted and explained below. Figure 3 displays a high centralized network. The node (1) has a higher centrality than the rest of the nodes. This shows that node (1) and the actor represented by node (1), is the most important and influential within this network. Because node (1) has the position of highest in-degree, out-degree, and betweenness centrality. Due to having the highest in- and out-degree centrality, the node value of node (1) is the highest for this network.



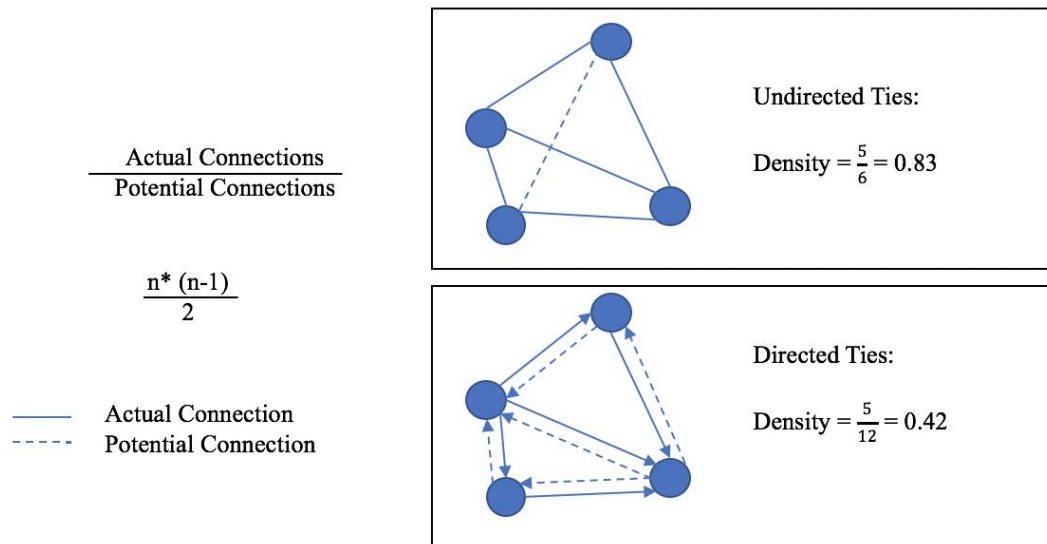
**Figure 3: High Centralized Network**  
(Source: Own Preparation.)

A central actor frequently also fulfills the role of a broker, being situated between two other actors on the single link between them. This position is powerful and allows the broker to control the resource flow or relation between the other two linked actors (HANNEMAN & RIDDLE 2005). There are different brokerage types which are defined depending on the groups the actors belong to. The different brokerage types are depicted in Figure 4. Node (2) represents the actor that mediates contact between the actors represented by nodes (1) and (3) (GOULD & FERNANDEZ 1989).



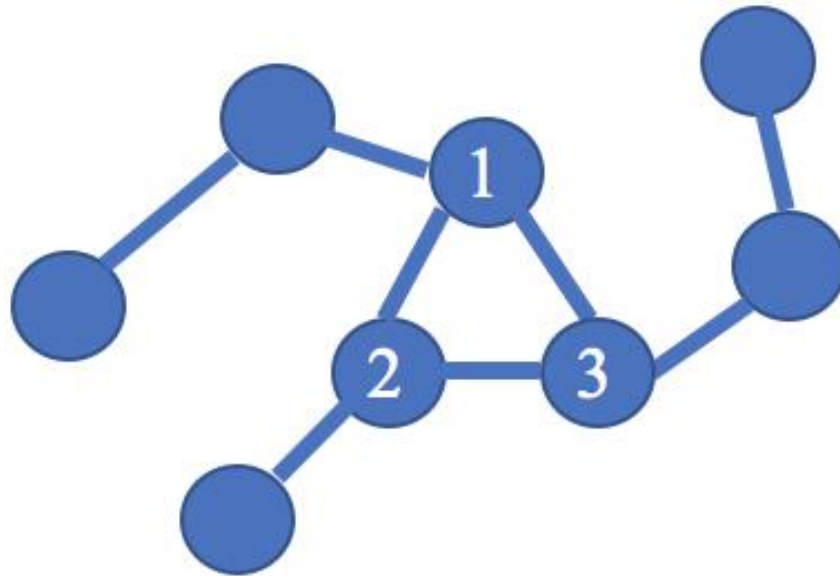
**Figure 4: Brokerage Roles of Actor (2)**  
(Source: Own Adaptation from GOULD & FERNANDEZ 1989.)

Another example of the visualization of network measurements is depicted in Figure 5. The network density is calculated as a quotient of actual connections divided by potential connections (FAUST 2006). The density quotient of an undirected graph is twice as high as the density quotient of a directed graph.



**Figure 5: Calculation and Visualization of Network Density**  
(Source: Own Preparation.)

The last example is a network graph visualizing a clique (see Figure 6). The sub-structure is made up by the nodes (1), (2) and (3). The actors represented by the nodes (1), (2) and (3) form a sub-group within the main network. They are more closely and intensely linked to each another than to any of the other nodes (HANNEMAN & RIDDLE 2005).



*Figure 6: Visualization of a Clique*  
(Source: Own Preparation.)

Next to the links, the interviewed actors identified between two to five different motivations for the BKS actors to participate in the citizen foundation. Number and naming of the motivations differed as they were not predefined. With the help of the transcripts, motivations were grouped into similar categories. This resulted in six categories: (1) social, (2) ecological, (3) cultural and traditional, (4) economic, (5) duty-related, and (6) image-related motivation. These motivation categories were transmitted into a spreadsheet. The spreadsheet contained actors' names in the first column and actors' motivations in the first row. Numbers were inserted depending on the amount of times a motivation was mentioned for a BKS actor during all interviews. Some interviewees did not identify all BKS actors at all and because of that, they also did not mention any motivations for those actors. The unknown vector  $n$  was included in the calculation for motivations that were never identified for a specific BKS actor. This resulted in an attribute table comprised of all the mentioned motivations and varying weights for each BKS actor. A second table was prepared comprising of all mentioned motivations divided by the number of times a BKS actor was mentioned during the *Net-Map Tool* interviews. That resulted in a second attribute table with weighted mean values for each actor that varied between  $n$  and  $1 + n$ . The weighted mean values for each motivation category were summed up and resulted in aggregated weighted mean values for each motivation. These values varied between  $1.4 + n$  and  $7.9 + n$  (Appendix 6). The unknown factor  $n$  was neglected in the further study.

The motivations were assumed to reveal why actors were motivated to collaborate in the BKS. Social, ecological, cultural and traditional motivations were assumed to point at high levels of interest to serve the group. Actors with these motivations were expected to fulfil the mission of landscape protection for the general welfare of people and nature. In contrast were BKS actors with economically, image-related, and duty-related motivations expected to fulfil the mission due to self-interest. Self-interest motivations were assumed to indicate that BKS actors receive a personal output by protecting the cultural landscape. It was further assumed that adding up BKS actors' group-interest and self-interest motivations would reveal the overall motivations of BKS actors. A graph was created that displays actors' motivations.

To analyze data of perceived degree of influence and amount of benefit, the information collected during the *Net-Map Tool* interviews were transferred into two spreadsheets. The spreadsheets contained all the actors' names in the first column and actors' degree of influence/amount of benefit in the first row. This resulted in two separate attribute tables. Board game pieces could be stacked up to a maximum of five pieces so numbers in the attribute tables varied between **0** and **5** for each interview. If an actor was not mentioned during an interview, the perceived degree of influence/amount of benefit was coded as *n*. The unknown vector *n* was included in the calculation as some interviewees did not identify all BKS actors, and due to that also did not identify degree of influence and amount of benefit for them. Summing up the values of all nine interviews resulted in one value for each BKS actor. This sum was divided by the times an actor was mentioned during the interviews, and led to a weighted mean value for each BKS actor. The weighted mean values for perceived degree of influence varied between **1.0 + n** and **4.6 + n** (Appendix 7). The weighted mean values for perceived amount of benefit varied between **0.0 + n** and **3.6 + n** (Appendix 8). The unknown factor *n* was neglected in the further study. The weighted mean values were used to create two independent column charts.

Assumptions were that the actors with the highest degree of influence on decision-making lead the citizen foundation, while actors with less degree of influence follow the directions of these leaders. The perceived amount of benefit a BKS actor obtained from the participation in the collaboration was assumed to indicate who profits most and who profits least from the collaboration. Thereby, it was assumed that benefits vary between the BKS actors depending on the actors' motivations.



The qualitative data in form of the eight transcripts were used for a qualitative data analysis with the software system *MaxQDA* (<http://www.maxqda.de/>). Codes were identified with the technique of looking for code “repetition” like suggested by Ryan and Bernard (2003). This means that the transcripts were skimmed for topics that occur over and over again. Topics relating to challenges were picked out and defined as codes. Various codes were created for which text parts were coded. After one round of manually coding the data were tested, aggregated and reduced to six codes (i.e. with overall 222 codings) representing the main challenges of the BKS (see Table 11).

**Table 11: Codes and Number of Codings**

<b>Codes</b>	<b>Number of Codings</b>
Difficulty to maintain continuous funding/donation.	60
Financing the office staff (secretary) permanently.	24
Enhancement of marketing, public relation and communication.	37
Prevention of dissatisfaction amongst <i>Founders, Donors and Volunteers</i> .	13
Closed circle of leader group.	39
Well-connectedness and relations between individuals.	49

(Source: Own Elaboration.)

## 5. Results

The following chapter provide the results obtained in the analysis of the data. The data made it evident that the *Bürgerstiftung Kulturlandschaft Spreewald* was founded in 2007 to include private and civil actors in the conservation of the typical cultural landscape of the Spreewald region (I2; I3; I4). In general, conserving the cultural landscape is a task for the biosphere reserve and the state. However, since public funding has been decreasing it has not been possible to, for example, finance all landscape maintenance with *Individual Conservation Contracts* (I1; I2).

The idea to start a foundation originated from some local initiators (I1; I2), but it was finally a *LEADER* project that made it evident that a citizen foundation is the best fitting structure for the Spreewald region. This structure allows the local citizens to take action to protect the cultural landscape. The founding donors were important in the founding process as they donated the capital endowment that was needed to start the BKS. Founding donors were for instance; municipalities, counties, private individuals as well as businesses (I2).

Up to now, the structure of a citizen foundation allows to connect civil, private and public actors. Together the BKS actors can maintain parts of the cultural landscape (I1; I2). “*Because the foundation is a unique model, with a unique communication channel that generates contacts and possibilities, finally also generates money flows [...]*” (I2) that no BKS actor alone could generate.

The BKS had started primarily as a promotional citizen foundation that collected money and redistributed it to projects implemented by local associations. Not enough projects related to the mission statement were carried out in the Spreewald region so the BKS started to do additional operational work (I2). Thereby, the Advisory Board is in charge of deciding which projects are promoted or implemented by the BKS. The *Founders* are not included in the decision-making process (I1; I2), even if that is “*undemocratic*” (I2). Nonetheless, excluding the *Founders* saves transaction costs and time in the decision-making process (I2).

### **Results Related to Question 1: *What are currently the most relevant actors?***

14 main BKS actors are currently included in the collaborative governance approach. The results show that actors from all three spheres of society are represented in the citizen foundation. Some BKS actors cannot be assigned to a single category but rather

to more than one category. This is because the BKS actors consist of various individuals, businesses or organizations which separately belong into different spheres. Table 12 describes all main BKS actors, and sphere of society they are assigned to.

**Table 12 (Part 1): Description of BKS Actors and Assignment to Societal Sphere**

<b>BKS Actor</b>	<b>Description of Actor</b>	<b>Assigned Sphere</b>
<b>Foundation</b> <sup>7</sup>	This is a non-profit organization. It includes Board, Advisory Board and secretary. All individuals representing this actor do that as individual citizens, even if they, for instance, hold an additional public position (e.g. I1).	Civil
<b>Founders</b>	This actor includes various individuals, businesses, associations, and state authorities. Due to that, this actor represents all three spheres of society (e.g. I2).	Civil Private Public
<b>Touristic_Ser_Prov</b>	This is a for-profit actor which is uncontrolled by the state. Generally mentioned in this category are the ferrymen offering transportation in barges, canoeing, and other leisure activities for tourists. Other individuals representing this actor are for example hoteliers as well as innkeepers (e.g. I3; I6; I7).	Private
<b>Donors</b>	This actor includes various individuals, business, association, authority or any other organization or institution. Due to that, this actor represents all three spheres of society (e.g. I2).	Civil Private Public
<b>Biosphere_Adm</b>	This actor is a state actor because it is affiliated with the State Office for the Environment in the state Brandenburg (LfU) (e.g. I2).	Public
<b>Landowners</b>	This actor represents a non-profit oriented group of individuals that own a piece of land in the Spreewald region. The land size can vary widely. Just important is that all of these individuals lease their land to the BKS to keep them maintained (e.g. I2; I8). The lease is just a compensation not a for-profit transaction (I1).	Civil
<b>Contractors</b>	This actor represents non-profit as well as for-profit individuals and businesses. For instance, (part-time) farmers, landscape maintenance businesses and welfare recipients (i.e. 400€ mini-jobs). While maintenance businesses receive payment for the work, some farmers and the welfare recipients do the work voluntarily, and just receive compensation for incurred expanses. This actor carries out the work for the BKS in form of landscape maintenance (e.g. I1; I2; I8).	Civil Private

(Source: Own Elaboration.)

<sup>7</sup> Hereafter the term *Foundation* is used for the identified BKS actor. Not to be confused with the terms citizen foundation and BKS.

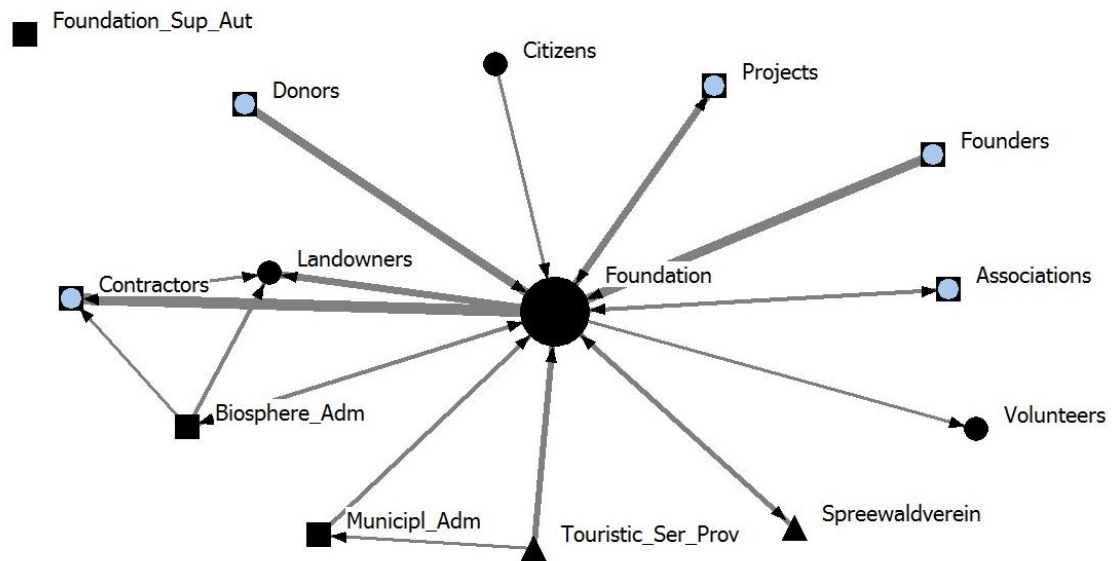
**Table 12 (Part 2): Description of Actors and Assignment of Societal Sphere**

BKS Actors	Description of Actor	Assigned Sphere
<b>Volunteers</b>	This actor is not oriented in profit, and includes all people that voluntarily perform certain tasks for the BKS. For instance, local citizens organize and implement projects that are sponsored or initiated by the BKS. Sometimes they receive compensation for incurred expenses. But this actor does not represent the Board and Advisory Board members that also work voluntarily. They are included in the actor <i>Foundation</i> (I1; I2).	Civil
<b>Spreewaldverein</b>	This actor is separated from the other local <i>Associations</i> because it turned out to play a major role that slightly varies from the role of other <i>Associations</i> (e.g. I1; I2). In contrast to other <i>Associations</i> the <i>Spreewaldverein</i> is mainly in charge for approving applications for <i>LEADER</i> initiatives of the EU (EAFRD) (I1; I2; I9). Further, the <i>Spreewaldverein</i> is an independent for-profit organization that coordinates all issues related to the regional brand <i>Dachmarke Spreewald</i> .	Private
<b>Associations</b>	This actor includes various associations. For instance, small local associations with charitable purposes (e.g. <i>Förderverein Lehde</i> and <i>Förderverein Leipe</i> ), the <i>Farmers Association</i> , and several local touristic associations (e.g. <i>Tourismusverband Spreewald</i> ). Because some associations are for-profit and some are non-profit, this actor is classified as a civil and private actor (e.g. I2; I4; I9).	Civil Private
<b>Municipal_Adm</b>	This actor includes all mentioned state authorities. For instance; counties, cities, municipalities and public authorities (e.g. lower conservation authority) on the regional and local level of government (e.g. I1; I2).	Public
<b>Projects</b>	This actor includes all projects performed or promoted by the BKS. Currently for instance, the <i>Spreewald Grassland Share</i> , the <i>Meadow Orchard Stradow</i> , and the <i>Spreewald Foundation-Honey</i> project. But as projects vary from time to time the individual, associations, businesses, organizations or institutions representing this actor change. Due to that this actor represents all societal spheres.	Civil Private Public
<b>Citizens</b>	This actor includes all people living in the <i>Spreewald</i> area (e.g. I2; I3; I4) but not households. This actor is not profit oriented and does not belong to any state institution. Individuals included in this actor frequently participate in the BKS as part of one of the other actors.	Civil
<b>Foundation_Sup_Aut</b>	This is a federal state actor (i.e. Ministry of the Interior). The actor is the next higher state authority in charge of supervising all citizen foundations in Germany (I1; I2).	Public

(Source: Own Elaboration.)

**Results Related to Question 2: How are actors interlinked in terms of money flows, information sharing, conflict relations and trust relations?**

The assessment of links concerning money flow, information sharing, conflict relations and trust relations result in four aggregated networks. Each of the four BKSNs are visualized as one graph, and the results are presented separately. The first presented network is the **BKSN of money flows** (see Figure 7).



**Figure 7: BKSN of Money Flows**

Node Shape: According to the actors' sphere of society: circle = civil actor; triangle = private actor; square = public actor; box with circle = depends on definition.

Node Size: According to the actors' amount of betweenness centrality. The bigger the node, the higher the betweenness centrality of an actor.

Tie Strength: According to the significance of a link. The thicker the link, the higher the number of times it was mentioned during the interviews.

Arrows point out toward the direction of the money flows.

(Source: Own Preparation with NetDraw.)

The graph shows that money to support the mission of landscape conservation is raised from civil, private and public actors. The capital endowment of the citizen foundation is currently around 110,000€, plus another 100,000€ in liquid funds. The capital endowment increased steadily since the beginning of 2007 with 57,000€ despite the interests of the capital endowment being low due to the economic financial crisis. This resulted in most *Projects* primarily being financed with donations (I2) and that in turn makes *Donors* the most important benefactors of the BKS. While the tie strength identifies the money flow from *Founders* as more significant than from *Donors*, the

interviewees also clarify that the amount of money currently received from *Donors* exceeds the amount of money received from *Founders* (I2).

The BKS is financed by grants, for instance, given from the *Spreewaldverein* (i.e. EU grant) and the state of Brandenburg (I1; I2). The founding donors donated a minimum of 1,000€, and *Founders* donated a minimum of 500€. There isn't a minimum level for donations of *Donors* but sometimes their donations are project related (I2). One important founding donor (and permanent *Donor*) is the city of Lübbenau (I3) because it donates 10,000€ each year to the BKS (I7).

In return for the donated money, BKS actors either implement projects or fulfill tasks for the BKS. *Landowners* receive money as lease payments for their land which the BKS rents out for landscape conservation measures (I1; I3; I8). *Contractors* receive money because they do the landscape maintenance work (I1; I2; I3). Leasing contracts between the *Foundation* and *Landowners* and service contracts between the *Foundation* and *Contractors* state the conditions of the money flows. Some *Volunteers* receive money from the *Foundation* as compensation for any expenses made during *Projects* (I1; I2). The money that the *Foundation* receives from the other BKS actors is further redistributed. The *Foundation* gives money to for instance, the *Projects* or the *Associations* including the *Spreewaldverein*. These money flows are related to project work (I2; I4). Sometimes money flows back from the *Projects* to the *Foundation*. This money is considered a donation (e.g. from the *Spreewald Foundation-Honey* project) (I1).

One important money flow is not visible in Figure 7 because this money flow takes place within the BKS actor *Foundation*. The secretary receives money as a wage and a formal working contract states all their accountabilities. For 30 hours of work per week, the secretary fulfils administrative and organizational tasks for the BKS such as issuing donation receipts and invoices, and sending out invitations to meetings (I1; I2).

Calculation of measurements indicate that the BKS money network is a highly-centralized network. The actor *Foundation* holds the position with the highest betweenness centrality. This indicates that the *Foundation* is most important in the BKS network of money flows and most influential in regards to the money exchange. The *Foundation* fulfills the role of a coordinator between all the other BKS actors. Because all significant money flows come in or stream out from the *Foundation*. Due to that, the *Foundation* coordinates and controls the money flows to all the other BKS actors. The

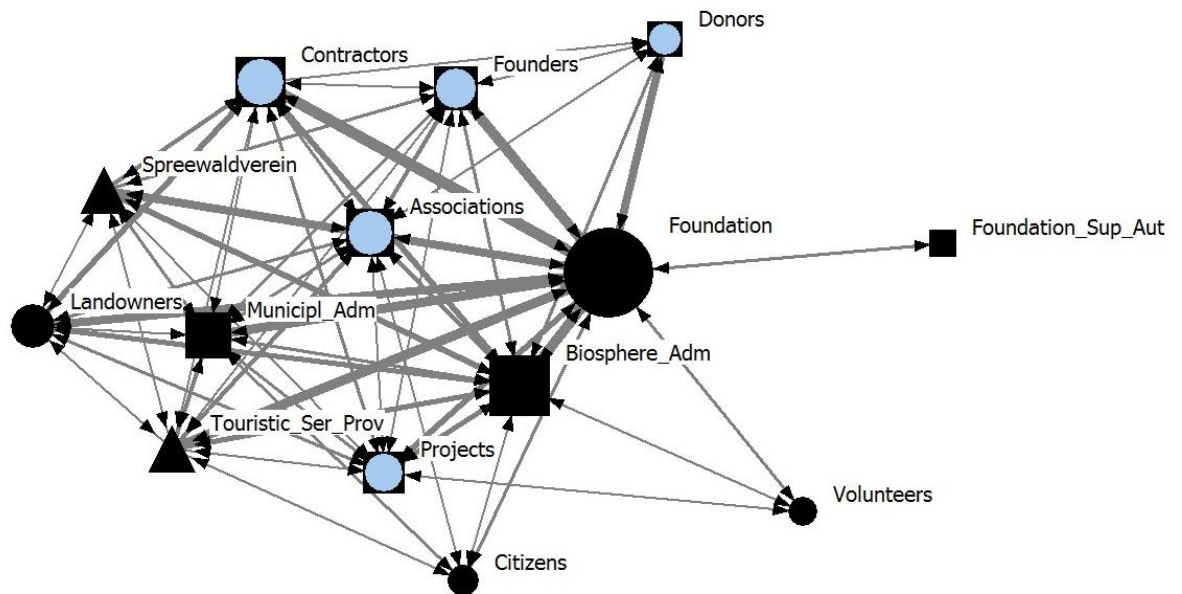
central position of the *Foundation* indicates that this actor is in charge of decisions concerning money flows. This is further confirmed by the interviewees. Within the BKS actor *Foundation*, the Board makes decisions about the allocation of funds in majority voting. After presenting the decision to the Advisory Board, the Advisory Board gives the final consent. Annually the boards inform the *Founders* about the decisions as well as activities of the citizen foundation (I1; I2).

In this section, the other money flows visible in the BKS of money flows is further explained in detail. The money flows between *Biosphere Administration*, *Landowners*, *Contractors* and *Foundation* are all related to *Individual Conservation Contracts* concerning maintenance of grassland areas (I1; I2; I3; I5). The money that flows from the *Touristic Service Providers* to the *Municipality Administration* is the tourism tax. This money flow is included in the BKS of money flows as the interviews clarify that parts of the tourism tax are redistributed as a donation to the *Foundation* (I7).

Other than money, BKS actors also donate time and resources. For instance, the *Biosphere Administration* as well as the *Water- and Soil Association* allocate conference rooms for any large BKS gatherings (I1). The city of Lübbenau additionally allocates office space for the secretary in the town hall (I7). Moreover, some businesses make contributions in kind (e.g. fulfil project work with their own machinery) (I2).

While the *Foundation Supervision Authority* is isolated in the money network, this actor gets informed about all money flows by the *Foundation* (i.e. Board). That confirms that BKS actors can be isolated in one BKS while being linked in another BKS. In general, it is the task of the *Foundation Supervision Authority* to check if all money flows within the BKS of money flows are aligned to the mission statement. If money would be used for purposes not covered in the mission statement, then the *Foundation Supervision Authority* would intervene (I1).

The second presented network is the **BKSN of information sharing** that depicts all information flows between BKS actors (see Figure 8).



**Figure 8: BKSN of Information Sharing**

Node Shape: According to the actors' sphere of society: circle = civil actor; triangle = private actor; square = public actor; box with circle = depends on definition.

Node Size: According to the actors' amount of node value. The bigger the node the higher the number of links to and from an actor.

Tie Strength: According to the significance of a link. The thicker the link, the higher the number of times mentioned during the interviews.

Arrows point out toward the direction of information flows.

(Source: Own Preparation with NetDraw.)

The analysis of the BKSN of information sharing shows that while all actors receive and spread information, there is a difference in the amount of information that is received and spread. The *Foundation* is the BKS actor with the highest amount of received and spread information. Due to that, the *Foundation* has the highest amount of information. Moreover, the *Foundation* is linked with the four most significant and frequent information flows, and has the highest betweenness centrality out of all BKS actors. In contrast, the *Foundation Supervision Authority* is the actor with the lowest amount of information. This is visualized with the calculated node values. The node values depict the amount of information an BKS actor possessed (BORGATTI & LI 2009).

The interviewees reported that the *Foundation* shares the highest amount of information about projects and events with all the other BKS actors. This is done through public relations, a Facebook page, a homepage and also occasionally through flyers (I1; I4; I9).



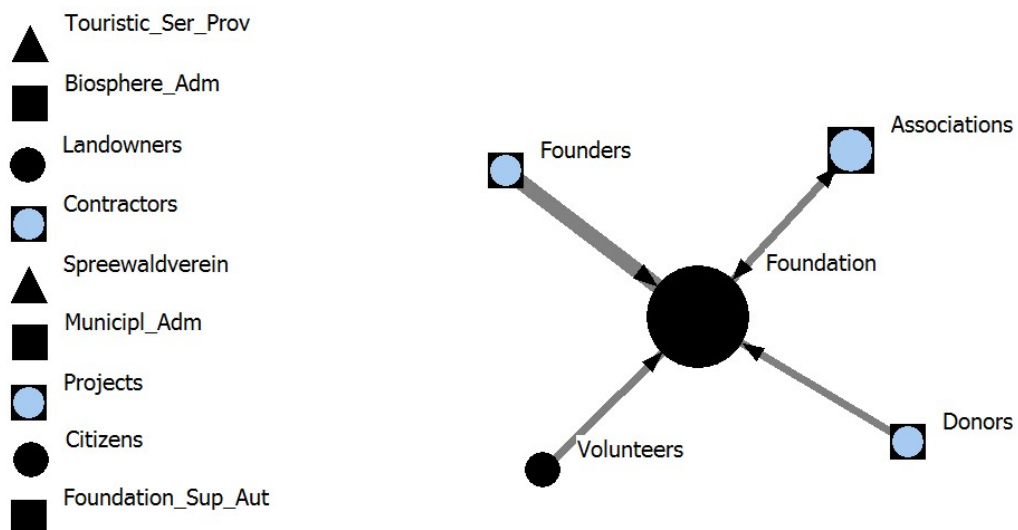
The *Founders* additionally get informed by the *Foundation* with an e-mail newsletter. Once a year the *Founders* and the *Foundation* get together in the Founders Assembly. During these meetings, the *Founders* receive information about last years and future projects (I1; I2; I5; I7). Information flows back from the *Founders* or the *Donors* to the *Foundation* usually concern recommendation of potential *Founders* and *Donors* (I1), or prospective projects (I2). The information exchange between the *Touristic Service Providers* and the *Foundation* usually concerns project-related donations for the *Spreewald Grassland Share* as well as the maintenance of specific areas (I1). In the same way, the information that flows between the *Municipality Administration* and the *Foundation* are usually project-related (I1). The *Foundation* informs the *Landowners* about the *Projects* that take place on their property. In return, the *Landowners* inform the *Foundation* about any observations of their land. The *Contractors* and the *Foundation* exchange information regarding tasks and responsibilities. The *Volunteers* and the *Foundation* exchange information concerning project work (I1). The *Biosphere Administration* informs the *Foundation* about nature protection, and in return receives information from the *Foundation* about the *Projects* (I1). The single information flow between the *Foundation* and the *Foundation Supervision Authority* concerns project work. The *Foundation* informs the *Foundation Supervision Authority* about all activities (e.g. elections, projects, annual report) and money flows. In return the *Foundation Supervision Authority* informs the *Foundation* about the validity of the activities (I1; I2).

Generally, there are interrelated information flows between more than two BKS actors like between the *Biosphere Administration*, the *Projects* and the *Foundation* concerning project work (e.g. *Spreewald Foundation-Honey* project) (I1; I2). Another identified example is the information exchange between the *Foundation*, the *Spreewaldverein* and the *Biosphere Administration*. The *Spreewaldverein* receives information from the *Foundation* when the *Foundations* sends an application for specific landscape maintenance grants (e.g. *LEADER*). Sometimes the *Biosphere Administration* gives additional statements to the *Spreewaldverein* concerning these applications. The *Spreewaldverein* in return suggests improvements or directly informs about application approvals (I1).

The statements of the interview participants make it evident that (1) some individuals are a part of two or more BKS actors, (2) that many local individuals are well connected, and that (3) some individuals are well known in the Spreewald region. These

well-known individuals are members in various local associations, organizations or committees and regularly get together. Some of the well-known individuals are also included in one of the three parts of the BKS (I1; I4; I6). As a consequence, information concerning the *Projects* is (1) spread by individuals that are part of more than one actor to all the other participating actors. And (2) personal contacts are constantly used to spread information between individuals belonging to different BKS actors. (3) Some interviewed actors even claim to just get informed by a member of the Board directly instead of receiving information through the official communication channels of the *Foundation* (I1; I8; I9).

The third network that is presented is the **BKSN of conflict relations** which is depicted in Figure 9. The interviews identify minor conflicts that make most nodes in the BKS conflict network too isolates.



**Figure 9: BKSN of Conflict Relations**

*Node Shape:* According to the actors' sphere of society: circle = civil actor; triangle = private actor; square = public actor; box with circle = depends on definition.

*Node Size:* According to the actors' amount of in-degree centrality. The bigger the node the higher the in-degree centrality.

*Tie Strength:* According to the significance of a link. The thicker the link, the higher the number of times mentioned during the interviews.

Arrows point out toward the direction of the conflict.

(Source: Own Preparation with NetDraw.)

Only a few actors are perceived as being in conflicting positions by the interviewees. In consequence, density of the BKS conflict network is low. The low density in the

conflict network indicated that feelings of distrust are not fostered, and collective action is not jeopardized (BODIN & CRONA 2009).

There are two types of conflicts which exist; *task conflicts* and *relationship conflicts*. Typically both types are correlated (SIMONS & PETERSON 2000). *Task conflicts* are disagreements between actors regarding their ideas and tasks (AMASON & SAPIENZA 1997) whereas *relationship conflicts* are personality clashes between individuals (JEHN & MANNIX 2001). Simons and Peterson (2000) identified that trust within a group is important for the group to not suffer from having conflicts. The BKS do not suffer from any conflicts because the BKS of trust relations has a high density of trust. The BKS of trust relations is described below in further detail.

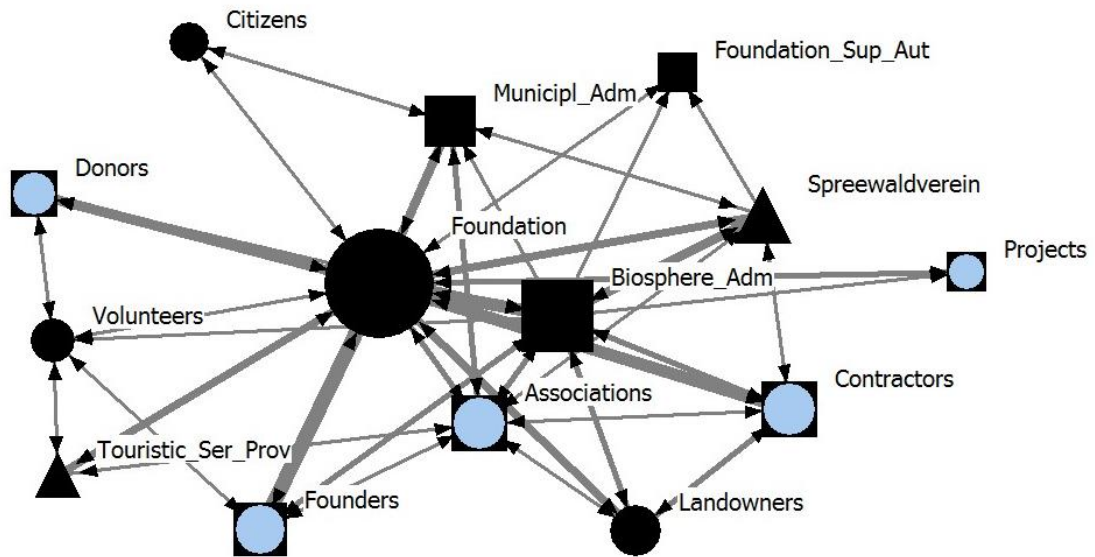
For the conflict network, the calculation of in-degree centrality shows that all conflicts are related to actions of the *Foundation*. Moreover, the actor *Foundation* causes the most significant and highest number of conflicts. The most significant conflict exists because the *Founders* are troubled by decisions of the *Foundation* concerning promotion and implementation of projects. Two other minor conflicts cause trouble for the *Donors* and *Volunteers*. These less significant conflicts both refer to the same problem. The conflicts indicate that *Founders*, *Donors* and *Volunteers* are dissatisfied because they are not included in the decision-making process about what projects are promoted and implemented by the citizen foundation. All three conflicts are just experienced by the *Founders*, *Donors* and *Volunteers* but not by the *Foundation* because the *Foundation* is satisfied with the decision. It has to be clarified that only a few individuals within the actors *Founders*, *Donors* and *Volunteers* are perceived to experience these conflicts. As an illustration, some *Founders* would prefer the maintenance of other areas with project work. They would prefer that other projects are promoted or implemented. These conflicts are not experienced by the *Foundation* because “[...] usually it is whispering behind the reproached hand, and no one knows who really did tell that something goes wrong [...]” (I1). The unsatisfied *Founders*, *Donors* and *Volunteers* do not openly express their dissatisfaction (I1, I4).

The identified conflict between the *Foundation* and the *Associations* are related to the project work of the BKS. As mentioned before, the *Foundation* started solely as a promotional citizen foundation. But because not enough appropriate projects were carried out, the BKS started to implement own projects. This circumstance leads to a conflict between the *Foundation* and the *Associations*. Some *Associations* would like to

carry out projects that are implemented by the *Foundation*. But project initiators choose the *Foundation* instead of the *Associations* “[...] because the [*Foundation*] implements the [*Projects*] in a way which the *Associations* never could [...]” (I2). Unlike citizen foundations, *Associations* do not have a capital endowment and have to use all the money within a financial year (I2; I7). Moreover, the *Associations* are unable to keep up the communication with the *Volunteers* and the *Projects* like the *Foundation* does, “[...] because they do not have a manned office [...]” (I2).

Two identified conflicts are not depicted in the BKS of conflict relations. The first because it takes place within the actor *Foundation*, and the second because it only concerns a part of the actor *Foundation*, namely the Advisory Board. The interviewees describe the conflict within the actor *Foundation* as conflict between the Board and the secretary. The secretary has a conflict with the Board concerning temporary employment. The secretary performs essential administrative tasks for the BKS. These tasks increased since the BKS started to work operational (I2). But according to the interviewees, the amount of money coming in from donations and grants fluctuates quite a bit making it impossible to employ a permanent secretary (I1; I2). The second conflict that isn’t depicted in the BKS of conflict relations, is a conflict experienced by the *Citizens* (i.e. Advisory Board candidates) towards the Advisory Board. Members of the Advisory Board are usually well known in the region, frequently inhabit positions in other local committees or associations, and are well connected to each other (I1; I6; I7). In one interview, the Advisory Board was described as a closed circle of local leaders who make it impossible for individuals with different ideas to get elected into the boards (I6).

The last presented network is the **BKS of trust relations**. This network is assessed because trust is essential for collaborative governance (BODIN & CRONA 2009; CARLSSON 1996; SABATIER 1986) as it reduces monitoring and transaction costs (PRETTY & SMITH 2004). In this study, trust is defined as “[...] a decision to place one’s confidence in others.” (LI & BETTS 2003). The BKS of trust relations is depicted in Figure 10.



**Figure 10: BKS Network of Trust Relations**

**Node Shape:** According to the actors' sphere of society: circle = civil actor; triangle = private actor; square = public actor; box with circle = depends on definition.

**Node Size:** According to the actors' amount of node value. The bigger the node, the higher the number of links to and from an actor.

**Tie Strength:** According to the significance of a link. The thicker the link the higher the number of times mentioned during the interviews.

Arrows point out towards the direction of the trust relations.

(Source: Own Preparation with NetDraw.)

Calculating the density of the BKS network of trust relations shows that the trust network has a high density. The high-density fosters feelings of belonging and group identity for the BKS actors. Trust is a part of social capital meaning groups that place extensive trust in each other accomplish more than groups without trust (COLEMAN 1990). The high trust density is also visible in the calculations for in-degree and out-degree centralities, as well as the node values. All BKS actors have incoming and outgoing trust relations which demonstrates that all BKS actors have some trust relations. The most significant trust relations are all with the actor *Foundation*. Furthermore, the *Foundation* has the highest number of overall trust relations, followed by the *Biosphere Administration*, *Associations* and *Contractors*. This is depicted as node values in Figure 10.

Eleven cliques can be found within the BKS network of trust relations. The *Foundation*, *Biosphere Administration* and *Associations* don't just control the highest trust relations, they are also a part of most cliques. Because of that, they form the base of the collaborative governance approach (EVERETT & BORGATTI 1998).

A crucially important point is that trust relations are frequently linked to a certain individual that is part of an BKS actor (I1). For instance, some interviewees identify

trust relations as existent to the Board because of one individual Board member they personally know (I3; I4).

The interview participants perceived a certain kind of trust existing between all BKS actors (I1; I4; I7; I9). As trust “[...] *should in general exist between all actors, because just on a basis of trust [they] can collaborate and cooperate [...]*” (I9). For instance, some *Landowners* refused to participate in the BKS due to having no trust with the *Foundation* and only a few *Landowners* who trusted the *Foundation* agreed to lease out their land (I1; I3). This also applied to all the actors that donated money and shared information. Actors would not give money or information to other BKS actors without a certain amount of trust (I1; I4; I8). Some BKS actors have nothing to do with each other and therefore no trust relation can be identified between them (I8; I1). Contact between BKS actors is a prerequisite for establishing a trust relation.

**Results Related to Question 3: *What are the motivations of actors to collaborate with the other actors?***

The specification of BKS actors’ motivations reveals that the majority of BKS actors share motivations. Shared motivations are important for collaborative governance and shape the quality, and extend the effectiveness of a cooperation (EMERSON et al. 2011). The investigation reveals that 13 BKS actors (i.e. not the *Foundations Supervision Authority*) share two of the six motivations: social motivation and ecological motivation. The *Foundations Supervision Authority* is just motivated by duty-related motivation. Table 13 lists all motivations of the 14 main BKS actors and the number of main BKS actors that share this motivation.

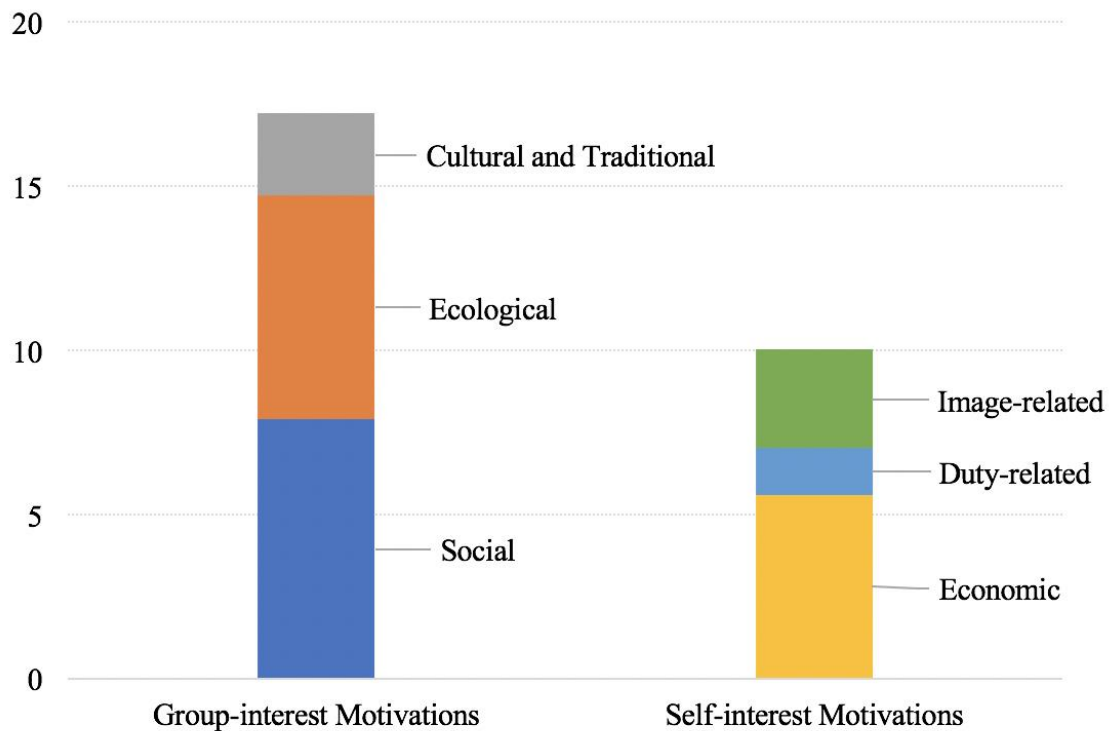
**Table 13: BKS Actors’ Shared Motivations**

Motivation	Number of BKS Actors that Share Motivation
Social	13
Ecological	13
Cultural and Traditional	10
Economic	12
Duty-related	5
Image-related	10

(Source: Own Elaboration.)

BKS actors’ motivations are connected to outcomes which actors expect in return from conducting collective action (OECD 2013). The categorization of motivations into self-interest and group-interest motivations reveal that overall group-interest motivations

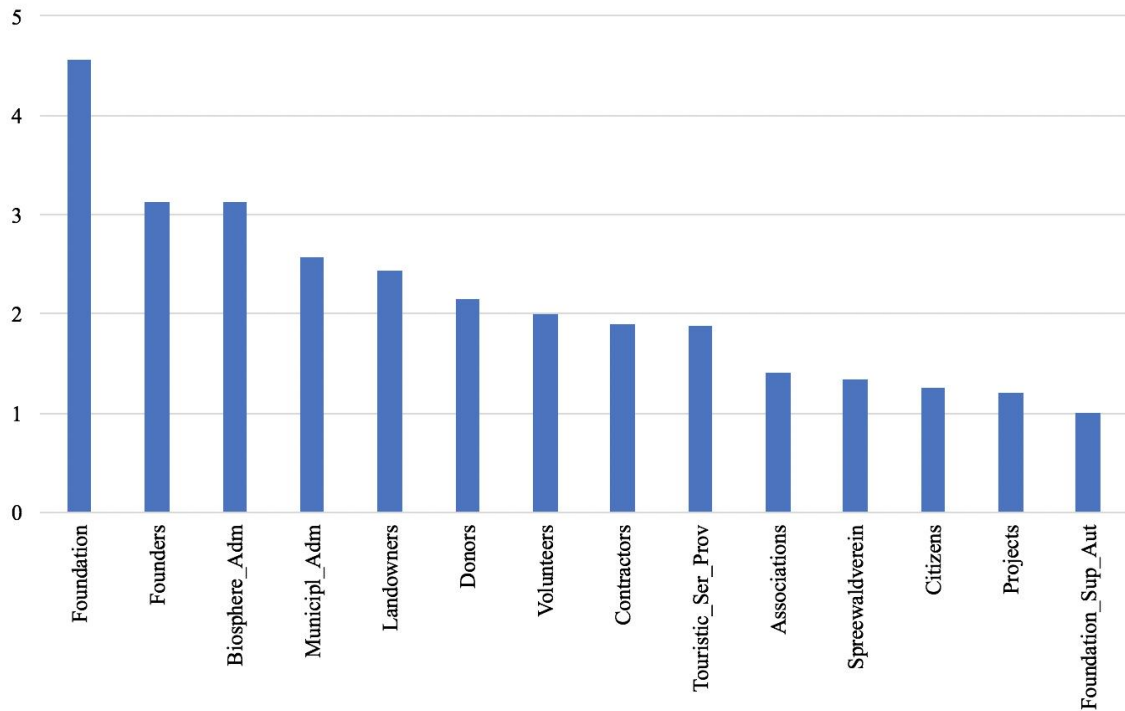
outweigh self-interest motivations. Depicted in Figure 11 are the weighted mean values of all BKS actors' aggregated motivations.



*Figure 11: Aggregated BKS Actors' Motivations*  
(Source: Own Preparation.)

#### **Results Related to Question 4: *What degree of influence does each actor have within the BKS?***

The interviews reveal that the *Foundation* is perceived as being most influential in decision-making within the BKS. As mentioned previously, the Board makes the decision about the allocation of funds in majority voting and the Advisory Board gives the final consent (I1). Moreover, the Advisory Board has vast influence because it is in charge of the election and gets to decide which individuals are members of the Board and Advisory Board. The secretary is not included in the decision-making process of the *Foundation* (I1, I6). Therefore, the *Foundation* is clearly positioned as the leader within the BKS actors. The *Foundation* makes the decisions which the other BKS actors have to follow. But the other BKS actors are perceived to inherit a certain degree of influence as well. Figure 12 depicts the weighted mean values for each BKS actor. The columns are arranged in descending order, and each column represents the weighted mean value of a single BKS actor.



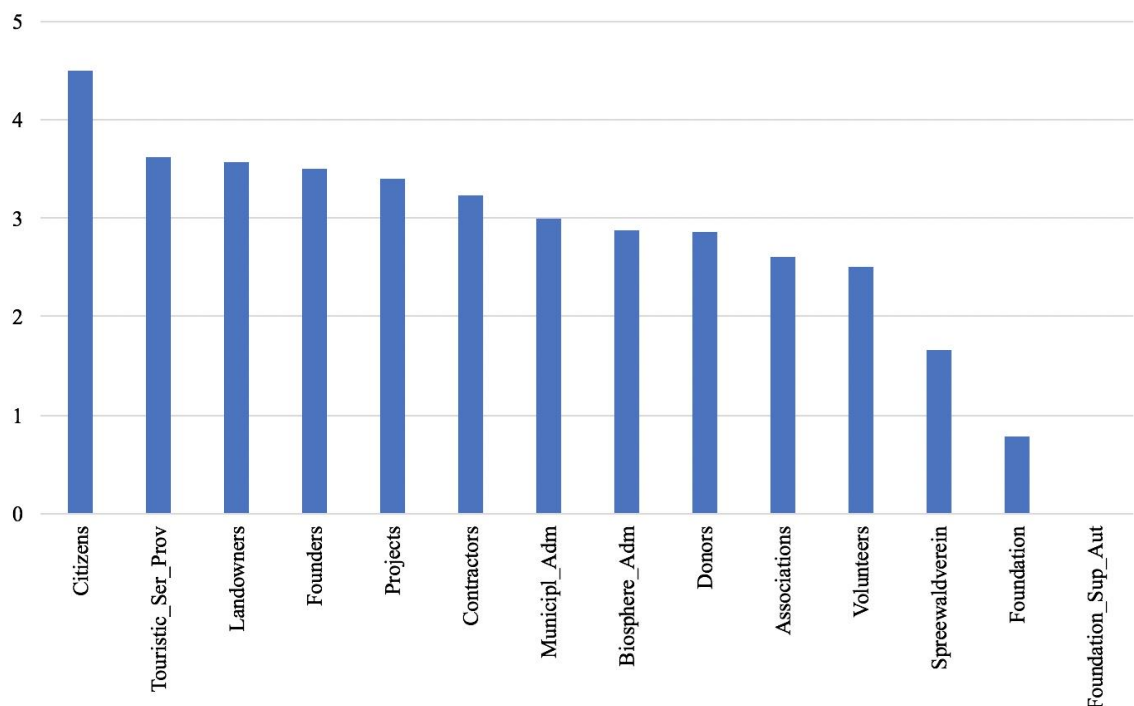
**Figure 12: BKS Actors' Perceived Degree of Influence**  
(Source: Own Preparation.)

The interview participants perceive all BKS actors to have at least some kind of influence because all are essential for the collaborative governance. Due to that, every BKS actor has influence because refusing to cooperate would stop the collective action from happening (I8). For instance, the participation of *Founders* and *Donors* is essential since they deliver the money to conduct the *Projects* of the BKS. By delivering the money, *Founders* and *Donors* have influence with the outcome. While *Donors* are usually not included in the decision-making process concerning project work there is one exception, the *Spreewald Grassland Share*. *Donors* that donate for the *Spreewald Grassland Share* actively decide that their money is used for that particular project. The participation of *Landowners* is essential since they lease their property to the BKS. *Landowners* are influential because without leasing their land, no *Projects* can be implemented (I1). While the *Associations*, the *Spreewaldverein*, and the *Municipalities* formally do not have influence on the decisions, they influence project work by getting involved and speaking up for their interests (I9). Perceived as having the least amount of influence on decision-making are *Projects* and the *Foundation Supervision Authority* because both do not directly influence decisions (I1; I2; I9). But as a supervising authority, the *Foundation Supervision Authority* has the power to shut down the BKS in case the activities are not aligned with the mission statement or the statute (I1; I2).



### Results Related to Question 5: *What amount of benefit does each actor gain by collaborating?*

Even though the *Foundation* is the leader of the BKS, it is perceived as getting the second lowest amount of benefit from collaborating in the BKS. The analysis of BKS actors' amount benefit reveals that the interviewees perceive *Citizens* as receiving the highest benefit from the collaboration. Figure 13 depicts the weighted mean value of BKS actors' amounts of benefit. The columns are arranged in descending order from highest to lowest amount of benefit of an BKS actor.



**Figure 13: BKS Actors' Perceived Amount of Benefit**  
(Source: Own Preparation.)

Since *Citizens* are the people that live in the Spreewald region, they are perceived to benefit the most from the maintained cultural landscape (I1; I2). Furthermore, the *Touristic Service Providers* are perceived as receiving “[...] a very high benefit. Whether it is a canoe renting agency, hotel or guest house [...]” (I7). This is because the conservation of the cultural landscape is essential for their businesses. The *Touristic Service Providers* rely on the natural landscape for the activities they offer to tourists (I5; I8; I9). *Landowners* benefit by having maintained properties which usually would not happen without BKS project work (I1; I4; I8). The benefit for *Founders* and the *Donors* is the fulfillment of their personal interest to conserve the cultural landscape. The *Projects* are the means by which maintenance of the landscape is achieved (I1; I4).

The *Contractors* are perceived as benefitting from the payments they receive by fulfilling their contracts. Additionally, to the payment some farmers use the hay they make by maintaining the grassland as fodder for their animals (I1; I4; I8). Supplementary benefit for the *Municipality Administration* and the *Biosphere Administration* come from the improved image resulting from the maintenance of the cultural landscape. This can be used to gain more publicity and attract more tourists to the region (I1; I5; I9). The *Biosphere Administration* benefits even more from the maintenance of areas that cannot be financed by other funds like the *Individual Conservation Contracts*. The *Foundation Supervision Authority* is the only BKS actor perceived as not benefitting at all. This is because the *Foundation Supervision Authority* has a working relationship with the BKS and just supervises the activities (I1).

### **Results Related to Question 5: *What are past and future challenges of the citizen foundation?***

The interviewees are aware of six main challenges of the BKS. Table 14 depicts the main challenges that were most frequently mentioned and the exact number of times the issues were mentioned during the interview.

**Table 14: Number of Times a Challenge was Mentioned per Interview**

Codes	Interview Number*							
	1	2	3	4	6	7	8	9
Number of Times a Challenge was Mentioned								
Difficulty to maintain continuous funding/donation.	1	1	6	5	6	21	16	4
Financing the office staff (secretary) permanently.	1	0	6	1	0	9	6	1
Enhancement of marketing, public relation and communication.	3	0	3	3	7	10	10	1
Prevention of dissatisfaction amongst <i>Founders</i> , <i>Donors</i> and <i>Volunteers</i> .	0	0	2	3	2	3	3	0
Closed circle of leader group.	1	5	3	12	2	3	12	1
Well-connectedness and relations between individuals.	4	6	2	4	7	7	18	1

\*Interview 5 is missing as it was not recorded and transcribed.

(Source: Own Elaboration.)

Financing the BKS with donations and funds is a challenge mentioned at least once in every interview. Locating and retaining *Founders/Donors* has been, and will remain a central challenge for the BKS. More communication is needed “[...] in order to involve

*even more Citizens and inform them so that they also get engaged and act as Donors [...]” (I4).*

A second challenge assessed is the financing of a permanent secretary. Because income from donations and grants aren't steady, it is a challenge to finance the secretarial office position. The city of Lübbenau in the past offered the locality for the office in the town hall and partly financed the secretary position (I7). For the future, one idea would be to start a non-profit enterprise (I1) or a limited liability company (IE) that finances the office permanently. It would have to be a requirement that the company stays legally independent from the citizen foundation (IE).

A tired identified challenge is about public promotion of the BKS. Nearly every interviewee mentioned at least once that attracting *Donors* and *Founders* with effective marketing and thorough public relations experience was always an issue for the BKS. This is assumed to remain as the primary challenge in the future since the BKS attempts to grow by supporting more *Projects*. The interviewees identified different strategies for the future: promotion and implementation of additional *Projects* that trigger more public awareness, enhancement of communication and improving advertising (e.g. I1; I4). Another noteworthy strategy mentioned involves engaging *Municipality Administration*, *Touristic Service Providers*, *Contractors* and *Landowners* which will increase public attention by advertising *Projects* of the BKS individually. Typically, they recruit potential candidates and advise others to become engaged in the BKS or donate for the *Projects* (I2; I4; I7).

Another stated challenge is the management of the conflict between *Founders*, *Donors* and *Volunteers* towards the *Foundation*. This challenge is also assessed in the BKS of conflict relations. This conflict is related to dissatisfaction of *Founders*, *Donors* and *Volunteers* because they don't feel involved enough with the decision-making process (I1; I5; I6). The motive to have them less involved with the decision-making process is on purpose and has been in place since the founding of the BKS. The objective for that is to prevent time-consuming decision-making processes as well as high transaction costs (I2). *Founders* in a citizen foundation are not members and their role is fulfilled just by completing donations. However, even though *Founders* aren't included in the decision-making process, it is still important to keep them happy. They can be kept happy, for instance, by being regularly informed about the activities of the BKS. Dissatisfied *Founders* can cause poor reputation (EI). Even though needing more

funding and searching for more *Founders* and *Donors* is important (I1-I9), a poor reputation can be a serious concern (EI). Poor reputation can stop *Donors*, *Founders* and *Volunteers* from further supporting the BKS and can even prevent attracting new *Donors*, *Founders* and *Volunteers*. Because of poor reputation, interviewees also cited communication as a challenge for the BKS to minimize dissatisfaction (I1; I4).

A long-term challenge is concerning the composition and structure of the BKS. All interviewees mentioned that the *Foundation* is made up of individuals that are well-known, well-connected, and are often members of local committees and organizations (e.g. I1; I2). However, one criticism is that this group of leaders is closed-minded towards new people and ideas because “[...] *the Advisory Board elects its members itself. And they [Advisory Board members] of course elect people which are pleasant for them [...]*” (I6).

The final identified challenge is related to the seemingly “closed” circle of leaders. Many individuals in the Spreewald region are well-connected and related. For instance, numerous individuals perform several roles. Doing several roles results in having various functions (e.g. I1; I2; I3). On the one hand, those individuals are burdened with many duties and obligations and on the other hand, their roles sometimes overlap. For instance, the formal information flow between the *Foundation* and the *Founders* is identified as insufficient. But this lack of formal information flow is compensated by an informal information flow between individuals representing the *Foundation* and individuals representing the *Founders*. Many individuals meet on a regular basis as they are highly active. These people spread information about the BKS amongst themselves while they fulfil other roles (I9). For future development, it is important that the roles and responsibilities of all BKS actors be clearly defined (IE).

## 6. Discussion

This following chapter discusses the results presented in the previous chapter, before discussing the research method of this study.

### 6.1. Discussion of Results

#### Literature Comparison

The results of this study indicate that the citizen foundation *Bürgerstiftung Kulturlandschaft Spreewald* is a collaborative governance approach that includes civil society actors, private actors and public actors from different levels of government (cf. EMERSON et al. 2011). The BKS actors collaborate to maintain the cultural landscape in the Spreewald region and improve ecosystem service provision. With this collective action they fill a governance gap since proposition of *public goods* usually falls under the jurisdiction of the state (cf. MURADIAN & RIVAL 2012; OECD 2013). This community management is based on the collaboration of the BKS actors because no single actor would be able to perform this task alone (cf. EMERSON et al. 2011; VATN 2010).

The collaborative governance approach is driven by individuals who began the founding of the BKS. The originators, for instance, knew of available grants for landscape maintenance. The legal form of a German citizen foundation may have helped them to establish a functional structure to conduct the collective action (cf. OECD 2013). Unquestionably, this legal form made it possible to collect additional civil money for landscape maintenance. Another driver is the interdependence of BKS actors to fulfill the mission statement. Moreover, the collective uncertainty is a driver for the collaborative governance. It is uncertain what would happen if no one would manage the landscape maintenance (cf. EMERSON et al. 2011). The observations indicate that the collaborative governance approach fills a governance gap by implementing missing social institutions which are necessary to provide the cultural landscape. Consequently, it sustains ES delivery for human and economic welfare (cf. CUMMING et al. 2006; EKSTROM & YOUNG 2009; EMERSON et al. 2011).

#### Allocation of Money

Since the beginning of 2007, the BKS has been very successful in raising a variety of funds for conservation purposes. Money is received from *Donors* and *Founders* that

belong to all spheres of society and topped by public grants. The possibility to combine donations and funds from civil, private, and state actors for the purpose of landscape management is exceptional. The local associations are quite often unable to compete with the BKS for projects. This is because of the advantageous structure of a citizen foundation. *Associations* are not allowed to have capital endowment, meaning most money has to be spent within a financial year (SCHWERTMANN 2002). Additionally, the employed secretary of the BKS is able to maintain contact between the *Foundation* and other BKS actors to organize the projects more efficiently. The local *Associations* do not have an office with permanent staff. These advantages lead to one of the identified conflicts within the BKS conflict network. Sometimes *Associations* feel less favored by *Donors* and *Projects* which prefer the *Foundation* to carry out certain projects.

The money flows are controlled by the most influential actor in the BKS network of money flows; the *Foundation*. Within the BKS actor *Foundation*, the Board makes decisions about allocation of funds in majority voting. After presenting the decision to the Advisory Board, the Advisory Board gives the final consent. The other actors are not directly included in the decision-making process. They just influence decisions because they are needed for the collective action. They deliver money, share information and perform tasks which are essential for the success of the BKS.

### **Decision-making Process of the BKS**

This hierarchical decision-making process on one hand, (HERBST 1976) lowers high transaction costs, saves time during the decision-making processes, and prevents least-common-denominator solutions (COGLIANESE 1999). On the other hand, the participatory element of a citizen foundation is not fully taken advantage of (IE) especially if the joining of the Board and Advisory Board is further limited by a closed circle of leaders. The degree of participation and the decision-making process are defined by the statute (HINTERHUBER 2005; SCHMIED 2005). The statute of the BKS states that the first Board and Advisory Board are staffed with individuals from the founding donors. Since the founding, the Advisory Board is in charge of electing the Board as well as themselves. Therefore, re-election can occur an unlimited amount of times (BKS 2007). The observations indicate that this lack of term limits has led to a closed group of leaders holding onto the same positions within the Board and Advisory Board. This indicates that the BKS boards do not best represent the local community or embody the characteristics that a citizen foundation should have (BDS 2000). The

hierarchical decision-making process and the closed circle of leaders could be the sources of waning trust within the BKS (EI).

So far, the high amount of personal relations between the BKS actors lead to a high density in the trust network. The trust relations between the BKS actors are the basis for the collaborative governance approach (cf. CARLSSON 1996; SABATIER 1986; BODIN & CRONA 2009). The success of the BKS is most likely tied to the high number of trust relations between actors because high trust relations decrease transaction costs and monitoring (PRETTY & SMITH 2004). Groups with high trust relations are proven to accomplish more than groups that lack trust since trust is a type of social capital (cf. COLEMAN 1990). Due to that, it is important to prevent distrust amongst the BKS actors and sustain the dense trust base.

### **Highly Active Individuals**

The high trust relations are related to the well-connectedness and the close relations between the BKS actors. Many personal relations exist between individuals of the BKS actors and various individuals hold many roles. Due to that, the information is frequently shared through informal personnel rather than formal contacts. Information is shared casually between acquaintances while formal information flows are sometimes acknowledged to be lacking.

The dependency on highly active individuals is a common characteristic of citizen foundations (EI). It has advantages by sharing information faster between actors and for pooling information from different actors. But it can also be disadvantageous to neglect formal information channels if important information is not shared with actors that do not have personal connections. Another issue is that highly active individuals are at risk to get overburdened with too many duties and obligations (EI). Furthermore, a highly active individual who decides to drop out presents a difficult challenge for citizen foundations because the individual may be very hard to replace. Generally, it depends on the individual person if the hand-over to a successor is smooth or problematic (KRIKSER 2013). Because of that, it seems important that for future development of the BKS, roles of individuals must be clarified (IE).

### **Possible Solutions for Problems**

To solve the problems related to the decision-making process and election process, the statutes could be adjusted. A different electoral process and different decision-making process would allow for a higher degree of participation. Other citizen foundations

allow their Founders Assembly to be in charge of elections or just accept more actors to participate in the decision-making process. But giving the Founders Assembly the power to elect the Board members is just advantageous if the statute defines the candidates to choose from (e.g. experts for landscape conservation) (SCHMIED 2005). Adjusting the decision-making process into a heterarchical decision-making process that takes place horizontally among all actors (BAECKER 1999) might solve all identified conflicts between the *Foundation* and the *Founders*, *Donors* and *Volunteers*. The dissatisfaction of *Founders*, *Donors* and *Volunteers* is triggered by being excluded from the decision-making process. However, decision-making processes that need consensus among participants bare the risk to result in least-common-denominator solutions (COGLIANESE 1999), longer decision-making processes and higher transaction costs.

Furthermore, prohibition or imposing electoral term limits may reduce the likelihood of a “closed” leadership circles from ever being formed in the first place. However, this could lead to a lack of candidates if not enough individuals want to participate on the boards of the citizen foundation.

If the statute is not changed, it is important that the dissatisfied *Founders* understand that their role ends with the donation they make. *Founders* are not included with opinion-shaping procedures unlike association members who are included (HINTERHUBER 2005; SCHMIED 2005). Participation in a citizen foundation can just include donation of money, time, or ideas (SCHMIED 2002). This collaborative governance approach makes a shared decision-making process possible but not obligatory. The *Foundation* is perceived to have the greatest influence on decision-making. Other actors are just perceived as very influential because they are required for the collaboration. They are not included within a final decision, but can influence a decision with their participation, or refusal to participate.

The identified conflicts between *Founders*, *Donors*, or *Volunteers* and the *Foundation* result from the hierarchical decision-making process. The *Founders*, *Donors*, or *Volunteers* are dissatisfied by the decisions they aren't included in formulating. Further challenging is that these dissatisfied *Founders*, *Donors* and *Volunteers* often do not openly express their feelings, that makes it hard for the *Foundation* to identify the dissatisfied individuals and solve the conflict. To minimize dissatisfaction, it may be enough to give them space to raise complaints. Good face-to-face communication can help reduce feelings of distrust and reduce the risk of developing a poor reputation.



Dissatisfied *Founders, Donors, or Volunteers* are likely to cause the reputation to deteriorate which in turn decreases the chances of finding and keeping *Donors and Founders* (EI). The BKS actors are well aware of these risks so improvement of marketing, public relations, and communication are all mentioned as future goals. People generally just want their consensus be heard and acknowledged. Due to that personable meetings, such as gatherings with coffee and cake are seen as more successful than electronic means of communication, such as public relations and a continuous seemingly distant internet presence.

For further development of the BKS, professional training in: fund-raising, accounting, and foundation management could be helpful (ADOLFF 2005; EI). The regulations allow for the use of foundation money for such training (EI).

Financing the staff became an issue for the BKS when they switched from the original intent to be solely promotional, to having both promotional and operational foundation work. Including operations caused much more administrative work for the BKS (cf. ADOLFF 2005). One idea to finance the office is to start a non-profit enterprise or a limited liability company. This is completely in accordance with the regulations if the company is legally independent. The business can be related or unrelated to the mission statement. Furthermore, the employed office staff should preferably be rather a project manager than secretary. A well-rounded employee who is able to do administrative work as well as project work fits much better in the organizational structure of the BKS because of the additional skills to do project work (EI).

### **Motivations for Cultural Landscape Conservation**

BKS actors are much more motivated to serve the common welfare than to pursue their own self-interests. The main motivations are usually shared by nearly all BKS actors which might be a reason for the effective cooperation (EMERSON et al. 2011). The two most common motivations that are shared by most actors (i.e. except the *Foundation Supervision Authority*) are social motivation and ecological motivation. These motivations match the qualities of a citizen foundation as a philanthropic institution. A study by Krikser (2013) identified common motivations for engagement in citizen foundations as willingness to do good, social capital building, networking, and the improvement of social acknowledgment. The highest identified social motivation of BKS actors is comparable to the willingness to do good. The social acknowledgment is reflected in the image-related motivation of BKS actors. The other two common

motivations identified by Krikser are not identified to motivate BKS actors to collaborate in the citizen foundation. The ecological, and cultural and traditional motivations of BKS actors are related to the mission statement of cultural landscape protection. Natural protection purposes, conservation of the cultural heritage for future generations, and education are important issues for various BKS actors. As citizen foundations in Germany seldom pursue ecological missions, it is not surprising that ecological motivations are not commonly identified for citizen foundations in general (EI). The duty-related motivation indicates that the conservation of the traditional landscape is a duty for some actors, for instance, the *Foundation Supervision Authority* and the *Biosphere Administration*. These actors have an official mandate assigned by government authority.

The economic motivation of the BKS actors indicates that the collaboration results in a monetary value. BKS actors either benefit from receiving payment for provided tasks or from the provision of the *good*; “cultural landscape”. To provide the *pure public good* and solve the social dilemma of the *Tragedy of the Commons* through collective action, all BKS actors are needed. Several landscape workers and farmers are needed to deliver work for the BKS, other actors deliver connections, information, knowledge or organize and finance the collective action (cf. OECD 2013).

Many people can enjoy the benefits of the cultural landscape without decreasing the benefits. The lack of effective exclusion mechanisms allows (OSTROM et al. 1994) free-riding (COSTANZA 2008). This increases the chances that providers of the cultural landscape remain unrewarded and unnoticed by beneficiaries. Governance is needed to sustain the provision (OECD 2013) and the absence of public governance causes a gap to open. The collaborative governance approach of BKS actors is able to manage the provision, and fills this governance gap. As public funding in the form of *Individual Conservation Contracts* are decreasing, (MLUL 2012) and high transaction costs of coordination make a market-based approaches less suited for the provision. Markets are better suited for the provision of *private goods* (MURADIAN & RIVAL 2012; POWELL 1990). However, one example of a market based governance approach in the Spreewald region is the local brand called *Dachmarke Spreewald* which is able to provide *private agricultural goods* (e.g. gherkins, horseradish).

The benefits that come about for BKS actors are related to the motivations. The main beneficiaries are the *Citizens* as they directly benefit from the ES the cultural landscape

delivers. Moreover, the cultural landscape is essential for tourism. Since tourism is the most important sector in the Spreewald region, (MLUL 2012) many jobs are dependent on it thriving. Next to delivering the cultural landscape, the BKS also increases social capital and knowledge sharing of actors (cf. HODGE & READER 2007; DAVIES et al. 2004). This makes it possible for individuals to take over social responsibility and forms a part of civil society (HINTERHUBER 2005).

### **Typical and Atypical Characteristics of the BKS**

Overall it seems as if the BKS has some typical and atypical characteristics for a German citizen foundation. Typical characteristics are; the foundation process by a group of individuals, popular and well-connected leaders, highly active individuals (cf. HINTERHUBER 2005; SCHMIED 2005), and having a lawyer as one of the Board members. Typical are also the challenges faced by citizen foundations; raising funds, financing office staff, marketing, and communication (ADOLFF 2005; KRIKSER 2013; EI). It would have been atypical for a German citizen foundation to only do promotional work as it was originally intended. Working only promotional is just typical for the U.S. model community foundations but not for German citizen foundations.

Atypical for a German citizen foundation is the narrow mission statement of the BKS. Citizen foundations with a longer history than the BKS but with a comparable size, location and structure can be found in Jena, Eberswalde, and Parchim<sup>8</sup>. All of them have much broader mission statements by comparison (EI). Their mission statements allow the promotion of overall civic involvement, and are not just related to one topic. The advantage of having a broader mission statement is that more *Founders* and *Donors* feel addressed by the mission (KRIKSER & MATZDORF 2015; SCHMIED 2005) and more projects can be supported. Furthermore, the ecological mission statement as well as the size of the defined mission area is atypical for a small citizen foundation like the BKS. Mission statements are not commonly related to conservation but do relate to geographically smaller areas. The atypical characteristics complicate a direct comparison of the BKS to other citizen foundations. But the exchange of experiences with other citizen foundations is expected to be helpful for further development (EI).

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<sup>8</sup> Available online: Jena (<https://www.buergerstiftung-jena.de/>); Eberswalde (<http://www.buergerstiftung-barnim-uckermark.de/>); Parchim (<http://www.parchimerbuergerstiftung.de/diestiftung.php>) [Date accessed: 19/12/2016].

## 6.2. Discussion of Methods

The *Net-Map Tool* method helped clarify the complex governance structure of the BKS by identifying the views of BKS actors on their own roles and the roles of the other actors. The method made it possible to visualize the BKSs, to specify motivations, to assess degree of influence and amount of benefit for each BKS actor. The Net-Maps that were prepared during the interviews secured the collected data and prevented BKS actors from being forgotten during the interview process.

Moreover, the interviewees usually became excited about their learning process. Most interviewees experienced the *Net-Map Tool* method as a welcomed change when it comes to interview techniques. Interviewees felt as though the new method was a gratifying experience and did not feel the process was an obligation. The direct preparation of the Net-Map during the interview process always led to a feeling of success for both the interviewee and the interviewer. A reason for this is because the information of the Net-Maps became “palpable” and visible immediately.

Prepared guidelines turned out to be crucially needed in the early interview phase in order to secure that no step was left out. The interviewees appreciated a printed version of the guidelines for themselves because they could see exactly how many questions were to come. It was advantageous that the method allowed to rearrange, add, sum up and divide actors during the interview process because various BKS actors had to be adjusted throughout the interviews.

Overall, the *Net-Map Tool* method was able to provide both quantitative and qualitative data which helped to understand how the complex, multi-actor governance system is organized (SCHIFFER & WAALE 2008). The qualitative data were especially helpful with identifying actors, clarifying links between actors and specifying the motivations. Additionally, it was possible to learn about the challenges of the citizen foundation with a qualitative data analysis.

There are also a number of difficulties and limitations attributable to the selected research method. The *Net-Map Tool* method is a new SNA method and up to now, there are only a few studies available in the literature (cf. HAUCK & SCHIFFER 2012; SCHIFFER & HAUCK 2010; SCHIFFER & WAALE 2008). Moreover, the lack of past research studies that used the *Net-Map Tool* method for an analysis of collaborative governance was seen as quite challenging. For the assessment of the links, more structure-oriented SNA

theories had to be included into the analysis (cf. BORGATTI & LI 2009; BODIN et al. 2006).

A disadvantage during the interview process was that every actor had to be inquired separately while assessing the links. This aspect was at times exhausting and time consuming. It had to be explained to interviewees rather frequently that all steps are necessary to validate the method.

During the earlier interviews, additional qualitative data collection tended to extend the conversation about facts that are irrelevant for this study. This is because the method allows to deepen the conversation at any point. For that reason, the first interviews took longer than expected. In the interviews conducted at a later stage, time was saved by focusing on the interview questions. Based on that experience, it is also not recommended to include more than four links in a *Net-Map Tool* interview because the questioning process gets tiring for the participants as it requires high concentration.

A limitation of the method is that *Net-Map Tool* interviewees have to give observations not only about themselves but also about other actors. In standard SNA methods, interview participants just inform about own relations that are commonly better known (BUTTS 2008). A consequence of this methodological limitation was that for instance, actors or links were unidentified by certain interviewees because the interviewee did not know of their existence (even if the existence was mentioned by other interviewees). These information gaps lead to challenges during the data analysis. Interviewees that did not identify all BKS actors also did not identify motivations, degree of influence and amount of benefit for these actors. As these values, could not just be assumed to be  $0$ , the unknown vector  $n$  had to be introduced in the calculations. Pre-defining the BKS actors could have minimized that issue but may have led to possible bias during the identification of BKS actors.

Another difficulty was experienced due to the overlapping roles of BKS actors. For instance, *Touristic Service Providers* and *Municipality Administration* appeared in their own roles, but at the same time they were also *Donors* or *Founders*. During the interviews, this issue was addressed over and over again to prevent any mix ups of BKS actors. In the same way, it was difficult to prevent a mix-up of links that generally exist between BKS actors, but which do not relate to the BKS. At various times, certain links turned out to be unrelated to the citizen foundation and had to be erased at a later point during the interview. Even during data preparation, some links turned out to be

unrelated to the citizen foundation. Moreover, it was also difficult to prevent mix-ups of individuals that are part of a specific BKS actor or the BKS actor in general. Interview participants sometimes identified links to individuals within a BKS actor that were later proved to be non-existent with the specific BKS actor per se.

A general limitation of interviews is that they rely completely on the anecdotal perceptions of interviewees. The information given by the interview participants can vary from reality due to different reasons; such as bias, ignorance, or blatant lies. Information sometimes cannot be taken as authentic proof due to those reasons.

Other general difficulties of SNA methods were experienced during the data processing. Entering data into the software programs required patience and dedication. Initially just to get familiar with the software program and secondly during the data processing. Due to that the analysis was limited by the accuracy and capabilities of the researcher.

## 7. Conclusion

This study analyzed the citizen foundation *Bürgerstiftung Kulturlandschaft Spreewald* using the *Net-Map Tool*. The results determine that interdependent actors from all spheres of society form a collaborative governance approach. The citizen foundation fills a governance gap by successfully managing the common purpose of cultural landscape conservation for improved ES delivery.

The main research question: “*How does collaborative governance for improved ecosystem service provision take place in the case of the Bürgerstiftung Kulturlandschaft Spreewald?*” was answered by (1) identifying the main actors, (2) assessing the links concerning money flow, information sharing, conflict relations and trust relations between actors, (3) specifying actors’ motivations to collaborate, (4) inquiring actors’ degree of influence, (5) inquiring actors’ amount of benefit, and assessing the main challenges of the citizen foundation.

The collected data were interpreted against the theories of ES governance, collective action and citizen foundations. The *Net-Map Tool* method proved to be low-cost and advantageous because it provided additional qualitative data to support and supplemented the quantitative social network data. The *Net-Map Tool* also benefitted the entire experience because interviewees felt more excitement with the interview process when compared to conventional interview methods.

The results show that the collaborative governance approach includes 14 main actors from different societal spheres. Single individuals are typically; enrolled into more than one actor, hold more than one role, and are connected by multiple personal relations.

The decision-making structure concerning money flows is hierarchical with the Board and Advisory Board members on top. While this structure diminishes the participatory element of citizen foundations, it also diminishes the probability of high transaction costs, longer decision-making processes, and lowest-common denominator solutions. The sharing of information includes all actors, while personal relations frequently add to the formal communication channels. Conflicts are rare and assumed to not jeopardize the collective action because the dense trust network forms a stable base for the collective action. The identified conflicts are mainly related to the hierarchical decision-making process that doesn’t include all actors.

Overall, the actors are perceived as extremely motivated to cooperate based on philanthropic motivations (i.e. social, ecological, and culture and traditional motivations). To a smaller degree, motivation is based off of self-interest (i.e. economic, duty-related, and image-related motivations).

The hierarchical decision-making process is reflected in the perceived highest influence of the Boards of the citizen foundation whereas the perceived amount of benefit is identified for the local population.

The main challenges are common for citizen foundations and have to do with long-term financing of the citizen foundation with donations and funds, employing office staff on a permanent basis, marketing, communication, leadership and overlapping of roles.

Further research is recommended regarding the following aspects:

- Reasons for actors' different perceptions on identical issues (short and long term).
- Opportunities that could develop from collaboration over time.
- Comparison to other citizen foundations with for instance, consensus oriented decision-making processes, different electoral processes.
- Comparison to market-based and hierarchical governance structures.
- Ways to fill governance gaps through collaborative governance.
- Opportunities to enhance ES through collaborative governance.
- Lessons that can be learned for policy development.

In conclusion, the analysis has showed that the *Bürgerstiftung Kulturlandschaft Spreewald* is a successful citizen foundation that is made up of highly engaged actors that have trustworthy relationships and rely on each other. The ability to collect funding from multiple sources and steadily increasing the project work indicate the astute capabilities of the actors.



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## Glossary

English	German
Advisory Board	Kuratorium
Allianz Environmental Foundation	Allianz Umweltstiftung
Associations	Vereine, Verbände
Biosphere Reserve Administration	Biosphärenreservatsverwaltung
Board	Vorstand
Citizen Foundation	Bürgerstiftung
Contractor	Auftragnehmer
Counties	Landkreise
Donation	Spende
Donor	Spender
European Agricultural Fund for Rural Development (EAFRD)	Europäische Landwirtschaftsfonds für die Entwicklung des ländlichen Raums (ELER)
Federal Association of German Foundations	Bundesverband Deutscher Stiftungen
Ferryman	Kahnfährlaute
Food Industry	Lebensmittelindustrie
Foundation	Stiftung
Foundations Assembly	Stiftungsversammlung
Foundation Supervision Authority	Stiftungsaufsicht
Founder	Stifter
Founding Donors	Gründungsstifter
Funds	Fördermittel
Individual Conservation Contract	Vertragsnaturschutz
Landowner	Landbesitzer
Landscape Protection Areas	Landschaftsschutzgebiete
Lower Conservation Authority	Untere Naturschutzbehörde (UNB)
Meadow Orchard Stradow	Streuobstwiese Stradow
Members Assembly	Mitgliederversammlung
Ministry of Agriculture, Environment and Rural Areas of the Brandenburg State	Ministerium für Ländliche Entwicklung, Umwelt und Landwirtschaft Land Brandenburg
Municipal Administration	Kommunale Verwaltung
Municipalities	Kommunen
Nature and Biodiversity Conservation Union	Naturschutzbund Deutschland (NABU)
Nature Reserve of Central Importance	Naturschutzgebiet
Non-profit Enterprise	Zweckbetrieb
Opinion-shaping Process	Willensbildungsprozess
Spreewald Foundation-Honey	Spreewälder Stiftungs-Honig
Spreewald Grassland Share	Spreewald Wiesenaktie
State Forestry Department	Landesforstbetrieb
State Office for the Environment Brandenburg	Landesamt für Umwelt Brandenburg (LfU)
Revenue Service	Finanzamt
Tourism Tax	Fremdenverkehr- und Kurabgabe
Touristic Service Providers	Touristische Dienstleister
Trust Foundation	Treuhandstiftung
Volunteer	Freiwilliger
Water- and Soil Association	Wasser- und Bodenverband

## Appendix

### Appendix 1: *Net-Map Tool* Interview Guidelines



civil public  
private partnerships

### Leitfaden

#### Interviewfragen Bürgerstiftung Kulturlandschaft Spreewald

- Einleitung
- Bitte um Audioaufnahme
- Daten sind anonym
- Unterbrechungen möglich
- Etwa 60 min Gesamtdauer
- Warum: Masterarbeit / Forschungsinstitut
- Was: Analyse von Strukturen, in welchen verschiedene Akteuren zusammenarbeiten
- Wie: Es geht uns um ihre Wahrnehmung der Bürgerstiftung!

- 1. Post-it anordnen**

Welches sind derzeit die zentralen Akteure der Bürgerstiftung Kulturlandschaft Spreewald?

**ca. 5min**
- 2. Verbindungslinien zeichnen**

**Zwischen welchen Akteuren fließt Geld?**  
Gibt es Verträge?

**Zwischen welchen Akteuren findet ein Austausch von Information statt?**  
Worüber werden Informationen ausgetauscht?

**Zwischen welchen Akteuren gibt es Konflikte?**  
Was sind das für Konflikte?

**Zwischen welchen Akteuren besteht ein Vertrauensverhältnis?**

**ca. 30min**

GRÜN

BLAU

ROT

LILA
- 3. Icons verteilen**

**Was sind die Motivationen der Akteure sich zu engagieren?**  
Interviewer legt die Icons fest.

**ca. 10min**

BRAUN
- 4. Türme (1-5) bauen**

**Wie einflussreich sind die Akteure?**  
**Wie hoch ist der Nutzen der Akteure?**

**ca. 10min**

HELLBLAU

ROSA
- 5. Fragen zur Vergangenheit/Zukunft**

Wenn Sie an die Zukunft (5 Jahre) denken, was könnte verbessert werden?  
Warum ist die Stiftung entstanden?  
Was waren die größten Herausforderungen?  
Werden Sie weiter dabeibleiben?

**ca. 5min**

Legende zeichnen, Datum, Name, Ort, Nummerierung des Interviews



## Appendix 2: Adjustment of BKS Actors

Identified Actors in Interviews	Adjustment	BKS Actor
<b>Interview 1</b>		
Vorstand, Kuratorium, Geschäftsstelle	Summed up as one BKS actor.	Foundation
Stifter, Touristiker und Spender	Separated into three BKS actors.	Founders Touristic Service Providers Donors
<b>Interview 2</b>		
Vorstand, Kuratorium, Geschäftsstelle	Summed up as one BKS actor.	Foundation
Vereine und Verbände, Spreewaldverein	Separated into two BKS actors.	Spreewaldverein Associations
<b>Interview 3</b>		
Lokale Tourismusvereine, Tourismusverband Spreewald (TVS), Naturschutzverbände	Summed up as one BKS actor.	Associations
Untere Naturschutzbehörden, Kommunen	Summed up as one BKS actor.	Municipal Administration
<b>Interview 4</b>		
Tourismusorganisationen, Vereine, Verbände, Fördervereine Lehde und Leipe	Summed up as one BKS actor.	Associations
<b>Interview 6</b>		
Touristiker (Kahnführunternehmen), Spender	Separated into two BKS actors.	Touristic Service Providers Donors
<b>Interview 9</b>		
Verbände und Vereine Landwirtschaft, Verbände und Vereine Naturschutz	Summed up as one BKS actor.	Associations

(Source: Own Elaboration.)

### Appendix 3: Identified BKS Actors

	Actors (English)	Actors (German)
1	Foundation	Stiftung
2	Founders	Stifter
3	Touristic Service Providers	Touristische Leistungsträger
4	Donors	Spender
5	Biosphere Reserve Administration	Biosphärenreservatsverwaltung
6	Landowners	Landeigentümer
7	Contractors	Landwirte und Auftragnehmer
8	Volunteers	Ehrenamtliche Helfer
9	Spreewaldverein	Spreewaldverein
10	Associations (others than Spreewaldverein)	Vereine und Verbände (ohne Spreewaldverein)
11	Municipal Administration	Kommunale Verwaltung und Behörden
12	Projects	Projekte
13	Citizens	Einwohner Spreewald
14	Foundation Supervision Authority	Stiftungsaufsicht
15	Research Project Ginkoo	Forschungsprojekt Ginkoo
16	Ministry of Agriculture, Environment and Rural Areas of the Brandenburg State	LELF (Landesamt für Ländliche Entwicklung, Landwirtschaft und Flurneuordnung)
17	Federal Association of German Foundations	Bundesverband Deutschen Stiftungen
18	Allianz Environmental Foundation	Allianz Umweltstiftung
19	Revenue Service	Finanzamt
20	Partners of the Biosphere Reserve	Partner des Biosphärenreservats
21	State Forestry Department	Landesforstbetriebe
22	Food Industry	Ernährungswirtschaft

(Source: Own Elaboration.)

### Appendix 4: BKSNs Aggregated Adjacency Matrices

#### Aggregated Adjacency Matrices of Money Flow

	Foundation	Founders	Touristic_Ser_Prov	Donors	Biosphere_Adm	Landowners	Contractors	Volunteers	Spreewaldverein	Associations	Municipl_Adm	Projects	Citizens	Foundation_Sup_Aut
Foundation	0	0	0	0	1	5	9	1	2	1	0	5	0	0
Founders	8	0	0	0	0	0	0	0	0	0	0	0	0	0
Touristic_Ser_Prov	4	0	0	0	0	0	0	0	0	0	1	0	0	0
Donors	7	0	0	0	0	0	0	0	0	0	0	0	0	0
Biosphere_Adm	2	0	0	0	0	2	1	0	0	0	0	0	0	0
Landowners	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Contractors	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Volunteers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spreewaldverein	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Associations	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Municipl_Adm	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Projects	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Citizens	1	0	1	0	0	0	0	0	0	0	0	0	0	0
Foundation_Sup_Aut	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Source: Own Elaboration.)

### Aggregated Adjacency Matrices of Information Flow

	Foundation	Founders	Touristic_Ser_Prov	Donors	Biosphere_Adm	Landowners	Contractors	Volunteers	Spreewaldverein	Associations	Municipl_Adm	Projects	Citizens	Foundation_Sup_Aut
Foundation	0	8	8	6	8	6	9	2	6	5	7	5	2	2
Founders	7	0	1	1	2	0	1	0	2	3	1	1	0	0
Touristic_Ser_Prov	7	1	0	0	4	1	0	0	1	3	3	1	1	0
Donors	6	1	0	0	2	0	0	0	0	1	0	0	0	0
Biosphere_Adm	8	2	4	2	0	4	5	1	5	3	2	3	1	0
Landowners	6	0	1	0	4	0	4	0	1	2	1	2	0	0
Contractors	9	1	1	1	5	5	0	0	3	2	1	2	0	0
Volunteers	2	0	0	0	1	0	0	0	0	0	0	1	0	0
Spreewaldverein	6	2	1	0	4	1	3	0	0	2	2	1	0	0
Associations	5	3	3	1	3	2	2	0	2	0	2	1	1	0
Municipl_Adm	7	2	3	0	2	1	1	0	2	2	0	2	2	0
Projects	5	1	1	0	4	2	2	1	1	1	2	0	0	0
Citizens	2	0	1	0	1	0	0	0	0	1	2	0	0	0
Foundation_Sup_Aut	2	0	0	0	0	0	0	0	0	0	0	0	0	0

(Source: Own Elaboration.)

### Aggregated Adjacency Matrices of Conflict Relations

	Foundation	Founders	Touristic_Ser_Prov	Donors	Biosphere_Adm	Landowners	Contractors	Volunteers	Spreewaldverein	Associations	Municipl_Adm	Projects	Citizens	Foundation_Sup_Aut
Foundation	0	0	1	0	0	0	0	0	1	1	0	0	0	0
Founders	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Touristic_Ser_Prov	2	0	0	0	2	1	1	0	0	0	1	0	0	0
Donors	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Biosphere_Adm	0	0	2	0	0	2	2	0	0	0	0	0	0	0
Landowners	1	0	1	0	2	0	0	0	0	0	0	0	0	0
Contractors	0	0	1	0	2	0	0	0	0	0	0	0	0	0
Volunteers	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Spreewaldverein	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Associations	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Municipl_Adm	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Projects	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Citizens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Foundation_Sup_Aut	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Source: Own Elaboration.)

### Aggregated Adjacency Matrices of Trust Relations

	Foundation	Founders	Touristic_Ser_Prov	Donors	Biosphere_Adm	Landowners	Contractors	Volunteers	Spreewaldverein	Associations	Municipl_Adm	Projects	Citizens	Foundation_Sup_Aut
Foundation	0	6	3	4	5	3	5	1	3	2	4	2	1	1
Founders	6	0	0	0	2	0	0	1	0	1	0	0	0	0
Touristic_Ser_Prov	3	0	0	0	0	0	0	1	0	1	0	0	0	0
Donors	4	0	0	0	1	0	0	1	0	0	0	0	0	0
Biosphere_Adm	5	2	0	1	0	2	2	1	4	2	1	1	0	1
Landowners	3	0	0	0	2	0	2	0	0	1	0	0	0	0
Contractors	5	0	0	0	2	2	0	0	1	1	0	0	0	0
Volunteers	1	1	1	1	0	0	0	0	0	0	0	0	0	0
Spreewaldverein	3	0	0	0	4	0	1	0	0	1	1	0	0	1
Associations	2	1	1	0	2	1	1	0	1	0	2	0	0	0
Municipl_Adm	4	0	0	0	0	0	0	0	1	2	0	0	1	0
Projects	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Citizens	1	0	0	0	0	0	0	0	0	0	1	0	0	0
Foundation_Sup_Aut	1	0	0	0	0	0	0	0	0	0	0	0	0	0

(Source: Own Elaboration.)

## Appendix 5: Calculated Measurements for the BKSNs

<b>In-degree Centrality:</b> Number of ties directed to a node.	<b>Out-degree Centrality:</b> Number of ties directed to other nodes.	<b>Betweenness Centrality:</b> Extent to which a node lies between other nodes in the network.	<b>Node Value:</b> Sum of all incoming and outgoing ties.
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Money Network	In-degree Centrality	Out-degree Centrality	Betweenness Centrality	Node Value
Foundation	30.0	24.0	57.0	54.0
Founders	0.0	8.0	0.0	8.0
Touristic_Ser_Prov	0.0	5.0	0.0	5.0
Donors	0.0	7.0	0.0	7.0
Biosphere_Adm	1.0	5.0	0.0	6.0
Landowners	8.0	0.0	0.0	8.0
Contrators	10.0	1.0	0.0	11.0
Volunteers	1.0	0.0	0.0	1.0
Spreewaldverein	2.0	3.0	0.0	5.0
Associations	1.0	2.0	0.0	5.0
Municipal_Adm	1.0	2.0	0.0	3.0
Projects	5.0	1.0	0.0	6.0
Citizens	0.0	1.0	0.0	1.0
Foundation_Sup_Aut	0.0	0.0	0.0	0.0

(Source: Own Elaboration.)

Information Network	In-degree Centrality	Out-degree Centrality	Betweenness Centrality	Node Value
Foundation	72.0	74.0	36.4	146.0
Founders	21.0	19.0	12.4	40.0
Touristic_Ser_Prov	24.0	22.0	5.8	46.0
Donors	11.0	10.0	5.0	21.0
Biosphere_Adm	40.0	40.0	2.4	80.0
Landowners	22.0	21.0	2.2	43.0
Contrators	27.0	30.0	2.1	57.0
Volunteers	4.0	4.0	1.1	8.0
Spreewaldverein	23.0	22.0	0.4	45.0
Associations	25.0	25.0	0.1	50.0
Municipal_Adm	23.0	24.0	0.0	47.0
Projects	19.0	20.0	0.0	39.0
Citizens	7.0	7.0	0.0	14.0
Foundation_Sup_Aut	2.0	2.0	0.0	4.0

(Source: Own Elaboration.)

<b>In-degree Centrality:</b> Number of ties directed to a node.	<b>Out-degree Centrality:</b> Number of ties directed to other nodes.	<b>Node Value:</b> Sum of all incoming and outgoing ties.	<b>Network Density:</b> $\frac{\text{Actual Connections}}{\text{Potential Connections}}$
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Conflict Network	In-degree Centrality	Out-degree Centrality	Node Value	Network Density Overall
Foundation	6.0	1.0	7.0	3.8%
Founders	0.0	3.0	3.0	
Touristic_Ser_Prov	0.0	0.0	0.0	
Donors	0.0	1.0	1.0	
Biosphere_Adm	0.0	0.0	0.0	
Landowners	0.0	0.0	0.0	
Contrators	0.0	0.0	0.0	
Volunteers	0.0	1.0	1.0	
Spreewaldverein	0.0	0.0	0.0	
Associations	1.0	1.0	1.0	
Municipal_Adm	0.0	0.0	0.0	
Projects	0.0	0.0	0.0	
Citizens	0.0	0.0	0.0	
Foundation_Sup_Aut	0.0	0.0	0.0	

(Source: Own Elaboration.)

Trust Network	In-degree Centrality	Out-degree Centrality	Node Value	Network Density Overall
Foundation	40.0	40.0	80.0	77.5%
Founders	10.0	10.0	20.0	
Touristic_Ser_Prov	5.0	5.0	10.0	
Donors	6.0	6.0	12.0	
Biosphere_Adm	18.0	22.0	40.0	
Landowners	8.0	8.0	16.0	
Contrators	11.0	11.0	22.0	
Volunteers	5.0	4.0	9.0	
Spreewaldverein	10.0	11.0	21.0	
Associations	11.0	11.0	22.0	
Municipal_Adm	9.0	8.0	17.0	
Projects	3.0	2.0	5.0	
Citizens	2.0	2.0	4.0	
Foundation_Sup_Aut	3.0	1.0	4.0	

(Source: Own Elaboration.)

#### Cliques:

Sub-structure within a network. Every node part of the sub-structure is connected to all other nodes of the sub-structure.

Cliques within the Trust Network	
1	Foundation Biosphere_Adm Landowners Contractors Associations
2	Foundation Biosphere_Adm Contractors Spreewaldverein Associations
3	Foundation Founders Biosphere_Adm Associations
4	Foundation Biosphere_Adm Spreewaldverein Associations Municipl_Adm
5	Foundation Founders Biosphere_Adm Volunteers
6	Foundation Donors Biosphere_Adm Volunteers
7	Foundation Biosphere_Adm Projects
8	Foundation Biosphere_Adm Spreewaldverein Foundation_Sup_Aut
9	Foundation Touristic_Ser_Prov Volunteers
10	Foundation Touristic_Ser_Prov Associations
11	Foundation Municipl_Adm Citizens

(Source: Own Elaboration.)

## Appendix 6: Aggregation of BKS Actors' Motivations

Motivations (Aggregated Values)	Social	Ecological	Cultural and Traditional	Economic	Duty- related	Image- related
Foundation	6	7	3	4	2	3
Founders	7	5	2	2	n	3
Touristic_Ser_Prov	4	3	3	5	n	2
Donors	4	3	2	1	n	3
Biosphere_Adm	4	5	1	3	3	2
Landowners	3	4	1	5	n	2
Contractors	5	5	3	7	n	2
Volunteers	2	1	n	n	n	n
Spreewaldverein	3	2	2	1	2	2
Associations	2	3	1	3	n	1
Municipl_Adm	5	3	1	3	3	2
Projects	2	1	n	3	n	n
Citizens	3	3	n	2	n	n
Foundation_Sup_Aut	n	n	n	n	2	n

**Aggregated Weighted Mean Values:**  
 Aggregated Values  
 -----  
 Number of Times an Actor was Mentioned

Motivations (Aggregated Weighted Mean Values)	Social	Ecological	Cultural and Traditional	Economic	Duty- related	Image- related
Foundation	0.7	0.8	0.3	0.4	0.2	0.3
Founders	0.9	0.6	0.3	0.3	n	0.4
Touristic_Ser_Prov	0.5	0.4	0.4	0.6	n	0.3
Donors	0.6	0.4	0.3	0.1	n	0.4
Biosphere_Adm	0.5	0.6	0.1	0.4	0.4	0.3
Landowners	0.4	0.6	0.1	0.7	n	0.3
Contractors	0.6	0.6	0.3	0.8	n	0.2
Volunteers	1.0	0.5	n	n	n	n
Spreewaldverein	0.5	0.3	0.3	0.2	0.3	0.3
Associations	0.4	0.6	0.2	0.6	n	0.2
Municipl_Adm	0.7	0.4	0.1	0.4	0.4	0.3
Projects	0.4	0.2	n	0.6	n	n
Citizens	0.8	0.8	n	0.5	n	n
Foundation_Sup_Aut	n	n	n	n	1.0	n
Summe	7.9 + n	6.8 + n	2.5 + n	5.6 + n	1.4 + n	3.0 + n

(Source: Own Elaboration.)

## Appendix 7: BKS Actors' Degree of Influence

<b>Weighted Mean Values:</b> $\frac{\text{Sum}}{\text{Number of Times an Actor was Mentioned}}$
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Influence	Interviews									Sum	Weighted Mean Values
	1	2	3	4	5	6	7	8	9		
Foundation	5	5	5	3	5	5	3	5	5	41	4.6
Founders	2	3	5	1	2	n	3	5	4	25 + n	3.1 + n
Touristic_Ser_Prov	2	n	1	0	2	0	5	5	0	15 + n	1.9 + n
Donors	2	4	1	n	n	0	3	5	0	15 + n	2.1 + n
Biosphere_Adm	2	3	5	3	2	0	n	5	5	25 + n	3.1 + n
Landowners	2	1	5	1	1	n	n	5	2	17 + n	2.4 + n
Contractors	1	2	1	1	1	0	4	5	2	17 + n	1.9 + n
Volunteers	2	2	n	n	n	n	n	n	n	4 + n	2.0 + n
Spreewaldverein	1	2	2	n	2	0	n	n	1	8 + n	1.3 + n
Associations	n	1	2	1	n	0	n	n	3	7 + n	1.4 + n
Municipl_Adm	1	2	4	2	2	n	3	n	4	18 + n	2.6 + n
Projects	1	2	n	0	0	n	n	n	3	6 + n	1.2 + n
Citizens	n	0	3	0	n	n	2	n	n	5 + n	1.3 + n
Foundation_Sup_Aut	2	0	n	n	n	n	n	n	n	2 + n	1.0 + n

(Source: Own Elaboration.)

## Appendix 8: BKS Actors' Amount of Benefit

<b>Weighted Mean Values:</b> $\frac{\text{Sum}}{\text{Number of Times an Actor was Mentioned}}$
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Benefit	Interviews									Sum	Weighted Mean Values
	1	2	3	4	5	6	7	8	9		
Foundation	2	0	5	0	0	0	0	0	0	7 + n	0.8 + n
Founders	4	2	5	5	3	n	2	3	4	28 + n	3.5 + n
Touristic_Ser_Prov	4	n	4	5	3	2	5	3	3	29 + n	3.6 + n
Donors	4	1	5	n	n	2	2	3	3	20 + n	2.9 + n
Biosphere_Adm	2	3	5	5	3	1	n	0	4	23 + n	2.9 + n
Landowners	4	2	4	5	2	n	n	3	5	25 + n	3.6 + n
Contractors	2	1	2	5	5	2	3	4	5	29 + n	3.2 + n
Volunteers	3	2	n	n	n	n	n	n	n	5 + n	2.5 + n
Spreewaldverein	1	3	3	n	3	0	n	n	0	10 + n	1.7 + n
Associations	n	3	3	5	n	0	n	n	2	13 + n	2.6 + n
Municipl_Adm	1	0	4	5	3	n	5	n	3	21 + n	3.0 + n
Projects	2	5	n	0	5	n	n	n	5	17 + n	3.4 + n
Citizens	n	5	3	5	n	n	5	n	n	18 + n	4.5 + n
Foundation_Sup_Aut	0	0	n	n	n	n	n	n	n	0 + n	0.0 + n

(Source: Own Elaboration.)



**Selbständigkeitserklärung**

Hiermit erkläre ich, dass die vorliegende Arbeit nicht für andere Prüfungen eingereicht worden ist und selbstständig geschrieben wurde. Sämtliche Quellen einschließlich Internetquellen, die unverändert oder abgewandelt wiedergegeben werden, insbesondere Quellen für Texte, Grafiken, Tabellen und Bilder, sind als solche kenntlich gemacht und mir ist bekannt, dass bei Verstößen gegen diese Grundsätze ein Verfahren wegen Täuschungsversuchs bzw. Täuschung eingeleitet wird.

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