

The role of social capital in community-based natural resource management: A case study from South Africa

by

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DECLARATION

I, Megan Blore, declare that the thesis, which I hereby submit for the degree Masters of Science (Environmental Economics) at the University of Pretoria, is my own work and has not been previously submitted by me for a degree at this or any other tertiary institution.

Signature: _____

Date: _____

ABSTRACT

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Community-based approaches to natural resource management have become increasingly popular because of their potential to stimulate rural economic development and promote sustainable natural resource use. The appeal of such approaches have been supported by recent developments in economic theory regarding collective action and common property institutions, which have replaced the long-held idea that resources held in common are doomed to overuse and degradation. In particular, a wide array of empirical and experimental studies have led to the emergence of ‘second generation’ collective action theories which are able to reconcile observed behaviour in social dilemma settings with rational choice theory.

Second generation theories of collective action also encompass the concept of social capital; viewing forms of social capital as the fundamental motivations for collective action. Therefore, based on a second generation theoretical framework, social capital ought to play an important role in the emergence and maintenance of self-driven CBNRM projects. Despite this, there have been limited assessments of the explicit role of social capital in cases of self-driven CBNRM.

Consequently, this study set out to evaluate the role of social capital and its relationship with the performance of a self-driven CBNRM case study in South Africa. In order to achieve this aim, a mixed methods research design was employed to assess the roles and relationships of social capital at different levels of analysis. Qualitative results highlighted the major role of

social capital in building various forms of trust at the project level. On the other hand, quantitative results obtained from exploratory factor analysis uncovered a number of latent dimensions of social capital at the household level. In addition, two binary logistic regression models demonstrated both positive and negative relationships between latent dimensions of household-level social capital and indicators of successful collective action in the Umgano Project. The crucial role of traditional leaders in maintaining and mobilizing social capital was a cross-cutting feature of the results in this study. Overall, the findings of this study support the stance of second generation collective action theories regarding the role of social capital in enhancing collective action outcomes.

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Table of Contents

DECLARATION	i
ABSTRACT.....	ii
ACKNOWLEDGEMENTS	iv
List of Tables	viii
List of Figures	viii
CHAPTER 1: INTRODUCTION	1
1.1 Background and Context.....	1
1.1.1 CBNRM in South Africa.....	1
1.1.2 The Umgano Project as a South African CBNRM Case Study	2
1.2 Problem Statement	3
1.3 Aims, Objectives and Hypotheses of the Study	4
1.4 Thesis Structure	5
CHAPTER 2: A REVIEW OF LITERATURE CONNECTING CBNRM, COLLECTIVE ACTION AND SOCIAL CAPITAL.....	6
2.1 Introduction.....	6
2.2 CBNRM and Common Property Institutions.....	7
2.3 Paradigms about the ‘Commons’	7
2.4 Confusion between Property Rights and Resource Systems.....	10
2.5 Coordination and Collective Action in NRM	13
2.6 Theoretical Frameworks for Collective Action.....	15
2.7 Conceptualizing Social Capital in NRM.....	18
2.8 Operationalizing Social Capital in NRM	19
2.9 Summary	23
CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY	24
3.1 Introduction.....	24
3.2 Analytical Framework	24
3.3 Qualitative Research Methods	25
3.3.1 Data Collection	25
3.3.2 Data Analysis	25
3.4 Quantitative Research Methods	26
3.4.1 Data Collection	26

3.4.1.1 Instrument and Measures	27
3.4.1.2 Outcome Measures.....	27
3.4.1.3 Ethical Considerations	29
3.4.2 Data Analysis	29
3.4.2.1 Descriptive Statistics.....	30
3.4.2.2 Exploratory Factor Analysis	30
3.4.2.3 Modifying Variables for Use in the Factor Analysis	31
3.4.2.4 Multivariable Regression Analysis	32
3.5 Summary.....	33
CHAPTER 4: INSTITUTIONAL FEATURES AND PERCEIVED SUCCESS FACTORS OF THE UMGANO PROJECT.....	35
4.1 Introduction.....	35
4.2 Delineating the Institutional Environment and the Action Domain.....	35
4.3 The Institutional Environment	36
4.3.1 The Umgano Project Area: Biophysical Features and Socio-Political History.....	36
4.3.2 An Overview of the Mabandla Community.....	39
4.4 The Action Domain.....	41
4.4.1 Actors and their Attributes	42
4.4.1.1 Role-players from the Mabandla Community.....	42
4.4.1.2 External Role-players.....	45
4.4.2 Activities and Attributes	48
4.4.2.1 Commercial Forestry.....	48
4.4.2.2 Biodiversity Conservation and Sustainable Land Use Practices.....	50
4.4.3 Institutional Arrangements.....	51
4.4.3.1 The Deed of Trust for the Mabandla Community Trust	51
4.4.3.2 The Organisational Structure of the Umgano Project	53
4.4.3.2. The Integrated Management Plan	54
4.4.4 Outcomes of the Action Domain	55
4.5 Key Findings Regarding Perceived Success Factors	55
CHAPTER 5: QUANTITATIVE RESULTS	58
5.1 Introduction.....	58
5.2 Descriptive Statistics.....	58
5.2.1 Socioeconomic and Demographic Characteristics of the Sample.....	59
5.2.2 Indicators of Structural Social Capital	60
5.2.2 Indicators of Cognitive Social Capital	62

5.2.3 Indicators of Previous Civic Engagement.....	64
5.2.4 Outcome indicators	66
5.3 Exploratory Factor Analysis Results.....	68
5.4 Binary Logistic Regression Results	72
5.5 Discussion.....	76
5.5.1 Dimensions of Household-Level Social Capital in the Mabandla Community	76
5.5.2 Relationship between Dimensions of Household-Level Social Capital and Indicators of Successful Collective Action in the Umgano Project	77
5.5.3 Importance of Traditional Leadership.....	79
5.6 Summary of Key Findings regarding Household-level Social Capital.....	80
 CHAPTER 6: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS	 81
6.1 Introduction.....	81
6.2 Relationships between Dimensions of Social Capital and the Success of the Umgano Project .	82
6.3 The Role of Social Capital in the Success of the Umgano Project	83
6.4 Assumptions and Limitations of this Study	83
6.5 Final Thoughts: Implications for Policy and Research	85
 REFERENCE LIST	 86
 APPENDIX 1: QUESTIONNAIRE ITEMS AND CODES FOR SOCIAL CAPITAL INDICATORS AND OUTCOME VARIABLES.....	 96
 APPENDIX 2: SUPPLEMENTARY STATISTICS TO CHAPTER 5	 102
 ANNEX 1: CONSENT FORM AND QUESTIONNAIRE USED IN THE HOUSEHOLD SURVEY	 108

List of Tables

Table 1.1: Objectives and key questions for this study.....	4
Table 3.1: A summary of the methods used to address each of the study objectives	34
Table 4.1: Some of the roles of the Mabandla Community Trust as stipulated in Section 5 of the Mabandla Community Deed of Trust, signed in 2000.....	43
Table 4.2: Other external role-players involved in the Umgano Project ^a	47
Table 4.3: Perceived success factors for the Umgano Project	56
Table 5.1: Socioeconomic and demographic characteristics of the sample.....	59
Table 5.2: Descriptive statistics for indicators of structural social capital.....	61
Table 5.3: Summary of the positive response categories regarding cognitive social capital.....	63
Table 5.4: Descriptive statistics for indicators of previous civic engagement.....	65
Table 5.5: Rotated factor loadings using principal factors method of extraction and varimax rotation with Kaiser Normalization.....	70
Table 5.6: Binary logistic regression results for the understanding and support outcome indicators... 75	

List of Figures

Figure 2.1: Typology of goods (adapted from Ostrom, 2005b: 24).....	8
Figure 2.2: A conceptual model showing how forms of social capital generate collective action (adapted from Ahn & Ostrom, 2002; Ostrom & Ahn, 2009).....	17
Figure 3.1: A framework for analysing institutions (source: Dorward & Omamo, 2009).....	26
Figure 4.1: Map of the study area (source: Google Maps, 2015).....	37
Figure 5.1: Extent to which households disagreed with the statement “The Umgano Project is a development project owned by a company from outside the Mabandla community”	66
Figure 5.2: Extent to which households agreed with the statement “If there are new businesses or plans for the Umgano Project that I disagree with, I will let a village representative know my opinion”	67

CHAPTER 1

INTRODUCTION

1.1 Background and Context

Community-based natural resource management (CBNRM) is an umbrella term for a variety of arrangements in which local user groups participate in managing and benefitting from shared natural resources. Although CBNRM came into the spotlight roughly 30 years ago, it continues to receive ample attention worldwide (Shackleton et al., 2010). The popularity of CBNRM, especially in developing countries, stems from assumptions about the ability of community-based approaches to empower local people, improve access to resources, redress colonial injustice, and stimulate rural development (Mansuri & Rao, 2004; Dressler et al., 2010). Decentralized approaches to natural resource management (NRM) are thought to be more appropriate for dealing with the complexity of social-ecological systems and are therefore also promoted as a means of achieving environmental sustainability (Berkes, 2004; Armitage et al., 2009).

In addition, the appeal of CBNRM has been supported by developments in economic theory with regard to collective action and common property institutions (Ostrom, 1990), which have replaced the long-held idea that commonly owned resources are doomed to overuse and degradation, as per Hardin's (1968) *The Tragedy of the Commons*. The collective action literature has also fostered the concept of social capital. Social capital can be understood as features of individuals and of their relationships which enable people to cooperate and coordinate their activities to pursue shared objectives (Coleman, 1988; Putnam, 1995; Ostrom & Ahn, 2009; World Bank, 2011). Thus, social capital can provide the basis for collective action in self-governed CBNRM projects (Pretty & Smith, 2004), but is also understood to be modified through CBNRM projects (Pretty & Smith, 2004; Gruber, 2010).

1.1.1 CBNRM in South Africa

CBNRM has taken a strong foothold in Southern Africa, where the ostensible outcomes of CBNRM resonate with needs to stimulate rural economic development, alleviate poverty, and more recently, to meet obligations for conserving biodiversity (Fabricius et al., 2004). In addition, before the 1980s, governments in the sub-region generally adopted Western preservationist conservation policies, and the exclusion of local communities from accessing

natural resources in protected areas, combined with fines and prosecution, resulted in alienation and conflict between rural communities and the conservation agenda (Brockington & Igoe, 2006). Thus CBNRM has also been touted as a means for improving people's attitudes towards conservation (Fabricius et al., 2004; Child & Barnes, 2010). This is especially true in South Africa, where some of the well-known CBNRM projects in protected areas (such as the Makuleke and Richtersveld contractual parks) have been the lynchpin in land reform processes (Reid & Turner, 2004; Kepe, 2008; Cundill et al., 2013). In addition to community management of protected areas, cases of community-based rangeland, forestry, fisheries and water management also fall under the CBNRM banner in South Africa (Turner, 2004). Indeed, CBNRM-related principles can be found in numerous pieces of South African legislature spanning various sectors associated with natural resources (Fabricius et al., 2003).

1.1.2 The Umgano Project as a South African CBNRM Case Study

The Umgano Project is a development and conservation initiative owned by the Mabandla community. The project is situated in a remote rural area of the Umzimkhulu local municipality in southern KwaZulu-Natal, South Africa. With the technical and managerial assistance of a non-profit organisation, the Mabandla community has established and operate a commercial timber plantation, communal grazing lands, as well as a conservation area, totalling an area of 7000 ha of collectively managed land (Leisher et al., 2011). The Umgano Project serves as a platform for social development by providing much needed employment opportunities and investing revenues from the timber plantation in local infrastructure and other subsidiary companies (an eco-tourism business, a sawmill business, an agricultural company, and a commercial cattle venture) which are majority-owned by the community. The Umgano Project has also invested in natural capital by implementing an integrated management plan and creating a biodiversity conservation area which the community manages in collaboration with the provincial conservation agency, Ezemvelo KwaZulu-Natal Wildlife (Leisher et al., 2011). While the Umgano Project was not intentionally conceived or labelled as a CBNRM project, key elements of CBNRM are evident in the project. Specifically, the collective ownership and management of the Umgano Project, as well as the various natural assets key to the profitability and sustainability of the project are typical features of CBNRM. Moreover, the long-standing and continued progress of the project, both in terms of development and conservation (Leisher et al., 2011; Bainbridge & Alletson, 2012), position the Umgano Project as a relatively successful case of CBNRM in the South African context.

1.2 Problem Statement

Experiences of CBNRM have been mixed, and many have been disappointed with the poor performance, in terms of social and conservation outcomes, of CBNRM in South Africa (Kepe, 2008; de Beer, 2013), Southern Africa (Fabricius et al., 2004), and elsewhere (Dressler et al., 2010). While broad sets of principles for successful CBNRM have been proposed (Cox et al., 2010), it is increasingly recognised that CBNRM is dynamic and works within complex, context specific social-ecological systems and these principles cannot always be applied across-the-board to all cases of CBNRM. Consequently, there have been calls for more nuanced, case-by-case analyses of CBNRM and factors that contribute to its success (Fabricius et al., 2004).

Much of the current literature on CBNRM in South Africa focuses on the challenges involved in co-management of protected areas by claimant communities and conservation agencies (e.g. Kepe, 2008; Cundill et al., 2013). While it is pertinent to understand the performance and success factors of CBNRM in these cases, the institutional setting involves a particular set of policies and issues which are not necessarily relevant to cases of CBNRM outside the context of land claims. In the few cases where CBNRM has been assessed outside the context of land claims, the focus has been either on ‘informal’ CBNRM (e.g. Shackleton & Shackleton, 2004) or on externally driven projects imposed on communities (e.g. Cundill, 2010). To my knowledge, there are no cases in the literature that analyse ‘formal’¹ CBNRM initiatives driven by the community themselves. This deficit is important in light of criticisms that externally-driven CBNRM results in ‘co-option’ of communities rather than co-management of natural resources (de Beer, 2013). Moreover, there are no South African studies that explicitly assess the importance of social capital in the performance of CBNRM. This represents a significant gap in our understanding of what motivates and sustains collective action by South African communities in the context of NRM.

^{1 1} Here, ‘informal’ and ‘formal’ CBNRM are used to distinguish the differences between the everyday use and management of natural resources on communal land and ‘formal’ projects which typically involve government or NGO support and are framed by a formal conservation and/or commercial objective. This distinction parallels Turner’s (2004) distinction between ‘everyday’ CBNRM and ‘focused’ CBNRM.

1.3 Aims, Objectives and Hypotheses of the Study

The aim of this study is to evaluate the role of social capital and its relationship with the success of the Umgano Project. More specifically, the ‘success of the Umgano Project’ is meant as a reference to the *collective action* component of the CBNRM project (as opposed to other interpretations of success, such as profitability for instance).

The nature of this enquiry is, however, multi-layered because of the complex nature of socio-ecological systems and the multifaceted nature of social capital. Therefore, it is necessary to first understand and explain the underlying CBNRM system operating in the Umgano Project before it is possible to expand on the role of social capital in this context. Consequently, multiple research objectives must be addressed in order to achieve the aim of this study. These objectives are listed in Table 1.1 alongside key questions and hypotheses that need to be addressed under each. The first objective addresses the need to understand the underlying system of CBNRM in this case, and the subsequent objectives address the role of social capital and its relationship with the performance of the Umgano Project in particular. The reasoning underlying each particular objective will be discussed more thoroughly in Chapter 3, following the key theoretical and empirical lessons drawn from a review of the literature (Chapter 2).

Table 1.1: Objectives and key questions for this study

No.	Objective	Key Questions to be Answered	Hypotheses
1	Conceptualize and explain the structure and operation of CBNRM in the Umgano Project	1.1. What are the main resources and activities involved in the project? 1.2. Who are the people/organisations involved in the Umgano Project? 1.3. What are the roles of the people/ groups involved in the project? 1.4. What are the rules and procedures that govern the resources and activities in the project?	All key questions are exploratory; hypotheses are not applicable
2	Determine the factors perceived by key informants to have been intimate to the success of the project	2.1. Do key informants think elements of social capital played an important role in the emergence and maintenance of the Umgano Project? 2.2. What are the other factors that potentially explain the success of the project?	Various elements of social capital have been critical for the emergence and maintenance of the project Factors other than elements of social capital play an important role in the success of the project

No.	Objective	Key Questions to be Answered	Hypotheses
3	Examine the relationship between different components of household-level social capital in the Mabandla community and the success of the Umgano Project from a collective action perspective	3.1. What are the key components of household-level social capital in the Mabandla community? 3.2. What is the relationship between key components of household-level social capital and the success of the Umgano Project from a collective action perspective?	Household-level social capital is comprised of multiple components—including features of both cognitive and structural social capital Both cognitive and structural elements of social capital have a significant positive influence on the success of the project

No hypotheses are advanced for the first objective because of its exploratory and descriptive nature. While the second objective is also partially exploratory, some hypotheses are raised in order to address Key Questions 2.1 and 2.2 (as shown in Table 1.1). Drawing on a multidimensional view of the social capital concept in answering Key Question 3.1, evidence of multiple distinct elements of social capital at the household level is expected; including dimensions of both structural and cognitive social capital. However, guided by second generation theories of collective action (discussed in Chapter 2), dimensions of structural and cognitive social capital (Key Question 3.2) are hypothesised to have a significant positive influence on the success of the Umgano Project.

1.4 Thesis Structure

In order to address the aim of this study, this thesis begins by reviewing the literature relevant to common property institutions, collective action, and social capital. In so doing, Chapter 2 unpacks important theoretical and empirical considerations for addressing the objectives of this study. Next, in Chapter 3, the analytical framework and research methods used in this study are presented. Thereafter, Chapter 4 delivers the qualitative results of this study and performs at least three interrelated purposes: first, it presents an institutional analysis of the Umgano Project (addressing Objective 1); second, it highlights some of the factors perceived by key informants to have been intimate to the success of the Umgano Project (addressing Objective 2); and third, it provides a thorough description of the Umgano Project that would traditionally be covered by a ‘Study Area’ chapter. Chapter 5 delivers the results of the quantitative components of this study, focussing on the dimensions of social capital at the household-level and their influences on the success of the Umgano Project (addressing Objective 3). Finally, the thesis concludes in Chapter 6 by summarizing the overall findings of the study and distilling key research lessons and policy messages.

CHAPTER 2

A REVIEW OF LITERATURE CONNECTING CBNRM, COLLECTIVE ACTION AND SOCIAL CAPITAL

2.1 Introduction

Although social capital is known to have been introduced before, it is widely accepted that there has been a resurgence of social capital in academic literature following the works of Coleman (1988), Putnam et al. (1993) and Putnam (1995). The concept of social capital has become a common point in dialogue around prevalent issues in economic development. Some of these issues are directly associated with CBNRM, including sustainable development, rural poverty, and collective action (Woolcock & Narayan, 2000; Pretty & Ward, 2001; Ostrom & Ahn, 2009). However, the widespread applicability of social capital is a double edged sword; while the concept promotes interdisciplinary communication and research, so too is the concept plagued by ambivalence associated with differences in epistemology and analytical approaches (Claridge, 2004). The problem of theoretical ambivalence also arises in concepts closely related to social capital, particularly in discourse on the ‘commons’ (Ostrom & Hess, 2007), collective action (Meinzen-Dick et al., 2004), and the characterisation of institutions (Ostrom, 2005a).

This chapter will provide some clarity about the meaning and role of social capital in CBNRM by examining the literature² linking common property institutions, collective action, and social capital. Firstly, in Section 2.2., CBNRM is framed as a common property institutional arrangement, thus explaining why most of the economic theory underpinning CBNRM stems from the commons literature. Secondly, two sections (Sections 2.3. and 2.4.) are dedicated to laying the conceptual groundwork for understanding collective action and social capital by examining key paradigms, technical concepts, and areas of confusion in the commons literature. Thirdly, the importance of collective action in NRM is explained and the role of social capital in initiating and sustaining collective action is highlighted (Sections 2.5. and 2.6.). Thereafter, in Section 2.7., the definition and conceptualization of social capital is briefly revisited, followed by a review of a number of case studies illustrating how social capital has been operationalized and measured in empirical NRM studies (Section 2.8.). Finally, the chapter is summarized by highlighting the underlying linkage between social capital and

² This study is framed by a New Institutional Economics (NIE) perspective, which draws on the contributions of a range of social science disciplines (Ostrom, 2005a).

CBNRM and reflecting on important considerations for measuring social capital in an empirical study.

2.2 CBNRM and Common Property Institutions

Much of the contemporary literature on the ‘commons’ deals with understanding the institutional arrangements that allow humans to sustainably manage natural resources. The commons literature is especially concerned with common property institutions (institutional arrangements involving a distinct group of people as opposed to an individual or the public at large); so much so that the term ‘commons’ is often mistakenly conflated with the idea of common property institutions (see Section 2.4 for a more detailed discussion of the often confused terminology used in the commons literature). The point of departure of this study is that CBNRM is an *operational* version of common property institutions in NRM (Turner, 2004; Cox et al., 2010). From this perspective, much of the theory relevant to CBNRM can be found in the body of work constituting the commons literature.

2.3 Paradigms about the ‘Commons’

Goods and services are frequently defined according to a typology (Figure 2.1) that distinguishes the degree of (i) *subtractability* – the extent to which one person’s consumption of a good, or resource unit, detracts from someone else’s ability to consume that good – and (ii) *excludability* – which can be defined according to the difficulty, or costliness, of excluding individuals from accessing or benefiting from the provision of the good, or resource system³ (Ostrom, 2005b; Meinzen-Dick, 2009). Many natural resources, such as ocean fisheries, forests, rangelands, and irrigation systems are characterised by high costs of exclusion because of their spatial scale and natural delineation (Ostrom et al., 1999; Meinzen-Dick, 2009). In addition, the use and management of natural resources affects many ecosystem services, such as carbon sequestration, nutrient cycling, and biodiversity, which in turn have broader impacts on other people, sometimes far removed from the site of resource use (climate change being the obvious example). Thus, most natural resources yield multiple goods and services and are

³ I use the term ‘resource system’ to refer to the stock variable associated with the resource. Ostrom (1990: 30-31) clarifies the difference between resource units (a flow variable), such as tonnes of fish or timber, and the resource system (a stock variable), such as fishing grounds or forests. The characteristic of excludability pertains to the resource system. Therefore, in situations with multiple users, difficulty of exclusion refers to the high costs of keeping other people from accessing and harvesting from the resource system, not the resource units.

classified as being, at least partially, common-pool or public goods (Pretty & Smith, 2004; Meinzen-Dick, 2009).

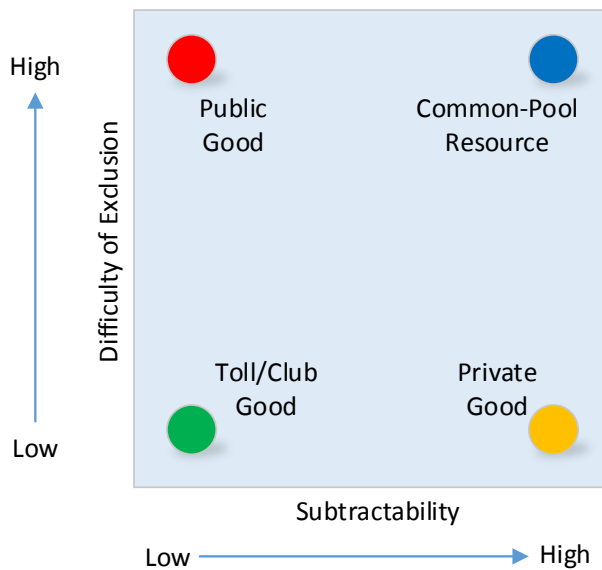


Figure 2.1: Typology of goods (adapted from Ostrom, 2005b: 24)

Because of high costs of exclusion, common-pool and public goods tend to suffer from issues associated with externalities and free riding (Ostrom et al., 1999; Meinzen-Dick, 2009). Free riding occurs when individuals try to gain the benefits of a good or service without contributing to the cost of its provision (Pretty & Ward, 2001). Consequently, free rider problems encourage overuse and underinvestment in natural resources (Ostrom et al., 1999; Meinzen-Dick, 2009). This problem is exemplified in *The Tragedy of the Commons*, in which Hardin (1968) uses an example of herdsmen sharing a pasture to illustrate how the difficulty of exclusion results in degradation of common resources. In his example, Hardin explains that the burden of overgrazing is shared by all the herdsmen, therefore each herdsman has the incentive to continually add cattle to the pasture because he gains all the benefit of doing so, but only bears a fraction of the cost. Hardin concludes that the pasture, like all other common resources, are condemned to overuse and degradation unless people are coerced into better management, either through state regulation or privatization of the ‘commons’.

Hardin's uncompromising assessment of the commons contributed to economic theories that emphasized the inability of individuals to solve social dilemmas⁴. Simultaneously, thinking in ecological science at the time, which described nature in terms of the ideologies of 'balance' and equilibrium states, modelled the environment as simplistic, linear systems which could be manipulated to improve their efficiency and productivity (Holling & Meffe, 1996; Leach et al., 1999). Together, these theories underpinned NRM and development paradigms that prevailed in policy and practice for much of the twentieth century (Mansuri & Rao, 2004). These paradigms stressed state regulation of public and common-pool resources (resulting, for example, in top-down, preservationist conservation policies and the establishment of protected areas) (Holling & Meffe, 1996; Leach et al., 1999; Fabricius et al., 2004) and, where possible, the privatization of communally owned resources in order to improve efficiency and productivity (e.g. Alchian & Demsetz, 1973).

Despite the compelling arguments underlying the state regulation / privatization paradigm, a large body of work has emerged in the last thirty years that challenges its assumptions and policy prescriptions. Although it is beyond the scope of this study to discuss the theoretical developments in ecological science, it is suffice to say that ecologists have increasingly recognised the complexity involved in natural systems, and that attempts to 'command and control' (sensu Holling & Meffe, 1996) resource systems often result in perverse outcomes that contribute to, rather than improve, resource degradation (ibid). Also, it is now widely accepted that ecological and human systems cannot be considered separately, but rather, that they are intricately coupled and exhibit non-linear and unpredictable features of complex systems (Berkes, 2004). Many authors (e.g. Feeny et al., 1990; Ostrom, 1990; Bromley, 1992) have drawn attention to cases around the world where there have been long histories of sustainable use of common-pool resources. Real world evidence of successful common-pool resource management was the impetus for Elinor Ostrom's seminal book *Governing the Commons* (1990), in which Ostrom describes the institutional arrangements of a number of cases that have enabled people to sustainably use common-pool resources for long periods of time. Since *Governing the Commons*, a multitude of empirical studies have emerged supporting the notion that common-pool resources do not necessarily have to be privatized or centrally controlled by the state, and, in some instances, common property arrangements can be more efficient and

⁴ The term 'social dilemma' is used to describe situations where there is a conflict between the rational, maximizing behaviour of individuals and cooperative behaviour required for the wellbeing of broader society (Ostrom, 2000).

sustainable (Ostrom & Hess, 2007; Meinzen-Dick, 2009). Moreover, scholars have called attention to the potential weaknesses of private and state ownership over common-pool resources, particularly the tendency of market failure (e.g. Platteau, 1996) and the weak capacity of the state to manage and monitor these resources (Meinzen-Dick, 2009). Furthermore, scholars and policy makers have increasingly acknowledged the detrimental effects that top-down NRM policies have had on conservation efforts, especially in developing countries, by undermining and weakening traditional institutions associated with NRM (Bromley, 1992; Fabricius et al., 2004; Brockington & Igoe, 2006).

Even though the paradigm shift in the commons literature draws attention to situations where Hardin's theory is weak, it by no means disproves the tragedy of the commons. The consensus in recent commons literature is that Hardin's thesis is "insightful but incomplete" (Feeny et al., 1990: 12), especially with regards to his assumptions about the behaviour of people (based on the axiom of methodological individualism that is at the core of economic analysis) and their inability to cooperate to overcome the social dilemmas involved with common-pool resources (Feeny et al., 1990; Ostrom et al., 1999). Unfortunately, misunderstanding with regards to the assumptions of Hardin's model has sometimes encouraged the division of scholars and policy makers into camps that idealistically support either 'state', 'market' or 'community-based' solutions to common-pool resource problems, rather than adopting a holistic view of institutional diversity in relation to complex social-ecological systems (Schlager & Ostrom, 1992; Ostrom et al., 2007; Ostrom, 2008).

2.4 Confusion between Property Rights and Resource Systems

It is not uncommon to see authors referring to 'common property resources', the 'commons' and 'common-pool resources' interchangeably. The distinction may seem trivial, but it is at the core of ongoing confusion in discourse on the commons (Bromley, 1992; Ostrom & Hess, 2007). Bromley (1992) brings clarity to the debate by clarifying the concept of property rights. Bromley (1992: 2) defines a property right as "... a claim to a benefit stream that some higher body – usually the state – will agree to protect through the assignment of duty to others who may covet, or somehow interfere with, the benefit stream". Bromley's definition highlights that ownership involves *claims* to benefit streams, not to objects. Therefore, property rights are, by nature, social relationships, since they specify the authorized actions of an individual with regards to a resource, *relative* to the actions of other individuals (Ostrom & Hess, 2007).

Furthermore, Bromley's definition reveals that, for claims to be effective, property rights need to be sanctioned by institutions.

At this point, it would be remiss to not clarify the meaning of 'institutions' as they are conceptualized in the commons literature. Scholars in NIE often refer to Douglass North's (1990: 3) definition of institutions as "the rules of the game". Some (e.g. Peters, 2002) have criticized this definition for being too simplistic, saying that it overlooks the social and cultural dynamics of institutions. However, a closer reading of North's definition reveals the comprehensive meaning of the term 'rules', which is used by North and other NIE scholars to include both formal rules, such as laws, as well as informal rules, such as norms and conventions, which shape the way that people behave and interact (Menard & Shirley, 2005). Ostrom (2005a) expands the definition of institutions to include rules, norms, and strategies used by people in repetitive situations. Ostrom's definition of institutions is particularly useful for understanding collective action and social capital because it encompasses the different components of institutions recognized across the spectrum of social science research.

By definition, therefore, property rights are themselves also institutions that prescribe the actions that people may take, and the benefits they may receive, with regards to resources. Schlager and Ostrom (1992) provide further conceptual clarity by discerning five categories of property rights typically seen in NRM: access and withdrawal rights (comprising operational-level property rights) and management, exclusion and alienation rights (comprising collective-choice rights). Schlager and Ostrom (ibid) explain that an assortment of property rights may exist in relation to a particular resource, including those recognised and enforced by the state (*de jure* property rights) and those organised and enforced between resource users but not recognised by the state (*de facto* rights). Property rights regimes are systems of rules that govern the various property rights over a resource, and can be separated into four broad categories (although, in practice, these regimes tend to overlap): private, common property, state, and open-access (Feeny et al., 1990; Ostrom & Hess, 2007). Private property rights regimes are characterized by rights vested in an individual entity, such as a single person or a corporation. In contrast, common property rights are vested in a defined group of individuals (Feeny et al., 1990). Private and common property regimes are similar in that they both exhibit exclusion rights, which means owners can exclude non-owners from rights over the resource (Bromley, 1992). However, the two regimes are usually distinguished by the right of alienation – that is, the right to sell or lease rights of management or exclusion – which is often a feature

of private, but not common property regimes (Ostrom et al., 1999; Ostrom & Hess, 2007) . By contrast, under state property regimes, the state owns and controls use of the resource. Frequently, the state may allocate operational-level rights to individuals or groups, but retains authority in prescribing the rules of who can access the resource, what can be harvested, and how harvesting may take place (Bromley, 1992). Finally, open-access regimes are characterized by a lack of defined or enforced property rights and therefore access and use of the resource is unrestricted (Feeny et al., 1990).

Common property theorists have pointed out that Hardin's *The Tragedy of the Commons* (1968) is, in fact, relevant to situations of open-access; the situation where there is an absence of rules to enforce property rights (Feeny et al., 1990; Ostrom et al., 1999). The fallacy that common property regimes are associated with the tragedy of the commons can be attributed to Hardin's use of the term 'commons' in reference to *common-pool resources* (and not, as is sometimes mistakenly assumed, common property) and the false assumption that systems of rules that authorize property rights do not exist outside the realm of state or private ownership (Feeny et al., 1990; Ostrom et al., 1999). The misconception that common property regimes necessarily result in excessive use and degradation of resources is also a consequence of the prevalent use of the term 'common property resource' which conflates the idea of a *resource type* (common-pool resources) and a *property regime* (common property) (Bromley, 1992; Ostrom et al., 1999). Ostrom and Hess (2007) point out that the use of the term 'common property resource' creates the false impression that all goods sharing the characteristics of subtractability and difficulty of exclusion are operated everywhere under the same type of property regime. Despite numerous attempts (Bromley, 1992; Ostrom & Hess, 2007, amongst others) to address the confusion between these terms, authors continue to use the term 'common property resource' to refer to common-pool resources throughout the commons and CBNRM literature (e.g. Feeny et al., 1990; Pretty & Ward, 2001; Pretty, 2003; Bodin & Crona, 2008; Nkhata et al., 2009). Nonetheless, it is useful to conceptually distinguish between resource systems and property regimes for the sake of understanding and investigating how the challenges associated with common-pool resources are overcome under different institutional arrangements.

Common-pool resources are managed under a variety of institutional arrangements with varying degrees of success, depending on the relative costs and benefits of these different arrangements within a particular social, political and ecological context (Feeny et al., 1990; Ostrom & Hess, 2007; Ostrom et al., 2007). Schlager and Ostrom (1992: 290) note that scholars

need to move away from dogmatic support of particular property-rights regimes, and look towards understanding the efficiency, enabling conditions, and resilience of different institutional arrangements in relation to a diversity of resources. For this reason, researchers interested in understanding the efficacy and sustainability of common property arrangements have made considerable progress in identifying and assessing the factors that contribute to the emergence and persistence of collective action to overcome social dilemmas associated with common-pool resources (Ostrom, 1999; Agrawal, 2001; Meinzen-Dick, 2009).

2.5 Coordination and Collective Action in NRM

Both the issues of overuse and underinvestment need to be addressed in order to overcome the problems associated with common-pool resources (Ostrom et al., 1999; Meinzen-Dick, 2009). At least two levels of coordination are required to address these issues. First, at the operational-level, mechanisms are required to coordinate people's activities to reduce the problem of overuse. These mechanisms take the form of rules, or institutions, that specify members' rights and duties (Ostrom, 1999). Second, at the collective-choice level, coordination is required to formulate and enforce these rules (Schlager & Ostrom, 1992). Incentives to invest in the resource are generally created through the assurance that others will cooperate with the agreed upon rules (Pretty, 2003).

In addition to the issues of overuse and underinvestment in many natural resources, there are other reasons for coordination amongst resource users. One reason is multiple uses and multiple users of the natural resource (Meinzen-Dick, 2009). For instance, coordination is required amongst users that harvest timber from forests for commercial purposes and forest users that harvest non-timber forest products, such as fuelwood, fodder, wild foods and resins; items that regularly make a significant contribution to poor people's livelihoods in South Africa (Shackleton & Shackleton, 2004). Even when the resource system is operated under a private property regime, it often makes sense for farmers or households to coordinate their activities in situations of high risk due to economic, climatic, or political shocks (for example, the creation of group-based credit and savings systems in some developing countries) (Pretty & Ward, 2001); when lumpy technologies are required (for example, certain expensive equipment required for improved farm yields) (Meinzen-Dick, 2009); or when technologies are only effective if applied over a large spatial area (for example, integrated pest management programmes) (Pretty & Ward, 2001; Meinzen-Dick, 2009).

Consequently, coordination is frequently a desirable feature in NRM. Meinzen-Dick (2009) notes that coordinating institutions associated with NRM are usually driven either by the state or collective action. Collective action is defined by Marshall (1998: 85) as “an action taken by a group (either directly or on its behalf through an organisation) in pursuit of members’ perceived shared interests”. Thus, collective action institutions encompass the self-organised and self-driven common property arrangements that are at the heart of Ostrom’s analysis in *Governing the Commons* (1990) and are the primary focus of this study. On the other hand, state institutions of coordination may appear to be very similar to collective action institutions, especially in light of the recent policy trend towards devolving NRM to local user groups. Decentralization and devolution of NRM by the state is largely a response to the weaknesses of central state organisations in managing and monitoring natural resources; the recognition that local people often have appropriate context-specific knowledge to manage resources; as well as the increasing popularity of the idea that devolution can potentially create incentives for local people to invest in the sustainable use and management of natural resources (Agrawal & Ribot, 1999; Meinzen-Dick, 2009). The distinction between devolved state institutions and collective action institutions of coordination therefore appears to be whether the impetus for coordination emerges externally or internally to the user group. However, Meinzen-Dick (2009) notes that the distinction may be blurred in practice and that a range of hybrid co-management⁵ arrangements may be more appropriate for coordinating NRM than either state or collective action or market institutions on their own. Furthermore, sincere devolutionary policies in NRM also need to draw on and enhance the conditions for collective action in order for local user groups to devise appropriate, legitimate rules for NRM (Meinzen-Dick, 2009). Thus, collective action is likely to be important across the array of CBNRM arrangements, externally or internally driven.

⁵ Co-management falls within the array of arrangements classified as CBNRM. There are different definitions of co-management, but it is usually distinguished by the presence of partnerships between communities and the state, NGOs, or private sector actors who share power and management responsibility with regards to decision making over the resource (Carlsson & Berkes, 2005). Even though a number of external organisations are involved in the Umgano Project, I have refrained from labelling the project as a form of ‘co-management’ primarily because the secondary literature concerning the Umgano Project presents the Mabandla community as the driving force. That is, the powers and management responsibility fall disproportionately on the shoulders of the Mabandla community and external role players are mostly involved in an advisory capacity. Nonetheless, Meinzen-Dick (2009) uses the term ‘hybrid co-management’ in a more general sense than I have defined here, and her intention is to draw attention to a number of ways that communities can collaborate with other role players in NRM.

2.6 Theoretical Frameworks for Collective Action

Formal models of collective action have been constrained by assumptions underpinning ‘first generation’ collective action theories (Ostrom, 1998; Ostrom, 2000; Ostrom & Ahn, 2009). First generation collective action theories, epitomized by Olson’s *The Logic of Collective Action* (1971) and Hardin’s *The Tragedy of the Commons* (1968), rely on the assumptions that people are fully rational (implicitly including the assumption that they have all the relevant information to make optimal decisions), selfish, and make independent decisions to maximize their private gains (Ostrom, 1998; Ostrom & Ahn, 2009). This set of collective action theories forecast that, without coercion, rational individuals “will not act to achieve their common or group interest” (Olson, 1971: 2). Olson’s contribution was an insightful counter argument to earlier theories that assumed that groups would automatically form and act collectively to achieve common interests (Ostrom, 2000). However, while first generation theories are useful in predicting behavioural outcomes in a competitive setting, they are not a complete theory of human behaviour, and are particularly inept at modelling the behaviour of humans in a social dilemma (Ostrom, 1998; Ostrom, 2000; Ostrom & Ahn, 2009). Based on empirical evidence and game theoretic experiments, Ostrom (1998) notes the inadequacy of first generation theories and proposes a modified theory of human behaviour which is consistent with rational choice models, but has the potential to account for observed human behaviour in social dilemma settings.

The core of Ostrom’s ‘second generation’ theory of collective action is the recognition that humans are ‘boundedly’ rational within the constraints of their cognitive capabilities and the often incomplete and asymmetric information available to them. Drawing on developments in evolutionary psychology, cognitive science, and game theoretic experiments, Ostrom (1998) explains that, under the constraints of bounded rationality, people tend to rely on experience-based heuristics, norms and rules to help them in decision making. Therefore, formal and informal institutions are important in determining the expected behaviour of humans in general, including their behaviour in collective action situations (Ostrom, 1998; Ostrom, 2000). Furthermore, it is widely accepted in NIE that institutions are embedded in aspects of social relationships and culture; consequently human preferences are endogenous (that is, they are affected by institutions, social relationships, and human experiences) and therefore human decisions are, at least partially, framed by their social context (Ishihara & Pascual, 2009; Kirsten et al., 2009).

To explain how collective action arises from a reliance on heuristics, norms, and rules, Ostrom and Ahn (2009) focus on how social networks (through repeated interaction and the consequences of reputation) and institutions (especially sanctions for non-compliance) affect the incentives for cooperative behaviour. These ‘structural’ mechanisms induce selfishly motivated individuals to participate in collective action because they increase the benefits of cooperation and increase the costs of acting opportunistically. In addition, Ostrom and Ahn (ibid) refer to the innate preference that some individuals have for cooperation, even in the absence of structural incentives. These intrinsic motivations for cooperative behaviour are labelled ‘trustworthiness’, although they can be considered as values or habits in a broader sense (ibid). Findings from empirical and experimental studies show that intrinsic motivations for cooperation are especially important for the sustainability of collective action (Ostrom, 2000; Pretty & Ward, 2001). While externally designed regulations and incentives for cooperation (such as can be expected in externally-driven CBNRM) can sustain collective action, their effect lasts only as long as there are mechanisms to monitor and enforce these incentives. By contrast, when cooperation is internalized by way of attitudes or values, cooperation is self-enforced and is therefore more durable than structural incentives (Ostrom, 2000; Pretty & Ward, 2001).

As illustrated in Figure 2.2, the structural and intrinsic motivations for cooperation help generate trust. Trust is defined here as “a psychological state comprising the intention to accept vulnerability based on positive expectations of the intentions or behavior of another” (Rousseau et al., 1998: 395). Trust allows (boundedly) rational individuals to participate in collective action because they expect that others will reciprocate cooperation (Ostrom, 1998; Ostrom et al., 1999; Ostrom, 2000). Given that trust, norms, networks, and reciprocity are often attributed to social capital (Woolcock & Narayan, 2000; Adler & Kwon, 2002; Ostrom & Ahn, 2009), a second generation theory positions certain dimensions of social capital as the central feature of collective action (Figure 2.2). While social capital theorists have tended to frame their research questions by claiming that social capital facilitates collective action, many have been unable to clarify the mechanisms that link social capital and collective action (Ishihara & Pascual, 2009; Ostrom & Ahn, 2009). Second generation theories of collective action clarify these mechanisms and do so in a way which is consistent with rational choice theory (Ostrom, 1998).

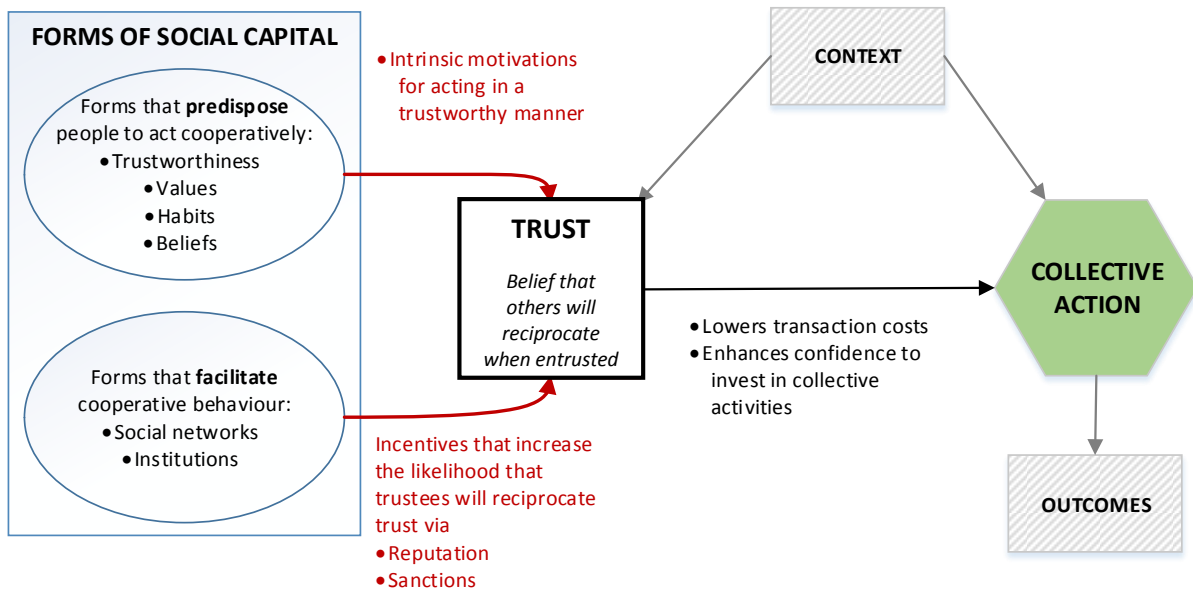


Figure 2.2: A conceptual model showing how forms of social capital generate collective action (adapted from Ahn & Ostrom, 2002; Ostrom & Ahn, 2009)

Other economic explanations for the link between social capital and collective action rely on concepts of transaction costs⁶ and imperfect information. Therefore, these explanations necessarily assume bounded rationality and are compatible with a second generation theoretical framework. For example, Pretty and Smith (2004) explain how features of social capital, specifically trust and obligation generated through social interaction and reciprocity, reduce the transaction costs of cooperation because individuals do not have to invest time and money in monitoring the actions of others. Similarly, Collier (1998) explains how different types of social interaction generate externalities that help overcome some of the problems in social dilemma situations, namely the problems of asymmetric information and free riding. In particular, Collier (ibid) draws on the notions of trust, reputation, copying or sharing information, rules and norms as mechanisms by which social interactions improve information about others' actions, improve knowledge about non-behavioural aspects of the world (for example, information about available technology), and overcome free riding. A key feature of

⁶ Transaction costs are a key feature of NIE analysis. Because of the problems arising from imperfect information, economic decisions are surrounded by uncertainty regarding the behaviour of other agents (i.e. the threat of opportunistic behaviour) and the future (i.e. threats of economic crises, drought, war, etc.). These threats pose the risk of transaction or coordination failure. Consequently, economic agents must engage in certain activities (for example, information seeking, screening, monitoring, and enforcement of contracts) to reduce the transaction risks they face. The costs incurred by economic agents in trying to reduce their transaction risks are referred to as transaction costs (Kirsten et al., 2009). Transaction costs are distinct from the operational costs of transacting or coordinating, and therefore the extent of transaction costs can make a large impact on what options an economic actor considers to be viable or not.

these explanations is that they view trust⁷ as an intermediate variable. For instance, Collier (1998) describes trust and knowledge as stocks which are generated by forms of social interaction and are inputs into the production process. Similarly, Collier (1998) and Pretty and Smith (2004) refer to social capital generating trust, and trust, in turn, lowering the transaction costs of cooperation. While viewing trust as an intermediate variable between social capital and collective action is consistent with the conceptual model illustrated in Figure 2.2 (Ostrom & Ahn, 2009), other conceptualizations of social capital have resulted in differing views as to whether trust is a source, form, or outcome of social capital (Claridge, 2004).

2.7 Conceptualizing Social Capital in NRM

Social capital captures the idea that people's relationships and shared norms and values are assets which can be leveraged to pursue personal interests, or which can form a safety net to fall back on in difficult times (Woolcock & Narayan, 2000). However, social capital is defined and operationalized in different ways depending on the disciplinary background of scholars and the level of analysis (see Claridge, 2004 for a review). Consequently, a plethora of definitions has led to obscurity in conceptualizing social capital (Adler & Kwon, 2002; Claridge, 2004). Key debates concerning the definition of social capital include: the distinction between the source, substance, and effect of social capital (Adler & Kwon, 2002); whether the term 'capital' is appropriate (Collier, 1998; Adler & Kwon, 2002; Ostrom & Ahn, 2009); and multiple forms of social capital (Adler & Kwon, 2002; Claridge, 2004). Moreover, the ambiguity of social capital has been compounded by the wide range of social issues to which the idea of social capital has been applied; often by scholars from different disciplinary backgrounds who draw on different epistemologies and use vastly different analytical approaches (Claridge, 2004).

⁷ However, trust is also a multifaceted concept. In a process of synthesizing multidisciplinary views regarding trust, Rousseau et al. (1998) distinguish at least three forms of trust, namely: '*Calculus-based trust*' (trust based on information from external sources – such as reputation or certification – that verify the expected behaviour or intentions of the trustee); '*Relational trust*' – also known as interpersonal trust – (a form of trust that arises from repeated interactions between parties over a period of time, and therefore tends to be inherently personal, incorporates reciprocity and emotional connections, and is more long-lasting and resilient compared to calculus-based trust); and '*Institution-based trust*' (which arises from a sense of security provided by institutional structures, such as laws, contracts, and social norms, as opposed to confidence in the trustee themselves). Others (e.g. Grootaert & van Bastelaer, 2002) have also distinguished between specific trust (that is, trust that exists in the context of specific transactions or with specific people) and generalized trust (also known as 'social trust', which is used to refer to the overall assessment of one's trust of others). Despite the various dimensions and types of trust, it is widely accepted that, in practice, trust takes on 'multiplex' forms (sensu Rousseau et al., 1998); meaning that trust can simultaneously exist in different forms within a given situation.

However, recent work has come a long way in integrating definitions and improving the conceptualization of social capital by synthesizing theoretical and empirical work across disciplines (e.g. Krishna & Shrader, 2000; Woolcock & Narayan, 2000; Adler & Kwon, 2002; Grootaert & van Bastelaer, 2002; Claridge, 2004). In particular, it has been recognized that social capital is a complex, multidimensional, and multiscale concept and therefore, appropriate indicators of social capital depend on the context of the research question and case study being examined (Grootaert & van Bastelaer, 2002; Claridge, 2004; Krishna, 2004). Ostrom and Ahn (2009) point out that the complexity of social capital is not surprising given that other types of capital, such as physical and human capital, also take on various forms and measurements of their aggregate values are also context specific. Furthermore, the complexity of social capital in a NRM setting is consistent with the dynamic, multidimensional and multiscale nature of social-ecological systems (Berkes, 2004), the interactive effects of institutions (Menard & Shirley, 2005), and the context specific nature of institutional analysis, particularly in the realm of common-pool resources (Agrawal, 2001).

As a working definition, this study views social capital as attributes of individuals and their relationships which enable people to cooperate and coordinate their activities to pursue shared objectives (Coleman, 1988; Putnam, 1995; Ostrom & Ahn, 2009; World Bank, 2011). This definition provides a useful basis for conceptualizing social capital in NRM for two reasons. First, it captures the converging views of social capital researchers: that social capital is not an entity but a latent variable that emanates from features of social interaction (Coleman, 1988); it distinguishes between the sources and consequences of social capital (Adler & Kwon, 2002); and it permits different dimensions of social capital (Woolcock & Narayan, 2000). Second, this definition is consistent with the forms of social capital underpinned by a second generation theoretical framework for collective action (Ostrom & Ahn, 2009).

2.8 Operationalizing Social Capital in NRM

Lessons from empirical studies are useful in highlighting important considerations for social capital operationalization in NRM and the opportunities and challenges associated with measuring social capital. Based on the case studies reviewed, there seem to be three primary approaches to measuring social capital: a network approach, a norms approach, or a mixture of the two. These approaches are guided by the priority given to structural or cognitive dimensions of social capital respectively (Uphoff, 2000). Structural social capital comes from the structure

and institutional composition – including the “*roles, rules, precedents and procedures*” (Uphoff, 2000: 218) – of social networks that contribute to cooperation. On the other hand, cognitive social capital emanates from less tangible sources (such as norms, attitudes, beliefs and values) that build trust and reciprocity between people (Krishna & Uphoff, 1999; Krishna & Shrader, 2000; Uphoff, 2000).

Adherents to the structural conceptualization of social capital are interested in the importance of networks in enhancing the potential for collective action. The primary method of analysis in this approach is social network analysis (SNA); a quantitative tool developed by sociologists to study the structure of social networks and quantify the ‘connectedness’ of people within a community (e.g. Burt, 2000). A key contribution of structural perspectives of social capital has been the differentiation of ‘bonding’, ‘bridging’, and ‘linking’ varieties of structural social capital. Bonding social capital, sometimes referred to as internal ties, is used to refer to the cohesiveness of a particular group which is often indicated by the density of social ties (Adler & Kwon, 2002; Adger, 2003; Bodin & Crona, 2008). Bonding social capital is thought to facilitate collective action because community cohesiveness increases the dissemination of information, sharing of norms and beliefs, and reduces the difficulty of monitoring and enforcing each other’s behaviour (Adler & Kwon, 2002; Adger, 2003; Ostrom & Ahn, 2009). However, various authors have warned against the negative consequences of social capital, many of which are associated with bonding social capital (for example, cohesive communities have the potential to exclude outsiders which can result in the persistence of inequality) (Pretty & Smith, 2004; Ishihara & Pascual, 2009). On the other hand, bridging and linking social capital, which can be thought of as external ties, refer to relational connections between groups (horizontal connections) and between groups and external agencies (vertical connections) respectively (Pretty & Smith, 2004). Bridging and linking ties are also thought to be useful for leveraging important financial and informational resources which can improve the effectiveness of collective action and enhance its outcomes (Adler & Kwon, 2002; Pretty & Smith, 2004). A combination of internal and external forms of social capital are mutually reinforcing and the relative combinations of these types of social capital are likely to affect the success of collective action (Ishihara & Pascual, 2009). For example, in a study of a remote rural fishing village in Kenya, Bodin and Crona (2008) found that, despite evidence of strong bonding and bridging social capital, one of the reasons that collective action towards improving the use of the fishery had failed to emerge was due to a lack of links to external agencies which

could help mobilize financial and informational resources that would be beneficial in reducing overexploitation of the fishery.

Researchers interested in the cognitive manifestations of social capital rely on an assortment of methods, qualitative and quantitative, to identify and measure the normative aspects of social capital. For example, Minato et al. (2010) use a qualitative approach to identify the role of social norms associated with landholder management of natural vegetation in Australia, while Baral (2012) uses primarily quantitative analyses (multiple regression models) to identify the factors contributing to trust between local organizations and administering agencies in the context of community-based forest management in Nepal.

However, in line with increasing consensus regarding a multifaceted definition of social capital, most social capital empirical studies focus on measuring aspects of both structural and cognitive forms of social capital, using a combination of quantitative and qualitative approaches (Grootaert & van Bastelaer, 2002). Excellent examples include the empirical studies by Krishna (2004) and McCarthy et al. (2004) as well as the social capital assessment tool (SOCAT) prepared through the World Bank's 'Social Capital Initiative' (Krishna & Shrader, 2000). These three sources highlight important operational considerations relating to *the role of leadership; levels of analysis; understanding the context; and use of indicators and indices* in social capital research. These considerations are briefly outlined here:

(i) *The role of leadership*

Krishna's study (2004) highlights the importance of leaders in mobilizing social capital for collective action. This consideration is consistent with Meinen-Dick's (2009) account of social capital, which explains that social capital provides the basis for collective action, but typically needs to be activated for collective action to emerge. Exploring the role of key individuals relates to the idea of bridging and linking capital, whereby the relationships of agents with external parties may help to leverage financial and informational support.

(ii) *Levels of analysis*

The multiscale nature of social capital means that social capital can be measured at the individual through to the national level (Grootaert & van Bastelaer, 2002). For example, Krishna (2004) measures social capital at the village level while McCarthy (2004), using similar methods to Krishna (2004), measures it at a community level. Likewise, the SOCAT

enables the assessment of social capital at the household, community, and organisational level (Krishna & Shrader, 2000). While particular research questions may favour a specific level of assessment, multiple levels of assessment are useful in getting a holistic view of social capital sources and outcomes within a particular context. Krishna and Shrader (ibid) make a similar argument with regards to the use of multiple, complementary data collection techniques which provide both a broad and a nuanced understanding of the manifestation of social capital at different levels of analysis.

(iii) *Understanding the context*

The context specific nature of social capital means that the researcher needs to have a good understanding of the particular case study. This consideration is especially important for defining indicators of social capital that are locally relevant (Krishna, 2004). Krishna and Shrader (2000) emphasize that SNA, used alone, is an inadequate indicator because of the context specific nature of social capital. While SNA has the advantage of being an objective measure that can be applied to different cases, thus promoting comparison and knowledge generation, it is the content of networks that matters for social capital (ibid). To illustrate this point, Krishna and Shrader (2000: 4) use the example of organised religion that “supports humanity and peace in one context [but] becomes a forum for armed militancy in another”. For this reason, the SOCAT is designed with instruments that are multidimensional (i.e. they look at both the network and normative manifestations of social capital using multiple methodologies) and flexible to application in different contexts (ibid). The novel feature of the SOCAT is that it retains a degree of rigour in analysis because, while the researcher is allowed to identify and measure social capital indicators that are locally relevant, instruments are constructed based on broad analytical categories with regards to the various facets of social capital (ibid). Thus, the SOCAT allows some consistency in the way that social capital is measured in different regions and under different institutional environments (ibid).

(iv) *Use of indicators and indices*

Social capital is somewhat elusive to measure. Since social capital is not a physical, measureable object, empirical studies rely on proxy indicators of social capital (Grootaert & van Bastelaer, 2002). Examples include membership in particular organizations and indicators of trust, solidarity and reciprocity. In addition, to capture the multidimensional nature of social capital, a wide range of indicators are used. Unsurprisingly, different indicators of social capital tend to be highly correlated. To overcome the issue of multicollinearity in regression

analyses, Krishna (2004) and McCarthy (2004) both constructed indices of social capital indicators using factor analysis. More generally, researchers have frequently used exploratory factor analysis to isolate latent dimensions of social capital from the broader set of indicator variables (for a review and application see Narayan & Cassidy, 2001; Grootaert & van Bastelaer, 2002).

2.9 Summary

By understanding CBNRM as a common property institution it is possible to synthesize the literature linking social capital and CBNRM by following the underlying theoretical literature on the commons. The characteristics of natural resources often mean that collective action is desirable, and, in the case of common-pool resources, necessary. The commonly cited, but often unsubstantiated, relationship between social capital and collective action is underpinned by second generation theories of collective action, which suggest that trust is the key linkage. Therefore, social capital can potentially explain the emergence and maintenance of self-driven CBNRM such as the Umgano Project. Key considerations for measuring social capital in a CBNRM setting include having a good overall understanding of the context of the project, identifying and operationalizing locally-relevant indicators of social capital, and noting the role that key actors play in the project.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

Drawing on the theoretical and empirical lessons in Chapter 2, this chapter outlines the research design used in the study, including the overall analytical approach, data collection methods, and data analysis procedures that were used. Firstly, in Section 3.2, the analytical approach of the study is presented and justified in light of the multiscale and multidimensional nature of social capital. Thereafter, the data collection and data analysis methods that were used in this study are described, firstly for the qualitative component (Section 3.3), then for the quantitative component (Section 3.4) of this study. Finally, the chapter concludes with a summary of the respective methods used in addressing each of the study objectives.

3.2 Analytical Framework

This study made use of a mixed methods research design. Both qualitative and quantitative methods of data collection and analysis were seen as complementary and useful for measuring different dimensions of social capital and their influence on the collective action performance of the Umgano Project. Also, since social capital is multidimensional and can be measured at different levels, the objectives of this study were structured to capture different roles of social capital at different levels of analysis.

Objectives 1 and 2 were designed to be qualitative in nature and were achieved simultaneously through multiple data collection methods (which were used as a means of triangulation) and qualitative analysis. To address Objective 1, institutional analysis was used to assess information about structural social capital (roles, rules, and procedures) at the project level. Similarly, in addressing Objective 2, qualitative analysis of key informant interviews also provided information about the role of social capital at the project level.

On the other hand, quantitative methods were used to address the third objective of this study. Furthermore, Objective 3 was explicitly designed to investigate multiple dimensions of social capital at the household level and determine their relationship with the performance of the Umgano Project from a collective action perspective.

3.3 Qualitative Research Methods

3.3.1 Data Collection

Both key informant interviews and a range of available literature (including academic research papers, articles in reputable magazines, legal documents, and grey literature) were used as data sources for the qualitative component of this study. Six key informants were purposively selected and interviewed because they were considered as actors or representatives of groups of actors that oversee crucial aspects of the strategic and/or operational approach of the Umgano Project. Key informant interviews were semi-structured and revolved around (i) institutional aspects of the project (i.e. Key Questions 1.1.-1.4) and (ii) the factors that key informants believe to have contributed to the emergence and success of the project (i.e. Key Questions 2.1 and 2.2). Key informant interviews were also used as a sounding board for ideas regarding the construction and implementation of the household survey (Section 3.4.1.1) and for obtaining/discussing any documents or other grey literature that may be of use in the study. With the prior verbal consent of key informants, all interviews were digitally recorded and later transcribed.

3.3.2 Data Analysis

Literature and transcripts from key informant interviews were coded and analysed by arranging available information according to themes. In particular, analytical themes were based on the framework of institutional analysis developed by Dorward and Omamo (2009), as depicted in Figure 3.1. This framework builds on the Institutional Analysis and Development (IAD) framework which is well known and has been widely used in empirical studies (Ostrom, 2005a). The framework depicted in Figure 3.1 is useful in the analysis of the Umgano Project because it outlines categories of endogenous variables in the ‘action domain’ (which, in this case, is the Umgano Project), while the IAD framework focuses more broadly on how exogenous variables affect situations and generate outcomes.

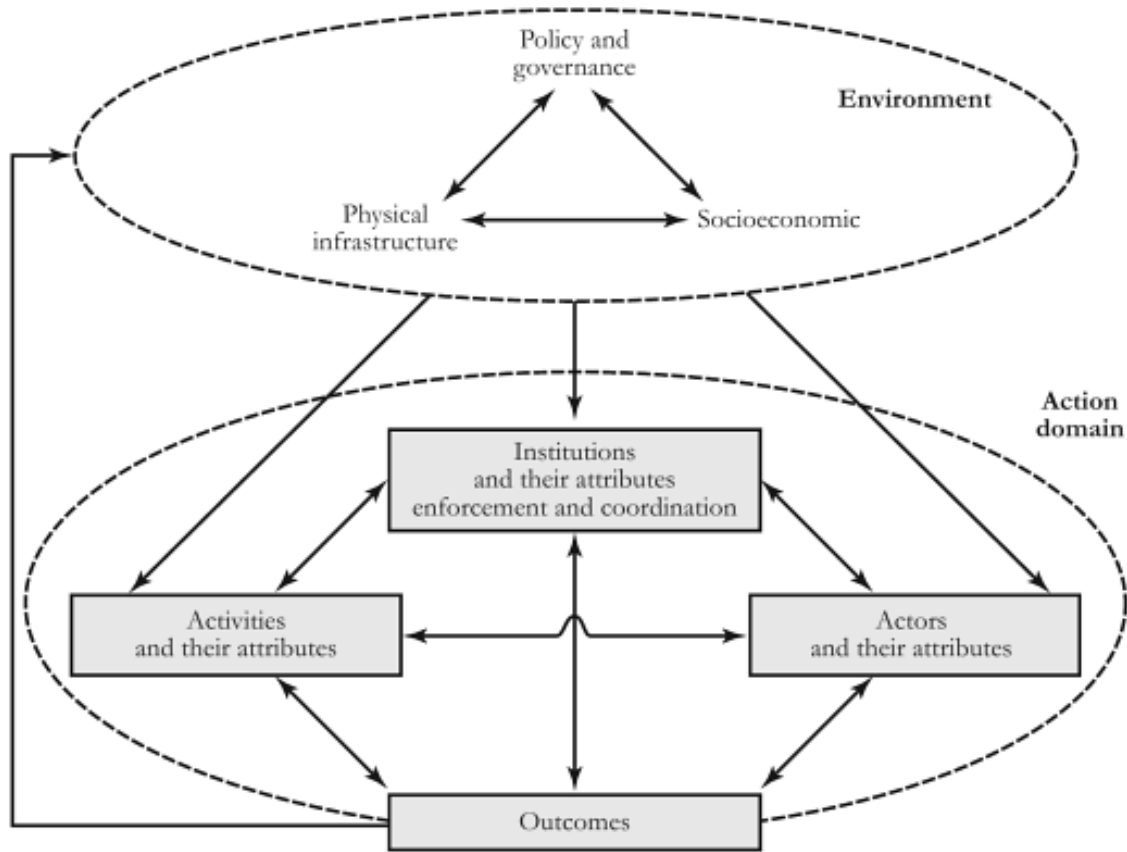


Figure 3.1: A framework for analysing institutions (source: Dorward & Omamo, 2009)

Categories within the ‘action domain’ correspond exactly with Key Questions 1.1-1.4. Therefore, by performing an institutional analysis the first objective of this study was addressed directly. On the other hand, by integrating answers to Key Questions 2.1 and 2.2 into the framework of institutional analysis, it was also possible to address the second objective simultaneously.

3.4 Quantitative Research Methods

3.4.1 Data Collection

The quantitative component of the study relied on a pre-coded structured questionnaire which was based upon the household survey in the SOCAT (Krishna & Shrader, 2000). The SOCAT was developed via the World Bank’s Social Capital Initiative and has been field-tested in a number of developing countries. Before administering the household survey, questionnaires were pre-tested for face validity and five local enumerators were given training for administering the household survey. A fully randomized sampling frame was constructed from a list of all beneficiary households, from which 30 households were randomly selected per each

of the twelve villages comprising the Mabandla Traditional Area (MTA). The sample size per village was specified at $n=30$ because, in the case of the smallest village, the maximum number of beneficiary households was 30. Overall, the decision to select equal sample sizes per village was made to facilitate comparison across villages if necessary (Newing, 2011).

During the months of July and August 2014, the household survey was administered to a random sample (total sample size of $n=360$) of beneficiary households in the Mabandla community. All surveys were carried out in the first language of the Mabandla people, *isiZulu*. Surveys were administered to heads of households, or alternatively, the next most senior adult present in the household.

3.4.1.1 Instrument and Measures

As per the recommendations of the SOCAT, various items in the household survey were adapted to suit the context of the study. In particular, following a pre-testing session with five local enumerators, the wording and coding for some of the survey items were adjusted and a set of questions concerning ‘exclusion from services’ and the ‘genogram’ (SOCAT household questionnaire items 4C.5 to 4C.8 and 3 respectively) were eliminated from the household survey. Also, to measure the outcome variables for use in regression analysis, two sets of questions regarding the respondent’s understanding and support for the Umgano Project were added to the survey. The final questionnaire used in the household survey has been included in Annex 1.

3.4.1.2 Outcome Measures

A major component of addressing the third objective of this study was identifying proxy indicators for successful collective action regarding the Umgano Project. As indicators of long-lasting CBNRM, Sano (2008) examined (i) whether resource users share a common understanding of the rules of CBNRM and (ii) whether they follow these rules. Based on the understanding that collective action is important in CBNRM in so far as it facilitates the formulation and enforcement of rules which help overcome the problems of over use and free riding (as explained in Chapter 2), a shared understanding of and compliance with rules is a useful indicator of collective action which can be measured at the household level. However, this study assessed understanding from a broader perspective than Sano (2008). More specifically, understanding indicators comprised a set of seven separate Likert-scale items

which assessed the extent to which respondents agreed with statements regarding the objectives and operation of the Umgano Project.

Support for the Umgano Project was also added as an alternative proxy indicator for successful collective action. The justification for this indicator lies in the theoretical connection between social capital and collective action, particularly through improved availability of information and ease of monitoring (as discussed in the theoretical framework in Chapter 2). Thus, social capital could contribute to support for the Umgano Project by, for instance, facilitating the sharing of information about the intention and progress of the various business operations at Umgano, thus improving the transparency and accountability of the project. In the household survey, support indicators comprised a set of eight Likert-scale items which assessed the extent to which respondents agreed with statements regarding their approval of the project and compliance with some of the project's rules-in-use. Also, by combining compliance items with more general support items (such as "I think the Umgano Project has brought development to this area"), the intention was to shift the focus away from compliance, with the hope that this would also reduce the possibility that some households would feel victimised or would be dishonest if asked only about rule compliance. The questionnaire items and codes for both the understanding and support indicators are also included in Table A.3.1 in Appendix 1.

Besides the additional survey items that were added, including the outcome measures also resulted in another notable modification to the household survey. Specifically, the 'previous collective action' component of the original SOCAT household survey was renamed 'civic engagement' in the questionnaire used in this study (part five of the household questionnaire). Although the same set of questions were used in both questionnaires, the civic engagement section was renamed to avoid confusion with collective action contributing to the success Umgano Project (i.e. the study's outcome variable of interest). To be clear, the civic engagement indicators and the outcome indicators measured distinctly different empirical and conceptual aspects of collective action. In contrast to the understanding and support indicators described above, the civic engagement indicators focussed on aspects of political-oriented civic engagement (such as asking whether or not the respondent had voted in elections, actively participated in an election campaign, or taken part of a disruption of government meetings during the previous three years) and aspects of volunteerism (such as whether or not the respondent had made a monetary or in-kind donation or had volunteered for a charitable organization in the previous three years).

3.4.1.3 Ethical Considerations

In an effort to adhere to the University of Pretoria's research ethics guidelines for engaging with human subjects, particular effort was made to ensure that informed consent was given before the commencement of any interview and that the individual responses to interviews remained confidential and anonymous. The household survey included an introductory section detailing the research affiliation with the university, the aims and objectives of the study, as well as the intended use of the study. In each and every case, respondents were asked to give their written consent before the commencement of the interview (consent forms have been included in Annex 1 with the household survey). All enumerators assisting in the conducting of interviews signed a statement confirming that they would keep all survey information confidential. As a means of ensuring confidentiality and anonymity, sample codes were used instead of personal information to identify the respondent household on questionnaire sheets. Completed questionnaires were collected from enumerators every second to third day to ensure the safe and orderly handling of questionnaire sheets. Once data were captured and cleaned, all questionnaire sheets were sorted and packed away for safe keeping in the researcher's office. In addition, as an act of gratitude and respectfulness, each household was offered a small gift pack (containing some basic household items such as small bags of rice, sugar, flour, etc.) at the conclusion of every interview. The research design of this study was approved by the research ethics committee of the Faculty of Natural and Agricultural Sciences at the University of Pretoria.

3.4.2 Data Analysis

This subsection describes the various empirical analysis procedures that were used in the quantitative analysis of the household survey, namely: descriptive statistics, exploratory factor analysis, and multivariable regression analysis. All statistical analyses were carried out using the STATA 12.0 statistical package. Descriptive statistical techniques were performed primarily to get an overview of the data and to facilitate the interpretation of the multivariable results. Exploratory factor analysis was used to extract latent dimensions of social capital in this case study. Lastly, two separate logistic regressions were used to determine the significance, sign, and relative impact of social capital factors on indicators of successful collective action in the Umgano Project.

3.4.2.1 Descriptive Statistics

Initial analysis involved using descriptive statistics, such as measures of central tendency and dispersion for numeric data and relative frequency tables for categorical data, for each of the indicators included in the household survey.

3.4.2.2 Exploratory Factor Analysis

Exploratory factor analysis is a data reduction statistical procedure which is frequently applied to social capital studies to manage the multiple related indicators of social capital used in research instruments (Narayan & Cassidy, 2001; Grootaert & van Bastelaer, 2002). Exploratory factor analysis is particularly useful for social capital research because it is able to uncover the latent structure of social capital by examining dimensions of shared variance amongst the measured variables (Costello & Osborne, 2005). In order to address Key Question 3.1, this study used exploratory factor analysis to extract the key dimensions of household-level social capital from data collected in the household survey. In addition, exploratory factor analysis assumes no *a priori* hypotheses about the particular factor structure, and was therefore appropriate for the exploratory nature of Key Question 3.1 (Costello & Osborne, 2005).

Most of the standard routines for performing factor analysis assume univariate or multivariate normality; assumptions which are violated by the use of the discrete variables obtained in the household survey (Narayan & Cassidy, 2001; UCLA Statistical Consulting Group, 2015). To overcome this problem, a matrix of polychoric and polyserial correlations was first constructed using the ‘polychoric’ command in STATA (Kolenikov & Angeles, 2004). Polychoric and polyserial correlations improve correlation estimates when data include ordinal and binary data (UCLA Statistical Consulting Group, 2015). The polychoric correlation matrix was subsequently used as the input into the exploratory factor analysis by using the ‘factomat’ command in STATA.

Factors were extracted using the principal factors method and orthogonal varimax rotation was used with Kaiser Normalization. Multiple criteria (namely: the ‘scree test’, the Kaiser Criterion, and cumulative variance explained) were used to decide on the number of factors to retain. Post-estimation, the Kaiser-Meyer-Olkin (KMO) statistic and a likelihood ratio test of independence for the underlying correlation matrix were both assessed to ensure the appropriateness of the data for running factor analysis. As is standard practice in exploratory

factor analysis, rotated factors were interpreted and given names that best describe the factor according to the variables with highest factor loadings (Costello & Osborne, 2005). A threshold of 0.40 was used as a minimum threshold for whether an item loads onto a factor. Finally, factor scores were estimated for use in subsequent regression analyses.

It is important to note that exploratory factor analysis is a complex procedure with few absolute guidelines and many options. Furthermore, study design, data properties, and the questions to be answered all have a bearing on which procedures will yield the maximum benefit (Costello & Osborne, 2005). As such, the particular methods of factor extraction and interpretation used in this study were chosen based on a combination of copious iterations and fine-tuning of variables (until a reasonably ‘clean’ and interpretable factor structure was obtained), as well as the recommendations of experts in the field. In particular, the paper written by Costello and Osborne (2005) and the examples provided on the UCLA Statistical Consulting Group’s website (2015) were extremely helpful in navigating the confusing information available regarding exploratory factor analysis.

3.4.2.3 Modifying Variables for Use in the Factor Analysis

A number of variables underwent modification before they were used in the overall factor analysis. One set of items that required modification were those that were answered after meeting/ not meeting a particular precondition. For instance, in the case of membership indicators, a precondition for answering questions about organisational characteristics was whether or not the respondent was involved in any organisations or social groups. If the respondent was not involved in any organisations or social groups, then subsequent items regarding organisational characteristics were recorded as missing. Including variables with a wide array of missing observations was problematic for factor analysis, particularly in the calculation of eigenvalues from the polychoric correlation matrix. Therefore, for the purposes of the factor analysis, it was necessary to exclude these variables or combine them with the precondition. For instance, the organisational characteristics variables were recoded such that a zero would indicate that the household was not involved in any organisations (e.g. the item concerning the effectiveness of organisation decision-making was recoded to: 0= not involved in any organisation; 1= not effective at all, 2= somewhat effective, 3= very effective).

In addition, polychoric correlation matrices cannot be used for categorical variables that are non-ordinal (UCLA Statistical Consulting Group, 2015). Consequently, all such non-ordinal variables were excluded from the factor analysis (Table A.3.1 in Appendix 1 contains a full list of all the items that were excluded from the factor analysis). These items included the solidarity items, the mutual support items, and other items that indicated which people in the community play important roles in various circumstances (for instance, items concerning who mediates conflict and who acts as leader in times of crisis). However, to include a measure of mutual support, a binary indicator was generated for whether or not the respondent selected the fifth item ('the entire village would act together') in the following scenario: "If there was a problem that affected the entire village, who would work together to deal with the situation?" The latter approach was also used by Pronyk et al. (2008) to formulate an indicator of mutual support.

3.4.2.4 Multivariable Regression Analysis

Once the extracted factors were named and estimated, binary logistic regression models were used to address Key Question 3.2. However, the decision to use binary logistic models resulted from a process of trial-and-error and critical evaluation. Initially, a number of ordinary least squares (OLS) regression models were run to explore the relationships between extracted factors and additive indices of understanding and support. Subsequently, ordered logistic regression analyses using individual indicators of understanding and support were run using the 'ologit' command in STATA. However, all of the ordered logistic regression models were found to violate the central assumption of proportional odds. To address this problem, the various indicators of understanding and support were converted to binary indicators (e.g. 1=agree or strongly agree; 0= otherwise) and binary logistic regression models were run.

Although the understanding and support indicators were ordinal, it was reasoned that usefulness of these indicators for addressing Key Question 3.2 could be retained if they were transformed into binary indicators. To illustrate, most of the understanding indicators were measured on a six-point Likert scale (e.g. 0= not sure; 1= strongly disagree; 2=disagree; 3= neutral; 4=agree; 5=strongly agree). Therefore, if the indicator was a true statement about the Umgano Project, any response other than 'agree'/'strongly agree' showed some level of misunderstanding. Hence recoding the responses to a binary outcome served the purpose of indicating whether or not the respondent understood the aspect of the project in question. In

addition, this approach was considered to be more meaningful (in terms of addressing Objective 3) than using a multinomial logistic regression model.

Furthermore, the binary logistic regression models were preferred to the OLS models because the former were non-linear and therefore more appropriate for the potentially complex relationship between dimensions of social capital and collective action (Narayan & Cassidy, 2001). Also, interpreting the coefficients of the OLS models was awkward because of the use of additive scores as dependent variables. More importantly, running the binary logistic regression models indicated that the signs and significance of some social capital factors were different for separate indicators of understanding and support. Therefore, it did not make sense to use the understanding and support indicators lumped together in additive scores.

Finally, one of each of the understanding and support indicators were chosen as the dependent variables to be used in the final binary logistic regression analysis with socioeconomic and demographic variables included as controls. Each of the respective dependent variables were chosen because they were considered to be the best proxies for capturing the relevant aspects of understanding and support in the context of the Umgano Project. The selected understanding dependent variable reflected whether or not the respondent *disagreed* with the statement “The Umgano Project is a development project owned by a company from outside the Mabandla community”. On the other hand, the selected support dependent variable indicated whether or not the respondent *agreed* with the statement “If there are new businesses or plans for the Project that I disagree with, I will let a village representative know my opinion”.

3.5 Summary

The aim of this study is to evaluate the role of social capital and its relationship with the success of the Umgano Project, which is taken to be a relatively successful self-driven CBNRM project. A mixed methods analytical approach (summarized in Table 3.1) was used to capture the multidimensional and multiscale roles/relationships of social capital.

The first two objectives of this study were qualitative in nature and focussed on social capital at the project level. The latter objectives were addressed simultaneously by using key informant interviews and a range of literature as primary data sources. Qualitative analysis was performed

by categorising and synthesising information according to the analytical themes of a framework for institutional analysis.

In contrast, the third objective of this study was quantitative and focussed on social capital at the household level. To address the third objective, a structured household survey was used to collect primary data regarding household-level social capital of beneficiary households in the Mabandla community. Factor analysis was used to discern the underlying dimensions of social capital among the sampled households, while regression analyses were used to assess the relationship between dimensions of household-level social capital and indicators of success (in terms of collective action) of the Umgano Project.

Table 3.1: A summary of the methods used to address each of the study objectives

No.	Objective	Key Questions to be Answered	Data Collection	Data Analysis
1	Conceptualize and explain the structure and operation of CBNRM in the Umgano Project	1.5. What are the main resources and activities involved in the project? 1.6. Who are the people/organisations involved in the Umgano Project? 1.7. What are the roles of the people/groups involved in the project? 1.8. What are the rules and procedures that govern the resources and activities in the project?	Key informant interviews; Review of relevant literature (published and grey literature)	Institutional analysis of key actors, activities and rules-in-use
2	Determine the factors perceived by key informants to have been intimate to the success of the project	2.1. Do key informants think elements of social capital played an important role in the emergence and maintenance of the Umgano Project? 2.2. What are the other factors that potentially explain the success of the project?	Key informant interviews; Review of relevant literature (published and grey literature)	Summary of perceived success factors, organised and integrated into the institutional analysis
3	Examine the relationship between different components of household-level social capital in the Mabandla community and the success of the Umgano Project from a collective action perspective	3.3. What are the key components of household-level social capital in the Mabandla community? 3.4. What is the relationship between key components of household-level social capital and the success of the Umgano Project from a collective action perspective?	Household survey (structured questionnaire based on the SOCAT household survey)	Descriptive statistics; Factor analysis Binary logistic regression analysis

CHAPTER 4

INSTITUTIONAL FEATURES AND PERCEIVED SUCCESS FACTORS OF THE UMGANO PROJECT

4.1 Introduction

This chapter comprises the qualitative component of this study and performs at least three interrelated purposes. The primary purpose of this chapter is to perform an institutional analysis of the Umgano project by answering the key questions posed towards addressing the first objective of this study. Secondly, this chapter highlights some of the major factors (elements of social capital and otherwise) perceived by key informants to have contributed to the success of the Umgano project; thereby fulfilling the second objective of this study. Thirdly, the elements discussed in this chapter provide a thorough background to the Umgano Project which would traditionally be covered by a 'study area' section in an academic paper. These interrelated purposes are addressed concurrently and are structured according to the analytical categories laid out in the framework for institutional analysis as discussed in Chapter 3. The structure of this chapter proceeds as follows: Firstly, the boundary between the institutional environment and action domain are defined in Section 4.2. Next, the institutional environment of the Umgano Project is examined in Section 4.3, followed by a consideration of the action domain (Section 4.4) which includes the major role players, resources and activities, and key rules and procedures governing the activities in the Umgano project. Finally, the chapter concludes by reviewing some of the important success factors of the Umgano Project as perceived by key informants.

4.2 Delineating the Institutional Environment and the Action Domain

An important aspect of institutional analysis is distinguishing between factors that are a part of the institutional environment and the action domain (Dorward & Omamo, 2009). Care has been taken to examine the institutional features of the Umgano Project that are relevant to the objectives of this study. In particular, the first objective of this study focuses on understanding the structure and operation of *CBNRM* in the Umgano Project. The approach of this study therefore assumes a perspective that is distinctly different from other, equally valid, perspectives (such as considering the structure and operation of the Umgano Project as a business venture or conservation initiative for instance).

For this reason, the action domain focusses on the actors, activities, and institutional arrangements that are involved in the overall Umgano Project. The focus of the action domain is the institutional arrangements within the Umgano Project that facilitate key aspects of CBNRM, such as, amongst others: collective action (including mechanisms that enable coordination, transparency, accountability, and cooperation); sustainable natural resource management; and development that meets the needs of the Mabandla community as owners and beneficiaries of the project. Detailed operational aspects of the project (such as the structure and day-to-day management of the individual Umgano subsidiary companies) are outside the scope of this study, and have therefore be regarded as ‘outcomes’ of the action domain. Likewise, role-players further up the timber supply chain are not discussed as part of this analysis. Conversely, the biophysical, socioeconomic and political aspects of the resources and community which are external⁸ to the Umgano Project are considered as part of the institutional environment. Although features of the institutional environment have been conceptually separated from the action domain, they are still important influences on the structure and functioning of the project. For this reason, the biophysical, socioeconomic and political context of the Umgano Project is included here as a component of the overall institutional analysis.

4.3 The Institutional Environment

The major contextual factors of the Umgano Project will be discussed hereafter according to the features of the Umgano Project Area (UPA) and the Mabandla community respectively.

4.3.1 The Umgano Project Area: Biophysical Features and Socio-Political History

The UPA is located in the southern region of the KwaZulu-Natal Province, approximately 100 km south west of the city of Pietermaritzburg, as shown in Figure 4.1. The area ranges in altitude (between 1 000 to 2 045 m above sea level), receives summer rainfall (approximately 750 to 1 000 mm p.a.) and is an important water catchment area (Bainbridge & Alletson, 2012). The UPA’s soils are shallow and not suitable for intensive agriculture, but are compatible with limited afforestation and livestock management (Sisitka, 2000; Bainbridge & Alletson, 2012).

⁸ As is the case for all social systems, it is difficult to define factors that are truly exogenous. Dorward and Omamo (2009) are cognisant of this in their framework, as indicated by the feedback processes linking features of the institutional environment and the action domain. In particular, it must be noted that the features conceptualized here as a part of the institutional environment are defined as the biophysical, political and socioeconomic features of the case study that originate outside the context of the Umgano Project or operate at a higher level than the Umgano Project. This is not to say, however, that these features are uninfluenced or unshaped by the features and outcomes of the action domain.

The UPA contains vegetation from both Forest and Grassland Biomes; most notably high altitude *Podocarpus* (Yellowwood) forests, high altitude grassland and wetland systems, as well as *Protea* and *Encephalartos* (Cycad) woodlands (Bainbridge & Alletson, 2012). The grasslands in the higher sections of the UPA are in very good condition, while the lower altitude sections are in worse condition – possibly because of a history of uncontrolled grazing of livestock (ibid). Recent assessments of the *Podocarpus* forests in the UPA (although, strictly, they are proclaimed state forests, as are a number of other indigenous forests outside the UPA) reveal that they are some of the most intact, best conserved forests in KwaZulu-Natal (ibid). These vegetation types form part of an important system of mountain habitats that support a range of endemic and threatened plant and animal species (ibid).



Figure 4.1: Map of the study area (source: Google Maps, 2015)

Land ownership of the UPA is a complex issue. Part of the complexity arises because of the history of socio-political instability the Umzimkhulu district, in which the UPA is located. For instance, in the *A Preliminary Survey of the Bantu Tribes of South Africa* (1935), Van Warmelo describes the inhabitants of the area as an assortment of small and heterogeneous clans displaced in the wake of King Shaka’s reign, stating that:

“The make-up of the population of any given area is therefore even more heterogeneous than the following data would indicate, and I am unable to give figures showing, even approximately, the strength of those clans and sections whose number warrant their being named below. To properly clear up the tribal tangle in Umzimkulu district will require more time than I have at my disposal.” - (Van Warmelo, 1935: 24)

Latterly, under establishment of the homelands during Apartheid, the district was subsumed into the independent government of the Transkei. As a result, a number of white-owned farms, including those on which the UPA is located, were expropriated and appended to the council lands of various traditional authorities in the district (Whelan, 2010; Legal advisor to the Umgano Project, pers. comm. 24 August 2014). Post-Apartheid, the Umzimkhulu district became a part of the Eastern Cape Province, but was more recently reallocated to the KwaZulu-Natal Province. To complicate matters further, the administrative transfer for the region between the now-defunct Transkei government, the Eastern Cape Province and the KwaZulu-Natal Province has resulted in the seeming misplacement of important documentation regarding land ownership over some portions of the UPA (Whelan, 2010).

The UPA is located on land which is formally state owned, with some parts of the project also extending to the original council lands (Bainbridge & Alletson, 2012). There have been disputes over the exact boundaries of the council lands, as is detailed by the report prepared by Whelan (2010). Although it was not mentioned in any of the key informant interviews, other sources (Sisitka, 2000; Bainbridge & Alletson, 2012) mention that the community entered into long-term lease agreements with the state for the establishment of the Umgano Project. Regardless, the Mabandla Traditional Council (MTC) are presently in an ongoing process of seeking clarification with the Department of Land Affairs and Rural Development regarding the future ownership of the land on which the UPA falls (Legal advisor to the Umgano Project, pers. comm. 24 August 2014).

Tenure security is a key threat to the initiative and has undermined the community’s ability to access credit using the UPA as collateral, which could help finance the expansion of the Umgano Project (Umsonti Director, pers. comm. 14 May 2014). Nonetheless, the MTC have received written assurances from various government representatives that the land tenure issue is “not a problem” (Legal advisor to the Umgano Project, pers. comm. 24 August 2014) and,

consequently, the Umgano Project has thus far been able to use these assurances to access financing.

4.3.2 An Overview of the Mabandla Community

The Mabandla community is situated in a remote, rural area which is characterised by poor infrastructure, a high dependency on social grants, and high unemployment (Leisher et al., 2011; Umsonti, 2013). During fieldwork, twelve villages⁹ were identified as comprising the residential areas of the MTC lands, which are generally situated along the southern border of the UPA (approximate locations given in Figure 4.1). Altogether, the population of the Mabandla community is approximately 22 000 people, all of whom fall under the jurisdiction of the MTC (Bainbridge & Alletson, 2012).

The Traditional Leadership and Governance Framework Act, or TLGFA, (Act No 41 of 2003) provides the higher level institutional framework for the relevance and role of traditional leaders in modern day South Africa; especially for how these traditional institutions should be integrated into the national system of democratic governance. The TLGFA recognises the role of traditional councils in administering the affairs of so-called ‘traditional communities’ in accordance with customary law, as well as some other (mostly advisory and supportive) roles in cooperative governance with local municipalities to advance development and service delivery within their jurisdiction.

In the case of the Mabandla community, traditional leadership still plays a prominent role in the affairs of the community. Traditional leadership can be seen as a form of structural social capital in so far as it encompasses the roles, rules and procedures as entrenched in the traditions and culture of the Mabandla community. In addition, the MTC has been a major driving force in the establishment and continued success of the Umgano Project. In particular, unanimous (and often repetitive) reference was made in the key informant interviews to the vision and strong leadership of the iNkosi¹⁰ (the chief of the Mabandla community) as a major success

⁹ For the most part, these villages (which are, more accurately, groupings of rural residential areas politically defined as wards) correspond with the thirteen villages identified by Leisher et al. (2011), with the exception of ‘Skebha’, ‘Mbulwini’ and ‘Bhuqwini’ (which was included but renamed ‘Mangeni’), and with the addition of ‘Egoso’ and ‘Lukhasini’. These amendments were made after referring to the list of wards kept by the Mabandla Community Trust office and consulting with the local enumerators.

¹⁰ Two hereditary chiefs have been involved since the initiation of the project. The second iNkosi, son of the first iNkosi, succeeded his father as per the customs of the Mabandla. Both chiefs were described as playing a central role in the original vision of the project and in building the support of the community.

factor of the Umgano Project. In a similar vein, an article in the SA Forestry Magazine (2011) described the leadership of the iNkosi as “the glue that binds the community – and the project – together”. The latter statement echoes terminology often seen in social capital literature and is a clear example of the importance of leadership in ‘activating’ social capital as was discussed in Chapter 2. One key informant reinforced this view by noting “for me that’s the thing that stands out most about this community... that strong, well-visioned, ethical leadership makes a fundamental difference in the leverage of social capital of a community”. Another key informant suggested that the integrity of the MTC is a key reason for the community’s trust in the chief’s vision for the Umgano Project:

“I think it was probably a miracle that [the community] could actually trust the Traditional Council with what they were saying about what to do because, back then, rural people where major cattle owners and most of [the project] land was used for grazing. So it was a huge compromise, [moving] all those cattle off the area for plantation purposes... The main problem now [for other communities] is that [there are] a lot of Traditional Councils being political structures... Traditional councils should actually showcase a tradition and how things are done and actually empower its own populace. But now, a lot of [Traditional Councils] are becoming very political which then, you know, once you talk about politics then immediately you are not trusting that. Like how you wouldn’t trust a politician to come and tell you ‘this is going to happen’.” - (Umgano Executive Director, pers. comm. 3 September 2014)

Furthermore, it seems that the MTC’s enthusiasm to collaborate with external advisors has been instrumental in the project’s ability to attract, or be eligible for, donor and technical support (Bainbridge & Alletson, 2012; Umsonti, 2013). In fact, one key informant suggested that a major factor contributing to the project’s success was its ability to leverage support from international, national and provincial organisations and government agencies. Moreover, all of the key informants interviewed (n=6) mentioned the relationships of trust forged between the iNkosi, external advisors, and representatives of the community as fundamental reasons for why productive collaboration amongst key role players in the Umgano Project was sustainable. Consequently, these productive relationships have been able to outlast the short term project cycles of government departments and donors (a factor which is often quoted as a major threat to CBNRM projects; for instance see Fabricius et al. 2004). By extension, therefore, the role of the MTC, and the iNkosi in particular, are key institutional features of the Mabandla community that can potentially explain the success of the Umgano Project. This feature of the

Umgano Project parallels the findings by Campbell and Shackleton (2001) regarding the importance of strong traditional leadership as the major strengths of CBNRM projects in Malawi and Lesotho. In addition, the cooperation between the MTC and external advisors and support agencies highlights some of the elements within the Umgano Project (i.e. the ‘action domain’) that are undoubtedly important in the success of the project. The following section explores these features in further detail.

4.4 The Action Domain

The Umgano Project began in 1998 as a community forestry project championed by the chief of the Mabandla community and assisted by an external management agency¹¹. Initial capital for the project was mostly funded by the community, via a Settlement and Land Acquisition Grant (SLAG) made available through the then-named Department of Land Affairs (DLA), as well as a loan from the South African Land Bank. The Umgano Project has since paid off the Land Bank loan and has begun to invest profits from the plantation in other components of the project (Umsonti, 2013). The project’s primary objective is to stimulate socioeconomic development, particularly through creating job opportunities for local people. However, sustainable resource use and biodiversity conservation are also important in achieving this objective, as can be seen in the project’s mission statement:

“To seek to manage and conserve the project area, including its outstanding scenic, cultural and other qualities, in its present well-preserved state to the benefit of the people of Mabandla and all others, through promotion of sustainable land uses, in order to provide a sustained flow of business and employment opportunities, ecosystem services and other benefits, from within and beyond its boundaries. Management will strive continually to improve the area and its flow of benefits to a higher state.”- (Bainbridge & Alletson, 2012: 2)

From an institutional perspective, it is important to consider the attributes of, and interactions between, the actors, activities, and institutional arrangements in order to evaluate the outcomes of the Umgano Project in light of its developmental and conservation objectives.

¹¹ In addition, Mondi Forestry (the forestry arm of the Mondi Corporation, a large paper and packaging company in South Africa) was involved in the very early stages of forestry at Umgano in 1995 when it was looking to develop community forestry to meet a projected shortfall in timber supply to its sawmills (Sisitka, 2000). Mondi funded the preliminary surveying, forest planning and licensing but withdrew from the project due to frustrations early on in the project (and later, the community paid back the initial expense incurred by Mondi). For this reason, the involvement of Mondi is not explored in any further detail here, although it is explained elsewhere (particularly Sisitka, 2000).

4.4.1 Actors and their Attributes

In line with the boundaries of the action domain, a number of ‘actors’ (also termed ‘role-players’) are considered because of their role in some or all of the collective action, natural resource management, and development components of the Umgano Project. These role-players can be categorised according to whether they are a part of, or external to, the Mabandla community. As part of the institutional analysis, each of these categories will be discussed hereafter alongside a description of the actors’ objectives and roles in the project, highlighting some of the potential complementarities and conflicts of interest among them.

4.4.1.1 Role-players from the Mabandla Community

The community represent the largest and most obvious group of role-players in the project. From the community’s perspective, the primary objective of the Umgano Project is to provide local employment, thus generating income locally and retaining youngsters who would otherwise be forced to seek work in the cities (Sisitka, 2000).

However, in practice, community members do not all have an active role in the Umgano Project. Rather, they are represented by the Mabandla Community Trust (referred to as ‘the Trust’) which plays a central role in terms of collective action by the community. The Trust was established in 2000 as per the conditions for the allocation of SLAG funds by the DLA (Leisher et al., 2011). A Deed of Trust recognises the Mabandla Community Trust as the legal entity tasked with holding and administering the UPA leased to them by the DLA. In addition, the Trust owns 100% of the Umgano holding company (known as the Umgano Development Company) through which they own the majority shareholding in Umgano subsidiary companies (Umsonti, 2013). The trustees and chairperson of the Trust (as well as the iNkosi, advisors from the contracted management agency, and representatives from various government agencies) sit on the Advisory Committee which oversees all operations that are a part of the Umgano Project (Leisher et al., 2011). Consequently, trustees have a significant influence in decision making and the operation of the Umgano Project. Furthermore, the Trust Deed also outlines the role of the Trust to promote development in the community, as is presented in Table 4.1.

Table 4.1: Some of the roles of the Mabandla Community Trust as stipulated in Section 5 of the Mabandla Community Deed of Trust, signed in 2000

Paragraph reference	Clause
5.1	<p><i>The primary objects of the Trust shall be:</i></p> <ul style="list-style-type: none"> • to lease the land from the State, to pay any rental due in terms thereof and to administer the lease; • to utilise the land demarcated for the forestry project only for growing trees on a commercial basis; • to cause the land to be used for the best advantage for the benefit of the beneficiaries; • to promote the economic development of the beneficiaries so as to improve the quality of their lives; • to utilise part of the income of the Trust for the establishment of community facilities in all sectors of communal life ; • to encourage and promote the involvement and integration of beneficiaries at grassroots level in the upgrading and development of their living environment so as to improve the quality of their lives
5.2	<p><i>The further objects of the Trust shall be:</i></p> <ul style="list-style-type: none"> • to raise, receive and hold funds from any lawful source, for the purposes of the Trust, and to manage, administer and disburse those funds in pursuance of the objects of the Trust and for administrative purposes; • to conduct and operate any financial assistance or subsidy programme or project to achieve the primary objects of the Trust and to co-operate with any other association of persons conducting such as programme or project; • to provide and make available funds by way of loans, grants, donations, bursaries, scholarships, or gifts, upon such terms and conditions as the Trustees may in their discretion determine, to any person, including any associations of persons, to develop and maintain any project or programme which, in the discretion of the Trustees, shall be consistent with the primary objectives of the Trust and for the benefit of the beneficiaries, and to encourage, initiate, promote, take part in or hold shares in, or sustain any such project or programme; • to guarantee, upon such conditions as the Trustees may determine, the obligations of any person, including any association of persons, in respect of any activity such person may engage in, which the Trustees deem to be consistent with the primary objects of the Trust.
5.5	<p><i>The Trust shall, in its activities, be conscious of the need to :</i></p> <ul style="list-style-type: none"> • protect and conserve the environment, and all such activities shall be carried out in a manner which shall have due and proper regard for the environment; and • prevent the overpopulation of the land to the detriment of its carrying capacity.
5.6	<p><i>Subject to the provisions of the Trust Property Control Act, No 57 of 1998, and the common law duties and obligations of Trustees, the Trust shall be accountable to the beneficiaries for all its activities, and shall report regularly to the beneficiaries thereon.</i></p>

Moreover, not all community members are indeed beneficiaries of the Trust. As mentioned earlier, the lion's share of the initial funding for the Umgano Forestry Company was made available by the community members themselves, through the voluntary contribution of a large portion of the SLAG which was awarded to each household in the community by the DLA (Sisitka, 2000). The majority of households (80%; approximately 2 300 households) opted to

contribute capital to the proposed Umgano Project, which enabled the start-up of the plantation (SA Forestry Magazine, 2008). These households are registered as the beneficiaries of the Mabandla Community Trust.

According to the Deed of Trust, all beneficiaries of the Mabandla Community Trust are eligible to become trustees. Trustees are nominated and elected by the beneficiaries in their ward every two years (Chairperson of the Trust, pers. comm. 26 August 2014). Beneficiaries also have the right to attend and participate an annual general meeting, where trustees are expected to report on the financial and operational performance of the Umgano Project and to include beneficiaries in decision making, such as deciding on the stipend /salary amounts for trustees and project employees (Deed of Trust for the Mabandla Community Trust, 2000; Sisitka, 2000). Beneficiaries are also able to submit proposals to the Trust for funding of community projects (Sisitka, 2000).

Beneficiaries also participate directly in the Umgano Project through their role as employees (Sisitka, 2000). Seasonal employees are recruited by the Development Company for a period of three months. Recruitment works on a rotational basis in order to allow as many beneficiaries as possible the opportunity of personally benefitting from the project (ibid). As a result, however, there is a potentially difficult situation where beneficiaries are simultaneously the employers (through the Trust and the Development Company) and the employees of the Umgano Project. To some extent, the latter conflict of interest is probably attenuated by the extent of the beneficiary group and the organisational structures in place. However, the recruitment system has not been without problems. Most notably, there have been instances where some employees refused to stop working after the end of their three month contract (ibid). Similarly, there have also been problems concerning the underperformance of employees (SA Forestry Magazine, 2008). These problems are usually dealt with by the Trust Chairperson and the elected trustee from the employee's ward (ibid). These examples serve to highlight the effect of personal relationships between community members (the employee and the elected trustee for instance) which enforce the rules-in-use because of trust or concern over one's reputation in the community. The importance of personal trust amongst trustees and community members is echoed in an excerpt from a magazine article:

“This is where the mediating role of the Trustees is important. They have to balance the interests of the individual with those of the community and the project. An element of trust and

a sound understanding between the various roleplayers is crucial if effective decision-making is to take place.” - (SA Forestry Magazine, 2008)

In addition, some of the more serious issues between members of the community and the Umgano Project seemed to have been resolved with the help of the iNkosi (Chairperson of the Trust, pers. comm. 26 August 2014); illustrating the important role of the traditional authority in the enforcement of rules-in-use in the Umgano Project.

4.4.1.2 External Role-players

A number of external role-players are also involved in the Umgano Project by giving technical assistance and funding to the project. Foremost among these groups is the management agency contracted by the Development Company on a long-term basis to provide managerial and administrative support to the project. Initially, the agency (known as Rural Forest Management (RFM)) provided support specifically for the set up and operation of the Forestry Company at Umgano. Later, however, the management agency – now a registered non-profit organisation called Umsonti – evolved in its role at Umgano to provide more integrated services and support for forestry and forestry-related ventures (Umsonti, 2013).

RFM have been with the Umgano Project since its conception and were instrumental in building the financial resources and corporate and legal structures that facilitate the smooth operation of the project today (Sisitka, 2000; SA Forestry Magazine, 2008; Umsonti Director, pers. comm. 31 July 2014). All of the key informants interviewed (n=6) mentioned the critical role that RFM played, and Umsonti continues to play, in the success of the Umgano Project. The agency seems to have built strong relationships of trust with key role-players in the community (Umsonti Community Liaison, pers. comm. 31 July 2014). Umsonti have also brokered crucial partnerships with other external role-players, which have been extremely important in the Umgano Project. A recent example is the timber business, which Umsonti helped establish by securing funding from investors and financing organisations (SA Forestry Magazine, 2014). Umsonti also perform the role of finding skilled individuals who are able to champion new enterprises that are emerging at Umgano (Umsonti Director, pers. comm. 31 July 2014).

The main objective of Umsonti is to facilitate the Umgano Project – increasingly in more of an advisory and capacity-development role rather than a managerial contractor role – until the project is able to be run autonomously by the community (Umsonti Director, pers. comm. 31 July 2014). Members of Umsonti have strong incentives to see the project succeed in creating jobs and improving the local economy in the Mabandla community (Sisitka, 2000). For one, the Umgano Project is the flagship community project for Umsonti, and therefore the continued success of the project will enhance the reputation of the non-profit organisation (and thus attract more support and opportunities for Umsonti in the other community projects in which it works). On the business side, Umsonti also have a financial stake in the project through a significant shareholding in all of the Umgano subsidiary companies (Umsonti Director, pers. comm. 31 July 2014). Perhaps most importantly, however, is the trust between directors of Umsonti and key role-players in the community which has seemingly reinforced Umsonti’s obligations to the project on a personal level, as is illustrated in the following quote from one key informant:

“[The community] trust me and that’s a huge responsibility. Sometimes it actually frightens me... if something goes wrong, they’re not going to blame me – it’s not a blame game – it’s just that I don’t want to let them down more than anything. So, I’ve got to keep working at it so that I don’t let them down.” – (Umsonti Director, pers. comm. 31 July 2014)

In addition to Umsonti, there is a long list of external organisations who have provided support to the Umgano Project. Some of the most frequently mentioned non-government organisations (NGOs), individual consultants and government agencies involved in the Umgano Project are listed in Table 4.2. For the most part, the objectives of these role-players are aligned with those of the community; either through addressing particular development or conservation mandates for government agencies and donors, financial returns for investors, or through the career objectives of individual consultants. Unsurprisingly, however, there have been instances of poorly coordinated or insincere participation by government departments which resulted in frustration and disappointment for managers of the project. Nonetheless, such set-backs have proved to be relatively insignificant for the progress of the Umgano Project; owing to the fact that the project is largely self-funded and was able to find alternative sources of support (Umsonti Director, pers. comm. 31 July 2014).

Table 4.2: Other external role-players involved in the Umgano Project ^a

Role-Player	Role	Primary Source(s)
<u>NGO</u>		
Land Bank	Financing and investment	Bainbridge & Alletson, 2012
Private consultants (veterinary services; livestock management; conservation; tourism)	Various advisory services	Umsonti, 2013
The Nature Conservancy	Research on the benefits of land use zoning on the UPA	Leisher et al., 2011
Vumelana Advisory Fund	Financing and investment	SA Forestry Magazine, 2014
Wildlands Trust	Funding towards mentoring field rangers	Bainbridge & Alletson, 2012
<u>Government</u>		
Department of Agriculture, Environmental Affairs and Rural Development	Funding for fencing, alien/ invasive species control and land restoration; assessments and recommendations regarding biodiversity management plan for the UPA	Bainbridge & Alletson, 2012
Department of Economic Development	Funding	Umsonti Director, pers. comm. 31 July 2014
Department of Land Affairs	Initial support for land acquisition, funding, monitoring and networking with other government departments	Sisitka, 2000;
Ezemvelo KZN Wildlife (EKZNW)	Key long-standing partner who has been intricately involved in the biodiversity conservation component of the Umgano Project via their Biodiversity Stewardship programme. Some of their specific roles have been: mentoring of field rangers for the conservation area; environmental awareness and education in the community ; assistance towards conservation-related research on the UPA; general assistance on conservation matters	Bainbridge & Alletson, 2012; Umsonti, 2013
Industrial Development Corporation	Financing	Umsonti Director, pers. comm. 31 July 2014
South African National Biodiversity Institute (SANBI)- Grasslands programme	Research; assessments and recommendations regarding biodiversity management plan for the UPA	Bainbridge & Alletson, 2012; Umsonti, 2013
Umzimkhulu local municipality	Various; not specified	Bainbridge & Alletson, 2012

^a Due to the frequent name changes of the South African national and provincial government departments in the last two decades, all government agents concerned have been referred to as they were by the source(s).

4.4.2 Activities and Attributes

Currently there are a number of business ventures running under the umbrella of the Umgano Project. These include the forestry company, an eco-tourism business, a sawmill business, and an agricultural business – all of which have been registered as subsidiaries to the Umgano Development Company– as well as a commercial livestock venture, which is still being established. Additionally, there are plans for more Umgano businesses as the project continues to grow. However, most of these businesses have only been recently operational (Umsonti Director, pers. comm. 31 July 2014). For the majority of the Umgano Project’s seventeen year lifespan, forestry and conservation have been the primary activities taking place on the UPA (SA Forestry Magazine, 2011). Consequently, forestry and conservation can be seen as the key activities that have shaped the institutional arrangements and actors involved in the Umgano Project.

4.4.2.1 Commercial Forestry

A number of technical features of commercial forestry have no doubt influenced the structure and operation of the Umgano Project. Firstly, setting up and maintaining the forestry operation required specialist expertise which were beyond the capabilities of the community at the time of the project’s conception (Sisitka, 2000). As a result, the Umgano Development Company forged key partnerships with external role-players (most notably RFM) to help establish and manage the forest operation and build capacity of community members (Umsonti Director, pers. comm. 31 July 2014). Furthermore, forestry tends to have longer payoff horizons than other agricultural activities. For example, Eucalyptus species have a rotation cycle of around seven years, while Pine species have a rotation cycle of 24 years (Umsonti Director, pers. comm. 31 July 2014). Indeed, the same can be said for conservation – where payoff horizons (through enhanced ecosystem services, for example) are arguably much longer. Consequently, key partnerships in the Umgano Project have tended to be long-standing. For example, RFM has been involved with the Umgano Project since the beginning, although its structure and role has evolved symbiotically with the development of the Umgano Project (Umsonti Director, pers. comm. 31 July 2014; Umgano Executive Director, pers. comm. 3 September 2014). However, long-standing partnerships are by no means a natural follow-up to forestry or conservation activities. Rather, these partnerships should be seen as a result of communication and trust building between key role-players in the community and external agents which is the

hallmark of linking social capital in this case study (Umsonti Director, pers. comm. 31 July 2014; Umgano Executive Director, pers. comm. 3 September 2014).

Secondly, the nature of financing for forestry is also likely to have had an influence in the structure and operation of the project. The initial capital outlays needed to finance the establishment of commercial forestry resulted in a number of important relationships with external financing organisations and government departments that were vital in the fledgling stage of the Umgano Project (Sisitka, 2000; Umsonti Director, pers. comm. 31 July 2014). Since the early stages of the project, the Umgano Project has continued to attract donor funding and support, both from already established partnerships and new partnerships with external organisations (Bainbridge & Alletson, 2012; Umsonti Director, pers. comm. 31 July 2014). The existence of these partnerships are most likely an indication of so-called ‘calculus-based’ and ‘institution-based’ trust (sensu Rousseau et al., 1998) rather than the types of interpersonal trust evident on the operational side of the Umgano Project. To elaborate, at least four of the key informants explicitly mentioned the importance of the legal and operational structure, effective management (indicated by healthy balance sheets, high return on investment, and continued job creation), certification (the forestry company is certified by the Forestry Stewardship Council) and the formal checks and balances in place (namely independent auditing and annual financial reports) as contributing to the success of the Umgano Project. From the business side, these characteristics give investors and donors a measure of confidence in the project, which in turn has resulted in their willingness to assist (Umsonti Director, pers. comm. 31 July 2014). More generally, these formal structures and processes contribute to accountability and transparency (for the benefit of the community and external organisations) which have been established as key success factors in CBNRM (Campbell & Shackleton, 2001).

Additionally, from a collective action perspective, the payoff dynamics in commercial forestry may have hindered and helped the success of the Umgano Project at different stages. The early stages of the project were particularly challenging because, for a number of years, the project had little to show in the way of benefits for the community (SA Forestry Magazine, 2008; Umsonti Director, pers. comm. 14 May 2014; Umsonti Community Liaison, pers. comm. 31 July 2014). Therefore the role of key individuals, such as RFM’s community liaison and the chairperson of the Trust, as well as the support of the MTC, were crucial in persuading members of the community about the long term value of the Umgano Project (Umsonti

Community Liaison, pers. comm. 31 July 2014). However, once harvesting began and the Development Company was able to pay off its loan from the Land Bank, the benefits of the Umgano Project became more evident in terms of more business (and therefore more employment opportunities) and investments in community amenities. The issue of insufficient net benefits – which is often cited as a downfall of CBNRM, especially in community-based wildlife projects (e.g. Campbell & Shackleton, 2001; Cundill et al., 2013) – in this case may have been offset by the relatively high revenue-earning potential of timber. Furthermore, the revenue-base of the forestry operation has enabled the Umgano Project to viably incorporate activities with less revenue-earning potential, such as the biodiversity conservation activities (Bainbridge & Alletson, 2012).

4.4.2.2 Biodiversity Conservation and Sustainable Land Use Practices

On the conservation side, the UPA encloses an area (approximately 1 300 ha of unused indigenous forest, grasslands, and wetlands) which has been allocated specifically for conservation purposes and is in the process of being formally registered as a nature reserve (Leisher et al., 2011). In addition, environmentally sustainable practices are incorporated into all of the other land uses on the UPA, as per the project's Integrated Management Plan (IMP) (Umsonti Director, pers. comm. 31 July 2014).

The attention given to biodiversity conservation seems to stem largely from the involvement of a local conservationist who became the environmental advisor to the project from as early as the first Environmental Impact Assessment (EIA) for the commercial forestry venture (SA Forestry Magazine, 2011). Later, the strategic partnership between the provincial biodiversity conservation agency, Ezemvelo KZN Wildlife (EKZWN), and the Umgano Project served to enhance the project's conservation activities. In particular, EKZWN invited the Umgano Project to become a part of their Biodiversity Stewardship programme, under which the Trust and members of the MTC signed a biodiversity agreement (Umsonti, 2013; Environmental Advisor to the Umgano Project, pers. comm. 12 May 2014). As a result, the conservation initiative has created jobs for field rangers and serves as the basis for the Umgano eco-tourism company (SA Forestry Magazine, 2014). The project has received substantial support from EKZWN as a result of the biodiversity agreement, which has further served as a platform for funding and technical assistance from other conservation-related organisations (for example, the support and attention from SANBI and the Wildlands Trust).

4.4.3 Institutional Arrangements

In NIE, institutional arrangements are understood as arrangements between economic actors that “govern the ways in which its members can cooperate and/or coordinate” (Kirsten et al., 2009: 57). In this subsection, *The Deed of Trust for the Mabandla Community Trust*, the relevant aspects of *The Organisational Structure of the Umgano Project*, and the project’s *Integrated Management Plan* are examined as important institutional arrangements that facilitate collective action and sustainable natural resource management in the Umgano Project, as well as economic development in the Mabandla community.

4.4.3.1 The Deed of Trust for the Mabandla Community Trust

The Trust forms the interface between the MTC, the Mabandla community, and the managers of the Umgano Project. Consequently, the Trust serves a crucial coordinating role in the Umgano Project. The Deed of Trust for the Mabandla Community Trust (referred to hereafter as ‘the Trust Deed’) is a formal, legal document that stipulates the roles, rules and procedures under which the Trust functions. The Trust Deed contains, *inter alia*, provisions for the definition and rights of the beneficiaries; roles of the Trust (some of which were presented previously in Table 4.1); terms of office for trustees; powers of trustees; and important requirements and procedures regarding the Trust’s finances. The Trust Deed is especially important to the success of the Umgano Project from a collective action perspective because it provides the mechanism by which the community owns, runs and benefits from the Umgano Project. Some of the important features of the Trust Deed in this regard include:

- (i) *Legitimacy*: The democratic processes embedded in the Trust Deed – in particular the stipulations regarding elections of trustees – are key to ensuring the legitimacy of the Trust in the eyes of the community. In addition, as mentioned by one key informant, the separation of the Trust from the usual political structures in charge of community development projects also improves the legitimacy and integrity of the Trust.
- (ii) *Communication, Transparency, and Accountability*: The Trust Deed goes a long way to clarifying the mandates of trustees and ensures that there are corresponding processes that ensure these mandates are being fulfilled. For instance, the detailed

stipulations in the Trust Deed regarding the use of the Trust's funds, paired with the requirement that the Trust is audited and that financial statements must be shared with the beneficiaries at annual meetings, ensure transparency and accountability on behalf of the Trust. In addition (although not stipulated in the Trust Deed), trustees are expected to regularly report back to beneficiaries in their ward after most Umgano-related meetings. Communication between the trustees and beneficiaries is essential to maintaining the transparency of decision making in the Umgano Project. Furthermore, the elected trustees do not overlap with traditional leaders from the MTC which facilitates communication and accountability because community members feel that they can approach and question trustees (whereas they may not feel that they could question traditional leaders in the same manner) (Umgano Executive Director, pers. comm. 3 September 2014). The features of transparency and accountability also uphold findings from other studies on common property institutions (e.g. Ostrom, 1990) and CBNRM in particular (e.g. Campbell & Shackleton, 2001) regarding the critical importance of collective-choice arrangements and clear mandates.

- (iii) *Fairness*: The Trust Deed instructs that the income of the Trust, including dividend payments from the Development Company, are invested in agreed community projects or programmes. However, a large proportion of the Development Company's profits are being reinvested into developing new businesses with the end goal being, according to one key informant, a turnover of R100 million per year for the main Umgano brand. By this stage the community will start receiving direct benefits in "big chunks" (Umsonti Director, pers. comm. 31 July 2014). Of course, the expansion of the Umgano Project is also necessary for expanding opportunities for employment, which is the major objective of the community. Ultimately, the Trust's approach for distributing benefits is fair and goes some way to avoiding the dilution of benefits amongst community members through direct payments, which would otherwise be inevitable because of the sheer magnitude of beneficiaries. Furthermore, the Trust Deed stipulates that no trustees or employees of the Trust may receive financial payment from the Trust besides their democratically agreed upon stipend amounts. The latter stipulation helps avoid so-called 'elite capture' (where key individuals commandeer most of the benefits for personal gain) which has been the downfall of other CBNRM projects (Fabricius et al., 2004).

Consequently, the Trust Deed is a central institutional arrangement for the operation of the Umgano Project which allows a high degree of buy-in from members of the community. However, the Trust Deed does not achieve all of the aforementioned characteristics without some important facilitation from other role-players and an enabling institutional environment. For instance, the terms of the Trust are quite technical and can only be properly implemented if the trustees understand the document (which, beyond the legal jargon, is problematic because it is written in English rather than the first language of the trustees). Consequently, comprehensive ‘training workshops’ are run for the newly elected trustees to help them understand the roles and rules stipulated in the Trust Deed (Legal advisor to the Umgano Project, pers. comm. 24 August 2014).

Additionally, the MTC plays an important role in overseeing and enforcing the mandates of the Trust. While the Trust and MTC are distinctly separate entities, the Trust still operates subject to the dictates of the MTC (Bainbridge & Alletson, 2012). For example, both the MTC and trustees attend meetings with managers together and are both conferred with by managers regarding important decisions (Umsonti Director, pers. comm. 31 July 2014). The MTC strengthens the role of trustees through their support and oversight; which of course, in this case, improves the legitimacy and accountability of the Trust because the MTC is itself regarded with respect by the community (Umgano Executive Director, pers. comm. 3 September 2014). The latter feature of the Trust supports Ostrom’s (1990) design principle of ‘nested enterprises’ in the governance of common property institutions. Furthermore, the characteristic of nested enterprises is also key to the organisational structure of the Umgano Project, as will be shown in the following section.

4.4.3.2 The Organisational Structure of the Umgano Project

The organisational structure of the Umgano Project is not necessarily static nor is it documented comprehensively in a single document like the Trust Deed. However, the organisational structure of the Umgano Project falls on the ‘procedures’ or ‘systems’ side of the institutional arrangements spectrum. Critically, the organisational structure provides the scaffold for how key role-players interact in the project; how jobs are created and capacity is developed within the community; and how profits are filtered towards the Trust, who then invest them in development projects in the community:

“What we’ve done is created the [Umgano Development Company] to be the overarching financial structure of the whole [of the Umgano project]. Underneath the [Development Company are] all these subsidiary companies, and that’s useful because we’re going to use the Umgano brand to create a set of branding and marketing that will help with the business side of [the Umgano Project]... And over and above that, is also the nature reserve and the game guards that are linked to the tourism [venture] but it’s not quite the same thing – it’s a part of a holistic biodiversity management framework for the whole area... the conservation area is managed through the [Development Company] – that will be something that the [Development Company] take responsibility for. The Trust is 100% shareholders of the [Development Company]. So all the dividends out of the [Development Company] will go to the Trust.”-
(Legal advisor to the Umgano Project, pers. comm. 24 August 2014)

Furthermore, the Development Company also receives a rental fee from the subsidiary companies, and in return, the strength of the Development Company’s balance sheet enables it to borrow money on behalf of the subsidiary companies (Umsonti Director, pers. comm. 31 July 2014). This arrangement also reinforces the relative financial self-reliance of the overall Umgano Project, which has already been discussed as a major strength of the project.

4.4.3.2. The Integrated Management Plan

The primary institutional arrangements for biodiversity conservation are captured in the regulations specified in the IMP for the Umgano Project. The IMP uses a simple land zoning approach to separate the conservation area, the timber plantation, and the livestock management zone (comprising the lower altitude grasslands). In addition, the IMP specifies what activities may take place in the various zones of the UPA and what actions need to be taken to conserve biodiversity (Bainbridge & Alletson, 2012). These plans also follow best-practice guidelines to achieve sustainable development, including strict adherence to relevant legislation, such as the National Environmental Management Biodiversity Act (Act No 10 of 2004) (Bainbridge, 2012).

One issue, though, is the inability of field rangers to enforce the rules stipulated in the IMP. There have been instances of fence cutting, unauthorized grazing of cattle in the timber and conservation area, hunting, illegal harvesting of timber, and arson (Head of field rangers, pers. comm. 15 May 2014). Furthermore, no authority has been devolved to the field rangers to do

anything other than report instances of rule breaking (Head of field rangers, pers. comm. 15 May 2014). However, the enforcement issue has recently been brought to the attention of the MTC and it remains to be seen what approach the council will take. This point serves as a key threat to biodiversity conservation efforts and has the potential to threaten the viability of future ventures on the UPA.

4.4.4 Outcomes of the Action Domain

At present, the Umgano Project has created roughly 100 permanent jobs and 30 part time jobs for members of the community (Umsonti, 2013). The forestry business has been certified by the internationally recognised Forest Stewardship Council (FSC) and is harvesting 90 ha of Eucalyptus per year, translating into an annual turnover of R12 million (SA Forestry Magazine, 2014). In addition, a study found that the grasslands within the UPA had greater peak production than control sites over a time span of 10.5 years, indicating successful grassland conservation despite the various activities taking place on the UPA (Leisher et al., 2011). The same study also found that Mabandla households have significantly higher levels of total annual income when compared to households outside the jurisdiction of the MTC (ibid).

Together, these positive outcomes indicate that the Umgano Project is well on its way to achieving its development and conservation objectives. More importantly, these outcomes also indicate successful collective action and collaboration between role-players in the action domain that are partly attributable to dimensions of social capital at the project level.

4.5 Key Findings Regarding Perceived Success Factors

Table 4.3 summarizes some of the success factors of the Umgano Project that were mentioned by key informants and were discussed in the in this chapter. For the most part, it is difficult to separate many of these success factors from manifestations of social capital in some form or other (thereby addressing Key Question 2.1). Therefore, findings from key informant interviews support the hypothesis that various elements of social capital have been critical for the emergence and maintenance of the project. In particular, elements of *structural* social capital (in terms of the roles, rules, and procedures of the social networks involved in the projects) and *linking* social capital are intricately involved in the structure and operation of the Umgano Project (as highlighted in the last column of Table 4.3). Moreover, it must be noted

that many of the success factors ultimately stem from the supportive role of the Traditional leadership of the Mabandla community.

Also, the evidence from key informant interviews suggests that social capital plays an important role in the establishment and maintenance of *trust*, in all its multiplex forms, between the various role-players involved in the Umgano Project. For example, ‘calculus-based’ trust (originating from the project’s reputation and certification) has been extremely important leveraging financial and technical support from external agencies. On the other hand, interpersonal trust has been vital in maintaining the relationships between managers, the MTC and the Trust, which are the heartbeat of the entire project. These findings also support the proposition of second generation theories that the major role of social capital in enhancing collective action is through building and maintaining trust (Chapter 2).

This chapter also highlighted some features of the resources and activities involved in the Umgano Project which are *not* directly related to social capital (such as the revenue-earning potential of commercial forestry for instance) that may have also contributed to the success of the project (thus addressing Key Question 2.2).

Table 4.3: Perceived success factors for the Umgano Project

Success factor	Description (as evidenced in the case study)	Manifestations of social capital
Strong leadership and integrity of the MTC	<ul style="list-style-type: none"> • Integrity of the MTC • Well-visioned and ethical leadership of the iNkosi • Importance of the iNkosi in leveraging linking social capital through willingness to collaborate and building of long-term trusting relationships with important partners in the project 	Structural social capital (in terms of the social networks associated with the MTC); Linking social capital which facilitated the building of interpersonal trust between key role-players in the project
Support of the MTC	<ul style="list-style-type: none"> • Support of MTC in overseeing the Trust to ensure that they are fulfilling their mandates as representatives of the community in the Umgano Project • Importance of MTC in enforcement of rules-in-use and in rallying the support of the community in the initial stages of the project when there were few direct benefits visible 	Structural social capital (structure and processes associated with the MTC and the Trust); institution-based and interpersonal trust in the traditional leadership as an outcome of social capital
Willingness to collaborate with external advisors	<ul style="list-style-type: none"> • Again, this relates to the vision of the traditional leadership • Has been essential in the successful establishment and growth of the Umgano Project because of imported expertise 	Linking social capital

Success factor	Description (as evidenced in the case study)	Manifestations of social capital
Long-standing partnerships with external agents built on relationships of trust	<ul style="list-style-type: none"> • Key role-players have been crucial in helping the community develop the financial capital and the capacity to own and manage the project • Importance of trust between trustees, the MTC and management 	Linking social capital; Importance of interpersonal trust as a result of long-standing interactions
Sound management and organisational structure	<ul style="list-style-type: none"> • Basis for ‘calculus-based’ and ‘institution-based’ trust that has enabled the project to attract continued support from donor and support organisations • Strength of the balance sheet and sound advice from experts allows the Umgano Project to be relatively self-reliant which has enabled the project to survive the short term funding cycles , and occasional unreliability, of government and donor organisations • Has resulted in sustainable resource use which will ultimately be beneficial to the sustainable income base for the Umgano Project the Mabandla community at large • Organisational structure allows role-players to coordinate; clear idea of different actors’ roles • Organisational structure is also flexible which has enabled the project to grow and reinforce financial independence of the project 	Both linking and structural social capital which has stemmed from the networking of key individuals and the reputation of the Umgano Project (which, in turn, has underpinned ‘calculus-based’ and ‘institution-based’ trust)
Organisation of the Trust	<ul style="list-style-type: none"> • Mandate and procedures of the Trust are stipulated clearly in the Trust Deed • Trust Deed includes features that facilitate the legitimacy, accountability and transparency of the Trust • Essential in the collective action component of the Umgano Project in that it allows the community to own, manage and benefit from the project 	Effective organisational structures a result of collaboration with legal advisors (i.e. is an outcome of linking social capital); the Trust Deed which itself represents a form of structural social capital because it stipulates the roles, rules and procedures of the Trust; the Trust also facilitates bridging social capital between villages with regards to the Umgano project

CHAPTER 5

QUANTITATIVE RESULTS

5.1 Introduction

This chapter describes the quantitative results of this study. The primary purpose of this chapter is to address the third and final objective of this study, which is to examine the relationship between different dimensions of household-level social capital and the performance of collective action regarding the Umgano Project. The remainder of this chapter will be structured as follows: Firstly, Section 5.2 presents descriptive statistics for some of the socioeconomic and demographic characteristics of the sample, as well as the social capital and outcome indicators. Next, Section 5.3 contains results from an exploratory factor analysis which highlight the underlying dimensions of household-level social capital in the Mabandla community (thus addressing Key Question 3.1). Thereafter, in Section 5.4, logistic regression analysis is used to determine the relationship between dimensions of household-level social capital and outcome indicators (thus addressing Key Question 3.2). Finally, the quantitative results obtained from the household survey are discussed in Section 5.5 and summarized in Section 5.6.

5.2 Descriptive Statistics

This section outlines the relevant variables obtained from the household survey that were used in subsequent analyses. In particular, the focus here is on five distinct groups of indicators, namely: (i) *Socioeconomic and Demographic Characteristics of the Sample*; (ii) *Indicators of Structural Social Capital*; (iii) *Indicators of Cognitive Social Capital*; (iv) *Indicators of Previous Civic Engagement*; and (v) *Outcome Indicators*. Each of these groups of indicators are briefly described hereafter alongside tables of summary statistics¹². Additional information about some of the social capital indicators are also contained in the appendices, as is referred to the relevant text below.

¹² However, some social capital indicators have not been included in the descriptive statistics because of their exclusion from the factor analysis. See Appendix 1, Table A.3.1 for a full list of social capital indicators and whether or not they were included in the factor analysis.

5.2.1 Socioeconomic and Demographic Characteristics of the Sample

Table 5.1 presents descriptive statistics for the socioeconomic and demographic characteristics of the sample (n=360). Sampled households were made up of approximately five people on average, with the largest household in the sample comprising 15 people. As indicated in Table 5.1, sampled households also seemed to be gender balanced on average, while the average share of children per household was approximately two out of every five household members. Sampled households also displayed a high degree of unemployment, with only one eighth of household members who were employed, on average, and only about 5% of households had someone that was employed by the Umgano Project at the time of the survey (Table 5.1). In addition, for almost two thirds of the sample, the highest level of education attained by any household member is less than some years of secondary schooling (Table 5.1).

Table 5.1: Socioeconomic and demographic characteristics of the sample

Variable	Description	% (n=360)	Mean	SD	Range
<u>Socioeconomic and demographic characteristics of household</u>					
Household size	Number of people / household		5.04	2.53	1-15
Proportion female	Share of household comprised of females		0.54	0.23	0-1
Proportion children	Share of household comprised of children (<18 years old)		0.38	0.25	0-0.875
Proportion employed	Share of household employed		0.13	0.19	0-1
Umgano job	Whether any member of the household is currently employed by the Umgano Project:				
	<i>Not employed by Umgano Project</i>	94.44			
	<i>Employed by Umgano Project</i>	5.56			
Highest level of education	Highest level of education attained by any member of the household :				
	<i>Illiterate, no schooling</i>	2.50			
	<i>Literate, no schooling</i>	1.94			
	<i>Primary, incomplete</i>	8.89			
	<i>Primary, complete</i>	9.72			
	<i>Secondary, incomplete</i>	41.94			
	<i>Secondary, complete</i>	26.94			
	<i>Tertiary, incomplete</i>	3.06			
	<i>Tertiary, complete</i>	4.72			
	<i>Other</i>	0.28			
<u>Socioeconomic and demographic characteristics of household head</u>					
Age	Age of household head (in years)		54.00	15.67	20-89
Female	Gender of household head:				
	<i>Male</i>	49.72			
	<i>Female</i>	50.28			

Variable	Description	% (n=360)	Mean	SD	Range
Years in village	Years that head of household has lived in the village		37.91	20.80	1-89
Employed	Whether head of household is currently employed:				
	<i>Not employed</i>	71.94			
	<i>Employed</i>	28.06			
Education	Highest level of education achieved by head of household:				
	<i>Illiterate, no schooling</i>	12.78			
	<i>Literate, no schooling</i>	7.22			
	<i>Primary, incomplete</i>	37.22			
	<i>Primary, complete</i>	14.17			
	<i>Secondary, incomplete</i>	21.39			
	<i>Secondary, complete</i>	5.83			
	<i>Tertiary, incomplete</i>	0.28			
	<i>Tertiary, complete</i>	0.83			
	<i>Other</i>	0.28			

Table 5.1 also outlines some of the socioeconomic and demographic characteristics for heads of sampled households¹³. The average age of household heads was 54 years old, but ranged from as young as 20 to as old as 89 years. In addition, just over half of the household heads were female. Similarly to the household-level statistics, unemployment was extremely high amongst household heads and approximately 70% only had an education level of completed primary schooling or lower (Table 5.1).

5.2.2 Indicators of Structural Social Capital

The household survey contained several indicators of structural social capital, which are summarized in Table 5.2. First among these indicators were measures of memberships in organisations and features of these organisations (items O1-O4 in Table 5.2). Although the household survey collected data on all of the household's memberships in organisations, very few households (17.50%) indicated that they were involved in more than one organisation. In fact, for the entire sample, the mean number of organisations per household was just 0.84 (± 0.74) (results not shown). For this reason, only the features of each household's top-ranked organisation were considered in the factor analysis in Section 5.3. Of those households participating in one or more organisation (n=227), the vast majority (77%) indicated that

¹³ In this study, the head of a household was defined as the member most in charge of household decision making.

religious groups were the most important organisation to the household, followed by finance groups – or ‘stokvels’, as they are commonly known in the community – (12.33%), and sports groups (4.85%) (Table A.5.1, Appendix 2). Just less than half of the sampled households indicated that they are ‘very active’ participants in their top-ranked organisation (Table 5.2). In addition, most households (40.56%) indicated that decision-making in top-ranked organisations tends to be carried out by entirely by leaders, as opposed to other decision making processes (such as ‘democratic leadership’ – i.e. where the leader asks the opinions of members of the group before deciding – or entirely democratic processes). However, of the households participating in organisations (n=227), all felt that these decision-making processes are either somewhat or very effective (Table 5.2).

Table 5.2: Descriptive statistics for indicators of structural social capital

Variable	Description	% (n=360)
<u>Household memberships in organisations</u>		
O1	Number of household memberships	
	0	36.94
	1	45.56
	2+	14.17
O2	Degree of participation (top organisation):	
	<i>Not involved in any organisations</i>	36.94
	<i>Not active</i>	0.83
	<i>Somewhat active</i>	6.94
	<i>Very active</i>	48.61
	<i>Leader or group/ organisation</i>	6.67
O3	Organisation decision making (top organisation):	
	<i>Not involved in any organisations</i>	36.94
	<i>Leader decides</i>	40.56
	<i>Democratic leader</i>	12.50
	<i>Group decides</i>	10.00
O4	Effectiveness of decision making (top organisation):	
	<i>Not involved in any organisations</i>	36.94
	<i>Not effective at all</i>	0.00
	<i>Somewhat effective</i>	10.83
	<i>Very effective</i>	52.22
<u>Mutual support</u>		
MS1	Whether or not the respondent agreed that the entire village would act together if there was a problem that affected the entire village:	
	<i>No, the entire village would not act together</i>	3.33
	<i>Yes, the entire village would act together</i>	96.67
D1	Problems as a result of differences between people in the village:	
	<i>Differences do not cause problems</i>	70.00
	<i>Differences cause problems but these problems do not result in violence</i>	9.17
	<i>Differences cause problems and these problems do result in violence</i>	20.83

The second indicator of structural social capital mentioned in Table 5.2 is an indicator of perceived mutual support (MS1). MS1 is a binary item indicating whether or not respondents felt that the entire village would work together to deal with a hypothetical crisis situation that affected the entire village, such as a fire that has burnt down many houses in the village. As indicated in Table 5.2, almost all respondents said that they felt that the entire village would act together. In addition, most households thought that community leaders (39.17%), members of the traditional council (27.78%), and representatives from local government (23.61%) would take initiative and act as leaders in such a situation (Table A.5.1, Appendix 2).

The final indicator of structural social capital offered in Table 5.2 is an indicator of divisions in the community (D1). The majority of respondent households (70%) felt that differences between people do not cause problems in the community. However, of those that reported problems as a result of differences in the community, the majority (69.44%, n=108) said that these problems lead to violence (Table A.5.1, Appendix 2). In addition, almost all of these households indicated that community leaders and religious leaders are important mediating entities in resolving this conflict (Table A.5.1, Appendix 2).

5.2.2 Indicators of Cognitive Social Capital

Table 5.3 presents the indicators of cognitive social capital that were used in the factor analysis, including indicators of trust and cooperation (TC1-TC6); social trust (T1 & T3-T10); specific trust (ST1 & ST2); and conflict and conflict avoidance (CR1-CR6). Table 5.3 only summarizes the ‘positive’ response categories for the latter variables (i.e. categories indicating high levels of cognitive social capital), but comprehensive frequency tables for each of these variables are available in Appendix 2, Table A.5.2.

Households generally felt that there are sufficient levels of social trust amongst people in their villages, but that these levels of trust have neither improved over the last few years nor are they much higher than levels of trust in nearby villages (as illustrated by TC1-TC3 and T1-T10 in Table 5.3). In addition, almost 65% of households felt that people are just as concerned about overall village welfare as they are about their personal welfare (Table 5.3). However, households also indicated that contribution to community projects (as an indicator of cooperation) tends to be low, with less than one fifth of households suggesting that people will contribute time to such projects (although about twice as many households suggested that

people would be willing to contribute money), as presented by TC5, TC6 and CR3 in Table 5.3.

Table 5.3: Summary of the positive response categories regarding cognitive social capital

Variable	Description	Positive response categories included in percentage	% (n=360)
<u>Trust and cooperation</u>			
TC1	Village trust ('Do you think that in this village people generally trust one another in matters of lending and borrowing?')	Do trust	83.89
TC2	Change in levels of trust in village	Trust is better	18.06
TC3	Village trust relative to other villages	More trust than other villages	19.72
TC4	People here look out mainly for the welfare of their own families and they are not much concerned with village welfare	Disagree or strongly disagree	64.72
TC5	People willing to contribute time to community project with no direct benefit	Will contribute time	18.61
TC6	People willing to contribute money to community project with no direct benefit	Will contribute money	39.72
<u>Social Trust</u>			
T1	Most people are basically honest and can be trusted	Agree or strongly agree	76.94
T3	Members of this village are more trustworthy than others	Agree or strongly agree	40.28
T4	People are willing to help me if I have a problem	Agree or strongly agree	92.78
T5	I do not pay attention to the opinions of others in the village	Disagree or strongly disagree	71.39
T6	Most people in this village are willing to help if you need it	Agree or strongly agree	79.72
T7	This village has prospered in the last five years	Agree or strongly agree	47.22
T8	I feel accepted as a member of this village	Agree or strongly agree	95.83
T9	Someone would return a lost pig/goat	Agree or strongly agree	36.39
T10	Someone would return a lost wallet	Agree or strongly agree	5.00
<u>Specific Trust</u>			
ST1	Land ownership option	Prefer the option of jointly owning a larger plot of land	61.67
ST2	Whom would be trusted with belongings	Would trust anyone from the village with their belongings	0.83
<u>Conflict and conflict avoidance</u>			
CR1	Village is generally peaceful	Agree	95.00
CR2	Relative village conflict ('Compared with other villages, is there more or less conflict in this village?')	Less conflict than other villages	30.56
CR3	People contribute time/money to common development goals	Contribute some or a lot of time and/ or money	33.06
CR4	Relative contribution ('Compared with other villages, to what extent do people of this village contribute time and/or money toward common development goals?')	Contribute more than other villages	11.11
CR5	Social harmony ('Are the relationships among people in this village generally harmonious (i.e. friendly) or disagreeable (i.e. people disagree and argue a lot)?')	Harmonious	95.56
CR6	Relative social harmony	More harmonious than other villages	51.11

To assess trust in more specific circumstances, the household survey asked households whether they would prefer “owning and farming land the size of one soccer field by themselves” or “owning and farming land the size of three soccer fields jointly with another person”. Under the ‘joint’ option, each partner would hypothetically get more land per household but would also require relatively more interpersonal trust and coordination compared to the first option. As shown in Table 5.3, just less than two thirds of the sample opted for the ‘joint’ option, thus indicating a certain degree of interpersonal trust in the context of owning and managing land. However, respondents indicated substantially less trust in the context of whom they would leave in charge of their property if “they suddenly had to leave the village for a while” – most households chose family (71.11%) and neighbours (26.11%) as their preferred caretaker, and only three people indicated that they would trust anyone in the village for this purpose (Appendix 2, Table A.5.2).

Sampled households seemed to perceive levels of conflict within their villages as relatively low, with approximately 95% stating that their villages is generally peaceful and relationships are generally harmonious (Table 5.3). Also, the majority of households (51.94%) felt that levels of conflict in their village are the same as other villages (Appendix 2, Table A.5.2), while roughly the same proportion felt that relationships in their village are relatively more harmonious compared to nearby villages (Table 5.3). However, when there are conflictive circumstances, most households (53.33%) indicated that community leaders are the primary entity that facilitate conflict resolution (Appendix 2, Table A.5.2).

5.2.3 Indicators of Previous Civic Engagement

Indicators of civic engagement are also output indicators of social capital, but do not fit neatly into the ‘structural’ and ‘cognitive’ social capital constructs. Rather they are a proxy for *both* constructs (Grootaert & van Bastelaer, 2002). Table 5.4 summarizes the responses to the various civic engagement indicators (E1-E5). In addition, the ‘civic engagement score’ in Table 5.4 depicts the additive score across twelve binary items (CE1-CE12) asking the respondent whether he/she had personally participated in a number of civic activities during the previous three years. Civic engagement scores near twelve indicate that the respondent had participated in nearly all of the civic activities, whereas scores near zero indicate that the respondent had participated in few/none of the civic activities.

Table 5.4: Descriptive statistics for indicators of previous civic engagement

Variable	Description	% (n=360)	Mean	SD	Range
E1	Frequency of petition for village development in the previous year:				
	<i>Never</i>	59.17			
	<i>Once</i>	10.56			
	<i>A few times</i>	28.33			
E2	Frequency of coming together to address a common issue in the previous year:				
	<i>Never</i>	38.33			
	<i>Once</i>	13.61			
	<i>A few times</i>	44.44			
E3	Decision making over development projects:				
	<i>Community leaders would decide</i>	14.17			
	<i>The entire village would be called on to decide</i>	85.83			
	<i>Frequently</i>	3.61			
E4	Spirit of participation:				
	<i>Very low</i>	2.22			
	<i>Low</i>	9.17			
	<i>Average</i>	63.89			
	<i>High</i>	15.28			
E5	Perception of one's own influence in making the village a better place to live:				
	<i>None</i>	1.11			
	<i>Little</i>	21.94			
	<i>Some</i>	53.89			
	<i>A lot</i>	23.06			
Civic engagement score (/12)	Additive score across the 12 binary items (CE1 - CE12) indicating whether the respondent had participated in a number of civic activities during the previous three years		4.59	2.10	1-11

Sampled households indicated that they had participated in some civic engagement activities, although very few (<5%) indicated that they participate in such activities regularly (as indicated by E1 and E2 in Table 5.4). Similarly, the civic engagement score indicates that, on average, households participated in just over a third of politically-oriented civic engagement and volunteering activities included in the CE1-CE12 items (frequencies for each of the CE items are provided in Appendix 2, Table A.5.3). In addition, most households (~64%) felt that the spirit of participation in their village is 'average' (Table 5.4). However, about three quarters of sampled households felt that they have some or a lot of influence in making their village a better place to live. Also, when asked who would be called on to make decisions related to a development project in their village, the vast majority (~86%) said that the entire community would be called on to decide (Table 5.4).

5.2.4 Outcome indicators

Figures 5.1 and 5.2 summarize the distribution of responses to the selected outcome indicators for understanding and support respectively. The first outcome indicator captures the extent to which respondent households understand the ownership structure of the Umgano Project. Overall, the responses illustrated in Figure 5.1 indicate ambiguity in the households' understanding of the project. More than a third of the sample disagreed or strongly disagreed with the item statement, indicating a relatively good understanding of the ownership situation. However, a quarter of the sample also stated that they were 'not sure'; thus indicating a lack of understanding regarding the ownership of the project for a non-trivial portion of the sample.

For the purposes of the logistic regression, the understanding indicator was transformed into a binary variable where 1= disagree/ strongly disagree (i.e. have an understanding the ownership of the Umgano Project) and 0= otherwise (i.e. do not have an understanding the ownership of the Umgano Project). By this definition, 35.83% of the sample demonstrated an understanding of the ownership of the project.

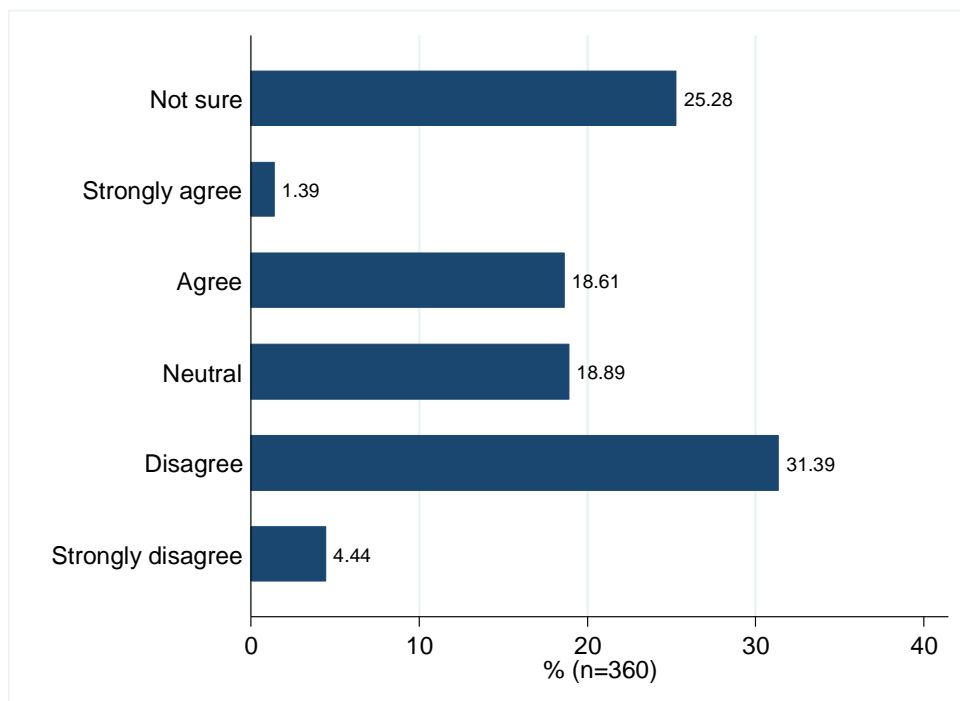


Figure 5.1: Extent to which households disagreed with the statement “The Umgano Project is a development project owned by a company from outside the Mabandla community”

Conversely, responses to the second outcome variable were clear-cut (Figure 5.2). The second outcome indicator measured the extent to which respondent households support the Umgano Project through their willingness to participate and communicate their opinions to elected representatives on the Mabandla Community Trust. More than half of the sampled households agreed or strongly agreed with the item statement (Figure 5.2), illustrating a high degree of support towards to the project.

Again, for the purposes of the logistic regression, the latter indicator was transformed into a binary variable where 1= agree/ strongly agree (i.e. willing to participate and support for the communication channels within the project) and 0= otherwise (i.e. hesitancy to participate or support the relevant communication channels). Consequently, the sample reflected supportiveness by 65.84% of respondent households.

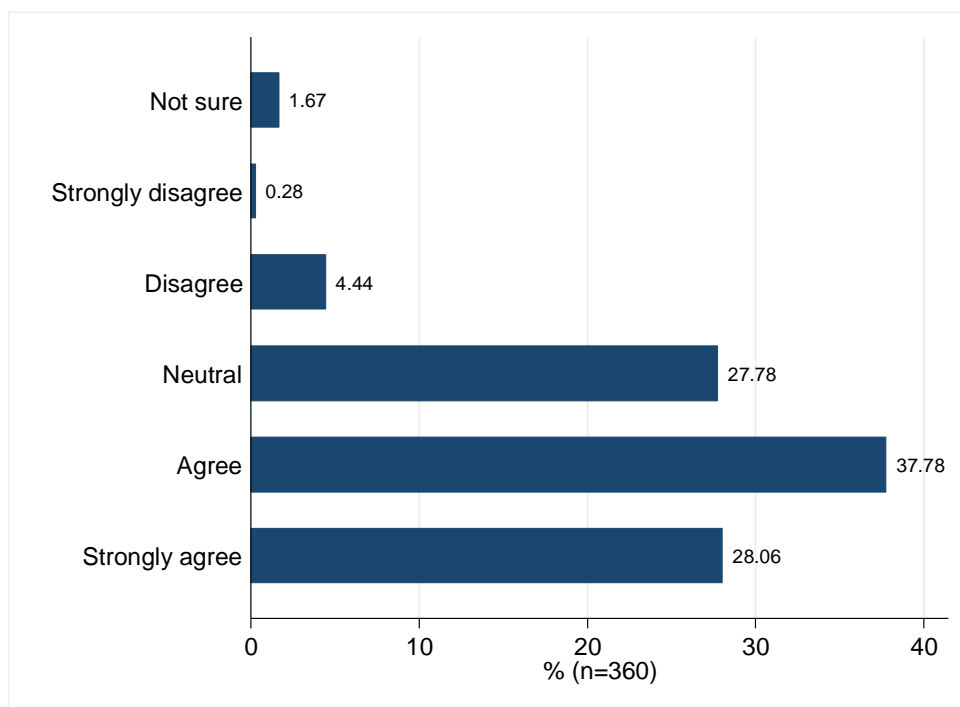


Figure 5.2: Extent to which households agreed with the statement “If there are new businesses or plans for the Umgano Project that I disagree with, I will let a village representative know my opinion”

5.3 Exploratory Factor Analysis Results

Exploratory factor analysis was used as a means to uncover the underlying dimensions of social capital in the Mabandla community. As discussed in Chapter 3, some modifications were made to simplify the overall factor analysis and improve the interpretation of the results. Eleven factors were retained; all had eigenvalues above unity and cumulatively explained 75.62% of the overall variance of the variables used in the factor analysis procedure. The rotated factor loadings of all eleven factors are presented in Table 5.5. Each of the factors will be described briefly here, and some attempt will be made to explain the possible commonality underpinning each of the factors. However, in most cases and unless otherwise stated, the explanation of factors is purely conjecture and should be considered a preliminary attempt at understanding extremely complex social phenomena.

The first factor was interpreted to indicate aspects of the politically active in the community, as all of the politically-oriented civic engagement items (items CE2 to CE8 and E1) loaded highly on the first factor – most notably the highest loading items, ‘took part in an election campaign’ (CE5), ‘made personal contact with an influential person’ (CE3). ‘People willing to contribute time to community project with no direct benefit’ (TC5) also loaded on the first factor which is consistent with politically-oriented collective activities. Interestingly, however, the CE1 item (i.e. whether or not the respondent had ‘voted in the national elections’) loaded negatively on the political engagement factor –although the loading was relatively small compared to the other loadings on the factor.

Items loading on the second factor predominantly have negative connotations in terms of collective action. For instance, the item indicating that people in the village are ‘mostly concerned with their own welfare rather than the welfare of the village in general’ (TC4) loaded highly on Factor 2 and is the key reason that the factor has been named ‘self-serving’. Similarly, indicators suggesting that village trust has improved and is relatively better than other villages (TC2, T7, CR2 to CR4) all loaded highly and negatively on the self-serving factor, and both aspects of volunteerism (CE11 and CE12) also loaded negatively on the factor. The remaining items loading on the self-serving factor were, however, less obviously related. In particular, item TC6 (‘people are willing to contribute money to community projects with no direct benefit’) loaded highly and positively on the self-serving factor. In all of the various attempts at factor analysing the data (using different extraction methods and rotation techniques), the

TC6 item consistently loaded highly and positively on the same factor as TC4. A potential explanation is that, to the extent that contributing money is a substitute for contributing time to common projects, TC6 indicates a less ‘sincere’ form of contribution. Furthermore, the contribution of money is consistent with self-interested behaviour; particularly if there are strong social norms governing community participation in mutually beneficial projects. A similar argument can be made for the loading of ST1 (the item depicting the respondent’s choice between owning a smaller plot of land by themselves, or owning a relatively larger piece of land jointly with another person from the village) and E2 (indicating the frequency of collective action in addressing common problems during the last year) on the self-serving factor. That is, higher scores for ST1 and E2 are consistent with self-interested behaviour (i.e. in ST1 the self-interested individual gets more land and in E2 the self-interested individual is more likely to have his/her concerns addressed by choosing the collective approach).

All of the items pertaining to features of group/ organisation functioning (O1 to O4) loaded very highly onto a single underlying factor, Factor 3 (the ‘group functioning’ factor). The ‘social harmony’ factor (Factor 4) was also straightforward to interpret as all items loading highly (T1, CR1, and CR5) pertain to the overall levels of general trust, peacefulness and social harmony of the village. The fifth factor was named ‘neighbourliness’ because two of the loading items indicated the helpfulness of people in the village, as indicators of trust (T4 and T6), and the third item suggested that the underlying factor also contributes to improved village trust compared to other villages (TC3). The sixth factor took its name ‘perceived influence’ from the highest loading item (E5) regarding the ‘perception of own influence in making village a better place to live’. Other items loading on Factor 6 – although they did not load anywhere nearly as highly as the E5 item – were also consistent with the ‘perceived influence’ concept; including an indicator of specific trust (in the context of leaving one’s belongings in the care of anyone in the village- item ST2) and relatively higher social harmony compared to other villages (item CR6).

Table 5.5: Rotated factor loadings using principal factors method of extraction and varimax rotation with Kaiser Normalization

Variable code	Description	Factor 1 (Politically active)	Factor 2 (Self-serving)	Factor 3 (Group functioning)	Factor 4 (Social harmony)	Factor 5 (Neighbourliness)	Factor 6 (Perceived influence)	Factor 7 (Heterogeneity)	Factor 8 (Problem reporting)	Factor 9 (Honesty)	Factor 10 (Social cohesion)	Factor 11 (Spirit of participation)	Uniqueness
O1	Number of household memberships			0.87									0.15
O2	Degree of participation			0.84									0.16
O3	Organisation decision making			0.92									0.11
O4	Effectiveness of decision making			0.87									0.04
MS1	Mutual support										0.69		0.14
D1	Differences cause problems and lead to violence							0.68					0.34
TC1	Village trust												0.26
TC2	Change in village trust		-0.53										0.43
TC3	Relative village trust					0.66							0.37
TC4	People here look out mainly for the welfare of their own families and they are not much concerned with village welfare		0.71										0.19
TC5	People willing to contribute time to community project with no direct benefit	0.54											0.23
TC6	People willing to contribute money to community project with no direct benefit		0.73										0.16
T1	Most people are basically honest and can be trusted				0.69								0.36
T3	Members of this village are more trustworthy than others										0.42		0.51
T4	People are willing to help me if I have a problem					0.71							0.27
T5	I pay attention to the opinions of others in the village										0.75		0.31
T6	Most people in this village are willing to help if you need it					0.64							0.31
T7	This village has prospered in the last five years		-0.42										0.47
T8	I feel accepted as a member of this village							0.59					0.27
T9	Someone would return a lost pig/goat									0.73			0.37
T10	Someone would return a lost wallet									0.81			0.21
ST1	Land ownership option		0.59										0.29
ST2	Whom would be trusted with belongings						0.55						0.44
CR1	Village is generally peaceful				0.87								0.09

Variable code	Description	Factor 1 (Politically active)	Factor 2 (Self-serving)	Factor 3 (Group functioning)	Factor 4 (Social harmony)	Factor 5 (Neighbourliness)	Factor 6 (Perceived influence)	Factor 7 (Heterogeneity)	Factor 8 (Problem reporting)	Factor 9 (Honesty)	Factor 10 (Social cohesion)	Factor 11 (Spirit of participation)	Uniqueness
CR2	Relatively more conflict in this village than others		0.63										0.30
CR3	People contribute time/money to common development goals		0.57										0.22
CR4	People in this village contribute relatively more time/money		0.75										0.28
CR5	Social harmony				0.73								0.06
CR6	Relative social harmony						0.47						0.38
E1	Frequency of petition for village development	0.79											0.13
E2	Frequency of coming together to address a common issue		0.71										0.20
E3	Decision making over development projects											0.59	0.31
E4	Spirit of participation											0.70	0.26
E5	Perception of one's own influence in making the village a better place to live						0.80						0.25
CE1	Voted in the elections	-0.48						0.64					0.03
CE2	Actively participated in an association	0.66											0.27
CE3	Made personal contact with an influential person	0.81											0.27
CE4	Made the media interested in a problem	0.66											0.32
CE5	Actively participated in an election campaign	0.83											0.22
CE6	Taken part in a protest march or demonstration	0.73											0.21
CE7	Contacted your elected representative	0.67											0.27
CE8	Taken part in a disruption of government meetings/ offices	0.76											0.17
CE9	Talked with other people in your area about a problem								0.86				0.16
CE10	Notified the court or police about a problem								0.72				0.16
CE11	Made a monetary or in-kind donation		-0.65										0.13
CE12	Volunteered for a charitable organization		-0.74										0.15

In contrast to the preceding factors, Factor 7 was less easy to interpret. The item with the highest loading on the seventh factor was D1, which captured the extent to which divisions in the community cause problems and whether or not these problems result in violence (with the modified response codes as follows: 0= divisions do not cause problems; 1= divisions cause problems, but these problems do not result in violence; 2= divisions cause problems and these problems often result in violence). Interestingly, item T8 (which indicates a sense of belonging in the village) also loaded quite highly on Factor 7. While the relationship is not obvious, a sense of belonging is certainly not mutually exclusive with experiencing problems and violence as the result of differences between social groups. For instance, the commonality between items D1 and T8 could potentially stem from the complex interaction between heterogeneous groups in a village. Consider, for instance, a village with a relatively large number of distinctive social groups¹⁴, each of which offers its members a sense of closeness and belonging, but also tends to divide people based on their differences and creates conflict as a result. Consequently, the seventh factor was tentatively named ‘heterogeneity’, with the name referring to the plausible common factor rather than direct indicators of heterogeneity in the community.

Factor 8 was interpreted to capture aspects of discussing and reporting problems, both through formal channels (such as courts or the police, as indicated by CE9) or informal channels (such as discussions of problems amongst friends, as indicated by CE10); hence the eighth factor was named the ‘problem reporting’ factor. Two items indicating the honesty and trustworthiness of people in the village (items T9 and T10) loaded very highly (>0.7) on the ‘honesty’ factor (Factor 9). Items that loaded on the tenth factor (the ‘social cohesion’ factor) all pertain to the interrelated concepts of reputation (item T5), trustworthiness (item T3), and mutual support (item MS1). Finally, the items loading on the ‘spirit of participation’ factor (Factor 10) clearly shared the characteristic of participation in major decisions and activities around village development as indicated by the high loadings of items E4 and E3.

5.4 Binary Logistic Regression Results

Table 5.6 contains the results of the two logistic regression models measuring influences of social capital factors on two indicators (understanding and support) of the performance

¹⁴ Although membership in formal organisations and social groups was measured in the household survey, this thought experiment refers to social groups more generally, including more informal groups such as groups of friends and family.

response variable discussed in Chapter 3. Control variables were added to the binary logistic regression model in a stepwise fashion and were only retained¹⁵ if they showed evidence of improving the fit of the model (as assessed by a likelihood ratio test for nested models). Neither of the models showed problematic multicollinearity among independent variables (variance inflation factors were all below 1.50 in both models). Indicators of model fit are presented at the bottom of Table 5.6. The model likelihood ratio statistics (LR χ^2) and associated probabilities confirm that both models show statistically significant power as a whole. The usual and adjusted Pseudo (McFadden) R^2 statistics also indicate that both models have reasonable predictive ability (Table 5.6). Other measures of fit have also been provided in Appendix 2, Table A.5.4.

Table 5.6 also displays several measures which can be used to interpret the relationships between individual social capital factors and the understanding and support dependent variables. Firstly, the beta coefficients estimate the effect of a unit change of a regressor on the log odds of success of the dependent variable, holding all other factors constant (Gujarati & Porter, 2009). For instance, the beta coefficient on the first factor indicates that for every unit increase in political activity, the log odds of understanding the project decrease on average by 2.55, *ceteris paribus*. However, the interpretation of probability of success in terms of log odds can be difficult to understand (ibid). To facilitate interpretation of logistic regression models, the beta coefficients can be transformed using the antilog function. The latter transformation yields odds ratio coefficients (the OR column in Table 5.6), which demonstrate the marginal effects of regressors in terms of a factor change in odds of success for the dependent variable. For instance, a unit increase in political activity is associated with a decrease in the odds of understanding of the project by a factor of 0.08 (or a reduction in odds of 92.2%). Nonetheless, the predicted social capital factors are not specified in terms of meaningful ‘units’. As a result, Table 5.6 also shows the odds ratio coefficients for a standard deviation change in the regressor (see the OR_{SDx} column in Table 5.6; the standard deviations of each regressor are also given in the SDx column). For example, a standard deviation increase in political activity is associated with an average decrease in the odds of understanding the Umgano Project by a factor of 0.38, *ceteris paribus*.

¹⁵ It should be noted that the categorical variable for the ‘highest level of education’ in the household also showed a significant ($\chi^2(7) = 17.81$, $Prob > \chi^2 = 0.0128$) overall effect in Model 2. However, the odds ratios for each category were very large (i.e. $OR \sim 500$ for one category) which may have resulted from a lack of variation in the categorical variable. As a result, the ‘highest level of education’ variable was excluded from the results table.

In both models, the ‘politically active’ and ‘self-serving’ factors both showed a statistically significant, negative relationship with the respective dependent variables. Interestingly, the self-serving factor had a similar *ceteris paribus* impact in both models; a standard deviation increase in self-serving is associated with an average reduction in odds of understanding and support by a factor of ~0.28 (Table 5.6).

Of the significant regressors in the first model, ‘social harmony’, ‘perceived influence’, and ‘spirit of participation’ factors all demonstrated large and statistically significant positive associations with understanding of the Umgano Project (Model 1, Table 5.6). A standard deviation increase in each of the social harmony, perceived influence, and spirit of participation factors was associated with an average increase in odds of understanding by a factor of 1.94, 1.99 and 1.82 respectively, holding other things constant. The ‘honesty’ factor also showed a positive significant relationship with understanding, although this factor was relatively less important than the former factors ($OR_{SDx} = 1.31$, Table 5.6). None of the remaining social capital factors demonstrated important and significant influences on understanding of the Umgano Project, including the ‘group functioning’ factor which is the primary indicator of structural social capital in the model.

However, the group functioning factor did demonstrate a significant and very large positive relationship with support for the Umgano Project (Model 2, Table 5.6). An increase in the group functioning factor by one standard deviation was associated with an average increase in odds of support for the Umgano Project by a factor of 2.70 (which translates into a percentage increase in the odds of support of about 170%). The ‘spirit of participation’ factor also showed a large positive influence on support for the Umgano project, with the odds of support increasing on average by a factor of 2.49 (a percentage increase of nearly 150%) with a standard deviation increase in the spirit of participation (Model 2, Table 5.6). In addition, the ‘neighbourliness’ factor also demonstrated a significant positive relationship with support for the Umgano Project – however, the magnitude of its effect is much smaller than the group functioning and spirit of participation factors ($OR_{SDx} = 1.38$, Table 5.6). Interestingly, the ‘social cohesion’ factor showed a statistically significant negative association with the support outcome variable, although the magnitude of the association is relatively small ($OR_{SDx} = 0.68$ which translates into an average reduction in odds of support about 30% per standard deviation increase in social cohesion).

Table 5.6: Binary logistic regression results for the understanding and support outcome indicators

Factor #	Regressor	Model (dependent variable)																
		1 (Understanding ^a)					2 (Support ^b)											
		β (log odds)	SE	OR	OR _{SDx}	SDx	β (log odds)	SE	OR	OR _{SDx}	SDx							
1	Politically active	-2.554 ***	0.583	0.078	0.381	0.378	-0.672 *	0.396	0.511	0.776	0.378							
2	Self-serving	-2.326 ***	0.327	0.098	0.278	0.550	-2.292 ***	0.345	0.101	0.283	0.550							
3	Group functioning	0.328	0.239	1.388	1.360	0.939	1.058 ***	0.191	2.880	2.701	0.939							
4	Social harmony	1.161 ***	0.365	3.192	1.942	0.572	0.253	0.267	1.288	1.156	0.572							
5	Neighbourliness	0.268	0.288	1.308	1.182	0.622	0.522 **	0.235	1.685	1.384	0.622							
6	Perceived influence	0.953 ***	0.256	2.594	1.992	0.723	-0.057	0.221	0.945	0.960	0.723							
7	Heterogeneity	0.025	0.322	1.025	1.016	0.613	-0.215	0.245	0.806	0.876	0.613							
8	Problem reporting	0.360	0.427	1.433	1.170	0.436	-0.333	0.341	0.717	0.865	0.436							
9	Honesty	0.350 *	0.215	1.419	1.311	0.774	0.236	0.196	1.267	1.201	0.774							
10	Social cohesion	-0.090	0.230	0.914	0.936	0.740	-0.512 **	0.216	0.599	0.684	0.740							
11	Spirit of participation	0.947 ***	0.295	2.579	1.827	0.636	1.435 ***	0.276	4.201	2.493	0.636							
Controls:																		
Household head characteristics																		
	Female	0.548 *	0.320	1.730	1.316	0.501												
	Age						0.017 *	0.009	1.017	1.299	15.666							
Household characteristics																		
	Household size	0.206 ***	0.077	1.229	1.687	2.534												
	Proportion children	-1.329 *	0.725	0.265	0.715	0.252												
	Proportion employed						2.612 ***	0.890	13.628	1.638	0.189							
	Constant	-4.382 ***	1.473				-2.448 *	1.337										
			<i>Obs: 360</i>				<i>Log Likelihood: -132.80</i>				<i>Obs: 360</i>				<i>Log Likelihood: -160.51</i>			
			<i>LRχ^2 (df): 204.17 (14)</i>				<i>McFadden's R2: 0.435</i>				<i>LRχ^2 (df): 141.31 (13)</i>				<i>McFadden's R2: 0.306</i>			
			<i>Prob>χ^2: 0.000</i>				<i>McFadden's adjusted R2: 0.371</i>				<i>Prob>χ^2: 0.000</i>				<i>McFadden's adjusted R2: 0.245</i>			

Notes:

^a Indicated by whether the respondent disagreed with the statement "The Umgano Project is a development project owned by a company from outside the Mabandla community" (1= disagree/ strongly disagree; 0=otherwise)

^b Indicated by whether the respondent agreed with the statement "If there are new businesses or plans for the Umgano Project that I disagree with, I will let a village representative know my opinion" (1= agree/ strongly agree; 0= otherwise)

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level

Control variables that were included in the understanding model (Model 1, Table 5.6) included a dummy variable indicating whether the head of the household is a female; household size; and the proportion of the household comprised of children. Both the gender of the household head and household size showed a positive relationship with understanding, while the proportion of children per household demonstrated a negative association with understanding of the Umgano Project. On the other hand, only the age of the household head and proportion of households that were employed were included as control variables in the model of support for the Umgano Project – both of which showed a positive, statistically significant association with support for the Umgano Project (as seen in Model 2, Table 5.6).

5.5 Discussion

5.5.1 Dimensions of Household-Level Social Capital in the Mabandla Community

In addressing Key Question 3.1, this study found evidence to support the hypothesis that there are multiple distinct components of social capital at the household level. In particular, factor analysis revealed eleven factors describing a diversity of social capital components which included dimensions of both structural and cognitive social capital.

However, of the eleven factors extracted, only one factor (the ‘group functioning’ factor) reflected a clear structural social capital dimension. There are two reasons for the limited consideration of structural social capital in this chapter. Firstly, descriptive statistics revealed that household-level structural social capital is meagre, as indicated by memberships in organisations. However, the mean number of memberships per household in this case study are comparable to results found in other developing countries. For example, Mitchell and Bossert (2007) found that the average number of organisational memberships per household ranged from 0.57 in rural areas to 0.89 in urban areas in Nicaragua, and Narayan and Cassidy (2001) found that the average number of memberships per individual was 0.5 in a Ugandan case study.

Secondly, the limited consideration of structural social capital in this study is also possibly due to the failure to quantitatively capture *informal* social networks in the factor analysis. Memberships in informal social groups were measured by Mitchell and Bossert (2007), and the resultant factor analysis showed that memberships in informal social groups loaded on a distinctly different factor to memberships in formal organisations; suggesting that

memberships in informal networks potentially capture important aspects of structural social capital in developing countries. The non-ordinal nature of other indicators of structural social capital used in this study meant that possible measures of informal social networks and support were excluded from the factor analysis for the most part. However, some attempt was made to include simplified indicators of mutual support (via item MS1) and divisions in the community (via D1) in the factor analysis. Therefore, in addition to the ‘group functioning’ factor, the ‘heterogeneity’ and ‘social cohesion’ factors (which included the MS1 and D1 items respectively) can also be interpreted as representing structural social capital to some extent.

On the other hand, the household survey results showed clear evidence of multiple features of cognitive social capital at the household level, as demonstrated in Table 5.5. Furthermore, unidimensional factors of cognitive social capital were not apparent, such as a single trust factor for instance. There is a disparity between multidimensional results, such as those found here and in some other studies (e.g. Onyx & Bullen, 2000; Mitchell & Bossert, 2007), versus the unidimensional results of cognitive social capital found elsewhere (e.g. Narayan & Cassidy, 2001). According to Mitchell and Bossert (2007: 61), this disparity “highlight[s] the contextual nature of social capital’s dimensions, suggesting that phenomena that may be uni-dimensional in one society may not be so in another.”

5.5.2 Relationship between Dimensions of Household-Level Social Capital and Indicators of Successful Collective Action in the Umgano Project

To facilitate the answering of Key Question 3.2, the following hypothesis was put forward: Both cognitive and structural elements of household-level social capital have a significant positive influence on the success of the project. Results from the binary logistic regression models provided some evidence in favour of the latter hypothesis. Specifically, the hypothesis was fully supported in the case of the second logistic regression model, where elements of structural and cognitive social capital were both positively related to support for the Umgano Project.

However, the results fail to confirm the above hypothesis in the case of the first model because of the statistical non-significance of structural social capital factors (i.e. the ‘group functioning’, ‘heterogeneity’ and ‘social cohesion’ factors) in explaining household-level understanding of the Umgano Project. It is not clear why there is a lack of evidence to suggest any influence of structural social capital on understanding of the Umgano Project. One

possibility is that, as previously mentioned, the primary indicator of social capital in this study (memberships in formal organisations) did not adequately capture structural social capital as it exists in the Mabandla community. Another possibility is that the effectiveness of the Mabandla Community Trust structure in liaising with members of the community (as described in Chapter 4) crowds out any additional benefit, in terms of information sharing, that otherwise would have been facilitated by memberships in formal organisations. In other words, the suggestion is that all members of the community have equal access to information regarding the operation and objectives of the Umgano Project, by virtue of the Community Trust.

Moreover, not all of the factors had a positive association with the outcome indicators. In particular, the ‘politically active’ and ‘self-serving’ factors demonstrated negative associations with both understanding and support for the Umgano Project. A number of other factors also demonstrated a negative association with support for the Umgano Project, although the ‘social cohesion’ factor was the only one with a statistically significant effect.

The negative impact of the ‘politically active’ factor echoes a key informant’s comment in Chapter 4 regarding the disconnection between the MTC (and therefore, the Umgano Project) and political structures. The same key informant also explained that other projects in the area (which usually appear to be politically connected; for instance, previous rural development programs and an agricultural cooperative operating through support from the local municipality), have disappointed members of the community through lack of support and failure to produce measurable or sustainable benefits (Umgano Executive Director, pers. comm. 3 September 2014). Therefore it is understandable that previous engagement in politically-driven activities may cause respondents to be more cautious of accepting the Umgano Project. Furthermore, this finding is in line with the study by Vollan (2012) which highlighted the lack of transparency, accountability, unrealistic expectations and diluted trust-building processes associated with politically-driven natural resource management projects devolved to communities in the Namaqualand region of South Africa.

The negative impact of the ‘self-serving’ factor¹⁶ is consistent with the conceptualisation of the project’s success as a measure of collective action. Therefore, those less inclined to act

¹⁶ As suggested by its name, the ‘self-serving’ factor in fact highlights the *absence* of a dimension of social capital (i.e. selfless behavior). The reason for the slightly unique interpretation of this factor is that some of the key items (specifically, TC4- ‘people here look out mainly for the welfare of their own families and they are not

collectively because they are more concerned with their own welfare were expected to demonstrate less understanding and support for the Umgano Project. However, the indication may also be that the support and understanding of the Umgano Project are not necessarily embedded in social norms. If support for the project was embedded in the social norms of the community, the self-serving regressor may have demonstrated a positive coefficient because social norms, through the impact of reputation and social sanctioning, can align the interests of selfish individuals and the broader community (Ostrom & Ahn, 2009).

The negative correlation between the ‘social cohesion’ factor and support for the Umgano Project points towards the issue of bonding social capital and its effect on collective action. As is cited in a number of other studies (e.g. Woolcock & Narayan, 2000; Adler & Kwon, 2002; Adger, 2003; Ostrom & Ahn, 2009) bonding social capital can be important in helping communities get by in times of difficulty, but – if not also combined with bridging social capital – can limit access to external resources that can enhance collective action and improve adaptive capacity. Likewise, the negative effect of social cohesion demonstrated in Table 5.6 may indicate that closely knit social groups are less inclined to cooperate with other members from the Mabandla community and are therefore less involved and show less support towards the Umgano Project.

5.5.3 Importance of Traditional Leadership

Although the role of leadership was not explicitly assessed in this study, some of the ancillary evidence presented in this chapter points to the crucial role of traditional leadership in the social fabric of the Mabandla community. For instance, the descriptive results indicated that traditional leaders are important in showing leadership in times of crisis; playing a mediating and conflict resolution role; and involving members of the community in development decision-making processes. Furthermore, the roles of traditional leaders in conflict resolution and mediation may be one of the reasons that respondent households perceived relatively stable levels of social trust and low levels of conflict among their villages (as captured in the descriptive statistics for indicators of cognitive social capital). These results also support the findings in Chapter 4 which pointed to the strength of the traditional leadership in facilitating support for the project and the management agency. Moreover, the importance of traditional

much concerned with village welfare’ - and CR2 –‘compared with other villages, is there more or less conflict in this village?’) were not reverse coded so that higher values indicated higher social capital. Ultimately, the decision not to reverse code these variables was to facilitate interpretation of the extracted factors.

leadership in this case study is in line with the suggestion by Krishna (2004) and Menizen-Dick (2009) that leaders play a crucial role in mobilizing social capital for collective action.

5.6 Summary of Key Findings regarding Household-level Social Capital

This chapter set out to examine the relationship between different dimensions of household-level social capital and the performance of collective action regarding the Umgano Project, while controlling for some important socioeconomic and demographic characteristics of the sampled households.

Descriptive statistics and exploratory factor analysis highlighted multiple dimensions of both structural and cognitive social capital at the household level in the Mabandla community. Also, descriptive statistics revealed that, on the whole, the Mabandla community is perceived by households to have relatively stable levels of social trust and low levels of conflict. Furthermore, descriptive statistics also revealed that traditional leaders play a central role in mobilising and maintaining household-level social capital in the Mabandla community through their role in providing guidance in times of crisis, conflict resolution, mediation, and in communicating with and encouraging households to participate in decision making processes.

Binary logistic regression analyses were used to assess the relationships between the various dimensions of social capital at the household level and indicators of understanding and support towards the Umgano Project. Results from the regression models suggested that both elements of structural and cognitive social capital are important in explaining households' support for the project, while only elements of cognitive social capital are important in explaining understanding of the project. However, in both models there was evidence of positive and negative associations between different social capital factors and indicators of understanding and support; potentially reflecting the complexity of the interaction between household-level social capital and the success of the Umgano Project.

CHAPTER 6

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

6.1 Introduction

According to the theoretical framework presented in Chapter 2, a ‘second generation’ collective action theory suggests that social capital encompasses the extrinsic and intrinsic motivations for collective action. In particular, the theoretical framework notes that forms of social capital facilitate collective action by building trust, which in turn lowers the transaction costs of working together and enhances confidence in the benefits of collective action.

Self-driven CBNRM projects usually incorporate collective action because of the characteristics of common property institutions and the typically high degree of coordination required to manage natural resources. Despite the theoretical link between social capital and collective action, there have been limited assessments of the explicit role of social capital in cases of self-driven CBNRM. Understanding the role of social capital in successful, self-driven CBNRM has the potential to yield useful insights into what motivates communities to collectively organise to sustainably manage resources. In South Africa in particular, such insights hold potentially valuable lessons for the wide array of community-based arrangements which are increasingly touted for economic development and biodiversity conservation. Consequently, this study set out to evaluate the role of social capital and its relationship with the success of the Umgano Project, which is understood to be a case of self-driven CBNRM in the South African context.

The remainder of this chapter will summarize the major empirical findings, key limitations, and broader implications of this study. First, in Section 6.2, the main findings are outlined according to the research objectives of this study. Second, an overarching explanation of the role of social capital in the success of the Umgano Project is offered in Section 6.3. Next, in Section 6.4, some of the key limitations of the study are considered. Finally, the chapter concludes in Section 6.5 by offering insights for policy and research associated with community-based projects.

6.2 Relationships between Dimensions of Social Capital and the Success of the Umgano Project

Three objectives were used to evaluate the role of social capital and its relationship with the success of the Umgano Project. Specifically, these objectives were designed to address the context-specific and multidimensional nature of social capital and its role at different levels of analysis.

The first objective of this study was to conceptualize and explain the structure and operation of CBNRM in the Umgano Project. To address the first objective, four key questions were posed – each of which corresponded to analytical categories of a framework for institutional analysis. In addressing each of the latter key questions, this study identified the main groups of role-players, the primary activities taking place, and the institutional arrangements involved in the Umgano Project (Chapter 4). The motive for the first objective was not directly linked to assessing the relationship or role of social capital per se; rather it was used as a means of understanding the context of the Umgano case study.

On the other hand, the second and third objectives of this study were directly linked to understanding role of social capital and its relationship with the success of the Umgano Project. The second objective sought to determine the factors perceived by key informants to have been intimate to the success of the project. Through reviewing a range of literature and key informant interviews, project-level structural and linking social capital were shown to be closely related to the success of the project (Chapter 4). In addition, some features of the resources and activities involved in the Umgano Project which are *not* directly related to social capital (such as the revenue-earning potential of commercial forestry) were flagged as potentially contributing to the success of the Umgano Project.

The third and final objective of this study was to examine the relationship between different components of household-level social capital and successful collective action regarding the Umgano Project. In addressing the third objective, both elements of structural and cognitive social capital were shown to have an important effect on households' support for the project. In contrast, only elements of cognitive social capital were shown to have a significant impact on the understanding that household have of the project. Both positive and negative relationships were demonstrated between various dimensions of household-level social capital and indicators of understanding and support for the Umgano Project (Chapter 5).

6.3 The Role of Social Capital in the Success of the Umgano Project

From a bird's-eye view, the results of this study provide a multiscale perspective on the role of social capital in the success of the Umgano Project. The project-level results presented in Chapter 4 demonstrated the role of structural social capital in coordinating the activities and agendas of the various role-players involved in the Umgano Project. In addition, the project-level results also highlighted the importance of linking social capital in leveraging essential expertise and resources from external role-players. Crucially, social capital was shown to achieve coordination and leverage support through its role in generating different forms of trust. Thus the project-level findings conform to the trust-building role of social capital posited in a second generation theory of collective action.

Evidence presented in Chapter 5 revealed the multidimensional nature of household-level social capital, as well as the complex relationships between household-level social capital and the success of the Umgano Project. However, unlike the project-level results, limitations in the research design of this study (see below) hinder any comprehensive conclusions regarding the role of household-level social capital in the success of the Umgano Project. Nonetheless, the descriptive results of nominal variables confirmed that traditional leaders play a central role in mobilising and maintaining household-level social capital in the Mabandla community. The implication of these results, when viewed together with the qualitative results presented in Chapter 4, is that household-level social capital is linked to the success of the Umgano Project via the coordinating role of the traditional leadership structures.

6.4 Assumptions and Limitations of this Study

The overriding assumption of this study is that the Umgano Project is a case of successful self-driven CBNRM. Making this assumption enabled the examination of the role/relationships of social capital while assuming a fixed-level of performance regarding CBNRM. This assumption was justified to an extent (as argued in Chapter 1), and it greatly facilitated the case study approach.

Due to time, budget and capacity constraints, this study was inevitably limited in a number of ways. In particular, a potential weakness of the research design was that it failed to explicitly capture the *role* of household-level social capital in the success of the Umgano Project. I opted instead to rely on statistical models to establish whether or not there was evidence of

correlation between household-level social capital and the success of the Umgano Project from a collective action perspective. However, key-informant interviews indicated that the crucial role of social capital in the Umgano case study exists at the project level rather than the household level. Nonetheless, my recommendation for future research is to consider the use of focus groups with household members to provide evidence of the role of household-level social capital in CBNRM. A shortened version of the SOCAT has been made available (De Silva et al., 2006), which could help free up resources for other forms of data collection methods while in the field.

Also, a methodological trade-off was made between the generalisability of a multi-case approach versus the nuanced insights offered by a case study approach. However, a case study approach proved to be valuable in facilitating an in-depth investigation of the Umgano Project and yielded important findings regarding project-level institutions and processes which have been central in the conclusions of this study. Nonetheless, caution must be made in generalising the stand-alone results of this study to policy and practice (see below). Likewise, this study was only able to assess the roles and relationships between social capital and collective action at the time of the study, which therefore hampered any consideration of the dynamics of social capital and its evolving role in a self-driven CBNRM project.

Because of the latent dimensions of social capital, the majority of the household-level variables relied on proxy measures rather than direct measures. Proxy indicators are usually imperfect measures of the corresponding ‘true’ phenomena (Gujarati & Porter, 2009). However, for the most part, the variables obtained from the SOCAT have been shown to have construct validity in other developing countries (De Silva et al., 2006). Another possible pitfall of this study was the potential source of error arising from the verbal translation of the household survey into *isiZulu* by different enumerators, as well as the potential difficulty experienced by respondents in answering abstract questions regarding social capital concepts. In an attempt to offset these issues, effort was made to discuss the meaning of each of the survey questions with the enumerators and a ‘training session’ was used as a means of standardizing the way that survey questions were asked (as mentioned in Chapter 3).

6.5 Final Thoughts: Implications for Policy and Research

The qualitative results of this study yielded some useful insights regarding the success factors of the Umgano Project which are related to social capital, including, but not limited to:

- The crucial role of traditional leadership
- The involvement of long-standing partners
- The organisational structure of the Umgano Project
- The structure and operation of the Mabandla Community Trust
- The legitimacy, transparency and accountability of the local-level institutions

In particular, the role of traditional leaders stood out as a key finding across the different levels of analysis in this study. Certainly, the part that the MTC plays in the success of the Umgano Project serves as an example of the potential role that traditional authorities can have in facilitating development in modern day South Africa. However, the extent to which the remaining success factors can serve as lessons for other cases of community-based conservation and development, in South Africa and elsewhere, is a matter that requires further investigation.

At the heart of the abovementioned success factors is the critical role of structural social capital in building multiple forms of trust, which in turn facilitate collective action in the Umgano Project. Consequently, this study has demonstrated the conceptual accuracy and empirical usefulness of using second generation theories of collective action as a synthesizing framework for understanding social capital in relation to common property institutions. Also, it should be noted that some of the major findings of this study would have been overlooked if analysis had only focussed on household-level social capital. Therefore, this study has also demonstrated some of the benefits of using multiple levels of analysis (based on an appropriate understanding of the given context) when investigating social capital.

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APPENDIX 1

QUESTIONNAIRE ITEMS AND CODES FOR SOCIAL CAPITAL INDICATORS AND OUTCOME VARIABLES

Table A.3.1: Questionnaire items and codes for social capital and outcome indicators

Construct	Indicator set	Indicator	Survey items comprising indicator	Coding of item if ordinal variable	Included in FA?
Structural social capital	Memberships in organisations	Number of memberships in social groups/ organisations per household	Are you or is someone in your household a member of any groups, organizations, or associations?	NA- Discrete random variable	Yes
		Type of organisation		NA- Nominal variable	No; nominal variable
		Degree of participation	Do you consider yourself/household member to be active in the group, such as by attending meetings or volunteering your time in other ways, or are you relatively inactive?	0= not active, 1= somewhat active, 2= very active, 3= leader	Yes
	Features of organisations	Organisation heterogeneity	Are group members mostly of the same extended family?	0=no, 1=yes	No; missing values due to precondition
			Are members mostly of the same religion?	0=no, 1=yes	
			Are members mostly of the same gender?	0=no, 1=yes	
			Are members mostly of the same political viewpoint or do they belong to the same political party?	0=no, 1=yes	
			Do members mostly have the same occupation?	0=no, 1=yes	
			Are members mostly from the same age group?	0=no, 1=yes	
			Do members mostly have the same level of education?	0=no, 1=yes	
		Method of group/ organisation decision making	How does the group make decisions?	1= Leader decides, 2= The leader asks group members what they think and then decides, 3= The group members hold a discussion and decide together, 4= Other	Yes
	Effectiveness of group/ organisation decision making	Overall, how effective is the group's leadership?	0= Not effective at all, 1= Somewhat effective, 2= Very effective	Yes	
	Value of organisation	Do you think that by belonging to this group you have acquired new skills or learned something valuable?	0=no, 1=yes	Yes	

Table A.3.1: Questionnaire items and codes for social capital and outcome indicators, *continued*

Construct	Indicator set	Indicator	Survey items comprising indicator	Coding of item if ordinal variable	Included in FA?
Structural social capital	Perceived mutual support	Mutual support (scenario 1: "If the primary school went without a teacher for a long time, who would take action?")	No one in the village would get together	0=yes, 1=no	No; polychoric error
			Local municipality/ government	0=no, 1=yes	
			Village association	0=no, 1=yes	
			Parents of school children	0=no, 1=yes	
			The entire village	0=no, 1=yes	
			Other*	0=no, 1=yes	
		Leader (primary school)	Who would take initiative (act as leader) in this case?	NA- Nominal variable	No; nominal variable
		Mutual support (Village problem scenario)	Each person/household would deal with the problem individually	0=yes, 1=no	No; polychoric error. However 'the entire village' option was included as a binary variable
			Neighbours among themselves	0=no, 1=yes	
			Local government/municipal political leaders	0=no, 1=yes	
			All community leaders acting together	0=no, 1=yes	
			The entire village	0=no, 1=yes	
	Other*	0=no, 1=yes			
	Leader (village)	Who would take initiative (act as leader) in this case?	NA- Nominal variable	No; nominal variable	
	Divisions in the community	Extent that differences divide people in the community	Differences in education	0= Not at all, 1= Somewhat, 2= A lot	No; polychoric error
			Differences in wealth/ material possessions	0= Not at all, 1= Somewhat, 2= A lot	
			Differences in landholdings	0= Not at all, 1= Somewhat, 2= A lot	
			Differences in social status	0= Not at all, 1= Somewhat, 2= A lot	
			Differences between men and women	0= Not at all, 1= Somewhat, 2= A lot	
			Differences between younger and older generations	0= Not at all, 1= Somewhat, 2= A lot	
			Difference between long- time inhabitants and new settlers	0= Not at all, 1= Somewhat, 2= A lot	
			Difference in political party affiliations	0= Not at all, 1= Somewhat, 2= A lot	
			Differences in religious beliefs	0= Not at all, 1= Somewhat, 2= A lot	
Differences in ethnic background			0= Not at all, 1= Somewhat, 2= A lot		
Other differences		0= Not at all, 1= Somewhat, 2= A lot			
Differences cause problems		Do these differences cause problems in the community?	0=no, 1=yes	Yes; modified	
How problems are usually handled		People work it out between themselves	0=no, 1=yes	No; nominal variable	
		Family/household members intervene	0=no, 1=yes		
		Neighbours intervene	0=no, 1=yes		
		Community leaders mediate	0=no, 1=yes		
	Religious leaders mediate	0=no, 1=yes			
Judicial leaders mediate	0=no, 1=yes				
Problems lead to violence	Do such problems ever lead to violence?	0=no, 1=yes	Yes; modified		

Table A.3.1: Questionnaire items and codes for social capital and outcome indicators, *continued*

Construct	Indicator set	Indicator	Survey items comprising indicator	Coding of item if ordinal variable	Included in FA?
Cognitive social capital	Perceived solidarity	Solidarity in the family death scenario	Suppose someone in the village had something unfortunate happen to them, such as a family member's sudden death. Who do you think they could turn to for help in this situation?	NA- Nominal variable	No; nominal variable
		Solidarity in the loss of the household breadwinner scenario	Suppose your neighbour suffered an economic loss, such as the loss of the household breadwinner. In that situation, who do you think would assist him/her financially?	NA- Nominal variable	No; nominal variable
	Trust and cooperation	Village trust	Do you think that in this village people generally trust one another in matters of lending and borrowing?	0= don't trust, 1= do trust	Yes
		Change in village trust	Do you think over the last few years this level of trust has gotten better, gotten worse, or stayed about the same?	0= worse, 1= same, 2= better	Yes
		Relative village trust	Compared with other villages, how much do people of this village trust each other in matters of lending and borrowing?	0= less, 1= same, 2= more	Yes
		People in the village only care about their own wellbeing	Do you agree or disagree that people here look out mainly for the welfare of their own families and they are not much concerned with village welfare?	0= strongly disagree, 1= disagree, 2= agree, 3= strongly agree	Yes
		Contribute money to community projects	If a community project does not directly benefit your neighbour but has benefits for others in the village, then do you think your neighbour would contribute time for this project?	0= will not contribute 1= will contribute	Yes
		Contribute time to community projects	If a community project does not directly benefit your neighbour but has benefits for others in the village, then do you think your neighbour would contribute money towards this project?	0= will not contribute 1= will contribute	Yes
		Social trust	Most people in this village are basically honest and can be trusted	0= strongly disagree, 1= disagree, 2= neutral, 3= agree, 4= strongly agree	Yes (except the second question because of perfect collinearity with another indicator)
			People only care about their own welfare	0= strongly agree, 1= agree, 2= neutral, 3= disagree, 4= strongly disagree #	
			Members of this village are more trustworthy than others	0= strongly disagree, 1= disagree, 2= neutral, 3= agree, 4= strongly agree	
			If I have a problem, there is always someone in my village who is willing to help me	0= strongly disagree, 1= disagree, 2= neutral, 3= agree, 4= strongly agree	
			I do not pay attention to the opinions of others in the village	0= strongly agree, 1= agree, 2= neutral, 3= disagree, 4= strongly disagree	
			Most people in this village are willing to help if you need it	0= strongly disagree, 1= disagree, 2= neutral, 3= agree, 4= strongly agree	
This village has prospered in the last five years	0= strongly disagree, 1= disagree, 2= neutral, 3= agree, 4= strongly agree				
I feel accepted as a member of this village	0= strongly disagree, 1= disagree, 2= neutral, 3= agree, 4= strongly agree				
If you lose a pig or a goat, someone in the village would help look for it or would return it to you	0= strongly disagree, 1= disagree, 2= neutral, 3= agree, 4= strongly agree				
If you drop your purse or wallet in the village, someone will see it and return it to you	0= strongly disagree, 1= disagree, 2= neutral, 3= agree, 4= strongly agree				

Table A.3.1: Questionnaire items and codes for social capital and outcome indicators, *continued*

Construct	Indicator set	Indicator	Survey items comprising indicator	Coding of item if ordinal variable	Included in FA?
Cognitive social capital	Trust and cooperation	Specific trust	Suppose a friend of yours in this village faced the following alternatives, which one would s/he prefer most? (1) Owning and farming land the size of one soccer field by themselves, or (2) owning and farming land the size of three soccer fields jointly with another person.	0= option 1 (by themselves), 1= option 2 (joint)	Yes
			Suppose someone from the village had to go away for a while, along with their family. In whose charge could they leave their fields/lands and house?	0= no one, 1= family, 2= friends 3= neighbours, 4= anyone from the village	Yes
			If you suddenly had to go away for a day or two, whom could you count on to take care of your children?	0= no one, 1= family, 2= friends 3= neighbours, 4= anyone from the village	No; polychoric error
	Conflict & conflict resolution	Village peacefulness	In your opinion, is this village generally peaceful or conflictive?	0= conflictive, 1= peaceful	Yes
		Relative conflict	Compared with other villages, is there more or less conflict in this village?	0=less, 1= same, 2= more	Yes
		Contribution	Do people in this village contribute time and/or money toward common development goals?	0= contribute little/nothing, 1= contribute some/ a lot	Yes
		Relative contribution	Compared with other villages, to what extent do people of this village contribute time and/or money toward common development goals?	0=less, 1= same, 2= more	Yes
		Social harmony	Are the relationships among people in this village generally harmonious (i.e. friendly) or disagreeable (i.e. people disagree and argue a lot)?	0= disagreeable, 1=harmonious	Yes
		Relative social harmony	Compared with other villages, are the relationships among people in this village more harmonious, the same, or less harmonious than other villages?	0=less, 1= same, 2= more	Yes
		Dispute resolution	Suppose two people in this village had a fairly serious dispute with each other. Who do you think would primarily help resolve the dispute?	0= no one, 1= family, 2= neighbours, 3= community leader, 4= religious leader	No; nominal variable
Structural and cognitive social capital	Civic engagement	Petitioned for development	In the past year, how often have members of this village gotten together and jointly petitioned government officials or political leaders with village development as their goal?	0= never, 1= once, 2= a few times a week, 3= frequently	Yes
		Petition success	Was this action/ were any of these actions successful?	0= none, 1= some were successful, 2= all were successful	No; missing values
		Joined together to address a common issue	How often in the past year have you joined together with others in the village to address a common issue?	0= never, 1= once, 2= a few times a week, 3= frequently	Yes

Table A.3.1: Questionnaire items and codes for social capital and outcome indicators, *continued*

Construct	Indicator set	Indicator	Survey items comprising indicator	Coding of item if ordinal variable	Included in FA?
Structural and cognitive social capital	Civic engagement	Decision making over development projects	If some decision related to a development project needed to be made in this village, do you think the entire village would be called upon to decide or would the community leaders make the decision themselves?	1= community leaders would decide, 2= the entire village would be called on to decide	Yes
		Spirit of participation	Overall, how would you rate the spirit of participation in this village?	0= very low, 1= low, 2= moderate, 3= high, 4= very high	Yes
		Civic engagement during the previous three years	Voted in the elections	0=no, 1=yes	Yes
			Actively participated in an association	0=no, 1=yes	
			Made a personal contact with an influential person	0=no, 1=yes	
			Made the media interested in a problem	0=no, 1=yes	
			Actively participated in an election campaign	0=no, 1=yes	
			Taken part in a protest march or demonstration	0=no, 1=yes	
			Contacted your elected representative	0=no, 1=yes	
			Taken part in a disruption of government meetings/ offices	0=no, 1=yes	
			Talked with other people in your area about a problem	0=no, 1=yes	
			Notified the court or police about a problem	0=no, 1=yes	
			Made a monetary or in-kind donation	0=no, 1=yes	
Volunteered for a charitable organization	0=no, 1=yes				
Influence	How much influence do you think people like yourself can have in making this village a better place to live?	0= none, 1= little, 2= some, 3= a lot	Yes		
Outcome	Collective action regarding the Umgano Project	Understanding of the Umgano Project	I am a beneficiary of the Umgano Project	0= not sure, 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree	
			The Umgano Project is a development project owned by a company from outside the Mabandla community	0= not sure, 1= strongly agree, 2= agree, 3= neutral, 4= disagree, 5= strongly disagree	
			The Umgano Project is only a timber plantation	0= not sure, 1= strongly agree, 2= agree, 3= neutral, 4= disagree, 5= strongly disagree	
			The Umgano Project is made up of a number of businesses, including a timber plantation, a tourism company, and a sawmill	0= not sure, 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree	
			The aim of the Umgano Project is to stimulate local business opportunities and provide jobs to the community	0= not sure, 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree	
			Our village representative on the Umgano Trust frequently informs people in my village about the new plans and ideas for the Project	0= not sure, 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree	

Table A.3.1: Questionnaire items and codes for social capital and outcome indicators, *continued*

Construct	Indicator set	Indicator	Survey items comprising indicator	Coding of item if ordinal variable	Included in FA?
Outcome	Collective action regarding the Umgano Project	Support for the Umgano project	The Umgano Project is good for my community	0= not sure, 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree	
			I am interested in hearing news about any changes or new ideas in the Umgano Project	0= not sure, 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree	
			I think the Umgano Project has brought development to this area	0= not sure, 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree	
			If there are new businesses or plans for the Project that I disagree with, I will let a village representative know my opinion	0= not sure, 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree	
			If I see someone stealing, vandalizing or destroying equipment/fences/property of the Umgano Project, I will report the incident to a village/ traditional representative	0= not sure, 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree	
			I am permitted to cut wood from the Umgano Project area whenever I like	0= not sure, 1= strongly agree, 2= agree, 3= neutral, 4= disagree, 5= strongly disagree	
			I am permitted to let my livestock graze anywhere on the project area	0= not sure, 1= strongly agree, 2= agree, 3= neutral, 4= disagree, 5= strongly disagree	
			I am permitted to let my livestock graze on some parts of the Umgano Project	0= not sure, 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree	

APPENDIX 2

SUPPLEMENTARY STATISTICS TO CHAPTER 5

Table A.5.1: Frequency tables for indicators of structural social capital

Variable	Freq.	%	Cum. %
<u>Household memberships in organisations</u>			
Overall involvement of households in organisations			
<i>Sports</i>	30	9.93	9.93
<i>Religious</i>	191	63.25	73.18
<i>Cultural</i>	0	0.00	73.18
<i>Political</i>	6	1.99	75.17
<i>Finance</i>	43	14.24	89.40
<i>Youth</i>	0	0.00	89.40
<i>Women's organisation</i>	3	0.99	90.40
<i>Trade union</i>	1	0.33	90.73
<i>Village association</i>	3	0.99	91.72
<i>School committee</i>	11	3.64	95.36
<i>Health</i>	2	0.66	96.03
<i>Farmers association</i>	10	3.31	99.34
<i>Business</i>	0	0.00	99.34
<i>Other</i>	2	0.66	100.00
Total	302	100.00	
Most important organisations to households			
<i>Sports</i>	11	4.85	4.85
<i>Religious</i>	175	77.09	81.94
<i>Finance</i>	28	12.33	94.27
<i>Women's</i>	3	1.32	95.59
<i>Trade union</i>	1	0.44	96.04
<i>Village association</i>	1	0.44	96.48
<i>School committee</i>	5	2.20	98.68
<i>Farmers association</i>	2	0.88	99.56
<i>Other</i>	1	0.44	100.00
Total	227	100.00	
<u>Mutual Support Networks</u>			
Leader (village problem scenario)			
<i>Community leaders</i>	141	39.17	39.17
<i>Chief</i>	14	3.89	43.06
<i>Traditional council</i>	100	27.78	70.83
<i>Local government</i>	85	23.61	94.44
<i>Ward councillor</i>	14	3.89	98.33
<i>Police</i>	2	0.56	98.89
<i>NGO</i>	4	1.11	100
Total	360	100	
<u>Divisions in the community</u>			
Differences cause problems in the community			
<i>Yes</i>	108	30.00	30.00
<i>No</i>	252	70.00	100.00
Total	360	100.00	
Problems lead to violence			
<i>Yes</i>	75	69.44	69.44
<i>No</i>	33	30.56	100.00
Total	108	100.00	

Table A.5.2: Frequency tables for indicators of cognitive social capital

Variable	Freq.	%	Cum. %
<u>Trust & cooperation</u>			
Whether people in village generally trust each other			
<i>No, don't trust</i>	58	16.11	16.11
<i>Yes, do trust</i>	302	83.89	100.00
Total	360	100.00	
Change in general village trust over the last few years			
<i>Worse</i>	61	16.94	16.94
<i>Same</i>	234	65.00	81.94
<i>Better</i>	65	18.06	100.00
Total	360	100.00	
People are mostly concerned with their own wellbeing			
<i>Strongly agree</i>	3	0.83	0.83
<i>Agree</i>	124	34.44	35.28
<i>Disagree</i>	229	63.61	98.89
<i>Strongly disagree</i>	4	1.11	100.00
Total	360	100.00	
People in village are willing to contribute to community projects			
<i>Contribute time</i>	67	18.61	18.61
<i>Contribute money</i>	143	39.72	58.33
Total	210	58.33	
<u>Social trust</u>			
Most people are basically honest and can be trusted			
<i>Strongly disagree</i>	3	0.83	0.83
<i>Disagree</i>	22	6.11	6.94
<i>Neutral</i>	58	16.11	23.06
<i>Agree</i>	255	70.83	93.89
<i>Strongly agree</i>	22	6.11	100
Total	360	100	
Members of this village are more trustworthy than others			
<i>Strongly disagree</i>	5	1.39	1.39
<i>Disagree</i>	52	14.44	15.83
<i>Neutral</i>	158	43.89	59.72
<i>Agree</i>	132	36.67	96.39
<i>Strongly agree</i>	13	3.61	100
Total	360	100	
People are willing to help me if I have a problem			
<i>Strongly disagree</i>	1	0.28	0.28
<i>Disagree</i>	12	3.33	3.61
<i>Neutral</i>	13	3.61	7.22
<i>Agree</i>	242	67.22	74.44
<i>Strongly agree</i>	92	25.56	100
Total	360	100	
I do not pay attention to the opinions of others in the village			
<i>Strongly disagree</i>	7	1.94	1.94
<i>Disagree</i>	25	6.94	8.89
<i>Neutral</i>	71	19.72	28.61
<i>Agree</i>	248	68.89	97.5
<i>Strongly agree</i>	9	2.5	100
Total	360	100	
Most people in this village are willing to help if you need it			
<i>Strongly disagree</i>	2	0.56	0.56
<i>Disagree</i>	15	4.17	4.72
<i>Neutral</i>	56	15.56	20.28
<i>Agree</i>	196	54.44	74.72
<i>Strongly agree</i>	91	25.28	100
Total	360	100	

Table A.5.2: Frequency tables for indicators of cognitive social capital, *continued*

Variable	Freq.	%	Cum. %
This village has prospered in the last five years			
<i>Strongly disagree</i>	1	0.28	0.28
<i>Disagree</i>	24	6.67	6.94
<i>Neutral</i>	165	45.83	52.78
<i>Agree</i>	124	34.44	87.22
<i>Strongly agree</i>	46	12.78	100
Total	360	100	
I feel accepted as a member of this village			
<i>Strongly disagree</i>	0	0	0
<i>Disagree</i>	6	1.67	1.67
<i>Neutral</i>	9	2.5	4.17
<i>Agree</i>	158	43.89	48.06
<i>Strongly agree</i>	187	51.94	100
Total	360	100	
Someone would return a lost pig/goat			
<i>Strongly disagree</i>	13	3.61	3.61
<i>Disagree</i>	106	29.44	33.06
<i>Neutral</i>	110	30.56	63.61
<i>Agree</i>	114	31.67	95.28
<i>Strongly agree</i>	17	4.72	100
Total	360	100	
Someone would return a lost wallet			
<i>Strongly disagree</i>	51	14.17	14.17
<i>Disagree</i>	207	57.5	71.67
<i>Neutral</i>	84	23.33	95
<i>Agree</i>	17	4.72	99.72
<i>Strongly agree</i>	1	0.28	100
Total	360	100	
<u>Specific trust</u>			
Land ownership preference			
<i>Own</i>	138	38.33	38.33
<i>Share</i>	222	61.67	100.00
Total	360	100.00	
Who would be trusted with property			
<i>No one</i>	7	1.94	1.94
<i>Family</i>	256	71.11	73.06
<i>Friends</i>	0	0	73.06
<i>Neighbour</i>	94	26.11	99.17
<i>Anyone</i>	3	0.83	100
Total	360	100	
<u>Conflict & conflict avoidance</u>			
Peacefulness of village			
<i>Conflictive</i>	18	5.00	5.00
<i>Peaceful</i>	342	95.00	100.00
Total	360	100.00	
Relative peacefulness of village			
<i>Less</i>	110	30.56	30.56
<i>Same</i>	187	51.94	82.50
<i>More</i>	63	17.50	100.00
Total	360	100.00	
Contribution towards common development goals			
<i>Little or nothing</i>	241	66.94	66.94
<i>Some or a lot</i>	119	33.06	100.00
Total	360	100.00	

Table A.5.2: Frequency tables for indicators of cognitive social capital, *continued*

Variable	Freq.	%	Cum. %
Relative contribution			
<i>Less</i>	166	46.11	46.11
<i>Same</i>	154	42.78	88.89
<i>More</i>	40	11.11	100.00
Total	360	100.00	
Social harmony			
<i>Disagreeable</i>	16	4.44	4.44
<i>Harmonious</i>	344	95.56	100.00
Total	360	100.00	
Relative harmony of relationships			
<i>Less</i>	34	9.44	9.44
<i>Same</i>	142	39.44	48.89
<i>More</i>	184	51.11	100.00
Total	360	100.00	
Dispute resolution			
<i>No one</i>	1	0.28	0.28
<i>Family</i>	141	39.17	39.44
<i>Neighbours</i>	25	6.94	46.39
<i>Community leader</i>	192	53.33	99.72
<i>Religious leader</i>	1	0.28	100.00
Total	360	100.00	

Table A.5.3: Frequency table for indicators of previous civil engagement

	Variable	Freq.	% of responses	% of cases
	<u>Civic engagement (past 3 years)</u>			
CE1	<i>Voted in the elections</i>	340	20.58	94.44
CE2	<i>Actively participated in an association</i>	92	5.57	25.56
CE3	<i>Made personal contact with an influential person</i>	47	2.85	13.06
CE4	<i>Made the media interested in a problem</i>	41	2.48	11.39
CE5	<i>Actively participated in an election campaign</i>	95	5.75	26.39
CE6	<i>Taken part in a protest march or demonstration</i>	31	1.88	8.61
CE7	<i>Contacted your elected representative</i>	60	3.63	16.67
CE8	<i>Taken part in a disruption of government meetings/ offices</i>	80	4.84	22.22
CE9	<i>Talked with other people in your area about a problem</i>	313	18.95	86.94
CE10	<i>Notified the court or police about a problem</i>	209	12.65	58.06
CE11	<i>Made a monetary or in-kind donation</i>	183	11.08	50.83
CE12	<i>Volunteered for a charitable organization</i>	161	9.75	44.72
	Total	1652	100	458.89

Table A.5.4: Measures of fit for the logistic regression analysis

Model 1 (Understanding)			
Log-Lik Intercept Only:	-234.883	Log-Lik Full Model:	-132.8
D(345):	265.599	LR(14):	204.167
		Prob > LR:	0
McFadden's R2:	0.435	McFadden's Adj R2:	0.371
ML (Cox-Snell) R2:	0.433	Cragg-Uhler(Nagelkerke) R2	0.594
McKelvey & Zavoina's R2:	0.593	Efron's R2:	0.532
Variance of y*:	8.08	Variance of error:	3.29
Count R2:	0.869	Adj Count R2:	0.636
AIC:	0.821	AIC*n:	295.599
BIC:	-1765.107	BIC':	-121.762
BIC used by Stata:	353.891	AIC used by Stata:	295.599
Model 2 (Support)			
Log-Lik Intercept Only:	-231.169	Log-Lik Full Model:	-160.513
D(346):	321.027	LR(13):	141.31
		Prob > LR:	0
McFadden's R2:	0.306	McFadden's Adj R2:	0.245
ML (Cox-Snell) R2:	0.325	Cragg-Uhler(Nagelkerke) R2	0.449
McKelvey & Zavoina's R2:	0.521	Efron's R2:	0.329
Variance of y*:	6.872	Variance of error:	3.29
Count R2:	0.731	Adj Count R2:	0.211
AIC:	0.97	AIC*n:	349.027
BIC:	-1715.565	BIC':	-64.791
BIC used by Stata:	403.432	AIC used by Stata:	349.027

ANNEX 1

CONSENT FORM AND QUESTIONNAIRE USED IN THE HOUSEHOLD SURVEY

INFORMATION SHEET: UNDERSTANDING THE ROLE OF SOCIAL CAPITAL IN THE UMGANO PROJECT

This information sheet was prepared on the **10 August 2014** for use in household interviews conducted between the 12 August 2014- 4 September 2014

Aim of Study:

This study forms the basis for a Masters dissertation being prepared for the University of Pretoria. This study aims to assess at whether social capital has played an important role in the success of the Umgano Project. Social capital is a term that is used to describe the things that help people work together to achieve their goals.

Information about this interview:

This interview will take about an hour to complete. It will contain questions about:

- Your household and livelihood activities
- Your participation in associations and organisations
- Your opinion about how the community functions and deals with problems
- Your opinion about who in your village may be excluded from certain services
- Your memory of activities which people in your villages undertook as a group
- Your sense of general solidarity, trustworthiness, and agreeableness displayed by people in your village
- Your understanding and support for the Umgano Project

By participating in this study you will be:

- Helping the researcher understand whether there are important characteristics of your community that affect the success of the Umgano Project
- Potentially helping identify if there are key lessons that can be transferred to other community-based development projects in South Africa (and possibly worldwide) to help improve their success

Anonymity, Confidentiality and Voluntariness:

As far as is practicable, measures will be taken to ensure that your answers to this interview will remain anonymous and confidential. The people performing this interview have agreed in writing to keep the content of your interview confidential. Your name will not be used in any report or publication stemming from this research. Your participation in this study is voluntary; you are not obligated to answers any of the questions you do not feel comfortable answering and you are free to withdraw from the interview at any time without having to give a reason.

Do you have any further questions regarding this study?

Do you agree to proceed with this interview? (If yes, please first sign both copies of the consent form).

THANK YOU!

Participant Identification Number: _____

**CONSENT FORM: PARTICIPANT COPY
UNDERSTANDING THE ROLE OF SOCIAL CAPITAL IN THE UMGANO PROJECT**

Name of Researcher:

Name of Interviewer:

Please initial box

1. I confirm that I have read and understand the information sheet dated **11 August 2014** for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.
3. I understand that any information given by me may be used in future reports, articles or presentations by the research team.
4. I understand that my name will not appear in any reports, articles or presentations.
5. I agree to take part in the above study.

Name of Participant

Date

Signature

Interviewer

Date

Signature

When completed, please return in the envelope provided (if applicable). One copy will be given to the participant and the original to be kept in the file of the research team at the University of Pretoria

Name of Interviewer: _____
 Interview number: _____ Interview ID: _____
 Date of interview: _____
 Time started: _____ Time completed: _____

PLEASE READ THE INTRODUCTION AND CONSENT FORM TO THE RESPONDENT AND ENSURE THAT THE RESPONDENT SIGNS THE CONSENT FORM BEFORE BEGINNING THE INTERVIEW

1. HOUSING CHARACTERISTICS

1.1. Name of Village: _____

1.2. How many rooms are there in this household? _____

1.3. How many rooms in this household are used for sleeping only? _____

1.4. What type of sanitary services does this household use? √

Connected to sewage system	<input type="checkbox"/>	1
Connected to septic tank	<input type="checkbox"/>	2
'Pit hole' (pit latrine/ long drop)	<input type="checkbox"/>	3
None	<input type="checkbox"/>	4
Other*	<input type="checkbox"/>	5

**If other, please specify:*

1.5. What is the primary source of water for this household? √

Piped water system in house or yard	<input type="checkbox"/>	1
Private well	<input type="checkbox"/>	2
Public well	<input type="checkbox"/>	3
'Umjijo' (communal pump)	<input type="checkbox"/>	4
River or stream	<input type="checkbox"/>	5
Other*	<input type="checkbox"/>	6

**If other, please specify:*

1.6. How does this household dispose of most of its garbage? √

Public garbage service	<input type="checkbox"/>	1
Throw in vacant lots	<input type="checkbox"/>	2
Throw in stream	<input type="checkbox"/>	3
Burn and/or bury	<input type="checkbox"/>	4
Other*	<input type="checkbox"/>	5

**If other, please specify:*

1.7. What type of fuel does this household mostly use for lighting, cooking and heating? (use code box below)

Lighting	Cooking	Heating
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Code box for question 1.7.					
Electricity	.....	1	Wood fire	.....	3
Paraffin/Candles	.....	2	Other*	.....	4

**If other, please specify:*

2. HOUSHEOLD AND LIVELIHOOD CHARACTERISTICS

2.1. Which of the following are a source of income for the household?

(Tick (√) either yes or no for each option)

	Yes	No
a. Government grant- Pension	<input type="checkbox"/>	<input type="checkbox"/>
b. Government grant- Child grant	<input type="checkbox"/>	<input type="checkbox"/>
c. Government grant- Disability grant	<input type="checkbox"/>	<input type="checkbox"/>
d. Government grant- other	<input type="checkbox"/>	<input type="checkbox"/>
e. Job- Umgano	<input type="checkbox"/>	<input type="checkbox"/>
f. Job- Other	<input type="checkbox"/>	<input type="checkbox"/>
g. Remittances (family or friends from outside the community send money)	<input type="checkbox"/>	<input type="checkbox"/>
h. Other*	<input type="checkbox"/>	<input type="checkbox"/>

**If other, please specify:*

2.2. What are the three most important sources of income to your household? (*Write down according to the categories given in question 2.1.*)

1: _____ []

2: _____ []

3: _____ []

2.3. How many government grants does the household receive in total? (*fill in number next to each category of grant*)

Type of grant	Total number
Pension	
Child	
Disability	
Other*	

**If other, please specify:*

2.4. What is the approximate total monthly household income from all sources other than government grants?

Amount:

OR tick one of the following categories:

Rands/ month	v
0	
1-2000	1
2001-4000	2
4001-6000	3
6001-8000	4
8001-10000	5
>10000	6

2.5. Does anyone in the household grow crops? (*Tick (v) either yes or no*)

	v
Yes	1
No	2

(*If no, go to question 2.8.*)

2.6. Are the crops grown mostly for consumption or sale?

	v
Consumption	1
Sale	2

(*if for sale, go to question 2.8.*)

2.7. Does the household produce most of the fresh vegetables/ fruits that they eat, or is most of it bought from a shop/ trader/ someone else

	v
Produced	1
Bought	2

2.8. Does anyone in the household own any livestock? If yes, how many? (*Tick (v) either yes or no on the table below for each option; if yes, write approximate number in 'if yes' column*)

	Yes	If yes: How many?	No
a. Cattle	1		2
b. Sheep	1		2
c. Goats	1		2
d. Pigs	1		2
e. Chickens	1		2
f. Horses	1		2
g. Other*	1		2

**If other, please specify:*

	2.9. List names of all individuals in household?	2.10. What is "_____"'s relationship to household head?	2.11. Gender?	2.12. Age?	2.13. Marital status?	2.14. Is "_____"'s spouse currently a member of the household?	2.15. Primary occupation?	2.16. Currently employed?	2.17. Education level?	2.18. How long have you lived in this community?
	<i>List household head first, use first names only</i> <i>Remember to include children</i>	<i>Use code box</i>	<i>Use: Male.....1 Female.2</i>	<i>Record age directly</i>	<i>Use: Married.....1 Common-law...2 Divorced.....3 Widow(er) .....4 Never married.5</i>	<i>If yes, use number of spouse(#) If no, write 99</i>	<i>Write occupation in full (e.g. farmer, housewife, etc.)</i>	<i>Use: Yes.....1 No.....2</i>	<i>Use code box</i>	<i>Record years directly</i>
#	Name	Code	Code	Age	Code	Code	Occupation	Code	Code	Years
01										
02										
03										
04										
05										
06										
07										
08										
09										

---Table continues on next page---

Code box for question 2.10			
Head ... 1	Father-in-law/Mother-in-law ... 10		
Wife/Husband ... 2	Son-in-law/Daughter-in-law ... 11		
Son/Daughter ... 3	Sister-in-law/Brother-in-law ... 12		
Father/Mother ... 4	Nephew/Niece ... 13		
Sister/Brother ... 5	Uncle/Aunt ... 14		
Stepson/Stepdaughter ... 6	Cousin ... 15		
Stepfather/Stepmother ... 7	Other relative ... 16		
Grandchild ... 8	Children from another family ... 17		
Grandparent ... 9	Other non-family ... 18		

Code box for question 2.15		
Umgano, timber ... 1		
Umgano, other ... 2		
Farmer ... 3		
Private sector, unskilled ... 4		
Private sector, skilled ... 5		
Public sector, unskilled ... 6		
Public sector, skilled ... 7		
Other ... 8		

Code box for question 2.17		
Illiterate, no schooling ... 1		
Literate, no schooling ... 2		
Primary (grade 1-7), incomplete ... 3		
Primary (grade 1-7), complete ... 4		
Secondary (grade 8 -12), incomplete ... 5		
Secondary (grade 8 -12), complete ... 6		
Tertiary, incomplete ... 7		
Tertiary, complete ... 8		
Other ... 9		

	2.9. List names of all individuals in household? <i>List household head first, use first names only</i> <i>Remember to include children</i>	2.10. What is "____"'s relationship to household head? <i>Use code box</i>	2.11. Gender? <i>Use: Male.....1 Female.2</i>	2.12. Age? <i>Record age directly</i>	2.13. Marital status? <i>Use: Married.....1 Common-law...2 Divorced.....3 Widow(er) .....4 Never married.5</i>	2.14. Is "____"'s spouse currently a member of the household? <i>If yes, use number of spouse(#) If no, write 99</i>	2.15. Primary occupation? <i>Write occupation in full (e.g. farmer, housewife, etc.)</i>	2.16. Currently employed? <i>Use: Yes.....1 No.....2</i>	2.17. Education level? <i>Use code box</i>	2.18. How long have you lived in this community? <i>Record years directly</i>
#	Name	Code	Code	Age	Code	Code	Occupation	Code	Code	Years
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										

Code box for question 2.10

Head ... 1	Father-in-law/Mother-in-law ... 10
Wife/Husband ... 2	Son-in-law/Daughter-in-law ... 11
Son/Daughter ... 3	Sister-in-law/Brother-in-law ... 12
Father/Mother ... 4	Nephew/Niece ... 13
Sister/Brother ... 5	Uncle/Aunt ... 14
Stepson/Stepdaughter ... 6	Cousin ... 15
Stepfather/Stepmother ... 7	Other relative ... 16
Grandchild ... 8	Children from another family ... 17
Grandparent ... 9	Other non-family ... 18

Code box for question 2.15

Umgano, timber ... 1
Umgano, other ... 2
Farmer ... 3
Private sector, unskilled ... 4
Private sector, skilled ... 5
Public sector, unskilled ... 6
Public sector, skilled ... 7
Other ... 8

Code box for question 2.17

Illiterate, no schooling ... 1
Literate, no schooling ... 2
Primary (grade 1-7), incomplete ... 3
Primary (grade 1-7), complete ... 4
Secondary (grade 8 -12), incomplete ... 5
Secondary (grade 8 -12), complete ... 6
Tertiary, incomplete ... 7
Tertiary, complete ... 8
Other ... 9

3. STRUCTURAL SOCIAL CAPITAL

"Now I would like to ask you some questions about how you feel about this village and how you take part in community activities."

3.A. Organisational Density and Characteristics

3.A.1. Are you or is someone in your household a member of any groups, organizations, or associations? (Probe: "Who in the household belongs to which group? Are there any other groups or informal associations that you or someone in your household belongs to?" Code on table on the right using the code box for question 3.A.1. If the household is not a member in any group, go to section 3B on page 7.)

3.A.2. Do you consider yourself/household member to be active in the group, such as by attending meetings or volunteering your time in other ways, or are you relatively inactive? Are you/household member a leader in the group? Code on table on the right using the code box for question 3.A.2

3.A.3. Which of these groups is most important to your household?

Group 1:	[]
Group 2:	[]
Group 3:	[]

"Now I'm going to ask you some questions about the members of these 3 groups."

3.A.4. Overall, are the same people members of these three different groups or is there little overlap in membership?

	v
Little/no overlap	1
Some overlap	2
Much overlap	3

3.A.1.			3.A.2.
Household member (Use roster code#)	Name of organisation	Type of organisation (use codes below)	Degree of participation (use codes below)

Code box for question 3.A.1					
Sports group	1	Trade union	.....	8
Religious group	2	Village association	.....	9
Cultural association	3	Parent/ school committee	.....	10
Political group	4	Health committee	.....	11
Credit/finance group	5	Farmers association/ cooperative	.....	12
Youth group	6	Business group	.....	13
Women's group	7	Other	.....	14

Code box for question 3.A.2			
Leader	.....	1	
Very active	.....	2	
Somewhat active	.....	3	
Not active	.....	4	

For questions 3.A.5- 3.A.11 please tick(v) either yes or no for each of the 3 groups mentioned in 3.A.3

			Group		
			1	2	3
3.A.5.	Are group members mostly of the same extended family?	Yes 1			
		No 2			
3.A.6.	Are members mostly of the same religion?	Yes 1			
		No 2			
3.A.7.	Are members mostly of the same gender?	Yes 1			
		No 2			
3.A.8.	Are members mostly of the same political viewpoint or do they belong to the same political party?	Yes 1			
		No 2			
3.A.9.	Do members mostly have the same occupation?	Yes 1			
		No 2			
3.A.10.	Are members mostly from the same age group?	Yes 1			
		No 2			
3.A.11.	Do members mostly have the same level of education?	Yes 1			
		No 2			

3.A.12. How does the group usually make decisions?
(use code box below)

Group		
1	2	3

Code box for question 3.A.12	
Leader decides and informs other group members	1
The leader asks group members what they think and then decides	2
The group members hold a discussion and decide together	3
Other*	4

*If other, please specify:

3.A.13. Overall, how effective is the group's leadership?
Tick (v) one option for each group

		Group		
		1	2	3
Very effective	1			
Somewhat effective	2			
Not effective at all	3			

3.A.14. Do you think that by belonging to this group you have acquired new skills or learned something valuable?
Tick (v) either yes or no for each group

		Group		
		1	2	3
Yes	1			
No	2			

3.B. Networks and Mutual Support Organizations

“Now I am going to ask you some questions about how the community functions and deals with problems.”

3.B.1. If the primary school of this village went without a teacher for a long time, say six months or more, which people in this village do you think would get together to take some action about it?

(Tick yes/no for each organisation listed below)

a. No one in the village would get together
(if yes, go to question 3.B.3)

b. Local municipality/ government

c. Village association

d. Parents of school children

e. The entire village

f. Other*

*If other, please specify:

	Yes	No
a.	1	2
b.	1	2
c.	1	2
d.	1	2
e.	1	2
f.	1	2

3.B.2. Who would take initiative (act as leader) in this case?

3.B.3. If there were a problem that affected the entire village, for instance a fire that has burnt down many houses in the village, who do you think would work together to deal with the situation?

(Tick yes/no for each group listed below)

a. Each person/household would deal with the problem individually (if yes, go to section 3.C)

b. Neighbours among themselves

c. Local government/municipal political leaders

d. All community leaders acting together

e. The entire village

f. Other*

	Yes	No
a.	1	2
b.	1	2
c.	1	2
d.	1	2
e.	1	2
f.	1	2

*If other, please specify:

3.B.4. Who would take initiative (act as leader) in this case?

3.C. Exclusion

3.C.1. Differences often exist between people living in the same village. To what extent do differences such as the following tend to divide people in your village?

- a. Differences in education
- b. Differences in wealth/ material possessions
- c. Differences in landholdings
- d. Differences in social status
- e. Differences between men and women
- f. Differences between younger and older generations
- g. Difference between long- time inhabitants and new settlers
- h. Difference in political party affiliations
- i. Differences in religious beliefs
- j. Differences in ethnic background
- k. Other differences*

	Not at all	Some-what	Very much
a.	1	2	3
b.	1	2	3
c.	1	2	3
d.	1	2	3
e.	1	2	3
f.	1	2	3
g.	1	2	3
h.	1	2	3
i.	1	2	3
j.	1	2	3
k.	1	2	3

*If other, please specify:

3.C.2. Do these differences cause problems in the community?

√

Yes	1
No	2

(If no, go to question 3.C.5.)

3.C.3. How are these problems usually handled?

(Tick (√) either yes or no for each of the options below)

- a. People work it out between themselves
- b. Family/household members intervene
- c. Neighbours intervene
- d. Community leaders mediate
- e. Religious leaders mediate
- f. Judicial leaders mediate

Yes	No
1	2
1	2
1	2
1	2
1	2
1	2

3.C.4. Do such problems ever lead to violence?

√

Yes	1
No	2

3.D. Previous Collective Action

3.D.1. In the past year, how often have members of this village gotten together and jointly petitioned government officials or political leaders with village development as their goal?

√

Never (if never, go to question 3.D.3.)	1
Once	2
A couple of times	3
Frequently	4

3.D.2. Was this action/ were any of these actions successful?

√

Yes, all were successful	1
Some were successful and others were not	2
No, none were successful	3

3.D.3. How often in the past year have you joined together with others in the village to address a common issue?

√

Never	1
Once	2
A couple of times	3
Frequently	4

3.D.4. If some decision related to a development project needed to be made in this village, do you think the entire village would be called upon to decide or would the community leaders make the decision themselves?

√

The community leaders would decide	1
The whole village would be called upon to decide	2

3.D.5. Overall, how would you rate the spirit of participation in this village?

√

Very low	1
Low	2
Average	3
High	4
Very high	5

3.D.6. In the last three years have you personally done any of the following things: (Tick (v) either yes or no for each of the options in the table below)

3.D.7. Have you been approached by someone personally during the last three years who asked you to do any of the following:(Tick (v) either yes or no for each of the options in the table below)

	3.D.6.		3.D.7	
	Yes	No	Yes	No
a. Voted in the elections	1	2	1	2
b. Actively participated in an association	1	2	1	2
c. Made a personal contact with an influential person	1	2	1	2
d. Made the media interested in a problem	1	2	1	2
e. Actively participated in an election campaign	1	2	1	2
f. Taken part in a protest march or demonstration	1	2	1	2
g. Contacted your elected representative	1	2	1	2
h. Taken part in a disruption of government meetings/offices	1	2	1	2
i. Talked with other people in your area about a problem	1	2	1	2
j. Notified the court or police about a problem	1	2	1	2
k. Made a monetary or in-kind donation	1	2	1	2
l. Volunteered for a charitable organization	1	2	1	2

3.D.8. How much influence do you think people like yourself can have in making this village a better place to live?

	v
A lot	1
Some	2
Not very much	3
None	4

4. **COGNITIVE SOCIAL CAPITAL**

4.A. **Solidarity**

4.A.1. Suppose someone in the village had something unfortunate happen to them, such as a family member's sudden death. Who do you think they could turn to for help in this situation?

(Record first three mentioned using codes in code box below)

a	b	c

Code box for question 4.A.1.			
No one would help	..... 1	Police	..... 8
Family	..... 2	Family court judge	..... 9
Neighbours	..... 3	Patron/employer/benefactor	..... 10
Friends	..... 4	Political leader	..... 11
Religious leader or group	..... 5	Mutual support group to which s/he belongs	..... 12
Community leader	..... 6	Assistance organization to which s/he does not belong	..... 13
Business leader	..... 7	Other*	..... 14

*If other, please specify:

4.A.2. Suppose your neighbour suffered an economic loss, such as the loss of the household breadwinner. In that situation, who do you think would assist him/her financially? (Record first three mentioned using codes in code box below)

a	b	c

Code box for question 4.A.1.			
No one would help	..... 1	Police	..... 8
Family	..... 2	Family court judge	..... 9
Neighbours	..... 3	Patron/employer/benefactor	..... 10
Friends	..... 4	Political leader	..... 11
Religious leader or group	..... 5	Mutual support group to which s/he belongs	..... 12
Community leader	..... 6	Assistance organization to which s/he does not belong	..... 13
Business leader	..... 7	Other*	..... 14

*If other, please specify:

4.B. Trust and Cooperation

4.B.1. Do you think that in this village people generally trust one another in matters of lending and borrowing?

√	
Do trust	1
Do not trust	2

4.B.2. Do you think over the last few years this level of trust has gotten better, gotten worse, or stayed about the same?

√	
Better	1
The same	2
Worse	3

4.B.3. Compared with other villages, how much do people of this village trust each other in matters of lending and borrowing?

Less than other villages
The same as other villages
More than other villages

√	
	1
	2
	3

4.B.4. Suppose someone from the village had to go away for a while, along with their family. In whose charge could they leave their fields/lands and house?

(Record first three mentioned using codes in code box below)

a	b	c

Code box for question 4.B.4..			
Other family member	.... 1	No one	..... 4
Neighbour	.... 2	Other*	.... 5
Anyone from the village for this purpose	.... 3		

*If other, please specify:

4.B.5. Suppose a friend of yours in this village faced the following alternatives, which one would s/he prefer most?

Own and farm land the size of **1 soccer field** entirely by themselves
Own and farm land the size of **3 soccer fields** jointly with one other person

√	
	1
	2

4.B.6. If you suddenly had to go away for a day or two, whom could you count on to take care of your children?(Record first three mentioned using codes in code box below)

a	b	c

Code box for question 4.B.6.			
Other family member	..... 1	No one	..... 4
Neighbour	..... 2	Other*	..... 5
Anyone from the village for this purpose	..... 3	Don't have children	..... 6

**If other, please specify:*

4.B.7. Do you agree or disagree that people here look out mainly for the welfare of their own families and they are not much concerned with village welfare?

	√	
Strongly Agree	<input type="checkbox"/>	1
Agree	<input type="checkbox"/>	2
Disagree	<input type="checkbox"/>	3
Strongly disagree	<input type="checkbox"/>	4

4.B.8. If a community project does not directly benefit your neighbour but has benefits for others in the village, then do you think your neighbour would contribute time for this project?

	√	
Will not contribute time	<input type="checkbox"/>	1
Will contribute time	<input type="checkbox"/>	2

4.B.9. If a community project does not directly benefit your neighbour but has benefits for others in the village, then do you think your neighbour would contribute money for this project?

	√	
Will not contribute money	<input type="checkbox"/>	1
Will contribute money	<input type="checkbox"/>	2

4.B.10. In general, to what extent do you agree with the following statements:

(Tick (v) either strongly agree, agree, neither agree or disagree, disagree, or strongly disagree for each of the statements a-k)

	Statement	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
a.	Most people in this village are basically honest and can be trusted.	1	2	3	4	5
b.	People only care about their own welfare.	1	2	3	4	5
c.	Members of this village are more trustworthy than others.	1	2	3	4	5
d.	In this village, one has to be alert or someone is likely to take advantage of you.	1	2	3	4	5
e.	If I have a problem, there is always someone in my village who is willing to help me.	1	2	3	4	5
f.	I do not pay attention to the opinions of others in the village.	1	2	3	4	5
g.	Most people in this village are willing to help if you need it.	1	2	3	4	5
h.	This village has prospered in the last five years.	1	2	3	4	5
i.	I feel accepted as a member of this village.	1	2	3	4	5
j.	If you lose a pig or a goat, someone in the village would help look for it or would return it to you	1	2	3	4	5
k.	If you drop your purse or wallet in the village, someone will see it and return it to you.	1	2	3	4	5

4.C. Conflict Resolution

4.C.1. In your opinion, is this village generally peaceful or conflictive?

√	
Peaceful	1
Conflictive	2

4.C.2. Compared with other villages, is there more or less conflict in this village?

√	
More	1
The same	2
Less	3

4.C.3. Do people in this village contribute time and/or money toward common development goals?

√	
They contribute some or a lot.	1
They contribute very little or nothing	2

4.C.4. Compared with other villages, to what extent do people of this village contribute time and/or money toward common development goals?

√	
They contribute less than other villages.	1
They contribute about the same as other villages.	2
They contribute more than other villages.	3

4.C.5. Are the relationships among people in this village generally harmonious (i.e. friendly) or disagreeable (i.e. people disagree and argue a lot)?

√	
Harmonious	1
Disagreeable	2

4.C.6. Compared with other villages, are the relationships among people in this village more harmonious, the same, or less harmonious than other villages?

√	
More harmonious	1
The same	2
Less harmonious	3

4.C.7. Suppose two people in this village had a fairly serious dispute with each other. Who do you think would primarily help resolve the dispute?

(please tick only one option)

√	
No one; people work it out between themselves	1
Family/household members	2
Neighbours	3
Community leaders	4
Religious leaders	5
Judicial leaders	6
Other*	7

**If other, please specify:*

5. UNDERSTANDING OF THE UMGANO PPROJECT

5.A. *Ownership and Objective of the project*

“Now I am going to ask you some questions about the Umgano Project.”

5.A.1. In general, to what extent do you agree with the following statements:

(Tick (v) either strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree for each of the statements a-k)

	Statement	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	I don't know
a.	I know about the Umgano Project	1	2	3	4	5	6
b.	I am a beneficiary of the Umgano Project	1	2	3	4	5	6
c.	The Umgano Project is a development project owned by the Mabandla Traditional Council on behalf of the Mabandla community	1	2	3	4	5	6
d.	The Umgano Project is a development project owned by a company from outside the Mabandla community	1	2	3	4	5	6
e.	The Umgano Project is only a timber plantation	1	2	3	4	5	6
f.	The Umgano Project is made up of a number of businesses, including a timber plantation, a tourism company, and a sawmill	1	2	3	4	5	6
g.	The aim of the Umgano Project is to stimulate local business opportunities and provide jobs to the community	1	2	3	4	5	6
h.	Our village representative on the Umgano Trust frequently informs people in my village about the new plans and ideas for the Project	1	2	3	4	5	6

5.B. Opinion and Support for the Umgano Project
5.B.1. In general, to what extent do you agree with the following statements:

(Tick (v) either strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree for each of the statements a-k)

	Statement	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	I don't know
a.	The Umgano Project is good for my community	1	2	3	4	5	6
b.	I am interested in hearing news about any changes or new ideas in the Umgano Project	1	2	3	4	5	6
c.	I think the Umgano Project has brought development to this area	1	2	3	4	5	6
d.	If there are new businesses or plans for the Project that I disagree with, I will let a village representative know my opinion	1	2	3	4	5	6
e.	If I see someone stealing, vandalizing or destroying equipment/fences/property of the Umgano Project, I will report the incident to a village/ traditional representative	1	2	3	4	5	6
f.	I am permitted to cut wood from the Umgano Project area whenever I like	1	2	3	4	5	6
g.	I am permitted to let my livestock graze anywhere on the project area	1	2	3	4	5	6
h.	I am permitted to let my livestock graze on some parts of the Umgano Project	1	2	3	4	5	6

END OF INTERVIEW. THANK YOU FOR YOUR TIME.

Please give respondent the small gift pack, thanking him/her for their contribution to this study