Participatory Development and the Capacity of Gabra Pastoralist Communities to Influence Resilience

By

Lance W. Robinson

A thesis submitted to the Faculty of Graduate Studies of
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in partial fulfilment of the requirements of the degree of

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Abstract

Social-ecological systems of traditional pastoralists are adapted to deal with shocks and stresses such as droughts and livestock disease that characterize their environment. However, inappropriate policies have undermined the resilience of pastoralist social-ecological systems at a time when stresses from new challenges, such as growth in the human population and global climate change are increasing. Many pastoralist groups such as the Gabra of north-central Kenya now regularly require emergency relief. There is an urgent need to take deliberate steps to rebuild the resilience of pastoralist social-ecological systems. One lever that external actors such as NGOs and government agencies have that could help them to do so relates to structures and processes of participation and decision-making.

The purpose of this research, therefore, was to examine ways in which the approaches to public participation used by agencies involved in water resources management can affect the collective capacity of pastoralist institutions and communities to influence social-ecological resilience. The research revolved around a single case study: the Kenyan NGO Pastoralist Integrated Support Programme (PISP) together with the Gabra communities where PISP works. The research found that the capacity to influence resilience resides in the network of vertical and horizontal institutional linkages as much as it does in any particular organization or institution. This implies the need for a radical paradigm shift in the way that NGOs and other formal sector actors think of participation and of their role. An examination of the Gabra approach to decision-making and PISP's approach to participation point to an alternative way of thinking about participation. This alternative rationale for participation would call on formal sector actors to promote participation and inclusivity of decision-making at multiple levels of social organization through an array of interconnected processes and institutions, to foster deliberation processes that are nested across levels, and to help create and strengthen vertical institutional linkages for their beneficiary communities. These proposed strategies relate to a key contribution of this research, which is to suggest building a

resilience-based theory of participation and to provide a glimpse of what such a theory might entail.

Acknowledgements and Dedication

In completing a four-year project like this there are of course many people to whom I owe thanks. I would like to start by acknowledging my advisory committee: John Sinclair for encouraging me to be rigorous and honest in the process of drawing conclusions from my findings and for pushing me to ensure that "participant voices" would be heard in the final product; Hank Venema for helping me to not lose sight of the practical, especially policy, relevance of my findings; and Leslie King, whose contagious enthusiasm for my work was a great confidence builder. I would like to thank all of them for their encouragement, wise advice, and support. I am also grateful to my external examiner, Maria Fernandez-Gimenez. The detailed and thoughtful report that she wrote on my thesis, as well as opening my eyes to possibilities for future research, will be immeasurably useful as I work towards publishing parts of the thesis.

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My thanks also go out to those who provided practical support. Financial help came from the Social Sciences and Humanities Research Council of Canada and the International Development Research Centre. Additional financial support was provided by Dr. Berkes through the Canada Research Chair in Community-Based Resource Management and an IDRC-funded research project on UNDP Equator Initiative cases, and by Dr. Sinclair through a SSHRC-funded project. In Kenya, the International Livestock Research Institute acted as my institutional host in the country and provided important in-kind support. In particular, Lucy Kirori, Robin Reid, and Mohammed Said always had their doors open for me. I also owe a huge debt of gratitude to my research assistants—Ejere, Guyo, Jarso and Shamo—whose greatest contribution to this research was to help me be

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Above all, I want to acknowledge my family, as it was they who sacrificed the most in order for me to carry out this research. Richard, you only saw the tail end of the process, but your arrival in our family helped to keep me focused on what is most important. Alejandra, my pastoralist wife, you are my greatest supporter. Tacheki pia. And Elham, most of all I want to thank you. On my very first extended trip away from our Marsabit home to the Chalbi lowlands you contracted malaria, and then I couldn't get back home to you and your mother because of unrest that had broken out. I decided then that this research and whatever might come out of it would be dedicated to you. According to your mother's matrilineal tribe you are one of them, and so you too are a pastoralist. Maybe, one day, you might even take an interest in the issues that I discuss in this thesis. But more to the point, for this research you were, as your name suggests, my inspiration. Elham, this thesis is dedicated to you.

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Ki-Borana Glossary

abba ela – father of the well

abba olla – father of the nomadic camp

arda – locality

balbala – clan

barbatha – an area without pasture

cinna – critical historical breaking points, crises, especially the crisis of the 1880s and 1890s

deeda – home range, especially the rangeland of a particular phratry

finna – the nourishing power of pasture, same as koshee

foora – the dry herd, the satellite camp

gosa – phratry (clan section), of which there are five. Each gosa is made up of between nine and nineteen balbala.

herega – the sequence of turns for watering animals, also the committee that oversees the turns

ibidda – household

irb – traditions regarding restocking for people in the community who have lost their herds

jalaab – a judge representing the yaa

korra – a meeting of elders, can be at the olla level, the reer level, the arda level or higher

koshee – the nourishing power of pasture, same as finna

kunn – migration toward permanent water sources

laf Gabra – Gabraland, the territory that the Gabra consider theirs

laf seera – territory that is restricted in some way, as with colonial restrictions on grazing in certain areas

miilo – lineage. Some balbala are made up of more than one miilo.

olla – a nomadic camp

qayath – migration to rainy season grounds

reera – a cluster of ollas

seera – laws

Yaa – the traditional council for each of the five gosa. Also the ritual village where the council is situated.

Abbreviations and Acronyms

ALRMP – Arid Lands Resource Management Project

ASAL – arid and semi-arid lands

CBNRM – community-based natural resource management

CBO – community-based organization

CDF – Constituency Development Fund

CORDAID – Catholic Organization for Relief and Development Aid

CRIC – components, relationships, sources of innovation, and sources of continuity

DDO – Catholic Diocese Development Office

DSG – District Steering Group

EMC – Environmental Management Committee

GWP – Global Water Partnership

HIS – humanitarian information system

IIRR – International Institute for Rural Reconstruction

ITDG – Intermediate Technology Development Group

IWRM – integrated water resources management

KES – Kenyan Shillings

NEMA – National Environment Management Authority

PISP - Pastoralist Integrated Support Programme

PRA – participatory rural appraisal

SMC – School Management Committee

SWCB – Soil and Water Conservation Branch

UNDP – United Nations Development Programme

WESCOORD – Water and Environmental Sanitation Coordination Group

WRUA – Water Resources Users Association

WRMA – Water Resources Management Authority

WSB – Water Services Board

WSP – Water Service Provider

WUA – Water Users Association

The natural rock catchment Afkaba, near Kalacha. PISP assisted local communities to make improvements to increase the capacity of the catchment and make it more accessible.

Photo by Lance W. Robinson

Chapter 1: Introduction

1.1 Pastoralists, Resilience and Participation

The capacity of the systems on which human life and livelihoods depend to withstand shocks and stresses—in other words, their resilience—is of fundamental importance as much for development and poverty reduction as for environmental protection and management. While this is true for every coupled social and ecological system within which human beings are embedded, for the systems that pertain to mobile pastoralists resilience is of *immediate* importance. The magnitude of the variability, shocks, and stresses that affect pastoralist systems and the potential human consequences of inability to cope are such that resilience cannot be assumed.

Since Buzz Holling began to explore what is referred to in this thesis as "resilience thinking" (e.g., Holling 1973; Holling 1986), a growing body of scholarship has explored the promise embedded in its concepts, metaphors and principles. In recent years, however, this body of scholarship has gone beyond merely exploring the implications of *resilience* and its related concepts; it has matured to the point of considering frameworks and surrogate indicators to assess and operationalize the concept of resilience (Carpenter et al. 2005; Cumming et al. 2005), identifying the kinds of management objectives that can help to build resilience (Folke et al. 2003), and needing to carefully distinguish resilience from related concepts such as vulnerability and adaptive capacity (Gallopín 2006). In other words, *resilience thinking* is gradually evolving into *resilience theory*.

A key concern of this thesis is another distinction that the resilience literature is now articulating: the distinction between resilience and the capacity of human stakeholders to influence resilience. The need to build this capacity is particularly urgent for dryland pastoralists such as the Gabra of north-central Kenya. Inappropriate policies have undermined the resilience of pastoralist social-ecological systems even as the stress on these systems coming from new challenges such as growth in the human population and global climate change is increasing. The consequences constitute a "crisis" in pastoralism (Devereux and Scoones 2007; Sandford 2007). For example, the Gabra of north-central

Kenya now regularly require emergency relief, a sign that the resilience of their social-ecological system has been eroded. It is no longer enough to simply create the conditions in which resilience can gradually re-emerge; there is a need to take proactive steps to enhance resilience. This will require capacity on the part of pastoralists themselves.

Recent scholarship has begun to identify key factors contributing to the capacity to influence resilience—factors such as appropriate, usually multilayered and polycentric, systems of institutions and governance (Lebel et al. 2006; Walker et al. 2006); social capital (Gunderson et al. 2006; Walker et al. 2006); and deliberation (Lebel et al. 2006). A set of factors of critical importance in the capacity to influence resilience relates to the structures and processes of participation and decision-making. This involves institutions at various levels, approaches to decision-making, and ways in which stakeholders at various levels are involved in decision-making.

The research presented in this thesis is concerned with the capacity of stakeholders, especially local-level, community stakeholders in pastoralist settings, to influence the resilience of the social-ecological systems in which they live, and contributes to emerging theory on resilience and adaptability (e.g., Walker et al. 2004; Gunderson et al. 2006; Lebel et al. 2006; Walker et al. 2006). The research asks how these agencies can build the capacity to influence resilience among pastoralist stakeholders, especially through their approaches to participation and decision-making. The research centres around a case study: the Kenyan NGO Pastoralist Integrated Support Programme and the Gabra pastoralist communities that it works with.

1.2 Purpose and Objectives

The research examines ways in which the approaches to public participation used by agencies involved in water resources management among pastoralists can affect the collective capacity of pastoralist communities and institutions to influence social-ecological resilience. The research has the following specific objectives:

- To identify the essential elements that comprise the Gabra social-ecological system and that contribute to its resilience.

- To identify ways in which various stakeholders are and are not taking deliberate action to influence the resilience of the Gabra system, and thereby identify factors that contribute to the capacity to influence resilience.
- To identify the rationale that guides the approach to decision-making and participation taken by various formal sector agencies, especially NGOs involved in the water sector, and assess the appropriateness of this rationale in the context of the Gabra social-ecological environment.

1.3 Methods and Study Area

1.3.1 The Case Study and the Study Area

The research focused on a single case study in north-central Kenya. The delineation of that case study had two components: the Kenyan NGO—Pastoralist Integrated Support Programme (PISP)—and the Gabra communities that PISP primarily works with. PISP was founded in 1996 by a group of local development practitioners in consultation with the traditional council of one of the five clan sections of Gabra, Yaa Galbo. Its focus has been on facilitating community-based water supply and management among the pastoralist populations of Marsabit District, especially among the Gabra ethnic group, but recently it has also become involved in education and micro-enterprise development as well. Based on its successful approach to working with traditional institutions for the promotion of the pastoralist way of life and of community-based approaches to providing water to pastoralist communities, it was nominated for the UNDP's Equator Prize and became a finalist for that prize in 2004. Two secondary case studies deal with water-related activities being carried out among pastoralists by another NGO (Food for the Hungry) and by the Water Resources Management Authority, respectively.

The Gabra are traditionally nomadic pastoralists, their territory being situated in north-central Kenya and extending into southern Ethiopia. While in the past two decades many Gabra have established homes in permanent settlements, a significant percentage are still mobile, and livestock still represents the foundation of the economy. The research focused on three sub-cases as defined by three different sets of water-related activities

that PISP had carried out or was in the process of carrying out, and by the local Gabra communities benefiting from those activities. In all three cases, the "communities" included a settlement, several nomadic camps which at the time were located in the vicinity of the settlement, and the ritual camp of one of the Gabra's five traditional Yaa councils.

1.3.2 Research Methods

The field research falls into two broad components. The first component was essentially conducted at the institutional level, involving interviews and documentary research on the water sector in Kenya, the implementation of the 2002 Water Act, and the practices of particular NGOs and other agencies. Sixty-two semi-structured interviews were conducted with 49 key informants. Information was also collected in a number of workshops and meetings. The second component of the research involved investigation at the local level. One hundred seventeen semi-structured interviews were conducted with respondents throughout Gabraland, as well as a handful of similar interviews that were done with local respondents in connection with the two secondary case studies. The research also included observation of/participation in over fifty workshops, meetings and focus group sessions. For the primary PISP-Gabra case study, these activities were conducted at various places throughout Gabraland, but the focus was on the three sub-case localities.

1.4 Assumptions and Scope

1.4.1 Participation and Development

One of the personal motivations that led to my undertaking this research and that influences my approach to it, is the conviction that important decisions about life and livelihoods should include the people who will be most affected by those decisions, and that ultimately development processes should be led by these people. This conviction informs my understanding of participation and development. For example, while I acknowledge that the participation of "beneficiaries" in the making of important decisions regarding projects, programs and policies that may affect them provides tangible benefits

such as reduced conflict and improved implementation, the justification for meaningful participation is more fundamental than this. Meaningful participation in the decisions that affect one's life and livelihood is a right. Based on such convictions, various authors (e.g., Arnstein 1969; Pretty et al. 1995; Stewart and Sinclair 2007), including myself (Robinson 2002), have said that participation, or at least meaningful participation, must be distinguished from mere involvement; rather, it should be thought of as an inclusive process in which stakeholders are involved in, and, more importantly, have some level of control over decisions that affect them.

This, in turn, influences my understanding of development. Since the beginning of the development enterprise after the close of World War II, development has been understood various ways. Dominant themes over the years have included modernization/ industrialization, basic human needs, economic growth, poverty reduction, and sustainable livelihoods, among others (Ashley and Maxwell 2001; Ellis and Biggs 2001). In my view, however, these various emphases represent outcomes and indicators of development rather than development itself. Ensuring that basic human needs are provided for, that people have sustainable livelihoods and that poverty is reduced are all vitally important; however, just as participation is about people being able to *participate* in decisions rather than merely being consulted and providing input, development is about people becoming *agents* in creating their own futures. Development, in my view, is a process in which individuals, their communities and their institutions uplift themselves in the pursuit of justice and progress. This research, in identifying ways in which approaches to public participation can affect the collective capacity of pastoralist communities and institutions to influence social-ecological resilience, attempts to find avenues for development agencies to ensure that participation processes contribute to people's ability to uplift themselves and to become active agents in their own development.

1.4.2 The Complexity Paradigm

The primary theoretical starting point for this research is resilience thinking (e.g., Holling 1973; Adger 2000; Gunderson 2000; Holling 2001; Gunderson and Holling 2002; Berkes

et al. 2003), which is based on the assumptions and tenets of the complexity paradigm. For a number of years, and most notably in the last ten years, the concepts of *complexity* and *complex adaptive systems* have been gaining influence in scholarship on natural resources management, poverty reduction and ecology. The ascendancy of the concepts has been the result of both a) their power for helping to explain emergent phenomena and the sudden, unpredictable changes that complex systems can undergo, and b) a number flaws and failures in conventional paradigms. As the body of scholarship drawing on these concepts has grown, and the implications of the concepts for thinking and research on social and ecological structures and processes has become clearer, fundamental principles that differentiate this new body of thinking from what has existed before are progressively being expressed. The concepts of *complexity*, *complex adaptive systems* and their related assumptions and principles, are now being articulated not merely as a set of relevant ideas—not merely as "complexity *theory*" but rather as the basis of a complexity *paradigm* with fundamental meta-theoretical differences from the dominant social science paradigms[1]. This paradigm influences my thinking on the kinds of issues under consideration in this research and my approach to analysis. While this thesis does not deal with all aspects of complexity but rather focuses on just one—resilience—it will be appropriate here to consider some of the meta-theoretical assumptions of the complexity paradigm insofar as these underlie resilience thinking. Therefore, I briefly summarize the ontology and epistemology of this emerging paradigm below.

The ontology of the complexity paradigm is similar to that of structuralism in that it affirms that structural patterns in society and in the physical world are real and affect smaller scale phenomena such as individual human beings. Structuralism, however, is prone to treating societal structures as reified entities that are independent of time—structuralism cannot easily deal with change in the structures themselves or with the role of individuals in affecting those structures (Smith 1998). The ontology of the complexity

[1] Masterman, developing the work of Kuhn (1962), argues that there are three types of paradigms: metaphysical paradigms (a set of beliefs or a way of seeing), sociological paradigms (a set of scientific habits and/or a set of institutions), and construct paradigms (a set of particular tools and/or analogies) (1970). She notes that Kuhn used the term paradigm in all three of these senses; nevertheless, I focus here on complexity primarily as a metaphysical paradigm.

paradigm, on the other hand, can be expressed in terms of panarchy: *complexity* allows for multi-dimensional causality that operates across levels of organization, and for structures that are dynamic rather than stable. This is akin to what has been called "sociological interactionism", the belief that both individual and structural units of analysis are legitimate, real and necessary.[2] However, scholarship influenced by complexity thinking also implies another element in this interactive ontology—the natural environment. Individuals, social structures, and the natural environment all influence and are all influenced by each other and recreate each other in an ongoing dynamic process. In other words, this paradigm is based on an ontology of "social-ecological interactionism". Reductionist perspectives of various stripes each explain phenomena in terms of some predetermined category of causes, whether it be social structures, socio-political power, cultural frames, or the rational calculation of utility-maximizing individuals. Social-ecological interactionism, on the other hand, entails an assumption of *multi-dimensional* causality.

This ontology has implications, in turn, for epistemology. Firstly, knowledge that pertains to only one type of cause, rather than to multiple causes and the interaction between those causes, is necessarily limited. Secondly, the epistemology of the complexity paradigm assumes that understanding the organization processes of dynamic systems is key—knowledge, in other words, comes from understanding change. Vallega (1998), for example, applying complex systems thinking in the context of natural resources management, differentiates its epistemology from the epistemology of structuralism and of older systems theories. In the complex systems perspective, he argues, the attention is on the process of organization rather than on the structure, as it is by understanding the processes that we can understand the system. This approach of understanding by understanding change is reflected in this thesis, for example in the emphasis that is placed on understanding cycles of change in the Gabra social-ecological

[2] I am referring here to *sociological interactionism* as an ontological proposition, rather than to the broad theoretical approach in sociology known as interactionism. The two are related; however, interactionist theory is sufficiently broad and diverse that it has been suggested that we might better speak of a "diversity of interactionisms" (Fine 1990: 121), not all of which share the same ontological assumptions. See Saiedi (1987; 2000) for a discussion of sociological interactionism and of multidimensional causality.

system (Chapter Four). And thirdly, *complexity* itself is the notion that no single theory, model or perspective can encompass or explain all of the processes, interactions, or causes and effects in the system. A complex system can be defined as a system for which many distinct yet valid subsystem descriptions are possible (Rosen 1991). No theory can encompass all possibly relevant aspects of the whole system, any more than a map can display all possibly relevant features of a territory—theories are always theories of *subsystems* never of the *whole* system (Robinson and Fuller 2005). Thus, complexity implies that understanding is enhanced by dialogue between multiple perspectives (Kay et al. 1999; Waltner-Toews 2004; Berkes 2007). The role of multiple perspectives in this research is discussed in the next chapter (Section 2.1.1)

1.4.3 Delimitations and Scope

In crude terms, an ontology of social-ecological interactionism means that everything is connected to everything else. This presents a challenge for science and the advancement of knowledge. Luckily, however, not every thing, nor every connection, is important. The word *important* implies a need to make value judgements. The value judgements that I have made in deciding what to *explore* in this research, what to merely *note*, and what to *ignore*, while not arbitrary, have been at least partly subjective. One choice has related to the scale of analysis. The research makes frequent reference to the "Gabra social-ecological system". Resilience thinking would suggest that this system is made up of smaller systems and is itself part of a larger system. Dynamics on a scale smaller than the Gabra social-ecological system are considered—for example, as they relate to household-level livelihoods—as are factors on a larger scale—climate change, for example. However, no effort has been made in this thesis to precisely define or delineate any of these smaller or larger social-ecological systems because such a task would be beyond the scope of the thesis.

In addition, several potentially interesting questions and areas of inquiry have only been touched on. For example, rangeland ecology, succession patterns, and pasture regeneration processes are certainly a key element of the resilience of the Gabra social-ecological system, but these were not explored in this research. Similarly, climate change

is undoubtedly of profound importance to the future life and livelihoods on Kenyan pastoralists, but I have not attempted to perform an in-depth assessment of the impacts of climate change. I have chosen instead to simply accept the statements of the majority of my Gabra respondents that rainfall is becoming increasingly unpredictable and droughts ever more severe. Their observations seem to be confirmed by records of annual rainfall in the area, which show a general drying trend over the past few decades. Another potential line of inquiry that I chose not to pursue was a rigorous evaluation of the work of PISP. I was more concerned with *what* PISP is doing than in conducting a rigorous analysis of how effective or beneficial its work has been overall.

1.5 Significance of the Research

A great deal of scholarship in recent years has identified ways in which policy and programming on the part of national governments and various development agencies have failed pastoralists, often because of a lack of understanding of pastoralism and of the environments that pastoralists typically inhabit (e.g., Ellis and Swift 1988; Rutten 1995; Scoones 1995; Scoones 2004). Over the past fifteen years, much of the academic literature on rangeland ecology has been based on a recognition that the arid and semi-arid rangelands where most pastoralists live are typically governed by non-equilibrium dynamics. This set of views, known as "the new rangeland ecology" (Behnke et al. 1993; Scoones 2004), has contributed to the idea that traditional mobile pastoralism is a sustainable form of livelihood and an adaptation to non-equilibrium, dryland environments that is both economically and ecologically rational, and deserves support from government circles and development agencies. While this recognition is gradually seeping into policymaking and the planning of development programmes aimed at pastoralists (Davies 2008), the question remains of just *how* development policy and programming should support pastoralists. This research, by furthering theory that is relevant to the pastoralist situation—theory related to the resilience of pastoralist systems, institutions in pastoralist systems, and public participation among pastoralists—will contribute to this aim.

Similarly, the field of participatory development has seen the emergence of a distinct cleavage between mainstream, populist approaches to participation, usually associated with Participatory Rural Appraisal and with Robert Chambers (Chambers 1994), and a set of critiques exemplified by several contributions to the volume, *Participation: The New Tyranny* (Cooke and Kothari 2001). Central to the critiques has been that charge that the populist approach has depoliticized participation, ignored issues of power, and reinforced the power of local elites (Cooke and Kothari 2001; Mosse 2001; Kumar and Corbridge 2002). However, these critiques of participatory development have not themselves been free of problems, including that they can be equally as naïve as the mainstream participation discourse in their understanding of power relations (Williams 2004). Another issue that is manifested in this tension is how to understand "community". Critics have complained that the mainstream approach with its emphasis on *community* participation ignores differences of power and interests *within* communities (Cleaver 1999; Mohan and Stokke 2000; Mansuri and Rao 2004). But should the concept of *community* be set aside altogether? If resilience thinking is to show its relevance to the study and practice of participation, it will need to provide an alternative to the populist and *Tyranny* treatments of issues such as power and community.

This research will also contribute to scholarship on social-ecological resilience (e.g., Holling 1973; Adger 2000; Gunderson 2000; Holling 2001; Gunderson and Holling 2002; Berkes et al. 2003). Even scholarship that goes beyond simply making reference to the concept of resilience and is *based* on resilience thinking often uses resilience and related concepts such as the adaptive renewal cycle as metaphors rather than as measurable characteristics (Carpenter et al. 2001). This is particularly true when resilience thinking is applied to *social-ecological* systems as opposed to ecosystems. While some research has contributed to going further and actually operationalizing the concept of social-ecological resilience (e.g., Scheffer et al. 2002; Allen et al. 2005; Carpenter et al. 2005; Cumming et al. 2005), much work remains to be done.

As resilience thinking is gradually being developed into resilience *theory*, authors have begun to refine and distinguish key concepts. One key distinction is between resilience and the capacity of stakeholders to consciously build resilience. This research explores this distinction, and in doing so discovers important elements that can be part of a resilience-based theory of participation. This research makes a contribution to such theory.

1.6 Outline of the Thesis

The next chapter describes the study area in more detail and provides details on the research methods that were used. Chapter Three discusses aspects of the historical and policy context, including the impacts of colonialism and post-colonial policies on Kenyan pastoralists and on the Gabra in particular, as well as current policy directions that are relevant, such as Kenya's 2002 Water Act. Chapters Four to Six present the findings of the research, each chapter corresponding to one of the three specific objectives that were mentioned above. These chapters are structured much like academic papers in that they combine discussion of relevant theory and academic literature, presentation of research findings, and analysis. Chapter Four presents a description of the Gabra social-ecological system, identifies elements which together constitute the identity of that system—elements that make that system what it is—and discusses how these elements contribute to the resilience of the system. Chapter Five examines what various stakeholders are and are not doing to influence the resilience of the Gabra social-ecological system, and considers what is involved in the capacity to influence resilience. Chapter Six considers the approaches to public participation used by various formal sector agencies involved in the water sector in north-central Kenya and the rationale that guides the thinking behind these approaches. This rationale is compared to the rationale that underlies the traditional Gabra approach to collective decision-making. The chapter considers the appropriateness, in the context of the Gabra social-ecological environment, of the rationale implicit in most formal sector agency approaches to participation, and suggests an alternative way of thinking about participation. Finally, Chapter Seven provides a synthesis of key elements of the earlier chapters along with overall conclusions. Chief

among these conclusions is a re-articulation of the key findings of the research in the form of six strategies that NGOs and other formal sector agencies might adopt in order to build local capacity to influence resilience.

Chapter 2: Methodology

This chapter begins with a description of the research approach followed by a summary of the overall structure and flow of the research. The primary case study with its three sub-cases is briefly described. This is followed by a summary of the research methods that were used. The chapter concludes with a discussion of the approach to analysis and validation of results, and a consideration of the limitations of the research.

2.1 Overview

2.1.1 Research Approach

Two main considerations influenced the form that this research would take. The first of these considerations relates to the interest of this research in social-ecological *systems*. In order to gain meaningful insight into systems, particularly complex systems, one must look beyond individual elements of the system and attempt to achieve a holistic, systemic perspective. Complex systems are more than the sum of their parts; they have properties that are emergent, properties such as resilience. The second consideration was that the research is exploratory. The ground being covered is too new, the theory around the main topic too limited to have made a hypothetico-deductive approach appropriate. Instead, the aims of the research are more in the nature of probing: digging into and exploring interrelationships between resilience, the capacity to influence resilience, and approaches to public participation.

The implications of these two considerations for the research are several. Firstly, it was decided that the best approach would be to focus on a single case study in order to be able to explore various avenues and various aspects of the above-mentioned interrelationships in depth. In addition, it was decided that the research should be primarily qualitative. Marshall and Rossman (1989:46) state that qualitative research is appropriate for several kinds of research including research that is exploratory and research that "delves in depth into complexities and processes." According to McCracken (1988:17), "Qualitative research does not survey the terrain, it mines it. It is, in other words, much more

intensive than extensive in its objectives". Furthermore, there was no single unit of analysis for the research: the research was concerned with households, organizations, institutions, communities, and social-ecological systems, any of which could have been a focal unit of analysis in a different research endeavour.

As mentioned in the previous chapter, one of the features of the epistemology of the complexity paradigm is that understanding and knowledge are enhanced by multiple perspectives. When the field research began, it was my hope that one way in which I would bring multiple perspectives to bear on the issues of concern would be to create a research process that was, in at least some aspects, participatory. In the end, this was not possible. That is to say, while I made use of a number of techniques that are often labelled as "participatory" (techniques drawn from Participatory Rural Appraisal and used in group settings, such as community mapping and matrix scoring), the "participants" in the research had only minimal input into directing the research and deciding on the research questions or on how the results of the research would be used. Before the field research began, I had hoped to create a core group of stakeholders from Gabra communities and from PISP who would be able to meet occasionally to advise me, to help set some of the directions for the research, and to consider implications of the research for the way in which PISP engages with Gabra communities. However, most elders and other stakeholders from Gabra communities were primarily concerned with the requisites of basic survival. Tangible considerations such as how to increase the availability of water for livestock are a higher priority than thinking about institutions, decision-making and capacity building. Similarly, PISP, like many national and local NGOs in Africa, receives funding for activities but very little funding for staff salaries, and, as a result, for the very small staff there is always more work to be done. Stakeholders from Gabra communities and from PISP were supportive, and I consulted with many about both the research process and the significance of the findings; however, these consultations remained informal, and because I was never able to share control or ownership of the research with these stakeholders, it would not be appropriate to consider this research as having been participatory.

The research was, however, able to bring multiple perspectives to bear in other ways. As mentioned above, I did have numerous opportunities for consultation with stakeholders about the research, including the kinds of questions I was asking, the nature of the findings, and the relevance and implications of the findings. The research, furthermore, made use of both emic and etic perspectives (Headland et al. 1990). That is, it included analysis and description both in terms that are used by, or meaningful to, the actors themselves—in other words, a culturally specific approach (emic); and from the point of view of an external observer in terms that can be applied to other cultural situations (etic). These two strategies, together with validation that was carried out while the field research was underway, helped in my process of distinguishing figure from ground, of defining the social-ecological system of interest and identifying which elements of that system are relevant, and of deciding what would be considered important.

2.1.2 Structure and Flow of the Research

The research is based on one primary case study and two secondary case studies. In all three instances, the case study has two components: a formal sector agency and a community or communities that it is working with. The primary case is comprised of the Kenyan NGO PISP and the predominantly Gabra communities that it works with. The two secondary case studies are comprised of (a) the international NGO Food for the Hungry along with one village on Mt. Marsabit where it is working (Hula Hula), and (b) the Water Resources Management Authority and some communities where it is working in Pokot North and Pokot West Districts. Each of the secondary cases was selected based on its involving pastoralist beneficiary communities, and formal sector agencies doing water-related work with them and using approaches that were in some way or another participatory.[3] For the primary case study, the research involved short visits to numerous communities where PISP works, and I often accompanied PISP staff as they carried out their normal activities in these communities. However, the research focused on three sub-cases as defined by three different sets of water-related activities that PISP has

[3] Little is said about the two secondary cases in this document. Essentially, in the end, their contribution to the research was in the way of the broadening my understanding of the context and key issues of concern, rather than providing *cases* for comparison with the primary case.

carried out or is carrying out and by the local communities benefiting from those activities. The sub-cases are described in Section 2.2.2, below.

The overall flow of the research was quite iterative in that there was a great deal of chronological overlap in activities: consultations with stakeholders, planning, testing and refining methods, data collection, analysis, and presentation of results to stakeholders each took place over several months and cannot be easily divided into distinct phases. Table 2.1 provides a summary of the field research activities divided only into three broad phases according to three separate trips to Kenya: a short reconnaissance visit to Marsabit in August-September 2006, a primary research phase of eleven months from January to November 2007, and a return trip for follow-up and validation for one and a half months from late May until mid-July 2008. The primary research phase is subdivided into two parts: three months of "preparatory" activities before the three sub-cases had been identified followed by eight months of "intensive" research. In any case, both the "preparatory" and "intensive" phase included both activities such as introduction and orientation to communities that might be considered preparation and serious research work involving interviews and group activities. See Appendix 1 for a detailed timetable of the research activities.

2.2 The Primary Case Study and Its Three Sub-Cases

2.2.1 Selection of the Primary Case Study

For an appropriate case study, I was interested in an NGO working in the water sector with rural communities in Africa. In order to have some opportunity to look at the impacts of the NGO's strategy and approach to participation over time, it was important that the NGO and its water-related activities have a history of several years but still be ongoing in the present. PISP was an attractive candidate, not only for meeting the aforementioned criteria, but also for using an innovative and participatory approach. PISP, founded in 1996, began its work helping to improve access to water for pastoralists in northern Kenya, a task which is still at the centre of its work, although now it is also involved in education and micro-enterprise development. Most of its work has been

Table 2.1: Summary of field research activities

Research Phase	Summary of Activities
Reconnaissance Visit. Aug.-Sept. 2006	Interviews in Nairobi Interviews and consultations in Marsabit Field visits with PISP staff to various communities Refining of research objectives
Primary Field Research – Preparatory Work Jan.-March. 2007	Interviews in Nairobi Interviews in Marsabit Field visits with PISP staff to various communities Initial visits to sub-case communities
Primary Field Research – Intensive Research April-Nov. 2007	Interviews in Nairobi and other centres Interviews, workshops and focus groups in Marsabit Field visits with PISP staff to various communities Activities in three sub-case communities Activities for two secondary case studies
Follow-up and Validation Visit June-July 2008	Interviews in Nairobi Interviews, workshops and presentation of findings in Marsabit Return visits to sub-case communities: interviews, follow-up investigation, validation, presentation of findings to local stakeholders

among the Gabra but in recent years it has done some work with Rendille and Borana communities as well. Over the years it has attracted funding from a variety of donors, including CIDA, CORDAID, DFID, the European Commission Humanitarian Aid department (ECHO), SNV and others. In 2004, it was a finalist for the UNDP's Equator Prize for innovative approaches to development and conservation. The primary case

study, therefore, is comprised of the PISP and the predominantly Gabra communities that it works with. Gabra society and livelihoods are described in Chapter Three.

2.2.2 Sub Cases

Within the primary case study, most of the research focused on three sub-case localities, each of which included a permanent settlement, various nomadic camps around, and the camp of one of the traditional Yaa councils representing one of the Gabra's phratries[4]. The three settlements were Balesa, Kalacha, and Hurri Hills. These three sub-cases were selected to represent some of the range of diversity of PISP's water related activities. At the time of the field research, PISP had ongoing water-related activities at each of these localities, and at two of the three (Balesa and Hurri Hills) it had been engaged in other water-related activities in the past. In the case of Kalacha, the research relates more to the site of a natural rock catchment called Afkaba, about eighteen kilometres from Kalacha than to the town itself. Other possible sub-cases were considered but rejected for various reasons. For example, in the small settlement of Forole PISP has done a great deal of work especially around rainwater harvesting, and PISP staff consider it probably their best success story. However, the proximity of site to the Ethiopian border made personal security a concern, as PISP staff as well as residents of Forole were always concerned about organized livestock raids from across the border. Another location—Turbi—had seen significant PISP involvement in the water sector, but none of it recent. Accessibility and transport was also a concern for some possible sites, and some localities had seen only very small PISP interventions in the water sector. The three sites chosen were the best ongoing examples of the diversity of kinds of water-related activities that PISP has been engaged in in Gabra communities, and also met the criteria of not entailing security concerns and not being extremely inaccessible.

KALACHA/AFKABA

Long before Kalacha was a permanent settlement, in the dry season nomads would come to the Kalacha Goda spring in the lowlands at the edge of the Chalbi desert to take

[4] The Gabra have five phratries each made up of between nine and nineteen clans. Every Gabra belongs to a clan, and by virtue of that clan, to one of five phratries.

Table 2.2: The three sub-cases

Sub-Case	The Community(ies)	PISP's Water-Related Activities
Kalacha/Afkaba	Kalacha (perm. settlement) Numerous nomadic camps The closest Yaa is Yaa Algana	Improvements to Afkaba natural rock catchment (2006 - 2008)
Balesa	Balesa (perm. settlement) Numerous nomadic camps Yaa Sharbana	Sand dams Improvements to shallow wells Construction of rainwater harvesting tanks Provision of hand pumps Emergency water tankering (2006)
Hurri Hills	Hurri Hills (perm. settlement, Gabra and Borana) Bagaga (perm. settlement, Borana) A few nomadic camps Yaa Gara	Construction of rainwater harvesting tanks Excavation of a new pan (2007) Construction of dams across a ravine (2007 - 2008)

advantage of a dependable source of water. Now Kalacha is a growing town benefiting from the reliable groundwater. Kalacha Sub-location in 1999 had a population of 4,625 (Central Bureau of Statistics 2001), most of that situated in the town. The town is situated about one kilometre from the spring, and residents get almost all of the water for their domestic needs from shallow wells. Water at the spring is used for livestock and for irrigating a number of gardens. Eighteen kilometres north of Kalacha, about half way to the base of Hurri Hills with its extensive pastures, is the natural rock catchment Afkaba. Because the ravine where Afkaba is located is very rocky, access is difficult for camels and impossible for cattle. Nevertheless, with few options for water nearer to the rich pastures of Hurri Hills, none of them reliable or substantial, Afkaba is a favourite water point. Normally, numerous nomadic camps are located in the vicinity of Kalacha and Afkaba, especially in the dry season. Some camps, especially those of people who lost

camels in recent years due to drought and/or theft, are gradually taking on the nature of permanent satellite settlements of Kalacha rather than nomadic camps. Given that access to water in the town of Kalacha is relatively easy, PISP has not been engaged in water-related activities there. However, in 2006 it began work on improvements at Afkaba, with the aim of making access easier and increasing the capacity of the catchment. Other activities in which PISP has been in Kalacha have been micro-enterprise development with women's community-based organizations and support to Nomadic Girls Primary School.

BALESA

Balesa is a town of about 2,650 people where PISP has been working since the year 2000 (Pastoralist Integrated Support Programme 2003). It is situated to the west and downwind of Hurri Hills, and probably because of a rain shadow effect is extremely hot and arid. However, it is located beside a lagga (a dry river bed) called Ririba, which floods for very short periods following rains in the Ethiopian highlands to the north. It is from wells along this lagga that residents and their livestock get most of their water. Currently, the Yaa Sharbana traditional council is located relatively close to Balesa (about 30 km.) and this institution has some influence on decision-making in the town. The town and its wells are also important for many Gabra who still live the nomadic life, and at the time of the research, several ollas were located in the vicinity of Balesa. The town itself is divided into three distinct neighbourhoods. Water-related activities supported by PISP over the years have included construction of sand dams along the lagga, improvement and rehabilitation of shallow wells, provision of hand pumps for two wells (known to residents as the “women’s wells”), construction of rainwater harvesting tanks, emergency water tankering during the last drought, and training in hygiene and sanitation. Other activities have included micro-enterprise development with a women’s community-based organization and support to the Balesa primary school.

HURRI HILLS

Hurri Hills is one of the three important highland areas in north-central Kenya. Having no accessible groundwater, the area has not attracted much settlement, and Hurri Hills

Sub-Location according to the 1999 census had a population of 2,133 persons spread over an area of 1,453 km^2 (Central Bureau of Statistics 2001). The main settlement, together with nearby villages such as Bagaga, has an estimated total population of around 1,400 people (Wargute and Roimen 2005). However, the area does receive a reasonable amount of precipitation: an average annual precipitation of between 650 and 850 mm. (Abdille and Maitho 2003) and an unknown quantity in the form of condensed mist. With an area of around 2,000 km^2 (Wargute and Roimen 2005), the hills have an immense quantity of pasture resources, much of which pastoralists are never able to take advantage of because of lack of water. Activities that PISP was undertaking in the Hurri Hills area during the course of this research included the excavation of a new pan and the construction of water system in a ravine near the village of Bagaga. The latter included two dams across the ravine and a gravity-driven pipe system to bring the water down to a more accessible point in the ravine.

2.3 Methods

The field research can be considered as being divided into two broad components. The first component was conducted among formal sector institutions and involved interviews and documentary research on the water sector in Kenya, the implementation of the 2002 Water Act, and the practices of particular NGOs and other agencies. Sixty-two semi-structured interviews were conducted with 49 key informants. Information was also collected in a number of workshops and meetings, through observation of PISP staff interacting with community members, and through participant observation in which I worked alongside PISP staff. The second component was research carried out at the local level. One hundred seventeen semi-structured interviews were conducted with respondents throughout Gabraland, as well as a small number of similar interviews in the communities of the secondary cases. I also either observed, or myself organized, over fifty workshops, meetings and focus group sessions. Some of these meetings involved the use of various diagramming techniques such as are common in Participatory Rural Appraisal. The research also included participant observation with Gabra herders.

Tables 2.3 and 2.4 summarize the research methods in terms of number of activities and methods used.

The primary research method used was semi-structured interviews. This was deemed appropriate because of the exploratory nature of the research which would not have lent itself to a structured questionnaire (McCracken 1988; Pretty et al. 1995). In semi-structured interviews, interview guides are used but the interview is treated much as a

Table 2.3: Summary of data gathering—interviews and meetings

Research Activity	Subtotals	Total
Interviews with personnel of formal sector agencies		62
- PISP	17	
- WRMA	11	
- FHI	6	
- Other International NGOs	6	
- Other National and Local NGOs	5	
- Consultants	9	
- Other government	6	
- University	1	
- Multilateral	1	
Interviews with community level informants		126
- Primary case study: PISP-Gabra	117	
- Secondary case study: FHI-Hula Hula	6	
- Secondary case study: WRMA-Pokot North and Pokot West Districts	3	
Workshops, meetings and focus groups with personnel of formal sector agencies		7
- Meeting of PISP personnel with funders	2	
- Workshops organized by NGOs for various institutional stakeholders	2	
- Meeting of the Marsabit Water and Environmental Sanitation Coordination Group	1	
- Workshops organized by me	2	
Community-level meetings		51
- Primary case study: PISP-Gabra	42	
- Secondary case study: FHI-Hula Hula	4	
- Secondary case study: WRMA-Pokot North and Pokot West Districts	5	
- Focus groups, workshops, impromptu group interviews organized by me	41	
- Meetings and workshops observed	10	

Note: The figures represent number of interviews and number of meetings, not number of respondents or participants. Some participants were interviewed twice.

Table 2.4: Research methods used

Method	Function in this Research/Issues Explored
Semi-structured interviews (Pretty et al. 1995)	General data gathering, all issues
Focus groups and meetings with groups of stakeholders	General data gathering, all issues
Diagramming and scoring techniques in group settings	
Matrix scoring (Pretty et al. 1995)	Participatory analysis; exploration of participation approaches, agency-community relations, and mental models related to collective decision-making.
Influence diagrams (Bodily 1985; Waltner-Toews et al. 2003; Gitau 2004)	Participatory analysis; exploration of resilience, systemic perspectives
Mapping	Researcher orientation; participatory analysis; exploration of nomadic movements, rangeland ecology, and shocks and stresses.
Other diagramming	Participatory analysis; exploration of institutions and institutional interplay
Scenario drama	Exploration of resilience and adaptation

conversation with scope to explore particular issues in more depth than expected or to raise new issues (McCracken 1988). Appendix 2 contains interview guides used for this research. In most cases, the interviews were recorded, with the permission of the respondent. In conducting the interviews and group sessions I was assisted by a translator who, in all cases, was a native speaker of the language in question (Ki-borana for the primary case study, Pokot for one of the secondary case studies, and Rendille and Samburu for the other case study). This person would translate while I took notes, then after the interview or group session I would listen to the audio recording and refer to my notes in order to transcribe the session.

A variety of methods were chosen for selecting interviewees. Some people were chosen because of their positions in relation to some local committee or a traditional or modern

office such as Chief or jalaab. Many interviews also resulted from the advice of other informants, based on my asking questions such as which elders in the area are very knowledgeable about traditions surrounding meetings, or who in the area has been deeply involved in the activities that PISP has brought to the community. In other cases, I was not looking for expertise but certain characteristics, such as people known to have come through the recent drought relatively unscathed, people known to have lost many animals in the last drought, and people who had had their entire herd stolen. Some interviews were also initiated opportunistically with people found watering their animals, for example. For interviews with formal sector personnel, selection was primarily based on seeking out people based on the organizations they were working with. Within PISP, I interviewed all the programme staff involved in water-related activities.

One particular sub-set of semi-structured interviews conducted at the community level focused on livelihoods and was particularly relevant to the first research objective of identifying key elements of the Gabra social-ecological system and its resilience. Individuals from twenty-one households from the three sub-case localities were interviewed regarding household livelihoods, shocks, stresses and other factors influencing the livelihood, and strategies for coping and recovery[5]. I refer to these henceforth as the "shocks and stresses interviews". Of the twenty-one shocks and stresses interviews, twelve were interviews with men, eight with women and one was an interview in which both a husband and wife participated. These interviews represented eleven households located in permanent settlements and ten in nomadic camps. For the interviews conducted in the permanent settlements, sampling was essentially opportunistic and was skewed away from the few community members with formal employment or otherwise engaged in the formal economy—schoolteachers, missionaries, government employees. Selection of these interviewees also aimed at capturing some of the diversity of community members.

[5] These 21 interviews are included in the total of 117 interviews done with Gabra informants as shown in Table 2.3.

A variety of meetings and group activities also contributed to the research. Seven of these were primarily comprised of personnel from formal sector agencies. Of these seven, two were workshops organized by myself with personnel from PISP and the Water Resources Management Authority. Others meetings that I observed and participated in included workshops organized by NGOs for the personnel of other NGOs and of government agencies, meetings of PISP personnel with funders, and in one case a meeting of the Marsabit Water and Environmental Sanitation Coordination Group. Group activities at the community level included forty-one meetings organized by me (focus groups, impromptu group interviews, and community meetings) and ten meetings that I observed (traditional meetings of elders, meetings and workshops organized by NGOs, meetings of community-based organizations (CBOs), and so on). Of the focus groups that I organized, selection of participants varied according the particular aim of the meeting: in some cases I met with members of some CBO or of a traditional institution such as a Yaa council, in other cases met with all the men of a particular nomadic camp who were available, and in other cases met with men who were all *abba elas* (owners of traditional wells).

Various methods were used in these group activities and community meetings. One was matrix scoring (Pretty et al. 1995), a process in which participants in the gathering identify criteria by which they would like to assess something and then decide on scores for each of these criteria. For example, in one case a scoring exercise that was conducted with a group of men in the settlement of Balesa, the participants identified factors that they want to see in the relationship between an NGO and their community and in the way the NGO engages with them. They identified several criteria such as "they keep their promises" and "they respect local traditions and rules", and then gave a score from one to four on each of these criteria for a few different NGOs. The exercise is typically conducted on the ground with rows and columns scratched into the dirt, and stones or some other object used to mark the score.

Another of the research methods used in a group setting that was particularly important was the influence diagram. This is a visual diagram that portrays ideas, beliefs and

attitudes, particularly regarding causality (Gitau 2004). Often used in research informed by a complex systems perspective, they can be seen as visual narratives (Waltner-Toews et al. 2003). In this research, they were used with small groups in order to analyze key features of the social-ecological system, particularly in relation to the need to protect livelihoods and rebuild herds after losses (see Chapter Four). Each of the two influence diagrams presented in this thesis were done with a group of men—in one case a group of men in a nomadic camp near the town of Kalacha, and in the other case with elders of Yaa Sharbana, the traditional council for the Sharbana phratry, which at the time of the research was located about twenty-five kilometres from the settlement of Balesa. In both cases, the diagram was done on the ground using stones, sticks and other physical objects to represent various causal factors, and then was copied onto paper. In both cases, not all factors that participants were willing to discuss were put into the diagram, largely due to time limitations, but the most of the most important factors are represented. The figures presented in Section 4.2.4 are "cleaned up" versions of those diagrams, but accurately represent the nodes and connections produced in the original diagrams by the focus groups.

On one occasion—a community meeting in Kalacha—a method that was used was scenario drama. Drawing on guidelines from Heydinger and Zentner (1983), Schwartz (1991), Wollenberg and coauthors (2000), and Bennett and Zurek (2006), and in consultation with key informants, I developed what is usually referred to as an "exploratory scenario" or "alternative scenario" (Ericksen 1975; Wollenberg et al. 2000) (as opposed to a normative scenario or "vision"). I then worked with a local youth group in Kalacha to develop the story line which related to a situation fifteen years in the future in which severe droughts continued to recur frequently, conflict had begun to arise between Gabra who were settled and those who were still nomadic, and NGO support had dwindled because of funding cutbacks. The drama was presented at the community meeting, which was attended by between fifty and one hundred adults and an uncountable number of children. Most of those in attendance were from Kalacha but there were also some people from neighbouring nomadic camps. The drama did not present a resolution

to the story line but ended with a series of question posed to the audience by the characters in the drama:

> Shoro: [Speaking directly to the audience] You see our crisis. What should we in the ollas [nomadic camps] do?
>
> Guyo: [Speaking directly to the audience] What should we, the people in Kalacha do?
>
> Wario: [Speaking directly to the audience] What should we the NGOs do?
>
> Mamo: [Speaking directly to the audience] What should the Yaa do?
>
> Abdi: [Speaking directly to the audience] What should they all have been doing over the past fifteen years so that we never reached such a state of crisis?

These questions became the focal point of an open discussion which followed.

2.4 Analysis, Validation and Limitations

An early step in analysis of the research findings was to produce transcripts of the interviews, workshops and meetings. These were entered into the Nvivo software, categorized and coded. Some use was made of ethnographic content analysis, a key aim of which is to document and understand the communication of meaning (Altheide 1987). Given the exploratory and largely qualitative nature of the research, ethnographic content analysis was thought to be an appropriate strategy for analysis that would lend rigor while respecting the exploratory nature of the research. Unlike the more conventional quantitative content analysis in which categories are determined *a priori*, in ethnographic content analysis the researcher moves reflexively between concept development, sampling, data collection, coding, data analysis, and interpretation (Altheide 1987). The Nvivo software, in that it has a powerful search function and several features that allow interview transcripts to be filtered and organized, facilitated this process by allowing me to search for recurring themes and concepts numerous times in numerous ways.

As mentioned above, theory around the issues in question is still too limited to warrant a hypothetico-deductive approach, and thus the research is essentially exploratory. However, this should not be taken to mean that there are no frameworks or theory

relevant to the research question or that analysis of the findings was undertaken in a theoretical vacuum. One framework that was important to analysis was the components-relationships-innovation-continuity (CRIC) framework for analyzing the identity of social-ecological systems (Cumming et al. 2005; see Chapter Four). Other emerging theory that was important comes from the literatures on the capacity to influence resilience (e.g., Walker et al. 2004; Gunderson et al. 2006; Lebel et al. 2006; Walker et al. 2006; see Chapter Five) and on reconceptualizing participation from a standpoint of critical modernism as exemplified in many of the contributions to *Participation: From Tyranny to Transformation* (Hickey and Mohan 2004; see Chapter Six).

The very large number of interviews and group sessions together with the exploratory nature of the research also meant that analysis and sensemaking had to be an iterative process involving reflection and dialogue with stakeholders. An initial conceptual framework that I had devised to tie together the main themes of the research eventually had to be discarded as unhelpful. The actual process used involved analysis and reflection while still in the field. Initial thoughts around some aspects of the findings and analysis were put into writing in the form of short reports and practitioner "tip-sheets" which I then shared with stakeholders such as some of my contacts at PISP. I also began to verbally share some of my thinking with some Gabra elders. In this way I was able to get reactions and feedback on my thinking while still in the field. This process also fed into the process of coding transcripts, as described above.

Jules Pretty (1994) suggests, as an alternative to positivist criteria for assessment of trustworthiness of research, a framework that includes elements such as prolonged and/or intense engagement between the various actors, triangulation by multiple sources and methods, participant checking, and reports with working hypotheses. In this research, prolonged engagement helped to build trust with Gabra elders and with PISP staff. This in turn, made it easier for respondents to open up and helped me to gain a richer understanding of the social setting. Triangulation involved looking at the same research questions in three different sub-cases and with numerous respondents, and using multiple data gathering techniques. Furthermore, analysis was begun during the course of the

research and fed back to Gabra elders and PISP personnel. This feedback was done verbally, in short written reports, and in one small workshop. This created opportunities for stakeholders to bring up additional issues and to express opinions on my tentative conclusions.

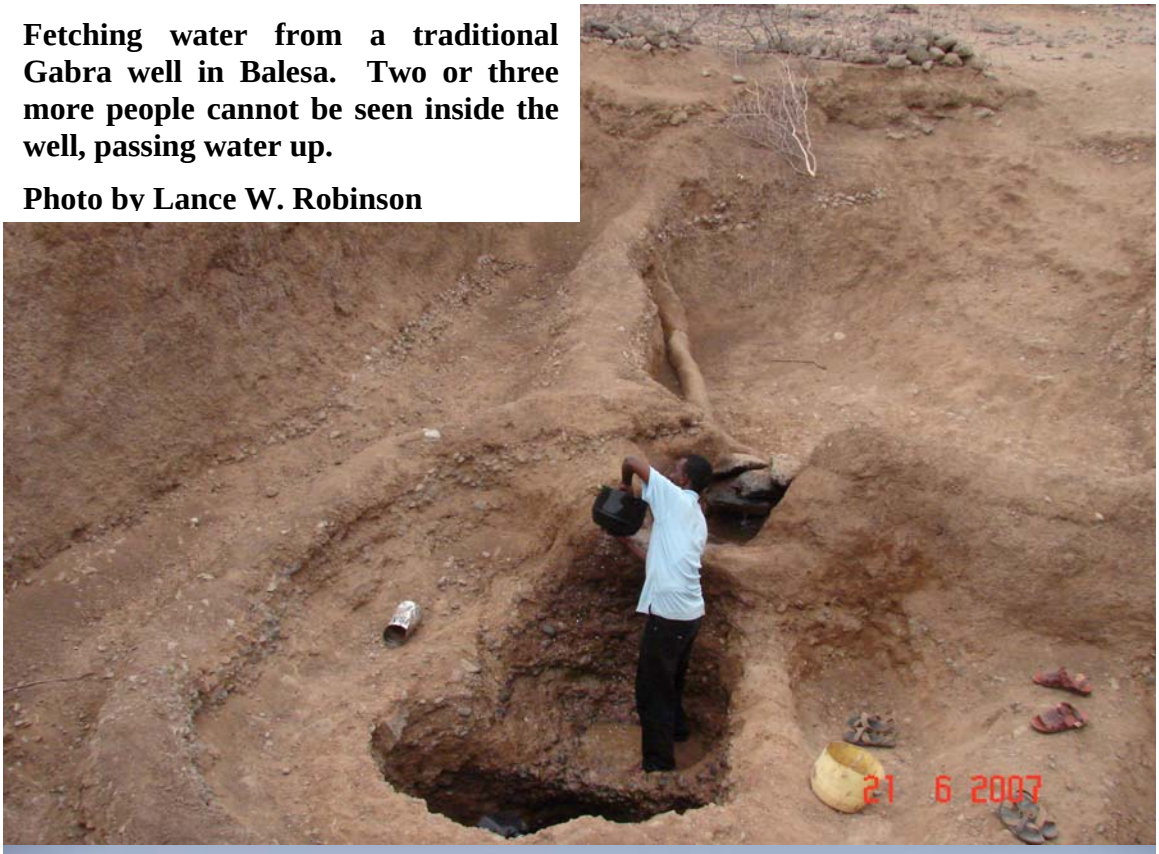
A key limitation of this research relates to its generalizability. Ultimately, this is something that a single case study cannot overcome, and it must simply be recognized what the research is and what it is not. This research has explored issues related to strategies and approaches for public participation and to the capacity to influence resilience in some depth, and has contributed to the development of theory in these areas. The conclusions of this research can be read as hypotheses which might now be tested in other settings.

2.5 Summary

This chapter began by stating that this research relates to social-ecological systems—that is to say, understanding such systems *as systems*. The research, furthermore, is exploratory, aimed at delving into the interrelationships between resilience, the capacity to influence resilience, and approaches to public participation. As explained above, these two features of the research suggested an approach that would involve focusing on a single, in-depth case study. That case study is comprised of the NGO PISP and the predominantly Gabra communities with which it works. I investigated this case study using semi-structured interviews; participant observation; focus groups, workshops and community meetings organized by me; and observation of and participation in meetings and workshops organized by others. The bulk of the research was carried out from January to November 2007, with a return trip to Kenya and to the case study communities in June and July of 2008. The next chapter provides background information on the context within which the research was set: the study area, the Gabra people, and the historical and policy context.

Fetching water from a traditional Gabra well in Balesa. Two or three more people cannot be seen inside the well, passing water up.

Photo by Lance W. Robinson



Girls in Balesa performing a traditional Gabra dance.

Photo by Lance W. Robinson

Chapter 3: Context of the Research

3.1 Study Area

3.1.1 Kenya

Kenya, with a population of about 35.6 million, has a per capita income of $1,240 (UNDP 2007). While this is relatively high for Sub-Saharan Africa, the distribution of income is quite skewed: Kenya has a Gini coefficient of 42.5 and 58.3% of the population live on less than $2 per day (UNDP 2007)[6]. The UNDP's Human Development Report ranks Kenya 148th out of 179 countries in the world (UNDP 2007). Eighty-three percent of Kenya's land mass is categorized as semi-arid, arid or very arid (see Table 3.1). These same lands support about 50% of Kenya's livestock and 35% of

Table 3.1: Agro-climatic zones of Kenya

Agro - Climatic Zone	Classification	Moisture Index (%)	Annual Rainfall (mm)	Land Area (%)
I	Humid	>80	1100-2700	12
II	Sub-humid	65 - 80	1000-1600	
III	Semi-humid	50 - 65	800-1400	
IV	Semi-humid to semi-arid	40 - 50	600-1100	5
V	Semi-arid	25 - 40	450-900	15
VI	Arid	15 - 25	300-550	22
VII	Very arid	<15	150-350	46

Note: moisture index = annual mean precipitation divided by potential evapotranspiration.

Source: modified from Sombroek et al. (1982)

[6] A Gini coefficient of 0 represents perfect equality in income (every household in the country has the same income), and 100 represents perfect inequality (all of the income in the country is earned by one household). For the 126 countries for which data is available 48 are more unequal than Kenya and 77 are more equal.

the human population (Mutungu 2001). Not surprisingly, therefore, a substantial portion of the population are pastoralists—around 18% (Kenya Bureau of Statistics, cited in Mushtaq 2008).

3.1.2 North-Central Kenya

POPULATION AND TERRITORY

The primary case study is located in north-central Kenya within the borders of what used to be Marsabit District. Marsabit District used to be one of the largest districts in the country, but was subdivided in 1995 and again in 2007. The Gabra made up 23.4% of the population of the pre-1995 Marsabit District, Borana 28.2% and Rendille 18.3% (Central Bureau of Statistics 1994). In 1995, the north-east corner of Marsabit District was hived off to create Moyale District, which is predominantly Borana in ethnicity. Then in 2007, Marsabit District was divided into three: Chalbi District across the north of the old Marsabit District, Laisamis District in the southwest, and a much smaller Marsabit District on Mt. Marsabit. Thus, some of the data that is referred to below relates to pre-2007 Marsabit District. Laisamis District is predominantly Rendille. Chalbi District is predominantly Gabra, and that is where the bulk of the research, including all three sub-cases, was situated. A significant number of Gabra, however, also live in the new, smaller Marsabit District, where there is a mix of ethnicities. Nevertheless, Gabra pastoralists do not confine their movements to these two jurisdictions, except when compelled to do so because of security considerations. PISP works both in Chalbi and Marsabit Districts.

Pre-2007 Marsabit District was located between latitudes 02º 45' and 04º 27' North and longitudes 37º 51' and 39º 21' East. It covered an area of 61,296 km^2, making it one of the largest districts in the country with a population density of 2.0 persons per km^2 (Central Bureau of Statistics 2001). Based on 1999 census data, the new Chalbi District can be calculated to have an area of 43,057 km^2 and a population density of 1.5 persons per km^2.

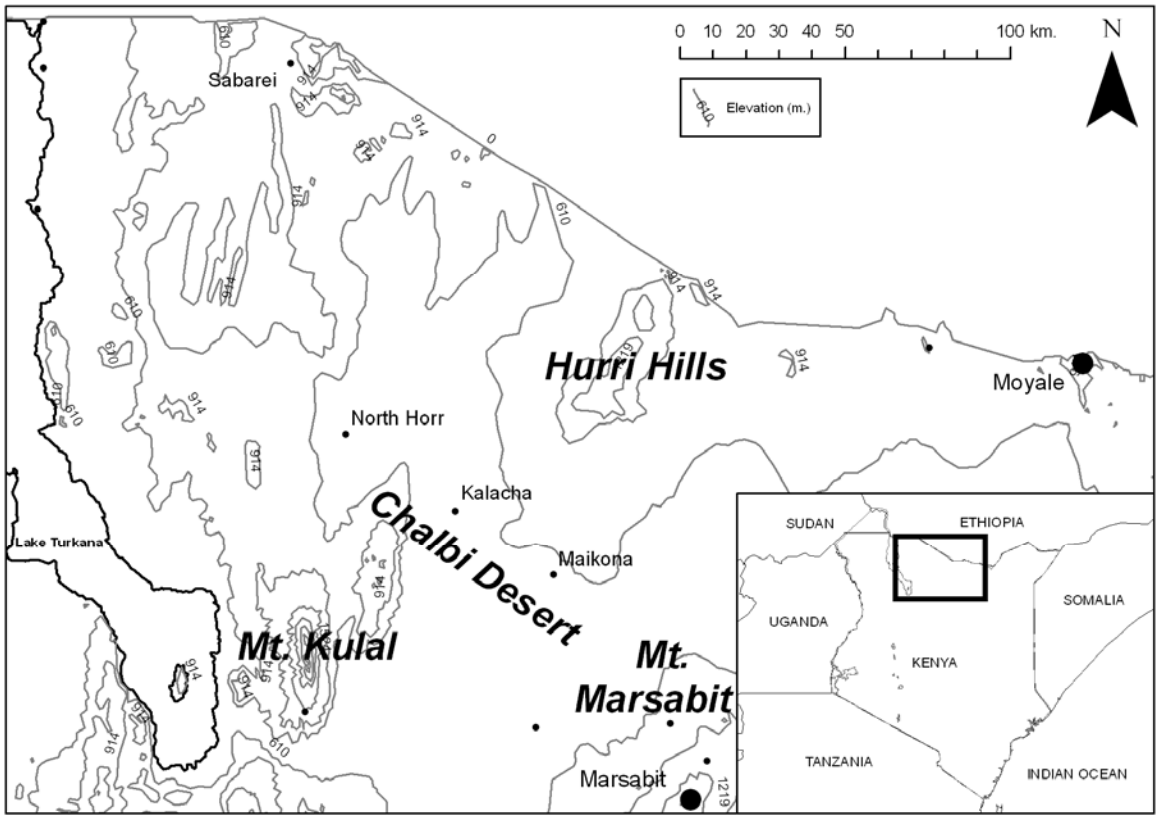


Figure 3.1: North-central Kenya and its main ethnic groups

CLIMATE, LANDSCAPE AND WATER RESOURCES

The geology and landscape of most of the old Marsabit District has been shaped by volcanic activity. The average altitude over the area is between 300 and 900m above sea level. The three main highland areas—Mt. Kulal (2,230 m.), Mt. Marsabit (1,700 m.) and Hurri Hills (1,310 m.)—are all extinct volcanoes, and much of the surrounding lowlands are littered with volcanic boulders (Torry 1973; Lusigi 1984; Ongweny 1984). Land is dominated by agroecological zones 5 and 6 (semi-arid and arid) with over 97% of land in the district being classified as rangeland (Kariuki and Mango 2003). It is generally believed that rangelands in the district are not overgrazed except in particular locations around settled areas (McPeak 2003).

Whereas rainfall in the tropics is typically dominated by the movement of the intertropical convergence zone, features of the terrain in this part of the African continent produce an area of enhanced divergence of airflow in north-central Kenya, the result being very low precipitation levels (Edwards et al. 1979). The mean annual rainfall is

less than 300 mm. across most of the study area (Lusigi 1984). The Gabra settlement of North Horr is typical of the area with a mean annual rainfall of 167 mm. (Lusigi 1984). The highland areas, however, receive considerably more. Hurri Hills has an average annual precipitation of between 650 and 850 mm. (Abdille and Maitho 2003). Marsabit town receives 804 mm. per year (Kenya Meteorological Department 2007). Condensed mist is also a significant source of water in these three highland areas (Lusigi 1984). Precipitation tends to fall in two seasons—April/May and November/December—based on the southeast and northeast monsoons respectively (Edwards et al. 1979; Kariuki and Mango 2003).

Rainfall in the district is highly variable, with the coefficient of variation probably approaching .60 in some areas (National Environment Management Authority 2006). Annual rainfall in North Horr, for example, can vary from essentially nil to 385 mm. (Lusigi 1984). The variability is greater than other arid regions of the world such as the Sahel or the arid parts of Sudan (Lusigi 1984). Even in the highland areas, precipitation is quite variable, with the coefficient of variation on Mt. Marsabit sitting at .36 (Kenya Meteorological Department 2007). Rainfall has declined over the past fifty years (National Environment Management Authority 2006; Kenya Meteorological Department 2007), and both trend analysis and some global climate change models predict a continued decline for the area (National Environment Management Authority 2006). However, it should be noted that climate change models are not yet supplying robust scenarios for the Horn of Africa (Hulme et al. 2001; Thornton et al. 2006).

There are no permanent rivers in the area. Surface water in the extreme western part of the old Marsabit District drains towards Lake Turkana, and the eastern part of the area lies within the Ewaso Ng'iro catchment, which is itself part of the Jubba River Basin, shared between Kenya, Ethiopia and Somalia. However, much of the central part of the area is essentially a closed basin, draining toward the Chalbi Desert. Chalbi itself is an ancient lakebed, a flat expanse of sand and salt flats, and still has standing surface water for short periods during the rainy seasons (Lusigi 1984). The flow of groundwater in the Chalbi basin, where the three sub-cases for this research were located, roughly mirrors

the flow of surface water, with groundwater moving toward the Chalbi desert from the surrounding highland areas (Lusigi 1984; Robinson 1985). As a result, the Chalbi is rimmed with a number of reliable, permanent springs, and in some locations groundwater, albeit slightly saline, is available only a metre or two below the surface.

SOCIAL CONTEXT

Most of the ethnic groups in north-central Kenya are traditionally pastoralists—Borana, Dassanech, Gabra, Rendille, Samburu and Turkana—and livestock raising is the primary economic activity. Some of the Borana, Gabra and Rendille living in the highland areas of the district now practice agriculture/horticulture, but generally even this small percentage of the population can still be classified as agro-pastoralists as they continue to get a significant portion of their livelihood from livestock. Other minor ethnic groups in the area include the Burji, agriculturalists who were assisted by the British colonialists to settle on Mt. Marsabit, and Wata, who traditionally were hunter-gatherers. The main ethnic group that PISP works with and also one of the most populous ethnic groups in the District are the Gabra, whose traditional territory corresponds roughly to the new Chalbi District and also extends into Marsabit District, Moyale District and southern Ethiopia. This traditional, imprecisely demarcated territory I refer to henceforth as *Gabraland*. Within Gabraland people of other ethnic groups can be found in small numbers: particularly Konso, Wata and Borana.[7]

The study area is quite poor. In North Horr Constituency, which has the same boundaries as the new Chalbi District, 62% of the people live below the national poverty line, meaning that it ranks 147th out of 210 constituencies (Central Bureau of Statistics 2005). Within the constituency, however, there is not an extreme disparity in distribution of wealth—the Gini coefficient sits at 30 (Central Bureau of Statistics 2005). Those most at risk are people who have lost their livestock and fallen into a poverty trap (McPeak and Barrett 2001; Kariuki and Mango 2003).

[7] The description of the social context in this paragraph is based on the following sources: Torry (1973), Robinson (Robinson 1985), Sobania (Sobania 1979), and Roba and Witsenburg (2004).

Aside from government institutions and traditional institutions, institutions important in Marsabit District have included the churches—especially the African Inland Mission and the Catholic church—and NGOs. Some of the international NGOs most active in the area are FARM Africa, Food for the Hungry, the International Institute for Rural Reconstruction, the Red Cross, and Solidarité. Some others are involved as donors rather than as implementers, along with bilateral and multilateral donors. There are also a handful for local NGOs with a reasonable level of capacity, of which PISP is one.

3.2 The Gabra

3.2.1 Gabra History

Gabra population has increased greatly over the last forty years. In 1969 it was 11,000 (Ganya et al. 2004). In 1989, the Gabra population in the then Marsabit District (comprising the current Chalbi, Laisamis, Moyale and Marsabit Districts) was 35,726 (Central Bureau of Statistics 1994). The total Gabra population in Kenya is now over 45,000 (Central Bureau of Statistics 2001).

It is generally believed that the Gabra are Somali in origin, but that at some point after they came into contact with the dominant force in what is now southern Ethiopia, the Borana, they lost their own language in favour of Ki-Borana and also adopted some aspects of Borana culture (Robinson 1985; Tablino 1999). Nevertheless, it must also be understood that it is not always accurate to conceive of an ethnic group as a clearly defined entity descended from some common ancestor. It seems that ethnic identities in northern Kenya and southern Ethiopia have been fluid, although perhaps more so in the past than at present (Sobania 1979; Robinson 1985). For example, as a result of a confluence of crises in the late 1800s, some Gabra whose herds were wiped out took up hunting and gathering and became Wata. Some of these same people, after eventually acquiring livestock again, then reclaimed their Gabra identity (Robinson 1985). Oral history suggests that both individuals and sometimes entire clans have at times switched identities declared themselves as belonging to another ethnic group (Sobania 1979; Robinson 1985).

Gabra oral history records key events going about 130 years. Oral historians interviewed for Paul Robinson's 1985 dissertation on Gabra history were able to recall events as far back as 1856. Respondents whom I interviewed were unaware of events that far back, but one was able to recount Gabra history as far back as the late 1880s. This history functions with the aid of an elaborate calendar (Robinson 1985). The Gabra's calendar is actually two, one lunar and one solar calendar. The solar calendar has 365 days. Because 365 days is exactly 52 weeks plus one day and because the calendar has no leap years, each year begins on a subsequent day of the week. Years are named for the day of the week on which it began and for an important historical event that took place in that year. For example, 1887 is known as the Thursday year of meetings. 1888 is known as the Friday year when rinderpest reached areas north of the Borana. 1889 is known as the Saturday year of the black flies, because swarms of black flies, following the southward wave Rinderpest, fed on the great number of cattle carcases (Robinson 1985). This system functions as a mnemonic device that helps to maintain the accuracy of oral history. Robinson (1985), in his detailed research into Gabra history and its calendar, provides clear evidence that events recorded in the oral history such as major conflicts, droughts, and disease outbreaks correspond precisely to written colonial records.

Two main episodes in the historical period stand out as having been of critical importance. One was the late 1800s, when the Gabra and other ethnic groups in the area, in subsequent years, were hit by outbreaks of Rinderpest, malaria and then smallpox, inter-ethnic conflict, and the arrival of European and Ethiopian colonialism. By the end of that period, camels had become far more important to the Gabra economy than they had been previously and Gabra territory had shifted slightly southward, with the aid of the colonial administration which saw the Gabra as useful allies against Ethiopian expansion (Sobania 1979; Robinson 1985). The other episode was the 1820s and 30s when the colonial administration began to restructure the governance of the area, facilitated the settlement of Mt. Marsabit by Burji agriculturalists (Robinson 1985), and permanently reduced the military strength of the Gabra by prohibiting them from owning horses (Torry 1973). The administration also tried to demarcate distinct ethnic territories,

which on the whole probably benefited the Gabra as they were allocated territory and water points that previously had been primarily used by the Rendille (Sobania 1979).

3.2.2 Gabra Society and Culture

Gabra society is characterized by an intricate set of social relationships based on their clan and age-grade systems. The Gabra ethnic group is made up of five phratries (*gosa*); each phratry is made up of 9 to 19 clans (*balbala*); and each clan typically contains a number of lineages (*miilo*) (Tablino 1999). Because the clans are exogamous, marriage establishes relationships between clans (Tablino 1999). There is also a system of age classes and grades (*luba* and *gada*) (Torry 1973; Tablino 1999). This system varies slightly between phratries, but essentially every Gabra male is permanently a member of one of the six cyclical age/generation sets, and it is based on membership in his set that he passes through a series of four grades. The grades define social responsibilities and status (Tablino 1999). It is through the articulation of the clan and age-grade systems that the institution of the Yaa and the leadership structure of each phratry are generated: "each phratry is represented by political and ritual office holders affiliated with a particular grade and their duties extend throughout the phratry" (Torry 1973). The clan and age-grade system also establish particular social ties such as stock-sharing arrangements.

Each of the five phratries is governed by a Yaa. The Yaa can be thought of as both a traditional council of elders and the nomadic village in which the elders and their families live. Each Yaa is, then, the mobile capital for its phratry. The headship of the Yaa varies slightly from phratry to phratry, but typically includes a *hayyu* and a *qallu*. Hayyu are elected for life from the most senior clan within the phratry. Qallu are the ritual leaders for each phratry and preside over important ceremonies (Robinson 1985; Tablino 1999). Roles of the Yaa include adjudicating cases that cannot be resolved at lower levels, legislation, especially around matters of tradition, and the performance of important Gabra rituals.

The smallest Gabra social unit is the *ibidda* (literally, “hearth”) (Torry 1973; Kassam and Ganya 2004). A *worra* is made up of one to five *ibidda* (Kassam and Ganya 2004). In literature on the Gabra either of these terms can be translated as "household". In this document, however, I reserve the use of the word *household* for the Gabra *ibidda*. Gabra still living the traditional life, live in nomadic camps known as olla. These camps are usually made up of about ten households, and many of the males in the camp will belong to the same phratry, but are also formed on the basis of friendship and have an overall membership that is very fluid (Robinson 1985; Tablino 1999; Kassam and Ganya 2004). There are also a number of permanent settlements, which in Gabra usage, are referred to as "towns" regardless of the size.

Delineating “community” among the peoples of north-central Kenya is problematic, and definitions of resource using communities are multiple and overlapping (Haro et al. 2005). Furthermore, for those Gabra who still live the nomadic life, the typical notion of a *community* as a group of people living in a particular place—a village, a neighbourhood or a town—does not apply. Collective decisions can be made on a geographic basis at the level of an *arda* ("locality"), with all adult Gabra males who happen to be living in the arda potentially being involved in decision-making, but the arda is thought of an element of physical geography not as a social unit. That is to say, for nomads, *places* and *communities* are separate things. Recently, however, this has begun to change with increasing number of Gabra living in permanent settlements and with those settlements taking increasingly prominent positions in political and economic life. Thus, clan and phratry relationships, nomadic camps (whose male populations may or may not be made up of people from a single phratry), permanent settlements, and administrative units such as parliamentary constituencies, Locations and Sub-Locations all embody aspects of what is typically thought of as "communities".

3.2.3 Livelihoods and Use of Natural Resources

Livestock are the foundation of the Gabra household economy, with milk accounting for over 60% of household food consumption among those still primarily engaged in the traditional economy (McPeak 2003). Most respondents interviewed for this research said

that livestock and food aid were the only sources of their livelihood. The livestock mix that they keep is diverse, including camels, sheep, goats, cattle and donkeys. This diversity of livestock is part of their regular coping strategies and is related to the varying amounts of time that different animals can go without water. Cattle need to be watered every second day, smaller animals can go up to four days without water, and camels are sometimes watered as infrequently as every ten or eleven days (Pastoralist Integrated Support Programme 2004). Aside from aridity and extreme variability in rainfall, other shocks and stresses that pastoralist communities in Kenya face include cattle raiding (McPeak and Barrett 2001; Gray et al. 2003; McPeak 2003) and inter-ethnic conflicts, which have increased in recent years (Haro et al. 2005).

Like many African dryland pastoralists, the primary household level strategy seems to be to maximize herd size while possible to ensure that when drought inevitably comes the family has a buffer (McPeak and Barrett 2001; McPeak 2005). The Gabra also practice a form of opportunistic mobility that involves herd-splitting. A mostly dry *foora* herd is taken far from the home to locations where water is less plentiful or less reliable, and a milk herd is kept in the vicinity of the home in closer proximity to one or more water points (Robinson 1985; Ganya et al. 2004; Kassam and Ganya 2004). The foora system helps to limit both human and livestock density and reduce competition for forage and water (Pastoralist Integrated Support Programme 2004). Another general mobility pattern is that ollas will move to the most arid lowland areas during the dry season where the most reliable water points are and move to the better pastures such as those in Hurri Hills in the rainy season, a pattern which is, in a sense, opposite to that of other East African pastoralists. This is because of the unique hydrology of the area and the fact that most of the springs are in the arid lowlands around the edge of the Chalbi desert (Robinson 1985). As the nomads shift from season to season and year to year, many of the rainy season sites will not be revisited each year because the perennials on which the livestock depend do not recover in the course of a single year (Robinson 1985).

The aridity of the climate has led to a wide variety of practices for conserving water, especially at times of extreme scarcity, including reliance on milk and blood for drinking

rather than water, washing hands with animal urine, keeping young animals in the shade of a thatched kraal to reduce their water needs, and of course moving animals long distances in search of water (Pastoralist Integrated Support Programme 2004). The only type of water sources over which some degree of private property rights are exercised are wells; other sources such as manmade and natural pans, springs, oases and rock catchments are governed as commons. However, even for wells, the management is usually a communal affair and the "owner" typically has rights of use, but with ultimate control being communal as with other water sources, and access being available to other community members through negotiation (Pastoralist Integrated Support Programme 2004). While there exist traditional institutions and practices for managing pasture and water resources, especially wells, the institutions and traditions are under pressure. Increases in human and livestock population and decline in rainfall has led to increased pressure on resources in the District, particularly pasture and water, and meanwhile, there has been a decline in relevance of the traditional decision-making structures that might have otherwise helped to manage such resources (Kariuki and Mango 2003).

3.3 The Kenyan Historical and Policy Context

3.3.1 British Colonialism and the Gabra

British and Ethiopian expansion both reached the Gabra at essentially the same time, 1896, which in Gabra oral history is known either as the "Saturday Year in which the Abyssinians Came" or the "Saturday Year in which the Whites Came" (Robinson 1985). When the British and the Ethiopians eventually agreed on a boundary, it cut through the territory that the Gabra traditionally used. However, during the course of the 1890s and the first decades of the twentieth century, impelled by loss of cattle resulting from the Rinderpest epidemic and harsh treatment from Ethiopian forces, the Gabra shifted slightly southwards (Torry 1973; Robinson 1985). From that time until the present, the territory normally used by the Gabra lay mostly in Kenya.

Although the British arrived in northern Kenya in the 1890s, it was another twenty years before they made their presence felt in the area in any significant way and attempted to

exert control over the area when they tried, for instance, to keep the Gabra away from the Ethiopian border in order to minimize clashes with Ethiopian forces. They also kept the entire Northern Frontier District essentially closed, including to missionaries, due to alleged insecurity (Torry 1973). This latter action undoubtedly contributed to the area's marginalization.

In 1922, the British began a policy which the Gabra remember today as *laf seera* (lit. "law of the land", or "land restriction"). The intermittent policy involved closing off some areas for grazing, sometimes for a season, sometimes for a few years. Such efforts lasted into the 1950s (Sobania 1979; Robinson 1985).

Nevertheless, overall, the Gabra and other inhabitants of what was to become Marsabit District had an experience of British colonialism that was quite distinct from that of many other pastoralists that the British encountered. The territory was vast and arid, and of no interest to British settlers. Instead, the relevance of the region to the British was primarily as a buffer against Abyssinian expansion (Goldsmith 2003). Although the colonial administration in the Northern Frontier District became increasingly active and interventionist over the decades, its approach there was much more benign than it was with pastoralists elsewhere in Kenya, especially for the Gabra and Borana. At first, these two groups were treated as refugees from Ethiopia and so were not taxed, unlike the Rendille and Samburu (Sobania 1979). The colonial government essentially adopted a laissez-faire approach toward the Gabra, in part because the Gabra more or less peacefully accepted British colonial dominion and in part because of the limited economic interest that Gabra territory attracted (Torry 1973). Most significantly, the colonial government did not try to take over Gabra lands or actively oppose the pastoralist way of life as they did with the Maasai for example (Goldsmith 2003).

One of the actions of the colonial administration, beginning in the second decade of the twentieth century, was to attempt to establish clearly delineated territories for the various pastoralist ethnic groups (Sobania 1979; Fratkin and Roth 2005). The Gabra should probably be regarded as overall winners from this process, having been allocated large areas of land that previously had mostly been used by the other camel-keeping group of

the area, the Rendille. The line between the Gabra and Rendille, which limited Rendille territory to areas south of the Chalbi Desert, was essentially established in 1919 (Sobania 1979). The delineation of Divisional (sub-district) boundaries in that part of Marsabit District approximately followed this line, and eventually, in 2007, became the boundary between two new districts that were hived off from Marsabit. While ethnicity has no official place in local government in Kenya, the newly created Laisamis and Chalbi Districts are essentially Rendille and Gabra districts, respectively.

3.3.2 Sedenterization and the Pastoralist Way of Life

The Gabra experience of British colonialism was also atypical in relation to settlement. Until World War II, the administration actively discouraged the three pastoralist groups—Gabra, Borana and Rendille—from settling, focusing instead on assisting Burji agriculturalists to immigrate to Marsabit mountain from Ethiopia (Tablino 1999; Adano and Witsenburg 2005). As Roba and Witsenburg (2004) note, "On the contrary, [the administration] sent people away from Marsabit Mountain more often than they settled them there" (Roba and Witsenburg 2004: 5). Generally, the colonial administration actively discouraged the Gabra, Rendille and Borana from settling (Roba and Witsenburg 2004; Fratkin and Roth 2005), and with the exception of North Horr all permanent settlements in Gabraland are relatively recent. During colonial times, North Horr was the only permanent settlement in Gabraland and for many years even it was really nothing more than an outpost.

As alluded to above, until the late 1960s, missionary activity was quite limited and was concentrated around Marsabit town and vicinity (Torry 1973; Tablino 1999). When they did arrive, missionaries sometimes showed acceptance of the nomadic lifestyle and attempted to adapt their activities to that lifestyle (Tablino 1999; Roba and Witsenburg 2004). But missionary history in this regard has been mixed. While on the one hand, some missionary groups have supported restocking to allow pastoralists affected by drought to continue their pastoralist livelihoods (Fratkin 1998; Roba and Witsenburg 2004), well-known anti-pastoralist attitudes have also been common among missionaries (Fratkin 1998).

Another way in which sedentarization in Marsabit District diverged from the norm occurred after the 1974-75 famine. NGOs rushed into Turkana District with aid and development programs that actively encouraging settlement. In Marsabit meanwhile, UNESCOs Integrated Project for Arid Lands was in the process of establishing settlement as the chief cause of desertification (Goldsmith 2003). In later years, what settlement schemes there were in Marsabit met with little to no success (Legesse 1989). Nevertheless, sedentarization is proceeding in this area (Roba and Witsenburg 2004). Beginning in the 1970s, the provision of relief food played a critical role in encouraging sedentarization (Fratkin and Roth 2005). Other "pull" factors have included the emergence of services such as clinics, schools and churches. A major "push" factor, especially within the past decade, has been loss of livestock to drought and theft.

3.3.3 Land Policy and Pastoralism, Pre- and Post-Independence (or... Thank God We're Marginalized)

Like many countries in East Africa and southern Africa, Kenya has had a history of coercive conservation and land management. The colonial government began to take an interest in agrarian production in the 1930s, first because of a desire to increase production during a time of global economic depression, but later influenced by concerns over land degradation (Anderson 1984). Then, in the latter phase of colonial rule, after 1945, the ethos of "development" began to dominate government thinking. The African Land Development Organisation was established in 1945 with two main aims: development of "sound ranching" methods to replace pastoralism, and the promotion of settled agriculture (Mutiso 1995; Kibugi 2008). In the 1950s in particular, the colonial administration was concerned with the "management" of the rural environment (Anderson 2002). These concerns were undoubtedly shaped by the white settler population and paternalistic feelings among colonial administrators that the indigenous Africans could not responsibly manage the land (Anderson 1984; Haro et al. 2005). Among the results of such attitudes was a program for soil conservation in that decade which saw entire villages relocated and farming practices closely monitored to ensure that proper procedures were followed. The program was doomed to failure, not only for its injustice, but also for the fact that the farming practices that it promoted

exacerbated rather than reduced soil degradation (Pretty 1995). Policy for rangeland was similarly top-down and motivated by the belief that indigenous Kenyan livestock owners invariably overstocked their ranges (Anderson 1984; Haro et al. 2005). This "ranching phase" of rangeland policy development lasted into the independence era and well into the 1980s (Haro et al. 2005).

Several pieces of legislation are relevant. The Crown Land Ordinance of 1902 declared that all "waste and unoccupied land" reverted to the sovereign. This regime continued after independence, with Government Land Act transferring ownership of Crown land to the office of the President (Mutiso 1995; Doyo 2003). Over the years, two other tenure types were created: reserve (later *Trust*) land, and group ranches. The creation of the *reserve land* category in 1915 resulted from a recognition—albeit a grudging and incomplete recognition—that some aspects of traditional tenure should be maintained in areas where "English tenure" would not be able to reach. Then in 1938, with the Native Lands Trust Ordinance, the reserves were removed from the purview of the Crown Lands Ordinance, with a clear distinction being made between Crown land and reserve land (Okoth-Ogendo 1999; Onyango et al. 2007). At independence, reserve land became known at "Trust Land", to be managed at the district level by County Councils and by the Commissioner of Lands (Kenya Land Alliance 2002). In practice, however, the distinction between Crown/government land and reserve/trust land, has not been so clear. For example, on the whole, County Councils have acted not as trustees, but rather have dealt with the land as if they own it and have the right to dispose of or allocate it as they will (Kenya Land Alliance 2002). Furthermore, little has been done to strengthen customary institutions that are purportedly, albeit vaguely, empowered to manage trust land (Okoth-Ogendo 1999).

Despite the half-hearted acknowledgement that was given to customary tenure with the Native Lands Trust Ordinance, private ranching remained the preferred option promoted by the colonial administration. The independence government, however, favoured group ranches for arid and semi-lands, and in 1968 passed the Land (Group Representatives) Act (Grandin 1991; Kibugi 2008). But few if any of the group ranches created were

viable, and soon many of them were subdivided and privatized. The group ranch concept is now generally regarded as having been a failure (Grandin 1991; Galaty 1992; Rutten 1995; Munei and Galaty 1999; Kibugi 2008). Land law in Kenya is widely regarded as being horrendously out of date, and the need for a review of land policy has been recognized at least since 1986 (Doyo 2003). As of the time of writing the review is finally nearing completion.

While the history of colonial and post-colonial treatment of pastoralists and pastoralism in Kenya as a whole may be quite dismal, much of that history does not pertain to north-central Kenya. The problem of pastoralists losing the most productive land, whether to white settlers or other agriculturalists was hardly an issue at all, except to a certain extent on Mt. Marsabit. Furthermore, the concept of *overgrazing* did not figure prominently in early colonial motivations in the Northern Frontier District and was not even mentioned in any reports until 1934 (Sobania 1979). Instead, what controls the administration did place on movements in the first third of the twentieth century had more to do with political-military considerations (Sobania 1979). Furthermore, the alienation of trust land has hardly been an issue anywhere but on Mt. Marsabit, and similarly, the more recent policy failure—group ranches—was never applied in Marsabit District. The subtitle that I have given to this section is, admittedly, an overstatement—Marsabit's physical, economic and political isolation has brought problems. For example, neither the Kenyatta government nor the Moi government invested much in the area (Fratkin 1998). However, the marginalization has also spared the pastoralists of the District from some of the worst of colonial and post-colonial policy.

3.3.4 Water Policy

The Kenyan government has given modest support to watershed management at various scales for over three decades. For example, the Tana River Development Authority was established in 1974 in order to integrate management of irrigation, public water supply and hydroelectricity (Liddament et al. 1980), the same year that the National Soil Conservation Program was established in the Ministry of Agriculture (Thompson and Pretty 1996). The program later became the Soil and Water Conservation Branch

(SWCB), which in 1987 introduced the "catchment approach" for the promotion of water and soil conservation measures among farmers (Thompson and Pretty 1996; Bunyatta et al. 2000). In this program, which ran until 1997, the SWCB would concentrate activities for one year in small "catchments"—local focal areas of 200 to 500 ha. with boundaries defined according to various factors including watershed boundaries, administrative boundaries and other social factors (Pretty 1995; Thompson and Pretty 1996; Bunyatta et al. 2000; Mati 2005). One of the aims was that by the end of the year of participatory exercises and other interventions, catchment areas would have formed Soil Conservation Catchment Committees that would maintain and manage watershed management and soil conservation activities thereafter (Pretty 1995; Thompson and Pretty 1996; Bunyatta et al. 2000). Opinions on the program have been mixed (e.g., Thompson and Pretty 1996; Bunyatta et al. 2000; Mati 2005), and it has been suggested that the degree of success varied from catchment to catchment depending on the extent to which SWCB staff undertook a truly participatory approach (Pretty 1995; Thompson and Pretty 1996).

The trend in water resources management over the last two decades has been away from state involvement towards greater involvement of communities and the private sector. This process of "handing over" began in the late 1980s, impelled in part by recognition that the government could not possibly meet its goal of providing water to all citizens by the year 2000 (Mumma 2007). This also coincided with two global trends which also certainly played a role: the growing popularity of participatory approaches and community-based natural resources management, and fiscal austerity measures that accompanied the structural adjustment programs of the Bretton Woods institutions. The most obvious implication of this trend in northern Kenya was in the handing over of government boreholes to water users associations. Since then, there have been various training exercises aimed at borehole committees carried out by government and by NGOs. Few of these have been very effective, and most boreholes in northern Kenya are still very poorly managed (Rural Focus Ltd. 2006).

Then in 1999, with the release of the government's Sessional Paper No. 1, a more comprehensive policy shift began. Key elements in this policy direction have included

decentralization, separation of functions (service provision, resource management, regulation, etc.), and community participation. That policy paper provided the basis for Water Act of 2002, which attempts to establish the foundation for a system in which a significant degree of authority is devolved to the local level and in which communities rather than the central government bear most of the responsibility for provision of water services and management of water resources. The rationale has been that community-level institutions are better placed to effectively manage provision of water services and management of water resources.

Key provisions of the Act include:

- Separation of control over water service provision, water resources management, and water policy between three institutions: the Water Services Regulatory Board and Water Services Boards, the Water Resources Management Authority, and the Ministry of Water and Irrigation respectively (see Figure 3.2);
- Decentralization of functions to lower levels;
- Provision for community groups, NGOs, and private corporations to engage in the provision of water services as recognized Water Service Providers; and
- Provision for community members and other stakeholders to participate in the management of water resources through Water Resource Users Associations (WRUAs).

It has taken time to implement the Water Act, and the reforms that it enacts are still in progress. For example, in the Marsabit Sub-Region (which does not correspond to the boundaries of Marsabit District, being delineated according to watershed boundaries), as of 2007 no WRUAs were yet registered. Nevertheless, early opinions on the Act in academic literature have been lukewarm at best. While it is acknowledged that the Act calls for community participation and makes provision for the involvement of community institutions and civil society, authors have criticized the Act for putting too much emphasis on formal land ownership and for ignoring customary land and water tenure systems (Vardhan 2006; Mumma 2007; Onyango et al. 2007). Water resources use permits, for example, pertain to the land and are to be issued to registered land owners.

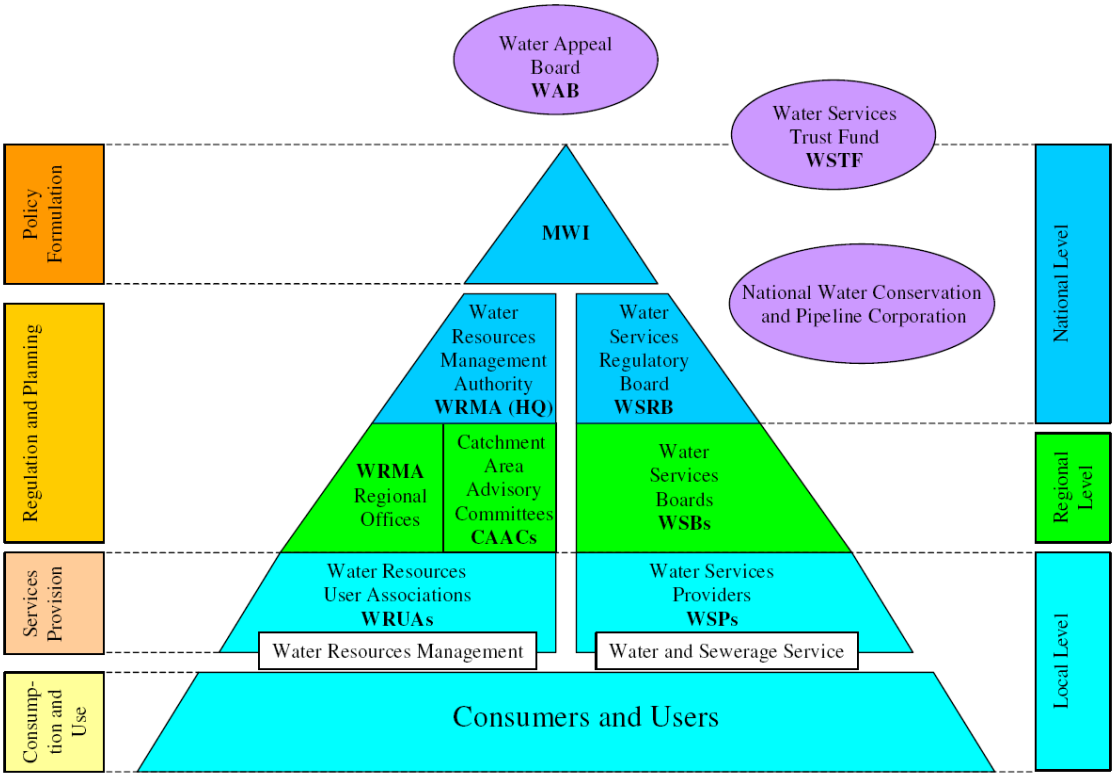


Figure 3.2: Water sector institutions under the 2002 Water Act

Public domain figure. Cited here from Ministry of Water and Irrigation and the Water Resources Management Authority (2005).

Communities operating under customary land tenure rules may therefore find it difficult to meet the conditions for permits and work within the Water Act (Vardhan 2006; Mumma 2007; Onyango et al. 2007). Thus the Act threatens to delegitimize many existing community-based water initiatives (Mumma 2007). Furthermore, the provisions of the Act relating to ownership of land are such that they may prove difficult to operationalize on Trust Land (Onyango et al. 2007), which is of particular concern for the most arid parts of the country, where the vast majority of land usually falls under this category. Requirements regarding registration and licensing may prove onerous for some rural communities with low levels of education and literacy, and in the poorest rural zones of Kenya, it seems likely that there are few existing institutions with sufficient capacity to take advantage of the Act (Vardhan 2006).

3.4 Summary

Key elements in the description of the study area presented in this chapter are its aridity and the extreme variability in rainfall. These are features which have necessitated, for the Gabra and other ethnic groups in north-central Kenya, an economy based on mobile pastoralism, as agriculture is essentially impossible throughout most of the area. While sedentarization and accompanying social changes, as well as colonial and post-colonial policies, have all had some effect on the Gabra, pastoralism is still the foundation of most livelihoods. Therefore, the resilience of pastoralist social-ecological systems in north-central Kenya and the capacity of these systems to continue providing livelihoods remains an important concern. Current and anticipated policies and legislation, such as the 2002 Water Act and the long-awaited reform of Kenya's land laws, have the potential to impact pastoral livelihoods and the resilience of pastoralist systems, as do the approaches and strategies adopted by NGOs and other agencies. This thesis is concerned in particular with approaches to public participation used by such agencies and ways in which these approaches can affect the collective capacity of pastoralist communities and institutions to influence resilience. The next three chapters present the findings of the research, as well as analysis and discussion of those findings, Chapter Four considering the resilience of the Gabra social-ecological system, Chapter Five the capacity to influence resilience, and Chapter Six approaches to participation used by formal sector agencies.

Chapter 4: Social-Ecological Resilience in Gabraland

4.1 Introduction: Pastoralist Systems, Policymaking and Resilience Thinking

4.1.1 Understanding Pastoralist Systems for Policymaking

Policy and development programming aimed at pastoralists and at the lands in which they live have often been questioned for being based on misconceptions about the nature of both pastoralism and the non-equilibrium environments in which pastoralists live (Ellis and Swift 1988; Scoones 1995; Behnke and Abel 1996a; Behnke and Abel 1996b; Ingo et al. 1996; Mearns 1996; Scoones 2004). A key aspect of pastoralist systems that often is not understood by policymakers relates to environmental variability and the flexibility needed to deal with that variability (Davies 2008). Scoones (2004), for example, points out that most African pastoralists live under non-equilibrium conditions in which the coefficient of variation of rainfall is greater than 30%. Policymakers and range managers, however, have historically drawn their prescriptions from experience in less variable, usually temperate, climates. The result, Scoones argues, has been policies, programs and management strategies that have been inappropriate.

On the other hand, numerous researchers have argued that mobile pastoralism represents a response to the variability of rainfall and pasture resources in drylands which is both ecologically and economically rational (e.g., Ellis and Swift 1988; Behnke et al. 1993; Scoones 1995; Ingo et al. 1996; Niamir-Fuller 1998). The World Initiative for Sustainable Pastoralism, a programme of the IUCN, bases much of its arguments and advocacy on the same premise (e.g., Nori et al. 2005). While a deeper understanding of the nature of pastoralist livelihoods and production systems is gradually seeping into policy and programming (Davies 2008), there are still many unanswered questions about the direction that policy and programming for pastoralists should take. One issue is whether traditional pastoralism is still viable or whether, because of population growth and loss of key ecosystems, a radically different livelihood system is needed, it being no longer feasible to restore traditional, sustainable pastoralist systems. Devereux and

Scoones (2007) and Sandford (2007) respectively argue the two sides of this debate. Another issue relates to adaptation to climate change. Some commentators see pastoralist systems as weakened and fragile systems on the verge of collapse, whereas others argue that pastoralists are the *most* capable of adapting to climate change (Nori and Davies 2007). Various arguments have been expressed in both of these debates, and both remain as of yet unresolved.

Furthermore, policymakers and development programmers have the more basic problem of making sense of the complexity of pastoralist systems and obtaining appropriate information on which to base action. They lack frameworks that can help them to understand pastoralist systems and plan for them in a systematic way. Some relevant information sources are available, for example from drought monitoring and famine early warning systems. However, these kinds of humanitarian information systems (HISs) are quite limited in scope. While the boundary between emergency response and development has become blurred in recent years, the information systems that relief and drought emergency programming rely upon have not kept pace (Maxwell and Watkins 2003). Humanitarian information systems have had a number of problems: they often focus narrowly on one set of variables while ignoring others, measure hazards and impacts without providing insights into the chain of causation in-between, give insufficient attention to causal factors, and provide their warnings too late (Buchanan-Smith and Davies 1995; Dilley and Boudreau 2001; Maxwell and Watkins 2003). Moreover, HISs tend to be designed for very specific purposes and be very focused; they are not designed for delving into the dynamics and complexity of social-ecological systems, and thus, while they are crucial for emergency response, they are of limited usefulness for making decisions on how to increase preparedness and, more generally, promote development. In short, policymakers and development programmers are left with two difficult questions of *what to do* for pastoralists, and *how to know* what to do.

Resilience thinking is particularly relevant to the study of pastoralist systems and has the potential to help fill this gap. Threshold effects and related indicators are of particular concern. For example, in a background paper prepared for the World Summit on

Sustainable Development, a team of authors suggest a number of broad implications for making policy in a way that promotes the resilience of social-ecological systems, and among their recommendations is the systematic monitoring of key ecosystem variables and "the development of indicators of gradual change and early warning signals of loss of ecological resilience and possible threshold effects" (Folke et al. 2002: 53).

This chapter applies resilience thinking to an analysis of the Gabra social-ecological system using a framework that provides a foundation for developing such resilience-based indicators for pastoralist systems. In other words, this chapter has two purposes:

a) to identify the essential elements that comprise the Gabra social-ecological system and that contribute to its resilience, and
b) to consider the relevance of a systematic application of resilience thinking to questions of pastoralist policy.

In working towards these two aims, this chapter demonstrates that some of the potential value-added of resilience thinking lies in the development of an analytical framework—a framework that allows for a systematic understanding of pastoralist systems and for assessing the resilience of these systems *before* their vulnerability has been catastrophically demonstrated.

Section 4.1.2 considers the relevance of resilience thinking for policymaking and programming that deal with pastoralist systems. The subsequent sections of this chapter correspond to stages in an iterative approach of analysis and synthesis. I use this approach as a vehicle for presenting the results of research into what may be called "the Gabra social-ecological system". The discussion is based both on primary data that I have collected, and on other authors' research among the Gabra. The chapter starts with a description of Gabra livelihoods, shocks and stresses influencing those livelihoods, and other causal factors in the Gabra livelihood system (Section 4.2). This provides the material for then developing an analytical description of the identity of the Gabra social-ecological system (Section 4.3.1) and a consideration of thresholds (Sections 4.3.2 and 4.3.3). The latter part of the analysis involves attempting to visualize the system in a more holistic way, by means of various diagrams depicting influential cycles that

characterize the system (Section 4.3.4). I conclude this chapter (Sections 4.4 and 4.5) by considering how the approach taken to understanding the Gabra social-ecological system provides clues as to possible trajectories for the system, contributes to the envisioning of preferable alternative states, and thereby yields insights relevant to current policy debates about the future of pastoralism.

4.1.2 Applying Resilience Thinking and Attention to Thresholds to Questions of Pastoralist Policy

As stated above, policymakers and development programmers face two key challenges in relation to pastoralists: what to do and how to know what to do. In this thesis it is argued that any response to these twin challenges must revolve, in terms of analysis, decision-making and action, around the resilience of pastoralist systems—*understanding* the resilience of these systems and *enhancing* that resilience. Resilience is the central issue because for dryland pastoralist systems, shocks and stresses are the decisive, central features. The most common of these shocks and stresses—livestock diseases, theft of livestock, extreme variability in rainfall and pasture resources, and especially drought—all challenge the capacity of households and communities to maintain livelihoods and to survive. On the other hand, social-ecological systems based on traditional pastoralism, and the livelihoods within those systems, have evolved a level of resilience that has allowed them to maintain themselves.

Unfortunately, dryland pastoralists face additional challenges. One is global climate change, whose potential consequences include increasing variability in weather generally and in precipitation in particular, and increasing frequency and severity of extreme weather events (Intergovernmental Panel on Climate Change 2007). Rainfall patterns in dryland areas, which are already extremely variable, may become even more variable and unpredictable than they already are (Bates et al. 2008). The issue is not only the climate impacts themselves, but also the transformation of local weather patterns that can render centuries of traditional ecological knowledge irrelevant. Another challenge is the growth in human population, which, it can be argued, has already undermined the viability of traditional mobile pastoralism in many places (Sandford 2007).

Inappropriate policies and development strategies over the years have also negatively affected the resilience of pastoralist systems. As mentioned above, an understanding of the distinctive features of pastoralist environments and livelihoods—distinctive features such as high levels of uncertainty and variability, the importance of flexibility, the need for mobility—has made only very modest inroads into policy and development programming. Pastoralist peoples deserve better from policy and programming than they have, on the whole, experienced thus far. Given that traditional pastoralism is a more sustainable, a more ecologically and economically rational form of livelihood than any alternative that has yet been seriously offered to people living in very arid environments, pastoralist peoples deserve policy and programming that, at the very least, does not make life in the harshest and most marginal of conditions even more difficult. The alternative, it is argued here, is for policy and development programming to focus on the resilience of pastoralist systems and to be informed by resilience thinking.

In recent years, the relevance of resilience thinking has been firmly established in the interdisciplinary field of development and environmental change by providing a set of concepts that have proven useful for making sense of the complexity of ecosystems and of coupled social-ecological systems. *Resilience* is the capacity of a social-ecological system "to tolerate disturbance without collapsing into a qualitatively different state that is controlled by a different set of processes" (Resilience Alliance 2008). This capacity can also be conceived of "as the ability of the system to maintain its identity in the face of internal change and external shocks and disturbances" (Cumming et al. 2005:976). Among the concepts that are central to resilience thinking is the notion that neither the ecological system nor the social system can be adequately understood without understanding the linkages between the two, and that essentially they function together as a *social-ecological system* (Berkes and Folke 1998; Folke 2006). Social-ecological systems, furthermore, exist in complex nested hierarchies that bridge levels—a social-ecological system is made up of smaller systems and is itself part of a larger system (Berkes et al. 2003).

Resilience depends both on elements within the system that provide continuity and memory (biological memory and social memory) and elements that bring novelty and change, and resilience thinking is based, in part, on the assumption that social-ecological systems are complex and seldom, if ever, stable. Rather, social-ecological systems tend to have multiple equilibrium states or stability domains (Gunderson 2000; Gunderson and Holling 2002). Graphically, this can be shown as in Figure 4.1. In this heuristic, the ball represents the system, valleys represent stability domains and arrows represent disturbance. Resilience, then, corresponds to the amount of disturbance needed to push the ball over the edge of one valley into another (Gunderson 2000). Scholarship based on this perspective therefore tends to focus on dynamics within social-ecological systems and on the capacity of these systems to tolerate disturbance.

The resilience perspective brings attention to threshold effects in complex systems. One or more controlling variables in a system can fluctuate within a certain range without

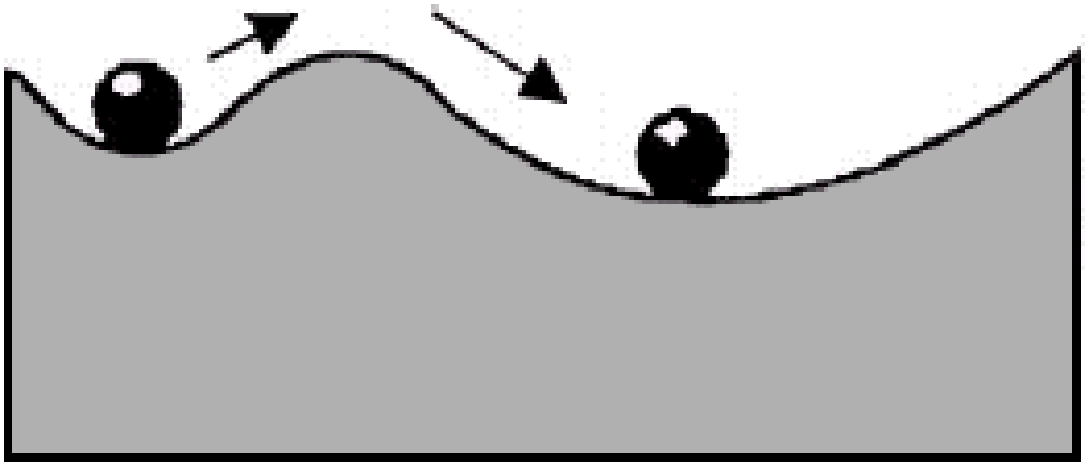


Figure 4.1: Stability domains

The ball represents the system, valleys represent stability domains, and arrows represent disturbances. Resilience is the amount of disturbance needed to push the ball over the edge of one valley into another and corresponds to the width of the valleys. Adapted from Gunderson (2000). Used with permission (June 11, 2009) from the *Annual Reviews* of Ecology, Evolution and Systematics, v.31, 2000 © by Annual Reviews www.annualreviews.org, and from the author (June 15, 2009).

producing profound effects on the system as a whole, but change in that variable beyond a certain point can produce a regime shift—a shift from one basin of attraction to another (Walker and Meyers 2004). In Figure 4.1, the threshold corresponds to the highest point between the two valleys. Alternatively, one can conceive of thresholds for various elements of the system, such that a shift to another stability domain may not occur until several system elements have passed their thresholds (Cumming et al. 2005).

These features of the resilience perspective make it an ideal starting point for studying that all-important imperative for pastoralist societies—the capacity to withstand shocks and stresses. A stress can be conceived of as continuous or slowly increasing pressure commonly within the range of normal variability. A shock or perturbation, on the other hand, is a major spike in pressure beyond the normal range of variability in which the system operates (Turner et al. 2003). For example, dryland pastoralist societies, for whom climate influences so much of their institutions, their practices, and their day-to-day lives and whose practices in turn have important impacts on the biophysical environment, provide an excellent example of coupled social-ecological systems. The matter of scale and relationships between levels is also important to understanding dynamics within pastoralist systems. And dryland pastoralist systems, characterized by constantly changing cycles of range conditions and livestock numbers, great uncertainty and variability in climate, and flexibility of livelihood and decision-making systems in order to deal with this uncertainty and variability, compel an approach to analysis that puts dynamics front and centre. The resilience perspective provides some of the conceptual tools that are needed—tools for making sense of social-ecological linkages, of dynamics, and of questions of scale.

While resilience thinking has been applied to rangeland ecosystems (e.g., Carpenter et al. 2001; Walker and Abel 2002), the resilience literature has yet to give much attention to pastoralism and particularly to the social elements of pastoralist social-ecological systems. The scholarship that sees pastoralism in terms of non-equilibrium systems and that draws on the "new rangeland ecology" (e.g., Behnke et al. 1993; Scoones 1995; Scoones 2004) is certainly compatible with a resilience-based approach but tends not to

draw on the resilience literature. However, an example of scholarship on pastoralists that is based more directly on resilience thinking is an overview of Sahelian pastoralist systems by Niamir-Fuller (1998), who suggests a number of mechanisms that tend to contribute to resilience in pastoralist systems (see Table 4.1). These various mechanisms work in synergy with each other. For example, a reduction in dispersion (dispersion of the group across space and dispersion of the resources that the group normally uses) can result in reduction in mobility, fewer incentives for monitoring, and loss of drought-adapted strategies such as group herding (Niamir-Fuller 1998). Another pastoralist strategy that contributes to resilience is management of key sites such as drought reserve pastures (Niamir-Fuller 1998). This strategy also depends on several of the mechanisms identified in Table 4.1: mobility, diversity of pasture classifications and movement patterns, local enforcement, and is itself a drought adaptation strategy.

While resilience thinking provides a powerful framework for understanding and describing the dynamics of social-ecological systems, as a multidimensional, emergent characteristic of complex systems, resilience cannot be measured directly except after a disturbance has caused a threshold to be crossed. In addition, it can be difficult to apply the abstract concept of stability domains to real world situations, to know where the

Table 4.1: Social-ecological mechanisms for resilience in pastoralist systems

mobility	decentralization
dispersion	nested rights
diversity	flexible rules
tracking	local enforcement
multiple-use	monitoring
negotiation	scouting
reciprocity	drought adaptation
flexibility	

Adapted from Niamir-Fuller (1998). Used with permission from Cambridge University Press (blanket permission: www.cambridge.org/uk/information/rights/permission.htm).

threshold between two different stability domains lies, or even to know what feasible stability domains exist for a given system. For these reasons, defining and measuring resilience for a particular system can be problematic (Bennett et al. 2005; Carpenter et al. 2005; Cumming et al. 2005).

An alternative to measuring resilience directly is to measure attributes of systems that are related to resilience—surrogates (Bennett et al. 2005; Carpenter et al. 2005). One approach to determining and measuring surrogates, offered by Cumming and co-authors (2005), is to focus on the identity of the system in question—the elements that make the system what it is—and to measure these. These elements are grouped into four categories: the components of the systems, the relationships between the components, sources of innovation, and sources of continuity. *Components* are the "pieces of the system", the human and non-human actors; *relationships* are the ways the components interact and fit together; *innovation* refers to the elements of the system that generate change or novelty; and *continuity* refers to elements of the system that embody memory and enable the system to maintain itself as a cohesive entity. The idea of this approach is that over time, many aspects of a system may change, but the essential attributes that make the system what it is must be maintained if the system is to be considered resilient. Cumming and co-authors (2005) give an example of a ranching system. Replacing sheep with goats could be seen as an innovation that entails some reorganization, but no loss of system identity; on the other hand, loss of livestock or ranchers from the system, or of a harvesting relationship between them, would represent a loss of identity. This approach also helps clarify the distinction between what is considered the system itself and what are drivers impacting on the system (Cumming et al. 2005). Drivers can be defined as any factors, natural or human-induced, that directly or indirectly causes a change in a social-ecological system (Millennium Ecosystem Assessment 2003).

Delineating system identity in this way provides a framework for developing an analytical description of a social-ecological system and its resilience. It allows us to deconstruct the system, and thereby helps to answer the question “resilience of what to what?” (e.g., Carpenter et al. 2001; Walker et al. 2002). The discussion below combines the analytical system identity approach with a more holistic approach of using influence

diagrams to get a picture of a particular social-ecological system and its dynamics and cycles. Thus, this chapter takes an iterative approach that moves back and forth between analysis and synthesis.

4.2 Findings: Gabra Livelihoods and Key Factors Influencing Them

4.2.1 Livelihoods, and Shocks and Stresses

In any analytical approach based on resilience thinking, including an approach that involves developing a description of the identity of the system, an implicit early step is to consider just what constitutes the system in question (or, in the case of multiple levels, the nested *set of systems* in question). Social-ecological systems can be defined according to watershed boundaries, ecosystem boundaries, political or other kinds of social boundaries, or combinations thereof, but which of these kinds of features are used to demarcate a system for analytical purposes involves an element of subjectivity. Stakeholders collectively, or in this case a researcher individually, must decide what properties are of interest—what the system is whose resilience they wish to assess (Cumming et al. 2005). Making this delineation depends in particular on the kinds of questions being asked (Waltner-Toews 2004). In this case, the primary interest of this research centres on those aspects of the social-ecological environment that allow the people living with that environment to create their livelihoods. Many of the most important institutions involved in the construction of livelihoods among the Gabra are *Gabra* institutions. That is to say, they are culturally defined rather than having been designed by the state. Furthermore, there are many aspects of decision-making, interaction, and management of resources that are connected to Gabra identity and to traditional Gabra institutions. Thus, for the purposes of this research, an important scale of the nested social-ecological system can be defined according to the territory in which the Gabra normally live and move. I refer to this as the Gabra social-ecological system. It is these institutions and patterns of nomadic mobility, and the linkages that they create, more so than a sense of collective ethnic identity *per se*, that make this kind of delineation appropriate.

The twenty-one "shocks and stresses" interviews (see Section 2.3) in the three sub-case areas were particularly relevant to this stage of the research. Nevertheless, many other interviews and group discussions done at the community level, while not focusing on the respondents' own livelihoods nevertheless yielded important information. Relevant data for this first step towards describing the social-ecological system also included influence diagrams (see Section 2.3) that were done in group settings with elders of Yaa Sharbana (near Balesa) and elders of a nomadic camp near Kalacha.

The importance of livestock to livelihoods in these communities cannot be overstated. There were no respondents in the shocks and stresses interviews who did not own livestock, even those few who either had paid employment or who owned a shop in town. And discounting relief food, sixteen of the twenty-one respondents, including six living in permanent settlements and all ten living in nomadic camps, said that livestock was the *only* source of their livelihood. Only two of twenty-one households had a household member or other family member with wage employment providing cash income to the family. Four households were engaged in some kind of trade, either petty trade or running a small shop. Livestock, as well as being the main source of livelihood, is also the primary form of savings, and those respondents who relied only on livestock for their livelihoods also relied only on livestock as their principal form of savings.

> "Even fifty years from now we are going to be pastoralists. Livestock is our farm. In the highlands they farm, but our farm is livestock."
>
> - A youth from Kalacha

The two shocks and stresses that were most commonly mentioned were drought and livestock theft. Essentially, everyone who owns livestock is affected by recurring droughts, which, according to the vast majority of respondents, are becoming increasingly severe. The 2005-2006 drought left many people without a single animal. Livestock theft is an inter-ethnic problem; large-scale livestock theft between groups of Gabra is unheard of. A third drain on livelihoods is livestock diseases, but this was mentioned by only a small number of respondents and fewer still complained of it being a serious problem.

> "It is true that we are experiencing very long periods of drought. But worst of all this time we have drought and raids at the same time. And I blame this on human beings, especially the drought. Because of our love of killing each other and spilling blood, God in a way has sent drought as a punishment."
>
> - A man from an olla near Kalacha

A slower moving stress results from depletion of pastures around permanent settlements. Among Gabra elders who were interviewed, two principal reasons were cited as causes for the poor state of pastures around settlements: over-concentration of livestock/overgrazing, and the general decline in rainfall. There were varying opinions among the respondents as to the relative weight of these two factors, but those living in nomadic camps tended to put more blame on sedentarization and concentration of livestock around towns than did those living in the settlements (see Box 4.1). The poor state of pastures around permanent settlements, most of which are situated at the site of permanent water, affects all pastoralists, not only those people who have settled. During the dry season and droughts, people and their herds congregate around reliable water sources, but as forage becomes less and less available in these areas, the dry season and droughts become more and more stressful. As one elder of Yaa Sharbana said, "These days … where there is water there is settlement and there is no pasture, and where there is pasture there is no water."

4.2.2 Preparation, Coping, Recovery and Adaptation

The Gabra are accustomed to having the size of their herds go up and down, and although they have traditions and practices that help protect against loss, death of livestock on a large scale is not unheard of. The most infamous example from Gabra history occurred in 1889 when rinderpest decimated cattle herds (Robinson 1985). But such occurrences are not confined to distant history: during the drought of 2005-2006, great numbers of animal carcases marked the long trails between permanent water and the remaining dry pastures. Many respondents expressed the idea that droughts originate from God and are unavoidable. As one respondent said, "Who brought drought? God. So we have no control of it. Raids are another problem. Who brought it? People brought raids. So we might be able to control it." But even livestock theft, which is within the purview of human control, is nevertheless seen as part of the normal course of life. More important-

Box 4.1: Views on the state of pasture resources near to settlements

"The problem with pasture around this place is brought about by lack of rain, the short period of rain. Why do people have their homes around here? It's because people don't have enough means of transport to shift their houses to far away. At the same time there aren't many animals around here. The problem is lack of transport. Do you see many animals around here? Even the remaining herds have gone so far around the shores of Lake Turkana…. As for overstocking, the issue is not relevant. I can even prove it to you. We can go to Afkaba, and I will show you. We can drive around for 60km. without seeing herds."

- A man from a nomadic camp near Kalacha

"Already there are people at Bagaga. If there is more water, there will be more people there, obviously. But even if the number of people increase, as far as there is no extended drought, the pasture will not get finished. The main problem will be if there is extended drought, not the number of people."

- An elder of Yaa Gara

"These days, the best pastures are available where there is no water. So where there is water there is settlement and there is no pasture, and where there is pasture there is no water. People can go where there is rain and pasture and animals drink rainwater. But in the dry season they come back to the water points. And that is where people settle. So there is overpopulation around the water points and overstocking."

- An elder of Yaa Sharbana

"There is overpopulation. The majority of the ollas [nomadic camps] stay around here for quite a long period. So we don't expect any buyo [one of the most preferred plants]. We see other kinds of shrubs growing, but not buyo. With so many people there are too many animals, so we don't expect buyo around here…. That overstocking and overgrazing affects the buyo, when there is no rain. When there is a little rain. It won't disappear completely. When the rain comes it will be there. When there is no rain and overstocking it can reduce. But if there is rain, after a period of some years or months, it will grow."

- A man from Balesa

Q.: I understand that people used to move more than they do today. Is this a problem for pasture?
One elder: "It will affect pasture around water because they are not moving away. And the settlement is more permanent now than it was before. And that will affect pasture and water."
Another elder: "The main reason [for depletion of pasture] is not enough rain in the rainy season. Secondly, there are more people in the permanent settlements. They don't have enough loading camels to go and move around so they usually stay around the water point. This has a great effect on the pasture available around the water point.

- From a focus group with elders of Yaa Algana

Box 4.1 (continued)

"You cannot find good pastures around town. Even in town there is now less rainfall. But overgrazing does not cause permanent damage. If it rains again, pastures can regrow."

- A man from a nomadic camp near Balesa

"Now [after the construction of sand dams] the water has increased. In the past, during the dry season, animals used to be sent far. Only people were left behind. Now the number of animals that even stay through the dry season is high. This has reduced pasture. Pasture has been pushed away from the permanent settlement. Even in front the houses in those days when there was shortage of water, there were grasses. Now pasture is not enough even during the rainy season."

- A man from Balesa

ly, the vast majority of respondents reported that in recent years both have become more frequent and more severe (see Box 4.2).

The central strategy for dealing with these shocks and stresses, simply stated, is to maximize herd size when rainfall is good, minimize losses during droughts, and rebuild herds after losses. Based on the shocks and stresses interviews, other community-level interviews, and influence diagrams done with elders, the mechanisms and strategies for dealing with shocks and stresses that emerged as most important are summarized in Table 4.2. They are broadly consistent with coping and recovery strategies that have been identified by other researchers who have studied the Gabra and other pastoralist groups in northern Kenya (e.g., Torry 1973; Robinson 1985; McPeak and Barrett 2001; Olukoye et al. 2001; Kassam and Ganya 2004; McPeak 2005). In the table, these mechanisms and strategies have been classified according to their primary function in relation to shocks and stresses: preparation for, coping with, recovery from, and adaptation to shocks and stresses.

The central strategy of Gabra pastoralists—maximizing herd size when rainfall is good, minimizing losses during droughts, and rebuilding herds after losses—has three main facets: mobility, herd splitting, and animal care. The first facet mentioned by respondents was mobility. This confirms the findings of earlier authors (e.g., Robinson

Box 4.2: Drought and conflict/livestock theft have become more common

"Drought was there before, but only once in a while. Now a whole year becomes a drought. It used to be only a season. An example is last year's drought year. It used to be that after drought it would rain then there would be enough pasture and then it would rain regularly. This time it only rained a little and the drought continued…. Saturday years and Wednesday years usually have drought but not every one. But now every Saturday year and every Wednesday year is a drought."

- A man from Kalacha

"For close to 24 years we've been seeing big changes. Drought periods last longer. The rains are short. Also, around water points, there was enough pasture previously. But not now. In the past, droughts were not close together. Only after some years would another drought come. For the past twenty years it's been a lot of drought, drought, drought."

- A man from Kalacha

"In the past, Gabra will even replace human beings lost from a family. We would give livestock to our brother who lost his livestock. But now the magnitude of these disasters is greater. Both raids and droughts are common everywhere."

- A man from a nomadic camp near Kalacha

"It is true that we are experiencing very long periods of drought. But worst of all this time we have drought and raids at the same time. And I blame this on human beings, especially the drought. Because of our love of killing each other and spilling blood, God in a way has sent drought as a punishment…. Gabra we used graze and stay peacefully in Gorrai, Magado and around there. But now there is this conflict. And a good person might say, let's settle this war. But then there is another one who is saying how can we act peaceful with those people who have been killing us. So when we are not reaching this level [of peace] there will be no rain and it will continue."

- A man from Kalacha

"[In the past] there wasn't this conflict. At that time in the drought we would even go into Ethiopia. These places now, there is fear of attack. Now even in Hurri Hills we fear. Places that we used to go to don't go…. One thing is that drought period is extending. And also the places we used to go to during drought like in Ethiopia, now aren't accessible."

- A man from a nomadic camp near Kalacha

1985; Ganya et al. 2004; Haro et al. 2005) who have emphasized the importance of diversity and flexibility of movement for the Gabra. Mobility takes many forms, as testified to by the numerous terms in the local language denoting particular types of herd

Table 4.2: Mechanisms and strategies for dealing with shocks and stresses among the Gabra

Mechanism/Strategy	Actor	Primary Function			
		Preparation for shocks & stresses	Coping with shocks & stresses	Recovery from shocks & stresses	Adaptation to shocks & stresses
Mobility	HHs	XX	XX	XX	
Taking care of one's animals	HHs	XX	XX	XX	
Herd splitting	HHs	X	X		
Selling and slaughtering livestock	HHs	x	XX		
Emergency water tankering	NGOs, government		XX		
Traditional stock sharing and restocking mechanisms	Inter-HH, miilo/ balbala			XX	
NGO/relief agency restocking programs	NGOs			X	
Development of new water points, improve-ments to existing water points	NGOs				XX
Diversifying livelihoods	HHs				x

HH = household, Actor = primary actor executing this mechanism or strategy, x = practised by or important to very few households, X = practised by or important to *many* households, XX = practised by or important to *most* households.

movement. *Qayath* is the movement of a herd to rainy season pastures, and is the essence of pastoralist response to a highly variable rainfall regime; *kunn* is the movement back to permanent water sources in the dry season; and *foora* is opportunistic movement of the dry herd, that part of the herd that is not needed for the household's daily milk consumption (Ganya et al. 2004). *Gargalfachitii* is the short distance movement of the camp to prevent tick infestation (Kassam and Ganya 2004). The second facet that respondents emphasized—dividing herds—involves not only dividing the milk herd from

the *foora* herd, but also, if the livestock holdings are large enough, breaking the herd into separate units, usually based on livestock species, so that each species can be taken to the ideal locations for that species. This applies not only to Gabra still living the nomadic life, but to town dwellers also. A number of respondents living in permanent settlements reported that they will often send one or two of the men of the household to distant pastures with part of the herd. Herd splitting also helps to ensure that not all of a family's "eggs are in one basket", because those who have been able to spread their livestock to various locations are less likely to suffer devastating losses from droughts or raids. Both mobility and herd splitting are undertaken in service of the primary livelihood strategy: in other words, when times are good, move animals to places that best serve their growth and reproduction (preparation); during droughts, moving animals to where they have the best chance of survival (coping); and after droughts (or other shocks or stresses) try to rebuild the herd as quickly as possible (recovery). "Taking care of one's animals" represents the third aspect of this which respondents emphasized: taking necessary steps to ensure animal nutrition and health and thus maximize reproduction and milk production, and minimize health-related losses.

As shown in Table 4.2, other mechanisms and strategies that come into play once a drought hits include slaughtering and selling livestock, and in recent droughts, emergency water tankering. Livestock that are slaughtered can be eaten directly by members of the household and the entire nomadic camp, or can be sold in the towns. It should be noted, though, that the livestock market in Gabra towns is not well integrated with larger livestock markets in Marsabit and nationwide. Furthermore, for most respondents, selling animals—whether in Gabra towns or transporting them to Marsabit—is not something that is done regularly. In "normal" times most people only sell livestock in small numbers using the cash to buy basic supplies. The option of selling and slaughtering animals always has to be balanced against the imperative of maximizing herd size.

> "When disasters like that come, only God knows what will come. People can't know, so there's no need for preparation. But people with big herds may sell some animals before the drought comes. But this isn't common with everyone. I only had about 100 so I couldn't sell."
>
> - A man from an olla near Kalacha

Only a few respondents sold livestock in large numbers as a way of avoiding drought-induced losses. Instead, most admitted that they wait too long until a drought is in full force and the market is already glutted with weak and starving animals before trying to sell any. The other coping mechanism that has operated in recent droughts, water tankering, is carried out by NGOs and relief agencies. PISP, for example, which has engaged in emergency water tankering since its inception in 1996, will mostly target underused dry season pasture areas that do not have permanent water sources, allowing livestock owners to keep their herds where forage is available instead of having to move them to the denuded zones around the permanent wells and springs in places such as Maikona, Kalacha and North Horr. Several respondents emphasized the importance of this intervention.

> "Had it not been for that program of water tankering when they were bringing water here, even human beings would not have survived."
>
> - A man from Balesa speaking about PISP's activities during the previous drought

Mechanisms and strategies for recovery all revolve around rebuilding herds. Mobility and traditional stock sharing mechanism have already been mentioned. Stock sharing, as well as distributing risk and strengthening social bonds in-between droughts, also helps people who have been devastated by droughts and/or raids to get some animals in order to start rebuilding their herds. Traditional stock sharing, like mobility, takes many forms, both as loans and gifts. *Kalassime*, for example, is a loan of a lactating sheep or goat with a lamb or kid. Eventually, the mother is returned, but the ownership of the lamb/kid transfers permanently. *Dabaree* typically refers to the loan of a camel. Animals are also exchanged in conjunction with certain ceremonies such as marriage. In addition there is also a traditional form of restocking known as *irb*. This can take the form of individuals deciding to respond to the direct appeal from a friend or family member who has lost animals, or can be a collective endeavour decided by the elders of one lineage assembled in a traditional *korra* meeting, or occasionally by one of the Yaa councils. Almost all respondents who were asked about *irb* had participated, either as givers or receivers. Another source of restocking has been restocking programs carried out by the Red Cross and NGOs such as PISP. PISP's restocking efforts have included the provision of sheep,

goats, loading camels, and, most unusually, female camels. The scope of these restocking programs is relatively small, but can nevertheless be important to those who have lost all their livestock.

New adaptations in this system are as yet quite limited and fall into two categories: diversification of livelihoods, and the development of new types of water points and of water points in new locations. Those who are able to diversify their livelihoods do so by engaging in paid employment and petty commerce in the permanent settlements, or in horticulture. Opportunities for the latter are quite limited: there is some gardening in the vicinity of the spring in Kalacha, but the water has a high mica content, and some people farm in Hurri Hills where precipitation is greater, but soils there are poor. In any case, as alluded to above, such diversification characterizes few households—most people still earn their livelihood only from livestock. The other new element that is seen, being led by NGOs, is the creation of new water points—most importantly strategically-located water points that open up under-used pastures. The aim of this strategy is to take the pressure off the permanent water points and the pastures around them.

4.2.3 Institutions

Several features of the institutional environment influence the way in which these mechanisms and strategies for dealing with shocks and stresses are carried out (Table 4.3 summarizes some key features of the Gabra institutional environment). Institutions involved in governing commons and in making collective decisions are particularly important. Commons institutions exist to govern trees, pasture and water. At sacred sites and in the vicinity of water points there are rules about cutting trees and branches. For example, in the vicinity of Kalacha, branches of certain trees are to be cut only on one particular day of the week. Respondents in Kalacha stated that some years back these traditional rules were beginning to fall by the wayside, but that now they have been revived and are being enforced by the recently created Environmental Management Committee. Other settlements and permanent water points have similar rules. Recently, some settlements such as Balesa and Kalacha have also adopted rules governing milk herds and *foora* (dry) herds: within walking distance of the settlement and its water

Table 4.3: Some of the key features of the Gabra institutional environment

Biophysical Context: extreme variability in rainfall and pasture resources across time and space

Standing Institutions: institutionalized positions and corporate institutions

- Yaa councils, one for each of the five Gabra phratries (groups of clans)
- Herega (well council)
- Abba herega (head of the herega, lit. "father of the watering rotation")
- Abba ela (lit. "father of the well")
- Water Users Associations governing boreholes

Rules, Norms and Understandings Regarding the Use of Natural Resources

WATER:

- Herega (rotation system) governing access to wells and to water in some pans and rock catchments
- Norms for accessing wells and some other water points and for receiving a slot in the herega
- Wells that are nominally "owned" by the abba ela, but held in trust for his clan
- Detailed rules about what activities are permitted at and near wells
- A degree of openness or rigidity in access to shallow wells that varies with livestock population and water availability
- Access to springs is more relaxed as supply typically exceeds demand. However, in recent years committees have been emerging regarding the apportionment of spring water for horticulture.

TERRITORY AND PASTURE

- Rules regarding sacred sites
- Rules regarding where foora (dry) herds may be grazed
- Exclusion of outsiders from the core of Gabra territory
- Generally, however, there are few restrictions on the use of pasture
- Most territorial boundaries are ill-defined

OTHER NATURAL RESOURCES

- Rules regarding sacred sites
- Rules limiting the cutting of trees and branches in particular locations

The Role of "Communities"

- There are several levels of "community"
- There is flexibility in how the competing claims of these "communities" are handled

points only animals in the milk herd should be grazed, whereas male animals, unproductive females, and productive females beyond the number that the household needs for its daily milk consumption are to be put in foora herds and kept on more distant pastures. Despite such controls on grazing around settlements, generally respondents confirmed findings from earlier researchers (e.g., McPeak 2003; McPeak 2005) which suggest that Gabra livestock owners enjoy essentially unrestricted access to pasture throughout Gabraland.

For the most part, Gabra pastoralists do not see the need for strict controls on use of pasture. An elder of one of the five *Yaa* went so far as to say that it would be "very shameful" for a Gabra to tell any other Gabra that they cannot use a particular pasture or that his livestock numbers should be limited (see Box 4.3). This is in part because most Gabra pastoralists do not believe that livestock numbers play a prominent role in determining the long-term condition of pastures. It is recognized that livestock can deplete pasture, for example, when large numbers are concentrated around a particular water point, but most Gabra do not believe that overgrazing can cause permanent degradation. Rather, it is rainfall that is believed to be the primary determinant of pasture conditions, both in the short and long term. This issue was directly discussed in thirty interviews with Gabra respondents and no more than a handful of respondents even hinted at the possibility of long-term degradation. Of these thirty respondents, most saw the benefit and necessity of having some kinds of controls on grazing around settlements and permanent water such as the foora rules mentioned above, but this seems to be the extent of what most Gabra feel is necessary.

Rather, as observed by Robinson (1985), it is water that is more tightly regulated in the traditional system, and access to water is the main factor limiting accessing to pasture. Shallow, hand-dug wells, for example, are governed by numerous rules and norms. The person who digs a well (with the help of physical labour on the part of friends and fellow clan members) is the *abba ela*, literally "father of the well". Although Gabra refer to the *abba ela* as the owner of his well, he is essentially a trustee, caring for the well on behalf of his clan. Wells and other water sources like rock catchments may also have a *herega*.

Box 4.3: Restrictions on use of pasture are minimal

"You can't tell people where to go, where to take their animals, where to get their water. You can't do that."

- An elder of Yaa Gara

"Some people are just focussed on their animals, not the future of the grass and so on. As long as there is water, some owners won't agree to send away their animals."

- A participant in a meeting in Hurri Hills

"As a Gabra it is very difficult to say that certain animals or a given number of animals can come here and graze or even have access to water. It would be very shameful. Even animals come from far away, from North Horr or further, so we can't say go away.… You should not even worry about pasture—it is enough. There is no reason to restrict on pasture. This place is a big place for pasture. People can come with their herds from Hurri Hills or further. This place can sustain a bigger population of livestock, provided there is water. But as to your question about pasture, it's true, if the population becomes too much, pasture can degrade. But there's no option. Other places, like Kalacha, don't have pasture so they come here. Otherwise, it would have been a good idea to control. Gabra is one and it is difficult to make these kinds of decisions."

- An elder of Yaa Galbo

The term *herega* refers to both the schedule of turns for bringing livestock to the water source, and to the body of elders who oversee the schedule. For shallow wells, these groups are formed on a clan basis, so that if a certain clan has, say, six wells at a certain location then it will have one herega at that location to manage access.

Gabra respondents explained that when a newcomer arrives in the area and requires water for his herd, he will typically ask permission from an *abba herega*. On one occasion I witnessed this firsthand, when an interview with an *abba herega* was interrupted by someone who had just arrived at the settlement and who came asking permission to water his livestock. The abba herega will call all the elders for all the herega of the various wells in the area and then the newcomer can be assigned a time slot at a particular well (see Box 4.4). Gabra respondents explained that permission to use a well will seldom be denied initially, but if a large number of livestock are already using the well, the

newcomer may be given water once but not given a regular turn in the rotation and then politely asked to find another water source. The *abba ela* is one of the members of the *herega*, and does enjoy certain rights regarding "his" well. For example, he usually is given the first morning slot in the watering rotation and hence does not need to spend any time waiting in a queue for others to finish watering. Ultimately, however, it is the *herega* as a whole that determines watering turns. One *abba ela* whom I interviewed went so far as to say that, depending upon circumstances, the *abba ela* may not even get a slot at his own well. While this kind of situation may be rare, it does highlight how rights to wells are distributed among the *herega*, the *abba ela*, and the clan.

Box 4.4: Newcomers securing access to a well from the herega

Q.: Does an abba herega coordinate several wells? All wells? The wells of one clan? How does that work?

A.: I am an ule [the name of his clan]. For our six wells there are two abba herega. The abba herega manages only the six wells. They are grouped by balbala [clans].

Q.: When the abba herega calls the elders, does he call all of them, or just those from his own balbala?

A.: The newcomer will come to a certain abba herega. But then the abba herega calls all the elders from all wells. Because the newcomer needs water, not necessarily from the well of that clan.

Q.: If a newcomer has already come, from then on is he included? I mean, is it that once you are there at a place you are included in the herega?

A.: The newcomer becomes a person of this place now. So from then on, he is also called.

- From an interview with an abba ela in Balesa

Another important feature of the Gabra institutional environment is an intricate set of nested decision-making institutions, and lines of authority which, like territorial boundaries, are fuzzy, with different levels and scales of "communities" making competing claims on the same resources (Haro et al. 2005). Decision-making institutions include both permanent bodies and traditional *korra* meetings that are held for various purposes at various levels of social organization. Korra can be held very frequently, such as for planning movements or organizing rituals, but can also be organized on an ad hoc

basis as the need to discuss particular matters of community interest arises (see Chapter Six for a more detailed discussion of decision-making and korra meetings).

In these various institutions involved in governing commons and in collective decision-making, one can see reflected the imperative for diversity and flexibility of movement. As noted by Haro and co-authors (2005), flexibility of nomadic movement functions without any strong emphasis in the culture on territorial boundaries. For example, while each of the five *Yaa*, the ritual nomadic camp for the traditional council of each of the five Gabra phratries (groups of clans), has defined frontiers that it does not cross, these frontiers do not constrain the movements of members of phratry at large. Furthermore, particular groups are generally not associated with territories defined by boundaries, but rather with some specific location (Haro et al. 2005).

4.2.4 Influence Diagrams

In order to understand the system *as a system*, one research technique that was particularly useful was developing influence diagrams in focus group sessions. Three of these were done during the course of the research. The starting point for the two of these diagrams that are discussed here was the question, "What are the factors that affect herd size and influence how you are able to rebuild your herds?" A third influence diagram that was done did not revolve around rebuilding herds but around the construction of two new water points in Hurri Hills, and it is not discussed here. Essentially, the influence diagrams attempt to show the most important causal factors at play in the issue being addressed. These factors are represented as positive and negative feedback, indicated by "+" and "-" symbols, respectively. No attempt was made to weight causal factors in the diagram itself, although which factors were identified as more or less important is discussed in the text below. Each of the two influence diagrams discussed here were done with a group of men—in one case a group of men in a nomadic camp near the town of Kalacha, and in the other case with elders of Yaa Sharbana, the traditional council for the Sharbana phratry, which at the time of the research was located about twenty-five kilometres from the settlement of Balesa.

In producing Figure 4.2a, elders of an olla that at the time of the research was situated near the town of Kalacha identified five main factors directly impacting on whether and to what extent someone is able to rebuild their herd: raiding other ethnic groups to replace livestock, taking good care of animals, receiving animals as gifts and loans from family and well-wishers, livestock diseases, and the condition of pastures. Livestock disease, as a factor that inhibits the rebuilding of herds, is shown with a "-" symbol; the other four, as factors that contribute to the rebuilding of herds are shown with "+" symbols.

According to the participants in this discussion, it is rainfall that is by far the major factor influencing the availability of pasture. The most critical negative influence on rebuilding herds therefore is drought. Following these nodes in the diagram then, drought results in a reduction in rainfall, which in turn means less available pasture, which results in the death of livestock and herd owners being unable to increase the size of their herds. A secondary factor influencing pasture and thereby reproduction and growth of herds is mobility. When herds can be moved without restriction they can be taken to the best pastures, and pastures therefore are not exhausted.

> *Q: This raiding back and forth—on balance, is it positive or negative? Do all of these together—you taking from enemies and enemies taking from you—add more or remove more from your herd?*
> A: "It depends on luck. If you're lucky you can get more, so it's a benefit."
> - A participant in focus group discussion in an olla near Kalacha

With respect to "raiding other ethnic groups to replace livestock", none of the participants claimed to engage in this practice, nor did I ask directly if any of them did. What they said was that some Gabra do raid neighbouring groups to steal livestock and that it is part of how these people rebuild their herds. However, raiding also has a negative effect, leading to revenge attacks, general insecurity, and loss of livestock for other Gabra. Most critical is the loss of loading camels because it means a loss of mobility. Because loss of mobility results in misuse of pasture and potential overgrazing in places where people have settled, the implication is that livestock theft by neighbouring groups, and indirectly the Gabra's own raiding of these groups, contributes to degradation of pasture resources, at least

Figure 4.2: Influence diagrams created by groups of Gabra elders

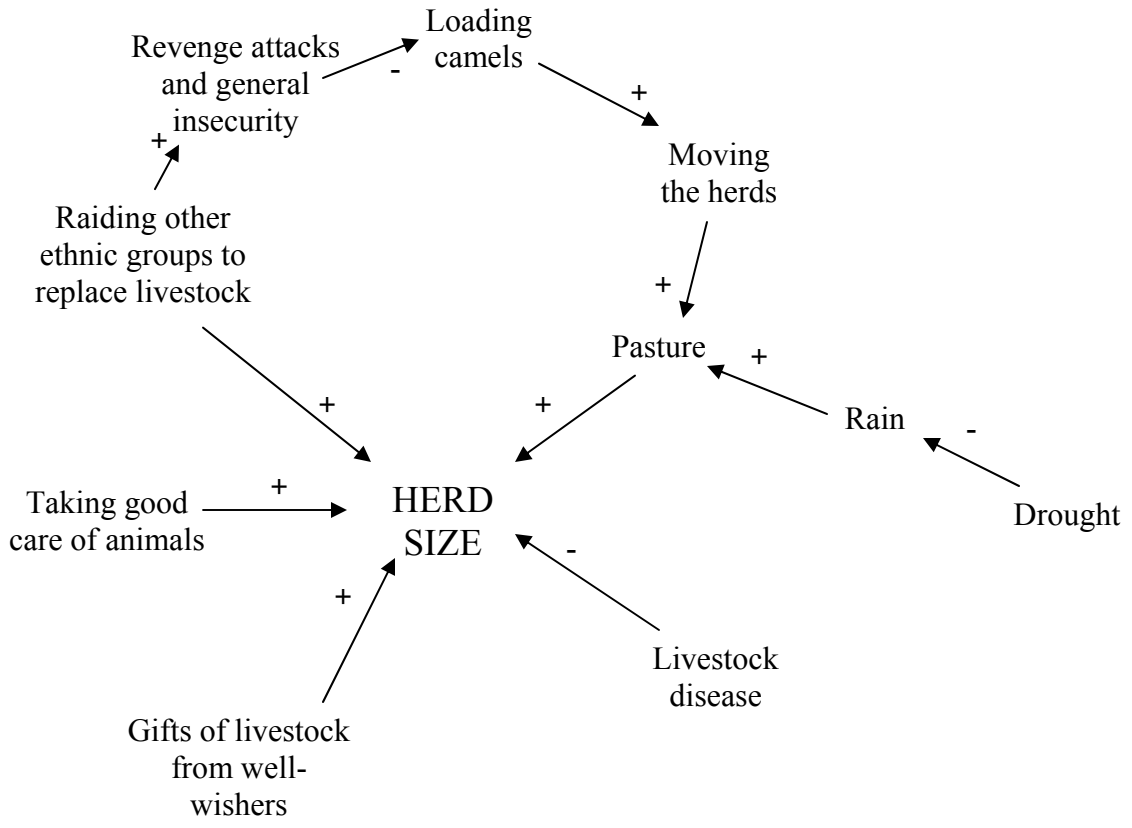


Figure 4.2a: Diagram created at Kuni Gorrai Olla, a nomadic camp which at the time of the research was located near the town of Kalacha

Respondents were asked, "What are the factors that affect herd size and influence how you are able to rebuild your herds?" Causal factors are shown as positive and negative feedback. Contributory factors are shown with a "+" symbol and inhibitory factors are shown with a "-" symbol.

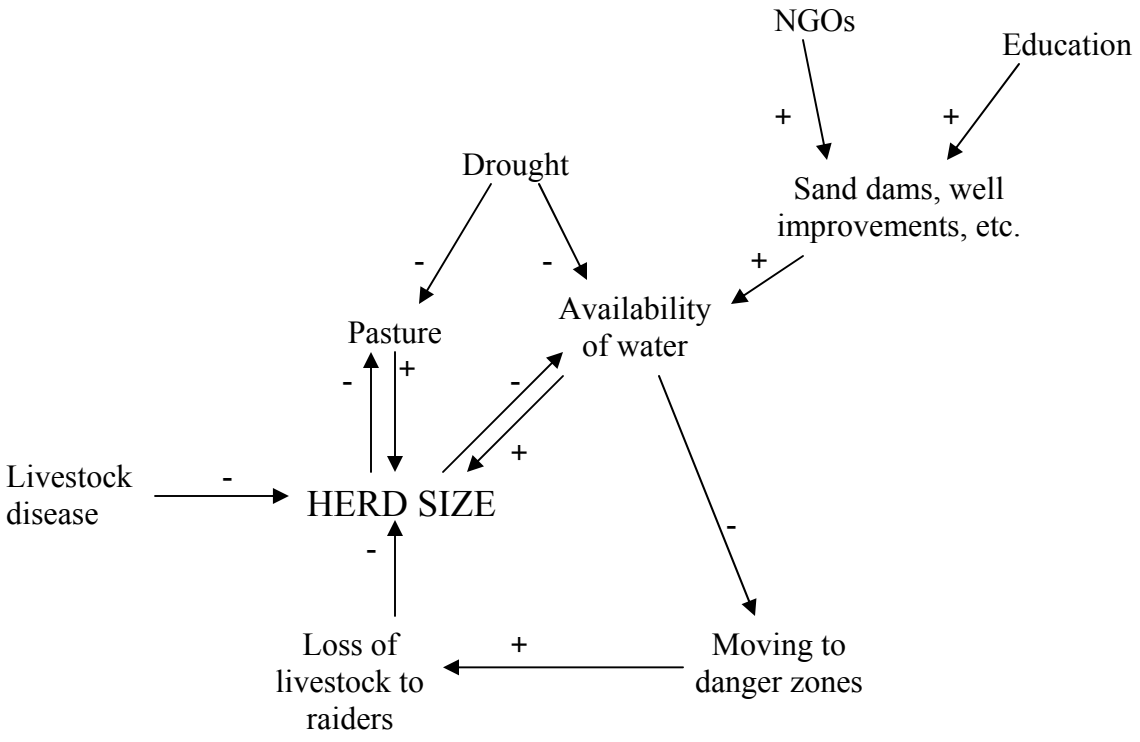


Figure 4.2b: Diagram created at Yaa Sharbana, the camp of the traditional Yaa council of the Sharbana phratry

around the permanent water sources where people have settled. The role of water points was also mentioned during the discussion but was not explicitly included in the diagram.

> "Camels are very important to us. They allow us to move. They also allow us to fetch water. This is water that we drink. It is the water we use for the lambs and kids and for everything. So camels are very important."
>
> - A participant in focus group discussion in an olla near Kalacha

A discussion with a group of elders of Yaa Sharbana, the council of the Sharbana phratry, produced a similar diagram (Figure 4.2b). The main determinants influencing the growth of herds were identified as pasture and water. But a there is also negative feedback as herd sizes grow, with increasing herd size resulting in pastures and non-permanent water sources being exhausted more

> An elder of Yaa Sharbana: "One reason for a herd to reduce greatly is disease. But water, that's the biggest influence."
>
> Another elder: "Raids, that's the biggest influence."

quickly. Nevertheless, the primary negative impact on pasture and water sources was said to be drought, not consumption by growing herds. A set of factors which Yaa Sharbana elders said has improved water availability has been the combination of increasing levels of education and the work of NGOs, which together have led to improvements such as sand dams, wellhead protection and the construction of rainwater harvesting tanks. As a result of sand dams, for example, the wells in Balesa remain productive for much longer than they used to. The availability of water also helps in an indirect way by reducing the need to move to distant pastures where the chances of being raided and having livestock stolen are higher.

4.3 Analysis: System Identity, Thresholds and Visualizing the System

4.3.1 System Identity

The next step in developing an analytical description of the social-ecological system was to describe the identity of the system, using the categories suggested by Cumming and co-authors (2005): components, relationships, innovation and continuity (CRIC). Some of these emerge obviously from the features of the social-ecological system described above, having been explicitly mentioned in interviews and focus group discussions; others have to be deduced. These do not represent all entities and variables that may impact on the system. Nor are all of these elements necessarily desirable. Rather, they are those elements of the system which, if removed, would result in a qualitatively different system. For example, there are a number of institutions such as government-appointed chiefs and elected councillors who can influence decisions but without whom the Gabra social-ecological system would still be the Gabra social-ecological system. For example, there is probably no single grass or forb species that makes the system what it is; on the other hand, one could not imagine the Gabra social-ecological system without pastures, and so the general category of pastures can be considered one of the defining components of the system. Cattle, sheep and goats are lumped together because none of

these species is in itself crucial to system identity. Each type of animal has important characteristics and, from the herder's point of view, strengths and weaknesses, but if any one of those species were to be greatly reduced, our overall description of the SES would still be essentially valid. The same cannot be said of camels: camels are key to Gabra livelihoods and way of life. I suggest the following as a tentative list of the key elements distinguishing the identity of the Gabra social-ecological system (see Table 4.4). A few of the elements are discussed and explained briefly below.

In this description of the identity of the social-ecological system, I suggest the following as the main components: households, the institutions of *Yaa* and *jalaab;* camels; cattle, sheep and goats; water points; and pastures. The primary economic unit for the Gabra is the household, the ibidda. Another important actor is the Yaa council, which I list together with *jalaab*. The jalaab is a particular category of elder who serves as a judge and as a representative of the Yaa among the people. Obviously, livestock are also important components in the system. As already mentioned, camels are listed separately from the other livestock species because of the important and unique functions that they serve as transport animals and for maintaining mobility. The other two components are water points and pastures.

One of the important relationships in the social-ecological system is a traditional institution, the *korra*. Korra are meetings that are held as and when needed at various levels of social organization, from the individual nomadic camp, to the cluster of camps, to an entire *arda* (a local area defined by a permanent water source or some other feature, sometimes a permanent settlement, and including all the camps currently situated there). They are also sometimes organized along descent lines, with korra meetings being held for individual *miilos* (lineages) and, occasionally, for an entire phratry. It is primarily through korra meetings, rather than through any standing institution such as the Yaa councils, that coordination and management of access to pasture and water takes place. It is also through korra meetings that decisions about traditional restocking are usually made. (Korra meetings are discussed in greater detail in Chapter Six, below.)

Table 4.4: The Gabra social-ecological system—elements of system identity (based on framework from Cumming et al., 2005)

System Element	Explanation
Components	
Households	The primary economic unit for the Gabra is the household, the ibidda.
Yaa and jalaab	The Gabra have five Yaa councils, one for each phratry. The jalaab is a particular category of elder who serves as a judge and as a representative of the Yaa among the people.
Camels	Camels are listed separately from the other livestock species because of the important and unique functions that they serve as transport animals and for maintaining mobility
Cattle, sheep and goats	
Water points	
Pastures	
Relationships	
Korra meetings	Korra are meetings that are held as and when needed at various levels of social organization.
Miilo/balbala relationships	Miilo/balbala (lineage/clan) relationships. Wells are, in a sense, owned by clans. In addition it is through these relationships that much of the social capital is organized, and much of the traditional restocking that takes place is within lineages.
Stock friendships, restocking mechanisms	This category of relationships overlaps with previous, as some, but not all, stock friendships and traditional forms restocking takes place along clan and lineage lines.
Local markets	In the Gabra social-ecological system, the selling of livestock plays only a minor function in converting livestock into other forms of capital as a way of avoiding drought-induced losses. However, the small-scale selling of animals is the primary way that most households meet their non-livestock consumption needs.
Commons rules for accessing pasture and water	
Groundwater recharge processes	
Pasture regeneration processes	
Herd mobility	Herd mobility, as well as being an important livelihood activity, embodies a critical relationship between livestock and pastures

Table 4.4 (continued)

System Element	Explanation
Innovation	
Diversity and flexibility of livestock species mix	The livestock that Gabra keep is diverse, including camels, sheep, goats, cattle and donkeys. This diversity of livestock is part of their regular coping strategies and is related to the varying amounts of time that different animals can go without water. Furthermore, different livestock species have differing grazing habits, differing needs for water, and differing levels of tolerance to various stresses. Thus having a mix of species helps the Gabra to respond to and cope with a highly unpredictable climate (Torry 1973; Ganya et al. 2004).
Overlap in decision-making authority	The overlap, flexibility and imprecision of boundaries and decision-making authority seems to be a key source of flexibility and innovation in the social-ecological system.
Boundaries that are imprecise and flexible	
Biodiversity embedded in sacred sites and patchy landscape pattern	The Gabra recognize over 100 sacred sites. Sacred sites, together with a patchy landscape pattern provide for a degree of biodiversity.
Continuity	
Oral history	With the aid of the Gabra's elaborate calendar, many of the oldest men have a good knowledge of Gabra history, and there are also particular elders who specialize in history.
Sacred sites	Genetic memory is maintained in part through the existence of sacred sites, where the cutting of trees and other uses of flora are restricted.
Seed dispersal via livestock mobility	The dispersal of seeds by livestock is an important factor in the maintenance of pasture.

The social-ecological system is described according to four types of elements that comprise its identity. *Components* are the pieces of the system, the human and non-human actors. *Relationships* are the ways that the components interact and fit together. *Innovation* refers to the elements of the system that generate change or novelty. *Continuity* refers to the elements of the system that embody memory and enable the system to maintain itself as a cohesive entity (Cumming et al. 2005).

Other social relationships include *miilo/balbala* (lineage/clan) relationships. For example, wells are, in a sense, owned by clans. In addition it is through these relationships that much of the social capital is organized, and much of the traditional restocking that takes place is within lineages. An overlapping category is the relationships that are created between individuals and households because of stock friendships and all forms of traditional restocking, as some, but not all, stock friendships and traditional forms restocking takes place along clan and lineage lines. One other social relationship is local markets. In the Gabra social-ecological system, the selling of livestock plays only a minor function in converting livestock into other forms of capital as a way of avoiding drought-induced losses. However, the small-scale selling of animals is the primary way that most households meet their non-livestock consumption needs. Biophysical relationships include groundwater recharge processes and pasture regeneration processes. The former was not mentioned explicitly in any interviews done at the community level, but given the importance of wells and springs to the Gabra and given the threats to forests in the highland areas of Mt. Marsabit and Mt. Kulal, biophysical processes by which groundwater is recharged are undoubtedly of critical importance and behove monitoring. One critical aspect of this which a few respondents working in the water sector are very concerned about is the level of afforestation/ deforestation in highland areas.

Two other relationships identified in Table 4.4—herd mobility and rules governing commons—together embody a critical relationship between livestock and pastures. The extreme variability of the climate in which the Gabra live and the resulting nomadic lifestyle mean that the relevant social-ecological system exists in a territory that covers tens of thousands of square kilometres. The need for mobility and to access pastures wherever the rain has fallen produce an imperative for keeping territorial boundaries porous and ill-defined. For those still living the traditional life, the notion of a village and its surrounding territory as a "community" is largely irrelevant. Furthermore, as noted above, most Gabra do not feel that overgrazing can produce lasting damage to the rangeland. This accords with the assertion of the "new rangeland ecology" that in non-equilibrium dryland pastoral systems, it is rainfall patterns that control pasture growth

rather than livestock numbers (Ellis and Swift 1988; Ingo et al. 1996) and that opportunistic stocking levels produce the economically optimum results (Scoones 1995; Behnke and Abel 1996b; Ingo et al. 1996; Sandford and Scoones 2006). That is to say, livestock numbers are regularly reduced by drought before they reach a level where they can exert a negative influence on range conditions. Thus, with limited scope for individual livestock owners to subtract from the welfare of the group as a whole, there is limited need for strict control over how, where or how much any particular livestock owner uses the range. Instead, the Gabra institutional regime reflects the need for flexibility and mobility, and, on the whole, allows individual Gabra to pursue those strategies that allow them to maintain their herds and to contribute to the resilience of the system as a whole.

Among the sources of innovation are overlap and flexibility in decision-making authority and territorial boundaries that are flexible and imprecise. In the past when the Gabra have been faced with major shocks and stresses, such as in the late 1800s, one of the key factors in their adaptability has been the flexibility of their institutions (Robinson 1985). This kind of flexibility manifests itself in a number of ways, including in the nature of territorial boundaries. As noted above, flexibility of nomadic movement functions without any strong emphasis in the culture on territorial boundaries. To the extent that these boundaries even exist, it has also been observed that they are quite flexible over time (Kassam and Ganya 2004). Furthermore, the Gabra, like other ethnic groups in the area, have a nested decision-making structure that lacks very clear lines of authority (Haro et al. 2005). Different scales and levels of "communities" will sometimes make competing claims on the same resource (Haro et al. 2005). The fuzziness and flexibility of boundaries and decision-making authority seems to be a key source of flexibility and innovation in the social-ecological system.

Another feature that contributes to innovation and reorganization is the diversity of livestock species mix. The livestock that Gabra keep is diverse, including camels, sheep, goats, cattle and donkeys. This diversity of livestock is part of their regular coping strategies and is related to the varying amounts of time that different animals can go

without water. Cattle need to be watered every second day and smaller animals can go up to four days without water. Camels are sometimes watered as infrequently as every ten or eleven days which allows them to be grazed as far as 50 km. from a water source (Ganya et al. 2004). Furthermore, different animals have different grazing habits and different levels of tolerance to various stresses, so having a mix of species helps the Gabra to respond to and cope with a highly unpredictable climate (Torry 1973; Ganya et al. 2004). Having a mix of livestock species is important on an ongoing basis from season to season, but can also be crucial during less common, major crises such as the major reorganization of Gabra society that occurred in the late 1800s. At that time, cattle herds were almost completely wiped out by rinderpest and the Gabra shifted their normal range toward the south into the more arid territory that they still occupy to this day. This would not have been possible without sheep and goats, and especially camels (Robinson 1985).

A feature of the social-ecological system that contributes to both innovation and continuity is the sacred site, of which there are more than 100 that the Gabra recognize. For example, the main sacred site of the Galbo phratry is located at Forole, and in the site it is forbidden to hunt or to cut plants or parts of plants. However, the site is visited by large numbers of people on average every seven years for the ceremony of succession of age grades (Ganya et al. 2004). One of the main sacred sites of the Gara phratry, Burarat in Hurri Hills, is governed by similar rules. As explained to me by various elders of Yaa Gara, burning, cutting of trees and sisal, and cultivation and other forms of digging into the earth are prohibited, but grazing is allowed. Sacred sites, together with a patchy landscape pattern provide for a degree of biodiversity. One elder indicated that the various sacred sites in Hurri Hills tend to have a slightly different mix of vegetation and slightly more trees than the surrounding land. Also, genetic memory is maintained in part through the existence of these sacred sites (Ganya et al. 2004). This occasional use of sacred sites functions together with another process—the dispersal of seeds in manure. Each year, shortly after the rains, areas that have been grazed sprout up with varied vegetation (Ganya et al. 2004). The dispersal of seeds by livestock, whether from sacred sites or simply from other areas of the range, is an important factor in the maintenance of

pasture. One other important source of continuity that deserves mention is oral history. With the aid of the elaborate Gabra calendar, many of the oldest men have a good knowledge of Gabra history, and there are also particular elders who specialize in history.

4.3.2 Thresholds for Livestock, Mobility and Grazing Patterns

Cumming and co-authors suggest focusing on the elements of system identity in order to overcome the difficulty of operationalizing the concept of resilience and empirically measuring it in particular cases. Rather than attempting to measure the width and depth of stability domains, for example, one can determine thresholds for the components, relationships, and sources of innovation and continuity that distinguish the system. This section and the next discuss a small set of the various system elements identified above and consider how to conceive of thresholds for these. For the most part, the discussion below stops short of suggesting particular quantitative values for the thresholds. The thresholds discussed can be seen as factors worthy of attention for anyone interested in monitoring the Gabra social-ecological system, or presumably other dryland pastoralist systems. However, before any such thresholds could be operationalized, further work would be needed in order to determine precisely for each threshold what data is feasibly available and in order to define quantitatively where the threshold sits. Some examples of system elements, thresholds and relevant drivers are shown in Table 4.5.

One critical threshold at the household level relates to herd size. Below a certain number of animals, a herd cannot produce sufficient milk, meat and blood to sustain the household. One of the recovery mechanisms identified in Table 4.2 was traditional stock sharing and restocking mechanism. When a single household loses livestock, stock friendships and traditional restocking mechanisms help to return the household to a minimum level. Recently, restocking programs carried out by NGOs and relief agencies have also afforded modest assistance to many households by providing a few animals. In one distribution that took place during my time in the area, recipient households, selected by local elders at a korra meeting, received two camels each. In another case, households received six sheep and/or goats each. However, when the number of households dropping below the threshold is large, the capacity of either traditional or modern

Table 4.5: Selected elements of the Gabra social-ecological system with examples of thresholds and drivers

Selected Elements of the Gabra Social-ecological system	Examples of Thresholds	Examples of Drivers that may Impact the Element
Components		
Cattle, sheep and goats	No. of cattle, sheep and goats/household	Conflict/livestock theft, restocking programs
Camels	No. of camels/household	
Relationships		
Herd mobility	TLUs based in the rainy season within some defined radius from permanent water	Conflict, restocking programs, sedentarization
Pasture regeneration processes	Level of regrowth of plant species a, b and c within some defined radius from permanent water	Sedentarization, climate change
Commons institutions governing access to water	Water points: ratio of no. operated as commons to no. operated as private property	The Water Act 2002, NGO water projects
	Extent to which institutions are able to limit access to wells	Creation of new institutions
Innovation		
Biodiversity embedded in sacred sites and patchy landscape pattern	α diversity of plant species in sacred sites	Climate change, conflict
Continuity		
Sacred sites	Sq. kilometres of land respected as a sacred site.	Conflict

restocking mechanisms to return these households to subsistence levels can be overwhelmed. As one abba olla ("father of the camp") put it, "These days Gabra don't hardly have any animals. So how can we share?" When this happens, those households dropping below the threshold are ejected from the pastoralist economy, at least temporarily. The number of camels that a household possesses is particularly important. Without a minimal number of loading camels, the household is forced to locate itself near a water point rather than locate itself near good pasture and have the camels bring water. And without a minimum number of loading camels, it is no longer possible to transfer the entire household to new locations as pastures are depleted. The typical result is to move to one of the permanent settlements and to rely, at least partially, on relief food, a situation that several people whom I interviewed found themselves in. With the household livestock confined to inferior pastures, reproduction and milk production are both hampered and household finds itself in a poverty trap. According to respondents, the minimum number of loading camels that a household needs is about three per household, or, if counting females and colts as well, about seven camels in total. As a result of drought and/or livestock theft, many Gabra households have already dropped below this threshold and have settled in towns or in camps for internally displaced persons.

Herd size, therefore, is related to another element of system identity: herd mobility. If too many people lose mobility and settle in one place but are still trying to make a living from livestock, then all of the other factors influenced by herd mobility are in turn affected. Pastures around the settlement or the water point are overgrazed and eventually pasture regeneration may be hampered. As identified by numerous Gabra respondents (see Section 4.2.1 above), because settlements are mostly located near reliable water in the midst of dry season grazing areas, those households that are still nomadic are in turn affected as they find that their dry season destinations are already overpopulated and overgrazed. The dry season and especially droughts, become more stressful for all, as the pastures surrounding permanent water points are never given time to recover. Therefore, a threshold measure for herd mobility might focus on the number of livestock that do not move away from permanent water in the rainy season, as would normally be expected

according to traditional practice. For any particular water point this might be operationalized as the number of Tropical Livestock Units that are based within a certain number of kilometres of the water point in the rainy season. Above a certain number, a threshold would be deemed to have been crossed, with the likely result being pasture degradation around the water point, reduced rates of livestock reproduction, and impacts for those who are still mobile but now find that that their dry season/drought grazing area has been degraded by livestock owners who never leave it.

An associated relationship variable is pasture regeneration processes. As alluded to above, this is most critical in the vicinity of permanent water points. The threshold here could be conceived of in terms of the regrowth of a few key plant species within walking distance of the water point. Given that different livestock species prefer different plant species and are able to move varying distances, thresholds might be set for a number of key plant species that are most important for each livestock species.

4.3.3 Thresholds Related to Institutions and Access to Water Points

Another important feature of the social-ecological system is institutions involved in governing the commons, especially water points, including rules, permanent bodies such as water users associations, and institutionalized decision-making processes. For example, there are traditional institutions governing access to shallow wells. Boreholes have their own system of access, typically involving a small payment for each animal or per 20-litre container. Various factors could potentially undermine these institutions, including the creation of new institutions and other modernization processes.

Thresholds for these elements of the social-ecological system might be set for two different extremes. The threshold at the one extreme would relate to an undermining of the relatively easy and equitable access to water that these institutions provide. This access could conceivably be undermined by privatization of boreholes or by a strengthening of individual ownership of wells at the expense of clan ownership. The threshold might be operationalized as a ratio of the number of water points that are operated as commons to the number of water points that are operated as private property.

At the other extreme, if the institutions lose the capacity to limit access to water when livestock populations are high and/or when water is scarce then a threshold may have been crossed. One factor that may push the social-ecological system towards this threshold is pressure on the institutions from powerful individuals trying to ensure that certain herd owners are given access when the borehole or well institution might have decided to limit access. Measuring such a threshold quantitatively would likely be unwieldy, in part because the ideal number of livestock using the water points in a particular area is constantly changing. Instead the threshold could be assessed qualitatively.

Another institution that is mentioned in the list of important relationships distinguishing this social-ecological system is the traditional korra meeting. The korra is not a permanent, standing institution, but rather an institutionalized process—a traditional type of meeting that is organized as and when needed. It is central to decision-making in Gabra communities, including decisions about access to pastures and to water. A threshold for korra meetings might attempt to measure the extent to which decisions about these matters become controlled instead by other institutions.

4.3.4 Visualizing the System and Envisioning Alternatives

Identifying the components, relationships, sources of innovation and sources of continuity of the social-ecological system is essentially an analytical process for deconstructing the system. In order to gain a holistic understanding of system dynamics and cycles, another step is needed. This section therefore begins with a presentation of three diagrams that depict elements of the Gabra social-ecological system and some of its dynamics and cycles. Firstly, based on the above analysis of the elements of system identity, another influence diagram is presented (Figure 4.3), one more comprehensive than those produced with groups of Gabra elders. It incorporates elements from those two influence diagrams that were done in the field, as well as most of the CRIC elements described above. The two main shocks and stresses are shown inside stars, and a selection of external drivers are shown in boxes.

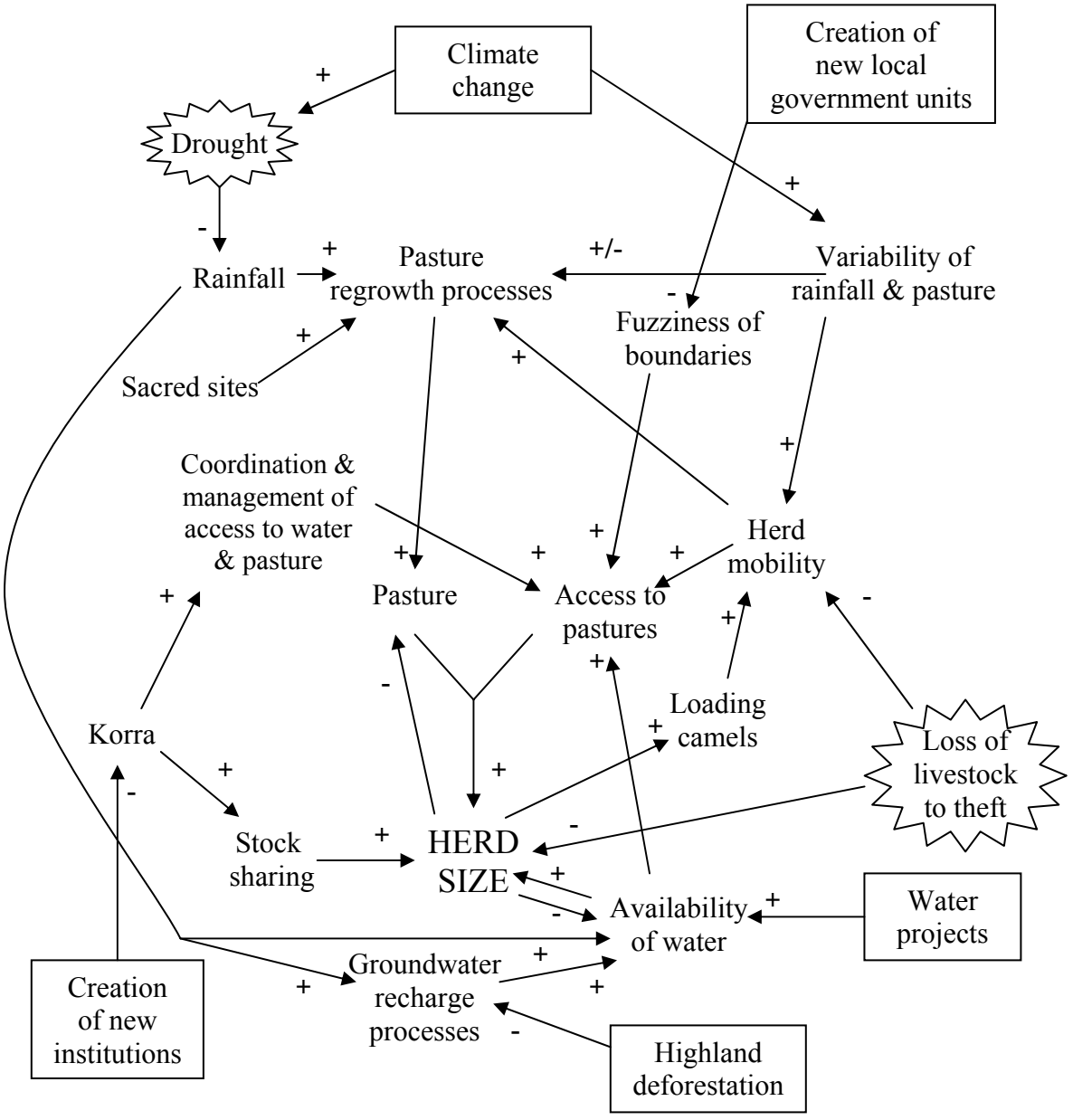


Figure 4.3: Influence diagram synthesis

The diagram portrays most of the key factors that affect herd size and people's ability to rebuild their herds after losses. Causal factors are shown as positive and negative feedback. Contributory factors are shown with "+" symbols and inhibitory factors are shown with "-" symbols. The main shocks and stresses are shown in stars and drivers are shown in rectangles.

It can also be useful to focus explicitly on cycles within the system. For example, the dominant cycle in the Gabra social-ecological system is the cycle that is dictated by droughts, and the discussion below describes two simplified and idealized versions of that cycle: a version that shows the "traditional", resilient pastoral system that withstands droughts as well as loss of animals to theft, and a contemporary version in which various "modern" developments such as growth in human population and escalating conflict have undermined coping mechanisms and created a poverty trap. In the traditional version of the cycle, livestock numbers wax and wane with years of good and poor rainfall. Droughts, and to a lesser extent raids by enemy groups, result in livestock being lost, but this is followed by a period in which the herds grow again. Any households that do fall below a minimum threshold for herd size can hope for traditional forms of restocking and stock sharing to lift them back up above that threshold again (see Figure 4.4a).

Figure 4.4b shows an alternative, present-day situation in which a number of the thresholds discussed in Section 4.3.2 have been crossed, and a large number of households have fallen below a minimum threshold of herd size with restocking mechanisms unable to provide for all of these households, thus allowing a vicious circle to take hold. Having an insufficient number of camels, households lose mobility. People are unable to seek out the best pastures; as a result, livestock nutrition suffers, reproduction is hampered and the household remains susceptible to future droughts. Many people are forced to settle around permanent water, meaning that nearby pastures do not receive a rest, a matter which many respondents complained about. The poor state of pastures around the water point hampers herd growth for all, even for those who are still mobile and only use those pastures in the dry season. Expressed in terms of the above influence diagram (Figure 4.3), this vicious circle represents a weakening or removal of several elements of the system. Stock sharing is reduced as fewer households have livestock to spare: as it was said in the interview mentioned above, one cannot share what one does not have. As the number of loading camels declines, mobility is reduced along with access to distant pastures, and as a result pasture regeneration processes are hampered because of overgrazing around settlements. Herd sizes,

Figure 4.4: Alternative cycles in the Gabra social-ecological system

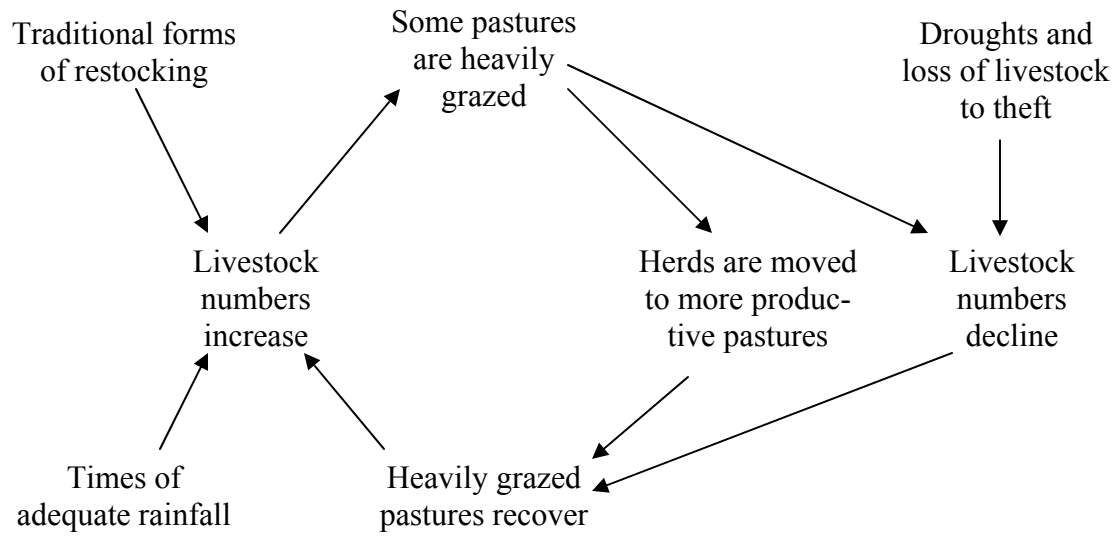


Figure 4.4a: Cyclical changes in traditional, resilient mobile pastoralism

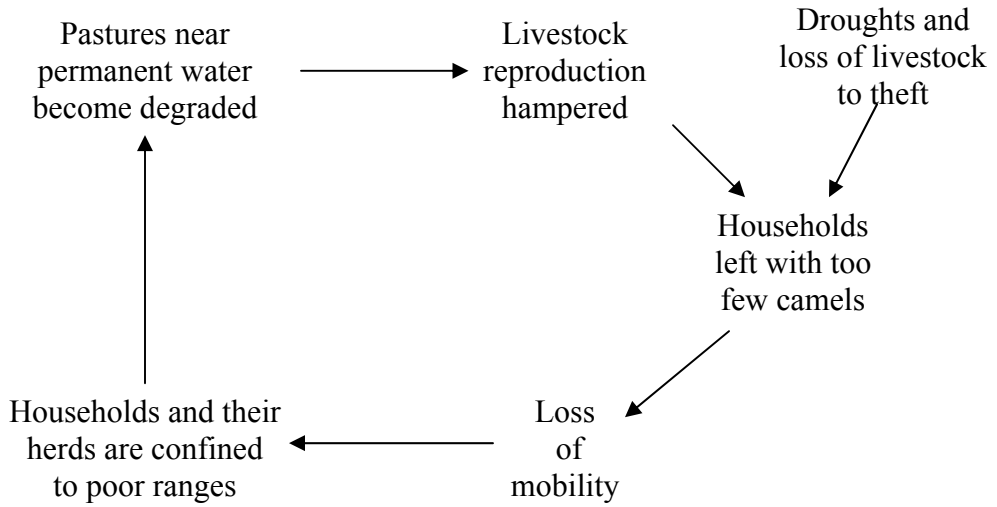


Figure 4.4b: A present-day alternative—loss of mobility creates a poverty trap

Figure 4.4a shows livestock numbers waxing and waning, with mobility being a key factor that allows herds to be rebuilt. Figure 4.4b describes what occurs when livestock (especially camel) numbers have been decimated and mobility has been lost. The two diagrams portray self-reinforcing sets of dynamics that contribute to the resilience of two alternate states.

therefore, remain small. This might be termed "perverse resilience". That is to say, the system may have moved into an alternative stability domain from which it will not easily be dislodged.

It is these same elements of the system—restocking mechanisms, minimum numbers of livestock for households, availability of water in reserve pastures—that many NGO programs are attempting to address. For example, some water projects aim at increasing availability of water in underused pastures to improve access to those pastures, either on an emergency basis during a drought or on a permanent basis. Restocking programs attack the problem more directly by helping people to increase herd sizes. While this strategy may seem to be treating the symptom rather than the disease, to the extent that it can help people move back to the favourable side of the herd-size threshold, it represents one element of what is needed to help people to escape the poverty trap.

Devereux and Scoones (Devereux and Scoones 2007) suggest that the use of livestock:human ratios can be inappropriate, as modern pastoralists often have other sources of livelihood besides livestock and hence are not necessarily reduced to destitution if they fall below some theoretical minimum threshold. However, as mentioned above, in the case of the Gabra, many depend *solely* on livestock for their livelihoods, and the vast majority depend *mostly* on livestock. As noted above (Section 4.2.1) sixteen of twenty-one respondents in shocks and stresses interviews said that livestock was the only source of their livelihood. For this reason, I would argue that in the Gabra social-ecological system, a minimum threshold does exist for household herd size, and this threshold is part of what divides the two states described in Figures 4.4a and 4.4b. These two figures, representing two possible states, are, stylized, simplified, and obviously omit a great many details. But they are presented in the hope that they can help to make obvious the implications of some of the thresholds that were discussed above, such as thresholds for herd size, herd mobility, and regeneration of pastures.

In comparing two alternative states such as these, one is faced with having to make value judgments. The question of whether a cycle is a vicious circle or a virtuous circle is subjective. In this example, it is not difficult to declare the cycle represented by Figure

4.4b, entailing destitution and environmental degradation, as undesirable. But does this mean that the other option is desirable? The system described in Figure 4.4a, although resilient to drought and able to re-establish households that have lost livestock, is a system that is maintained through periodic large-scale deaths of livestock. It is likely that at times in the past, such as during the crisis period of the late 1800s, a significant number of human deaths also occurred (Robinson 1985). As long as the number of livestock that disappear from the system because of any one drought never becomes *too* many, the system can continue. The death of large numbers of livestock with each drought also means that a significant amount of capital is regularly destroyed, something that many respondents lamented. Converted instead into other forms, this capital could have been invested in improving people's lives. The system described in Figure 4.4a proved, through many generations, to be resilient, but whether it is desirable depends upon value judgements and comparison to other possible states.

This way of depicting aspects of system dynamics can also offer clues as to possible future trajectories for the system. In the real world, these two idealized cycles are not necessarily mutually exclusive states, but rather can exist together in varying degrees in various places around Gabraland. For example, although many people have suffered devastating herd loses and have been forced to move to permanent settlements (Figure 4.4b), this does not mean that traditional restocking mechanisms have ceased to exist. Indeed, many Gabra whom I interviewed affirmed that these traditions are still very strong, and many people told of how they have been beneficiaries or benefactors in the sharing of livestock.

While both of the figures accurately describe some of the dynamics within the Gabra social-ecological system, one can ask which of the two is currently dominant. This research suggests that over time it is the latter, the vicious circle represented Figure 4.4b, that is becoming increasingly dominant. One factor contributing to this is the growth of the human population. In 1969, the Gabra numbered about 11,000; today there are over 45,000 (Ganya et al. 2004), resulting in increased competition for scarce resources.

Droughts and theft of livestock[8] function to keep livestock numbers within certain limits, but the ever-increasing human population means that in per capita terms, the system is tighter. One institutional response to this in Gabra communities has been the adoption of rules to restrict grazing near settlements and to require *foora* herds to be sent to distant pastures. A number of Gabra elders explained to me that the growing importance of such rules is a recent development, a departure from the more open and permissive grazing regime that has existed at least since Kenyan independence. Another ongoing institutional development is the delineation of new, smaller local government units, an action which typically receives strong political support at the local level. New local government boundaries, especially District boundaries, have a tendency to become de facto ethnic boundaries defining clearly marked grazing territories for various ethnic groups, as happened with the creation of Moyale District, when the Moyale-Marsabit border became one of the de facto dividing lines between the Gabra and the Borana.

As the marginal cost of securing scarce resources increases, so too does competition for those resources. This is leading to new mechanisms for distributing access and laying claim to resources, new rules, new institutions. This entails the tightening of rules for access to grazing land such as the rules for foora herds mentioned above and the ever-stricter demarcation of boundaries between ethnic groups. This is not to say that ethnically defined identities and territorial boundaries are necessarily desirable or that they represent a sustainable adaptation to increasing competition. Rather, ethnically based responses to this situation tend to emerge because ethnic identities and ethnically based institutions are already strong and often represent the most convenient way to draw both territorial and conceptual dividing lines. However, increasing institutionalization and increasing competition for resources may go hand in hand with increasing system brittleness. Whereas the rainfall regime remains as variable and unpredictable as it always was, these recent developments, while adding to the ability of the social

[8] Some livestock theft that takes place in Kenya is for purposes of restocking, some is done on a more commercial basis with the livestock being sent to market. Looking at a scale larger than the Gabra social-ecological system, say all of northern Kenya and southern Ethiopia, an interesting question beyond the scope of this research is whether livestock theft is in some ways adaptive—whether it is a system response to increasing pressure on the environment.

ecological system to manage competition, also restrict the primary means of dealing with the climatic variability: nomadism. The result can be an overall loss of resilience. Given the increase in human population that has occurred over the past forty years (Ganya et al. 2004), the increasing severity of droughts (according to Gabra elders), and the general drying trend (Kenya Meteorological Department 2007), the "traditional" social-ecological system, characterized in part in Figure 4.4a, is probably no longer tenable, and the institutional changes described above can be seen as a response to this.

The tension between the alternative stable states depicted in Figures 4.4a and 4.4b can be summarized visually in the form of a stability domains diagram (Figure 4.5a). In this diagram, Figures 4.4a and 4.4b correspond to the two valleys "A" and "B", respectively. Trends such as growth in the human population, the increasing severity in droughts, and loss of reserve grazing areas on Mt. Marsabit result in traditional mobile pastoralism becoming less resilient and the non-mobile poverty trap relatively more resilient (Figure 4.5b).

4.4 Discussion: The Relevance to Policy

This section begins with a consideration of the implications of using the CRIC framework and the kinds of system thresholds derived from it, including a discussion of the relevance of such thresholds to policymaking and development programming for pastoralists. Then the relevance of thinking in terms of alternative stability domains is considered, particularly in relation to two ongoing debates around pastoralist policy.

4.4.1 System Identity Thresholds and Appropriate Indicators

One way in which resilience thinking is potentially useful for policymaking and programming is by providing a framework for developing a systematic assessment of a social-ecological system. Part of this assessment can take the form of describing the elements of the identity of the system in question—its components, relationships, sources of innovation and sources of continuity—and determining thresholds for each of these elements. Clearly, for some system elements, devising thresholds that are measurable

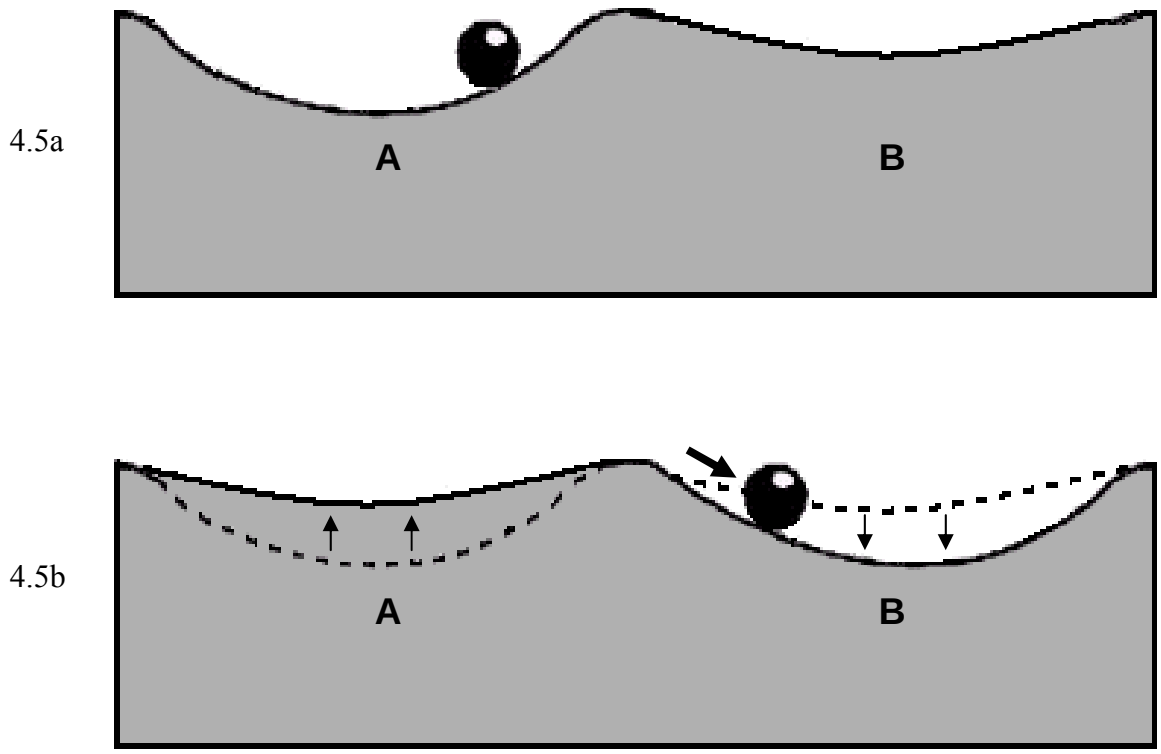


Figure 4.5: Two stability domains for the Gabra social-ecological system

Figure 4.5a shows two possible states for the Gabra social-ecological system: traditional mobile pastoralism (A), and a poverty trap in which drought, theft and other shocks and stresses have left more people destitute than restocking mechanisms can cope with (B). Figure 4.5b represents the notion that traditional pastoralism is becoming less and less viable, and the poverty trap more and more difficult to escape. The vertical arrows represent forces such as demographics and climate change that are undermining the resilience of traditional pastoralism. The heavy arrow represents a particular shock such as a drought that pushes the system from one state to another.

and for which data collection would not be too onerous could be difficult, and one may be tempted to ask whether it would be worth the effort. After all, one could, without doing any of the above analysis, arrive at straightforward indicators that in some way provide an assessment of the current state of pastoralist livelihoods in northern Kenya. For instance, one possible indicator might be the proportion of households relying on relief food. However, as an indicator of system resilience, this measure is, in a sense, too

late. If the percentage of households relying on relief food is large, this may tell us *after* a shock and subsequent "flip" that the system lacked resilience, but it does not tell us beforehand whether the system is close to a tipping point. Nor does this measure provide insights into the dynamics of the system. Similarly, some of the types of data that the Famine Early Warning Systems Network relies on—such as changes in food and livestock prices—indicate effects of shocks and stresses working through a social-ecological system, but do not describe *how* the effects occurred. For example, these kinds of indicators do not tell us whether many households are now relying on relief food because traditional restocking mechanisms have failed, because entire herds of livestock have been stolen, because pastures are degraded, or because of some combination of these factors. They do not tell us whether livestock prices are falling because livestock owners are rushing to sell for fear of losing their animals to starvation, or because consumers are afraid of Rift Valley Fever (as happened in Kenya in 2007). Indicators such as animal birth rates, market prices for livestock, household milk consumption, or the proportion of households relying on relief food do not answer these questions because they are indicators of aggregate effects produced *by* the social-ecological system, not of dynamics *within* the system.

The approach of describing system identity proposed by Cumming and co-authors (2005), on the other hand, does promise if done well to provide an analytical description of what is happening within the system, including a description of *how* the effects are being produced. Identifying and measuring the components, relationships, and sources of innovation and continuity that distinguish the system, doing so in relation to thresholds, and doing so at repeated intervals should also contribute to an understanding of the ongoing evolution of the social-ecological system and aid in measuring changes in the resilience of that system over time.

4.4.2 The Relevance to Current Debates on the Future of Pastoralism

The aim of the preceding discussion of thresholds has been to explore what a comprehensive resilience-based approach could entail, by considering possible thresholds for just a few elements of the identity of the Gabra social-ecological system. It is argued

here, however, that the strength of the analytical system identity approach is most apparent if combined with an approach that attempts to "put the pieces back together" and to thereby provide meaningful insights into the dynamics of the system. I return now to that aspect of synthesis and to a discussion of dynamics.

As discussed above, this research suggests that traditional mobile pastoralism (valley "A" in Figure 4.4b) is becoming more and more untenable, primarily because of factors such as the growing human population, an increasingly dry and less predictable climate, and growing restrictions on mobility brought about by local rules, inter-ethnic conflict and bolstered by ever-smaller local government areas. The alternative that currently dominates (valley "B") is clearly undesirable. Meanwhile, the push for new rules, new boundaries and other means of gaining control over increasingly scarce resources may be unavoidable. Clearly, however, policies and programmes that merely push the system back towards valley "A" without addressing its limited resilience under current circumstances are insufficient, and merely create the opportunity for continually repeating crises. Programmes for the distribution of relief food to pastoralists, and even NGO restocking programmes, to the extent that they reduce the need for local institutions to adapt to changing circumstances, and for the system as a whole to undergo some reorganization may be doing exactly that. The hope, rather, is that these two alternative states are not the only two possibilities. In other words, it is becoming increasingly important to envision an alternative system—one that is resilient, that provides livelihoods, and that meets other criteria that human stakeholders living within that system may have (Figure 4.6).

This suggestion should not be taken as a condemnation of mobile pastoralism—far from it. A viable alternative would almost certainly bear many similarities to traditional pastoralism. For example, for the kinds of highly variable climates in which nomadic pastoralists live, a system in which livestock numbers do not fluctuate is not desirable, and probably not even feasible (Sandford and Scoones 2006).

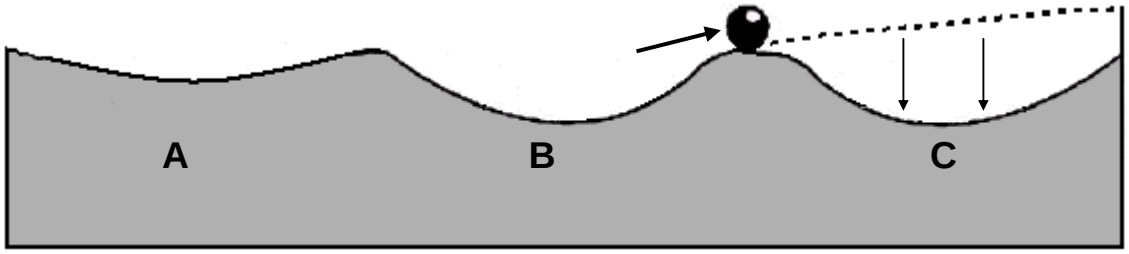


Figure 4.6: Envisioning and creating a third stability domain

If the perverse resilience represented by valley "B" is becoming more resilient and traditional pastoralism represented by valley "A" less so, then one option for stakeholders will be to try to envision and create a third alternative (C). The arrows represent deliberate action taken by policymakers and other stakeholders to create this alternative.

The questions of what an alternative stability domain would look like, of how to create that possibility and push the current system in that direction, and of whether to do so is even feasible can be informed by researchers and by insights from resilience thinking. For any particular social-ecological system, however, definitive answers to these questions would require much further research, far-reaching stakeholder consultation, and real world action. These questions are of great relevance to current policy debates on pastoralists and pastoralism generally. One of these debates is being promoted by the Future Agricultures Consortium[9]. The pessimistic side of the debate argues that in most of the Greater Horn of Africa there are now too many pastoralists, which, combined with a natural resource base that is not increasing in productivity, means that not enough livestock can be kept to sustain a viable pastoral system (Sandford 2007). According to this argument, the best that can be hoped for is for is a significant reduction in the number of people dependent on pastoral livelihoods. Devereux and Scoones (2007), reacting against this kind of thinking, argue that a focus on any optimal minimum livestock:human ratio is misguided, in part because most pastoralists now have numerous

[9] The Future Agricultures Consortium (www.future-agricultures.org) is a partnership between research-based organisations in Africa and the UK that promotes stakeholder-led policy dialogues.

livelihood sources, and so there can be no standard minimum ratio. Instead, they argue, policy should focus on strengthening local market linkages and fostering diversification, while also supporting and maintaining traditional livelihoods and the resources that these livelihoods rely upon.

The two sides of this debate share the view that livelihood diversification is needed, but a key difference lies in how and to what extent "traditional" pastoralism should be supported in the meantime. For example, Devereux and Scoones are suspicious of irrigated agriculture, insofar as it threatens to convert important riparian grazing areas to agriculture and thereby "encouraging even greater collapse" (2007: 4). The issue is whether traditional pastoralism is worth supporting while the hoped-for diversification takes place, or whether all efforts should be put towards creating new livelihoods and getting many people out of the pastoral economy as quickly as possible. An answer to this question depends upon whether and how a viable alternative to the vicious circle depicted in Figure 4.4b above can be created, and since it must be recognized that not all dryland pastoralist systems are alike, the answer will vary from case. For example, on the whole, Gabra livelihoods are almost certainly less diversified than Maasai livelihoods. In addition, for the Gabra the issue of grazing lands having been lost to irrigated agriculture is not as severe as has been described for many other pastoralist systems. It is these kinds of details that will determine, on a case-by-case basis, how existing pastoralist systems might be supported or in what new direction they might be pushed, as well as the kinds of policy and programming levers that might be helpful. It is these same kinds of details, furthermore, that the sort of analysis presented in this chapter can help to uncover.

An envisioned alternative for the Gabra would be a system in which livestock numbers go up and down, but which reduces the human suffering and the unproductive loss of capital that drought-induced livestock deaths currently entail. This presumably would involve an increase in offtake and conversion of livestock to other forms of capital. Points at which to envision this alternative can be surmised from the list of system identity elements. Stakeholders wishing to push the system towards this alternative could

adopt a strategy of selecting system elements that they could try to enhance: for example, local markets, herd mobility, and water points located in drought reserve pastures. As noted above, local markets already exist within the system, but few livestock owners regularly sell large numbers of livestock. Instead, most people normally sell animals one at a time, and only to buy a few basic foodstuffs. Efforts to create this envisioned alternative, therefore, would need to improve the ability of markets to quickly absorb animals, at reasonable prices, once droughts hit, and would have to address the factors that make selling livestock unattractive. Maintaining and enhancing people's mobility and creating and improving water sources in drought reserve pastures, as some NGO programs already attempt to do, will also reduce drought-induced livestock deaths.

However, the envisioned alternative system will probably require not only altering or enhancing existing elements of system identity, but also the introduction of *new* elements into the system. Development agencies might consider how institutional novelty and innovation can be fostered within pastoralist communities so that they themselves can do this. One sort of innovation that would be beneficial in north-central Kenya would be new and additional institutional mechanisms for managing increasing competition for scarce resources while still maintaining maximum flexibility for movement of herds. Another would be the introduction of new livelihood activities that could help to absorb some of the human population and also provide objects for investment other than livestock.

A similar debate on pastoralism was the focus of the Climate Change, Adaptation and Pastoralism conference organized by the IUCN's World Initiative for Sustainable Pastoralism (Nori and Davies 2007). On one side of the debate are those who see pastoralists as "the 'canaries in the coalmine' of ongoing processes" such as climate change—that it is pastoralist populations who will feel the effects of climate change first and strongest. On the other side of the debate are those who believe that pastoralists are experts at creating livelihoods in marginal and highly variable climates, and are the *most* capable of adapting to climate change.

A resolution to this debate partly lies in recognizing that an assessment of adaptive capacity cannot meaningfully be reduced to a point on a one-dimensional spectrum. If the resilience of a social-ecological system is embedded in a wide variety of elements and in the relationships between them, and if, as some authors (Folke et al. 2002; Gallopín 2006) suggest, resilience is only one aspect of adaptive capacity, then it is misguided to argue over whether pastoralist systems have great adaptive capacity, modest adaptive capacity, or poor adaptive capacity, declining adaptive capacity or increasing adaptive capacity. This way of thinking oversimplifies something that is clearly multi-dimensional. On the other hand, a detailed analysis of the resilience of pastoralist social-ecological systems, such as that which has been presented in this chapter, can help to provide the nuanced understanding that is needed. One way that the above analysis can be helpful is by clarifying the issue of "resilience of what, to what". In addition, focusing on system identity and determining the elements that comprise that identity helps one to distinguish between the system and the drivers affecting it (Cumming et al. 2005). An analysis of adaptive capacity, then, would include examining the driver(s) in question, ways in which the driver affects the elements of system identity, how close the susceptible elements are to their respective thresholds, and how easily the driver can move them. For example in the case of the Gabra system, one of the key elements that make the system what it is is pasture regeneration processes and one of the drivers impacting on this is climate change. An analysis of adaptive capacity, therefore, would also include an assessment of the capacity of the system and of actors within the system to adjust to a disruption in the regeneration of pasture. Answering such questions for the possible impact of climate change on pasture regeneration processes and also for other elements of the system which may be affected by climate change will begin to give an assessment of resilience and of adaptive capacity that is comprehensive and useful for policymakers. This is only one example—a comprehensive analysis of the adaptive capacity of a system would look at all of the critical elements of the identity of the system and of the key drivers influencing those elements.

4.5 Summary

The aim of this chapter has been to consider the relevance of a systematic application of resilience thinking to questions of pastoralist policy. *Resilience*, however, is an abstract concept referring to an emergent property of complex systems that is not directly observable. Therefore, the task arises of operationalizing *resilience* and taking it beyond the level of metaphor. The CRIC framework (Cumming et al. 2005) is one approach to doing this. Its strength is in allowing the user to develop an analytical description of a social-ecological system and its identity in a systematic, rigorous way. By combining this analytical approach with an approach for synthesizing information and "putting the pieces back together" for a more systemic perspective, it becomes possible to develop an assessment of resilience that is rigorous, systematic *and* holistic.

Applying this combined approach to an assessment of the Gabra social-ecological system and its resilience brings attention to several elements of the system for which threshold effects are important. For example, many Gabra no longer have the minimum number of camels needed to remain mobile. One could infer from the types of indicators that humanitarian information systems typically monitor that resilience has been eroded. For instance, increasing number of Gabra are being ejected from the pastoralist system and are relying on food aid in permanent settlements. But the approach adopted in this chapter helps to make clear the dynamics of *how* resilience is eroding. The CRIC analysis helps in identifying dynamic mechanisms within the social-ecological system and describing how the system functions, and the identification and measurement of thresholds for the system elements allows one to begin assessing the resilience of the system, or lack thereof. Combining this analytical approach with an examination of cycles and a consideration of the system as a whole helps to reveal ongoing processes of change and of possible states for the system. In this way, the approach used in this chapter highlights the relevance of attempting to envision a "third" state—an alternative to both traditional mobile pastoralism and the poverty trap of recent years. In the case of the Gabra, there is a need for stakeholders to envision an alternative "stability domain"—an alternative system that would probably bear similarities to traditional pastoralism but that would also involve novel elements such as new livelihoods.

These aspects of resilience thinking help to show how it has the potential to contribute to current debates about the future of pastoralism. The aim of this chapter has not been to resolve any of these policy debates, but rather to demonstrate the relevance of resilience thinking to questions of pastoralist policy. One set of needs for policy generally is to have monitoring of key ecosystem variables, and development of appropriate indicators and warning signals (Folke et al. 2002). This chapter has given an example of the way in which resilience thinking can help to fill that need. Given that the resilience of the Gabra social-ecological system has been eroded, and the need for the creation of this third alternative, the matter arises of how stakeholders can attempt to proactively influence the system and its resilience. The next chapter addresses this, examining who is and is not attempting to influence the resilience of the Gabra system and what is involved in the capacity needed to do so.

Hillside catchment with underground tank, having been constructed with assistance from PISP.

Photo by Lance W. Robinson

Sand dam in Balesa, constructed some years earlier by PISP.

Photo by Lance W. Robinson

Chapter 5: Collective Capacity to Influence Resilience

5.1 Introduction: The Importance of Enhancing Resilience

The pace of global climate change is escalating and its impacts on the interconnected biophysical, social and economic systems which sustain human life intensifying. As a result, the capacity of these systems to maintain their "identity in the face of internal change and external shocks and disturbances"—in other words, their resilience (Cumming et al. 2005)—is becoming increasingly important. If the resilience of social-ecological systems in the developing world has not yet merited much attention from development planners and policymakers, it certainly merits it now.

As mentioned in the previous chapter, in the case of the Gabra, they are simultaneously facing frequent armed conflict with neighbouring groups accompanied by large-scale theft of livestock, and a climate which is going through a general drying trend as well as, according to my respondents, becoming less and less predictable. Gabra respondents repeatedly told me that shocks and stresses have become more severe. The Gabra are attempting to cope with these shocks and stresses at the same time as having to face the consequences of a constantly growing human population. Meanwhile, certain elements of the resilience of their social-ecological system—especially mobility, households having the minimum number of livestock needed to make a living, and pasture regeneration processes around settlements and permanent water sources—have been eroded (see Chapter Four). The growing number of impoverished Gabra moving to permanent settlements with few prospects for returning to a pastoralist livelihood testify to the consequences of this loss of resilience. So does the now almost regular need for emergency assistance in order to avoid humanitarian disasters: relief food and emergency water tankering, especially.

There is a need, therefore, to create the conditions, both in north-central Kenya and in rural areas of developing countries generally, that will allow social-ecological resilience to be regenerated. However, there are places—and it is argued here that Gabraland is one of them—where the urgency is such that merely creating conditions to allow resilience to

gradually re-emerge or regenerate is not enough. A growing number of people are becoming dependent on food aid and emergency assistance from NGOs, relief agencies and government, and, as argued in Chapter Four, it seems that the social-ecological system can no longer reliably provide livelihoods for all people. Drivers such as climate change and population growth, furthermore, seem to be outpacing the self-organizational capacity of the system. In places such as north-central Kenya, therefore, the people who live there, with their communities, organizations and institutions, need to go beyond *creating the conditions* for resilience to re-emerge; they need to consciously and collectively take proactive steps to ensure that resilience is enhanced. The aim of this chapter, therefore, corresponds to the second of the three objectives for this research: to identify ways in which various stakeholders are and are not taking deliberate action to influence the resilience of the Gabra system, and thereby identify factors that contribute to the capacity to influence resilience. The chapter will also identify broad strategies that NGOs and other agencies might adopt in order to build this capacity in the communities in which they work.

The chapter begins with a review of some of the literature on resilience and particularly on adaptive capacity and the capacity to influence resilience (Section 5.2). This is followed by a presentation of the findings from this research that consider who in the Gabra social-ecological system is and is not influencing resilience and why. Section 5.3.1 considers action taken from within the system by communities and by various Gabra institutions and other Gabra stakeholders. Section 5.3.2 considers action taken to influence the system from outside, by NGOs such as PISP and other formal sector stakeholders. This leads to an identification of some of the most important factors contributing to the capacity to influence resilience (Section 5.3.3). Section 5.4 considers the implications of the research findings and identifies three interrelated strategies that NGOs and other agencies might adopt in order to build this capacity within communities and community institutions. The chapter concludes by arguing that donor agencies, development policymakers and programmers, and implementing agencies such as NGOs and frontline government departments should consider an alternative way of thinking

about how to help communities adapt to a changing world—a way of thinking that is based on building capacity to adapt rather than on providing adaptations.

5.2 The Capacity to Influence Resilience

5.2.1 Self-Organization and Intent

One of the most prominent ideas in the literature on social-ecological resilience is that neither ecological systems nor social systems can be adequately understood without understanding the linkages between them, and that essentially they function together as coupled *social-ecological* systems (Berkes and Folke 1998; Folke 2006). The kinds of social phenomena that contribute to social-ecological resilience are many. They include the persistence and sustainability of institutions (Adger 2000), as well as social and institutional memory (Olsson and Folke 2001; Folke et al. 2002; Berkes et al. 2003). Linkages between the social and the ecological must also be considered. For example, social-ecological resilience, or the lack of it, in part depends on the degree to which people rely upon a single resource (Adger 2000). Resilience is, furthermore, enabled and strengthened by diversity—diversity of institutions, of livelihood options, and of types of natural resources that an economy relies upon (Folke et al. 2002; Berkes et al. 2003; Dietz et al. 2003; Folke et al. 2003). Among the Gabra, social elements that make the social-ecological system what it is and contribute to its resilience include relationships and practices such as traditional forms of sharing and redistributing livestock, sources of innovation such as flexibility and overlap in spatial boundaries and lines of authority, and sources of continuity such as the institution of the sacred site (see Chapter Four).

While there is much of what has been learned about *ecological* resilience that is applicable to *social-ecological* resilience, obviously there is a fundamental distinction: social-ecological systems include conscious human actors. Social-ecological systems, unlike purely ecological systems, contain actors with agency and intent. Yet social phenomena that contribute to resilience do not require the actors involved to be aware of the social-ecological system as a whole nor to be consciously attempting to create resilience. A Gabra who gives some sheep to another Gabra whose herd has been wiped

out by drought does not need to be aware of the broader systemic impact of his actions for those actions to contribute to social-ecological resilience. Indeed, one of the fundamental starting points for complex systems thinking is that complex systems are characterized by self-organization without intent, even when they are social systems having conscious human actors (Schneider and Kay 1994; Levin 1998; Kay et al. 1999). An example is a market in which a large number of individual decisions and interactions, mediated by supply and demand, influence prices, which in turn provide feedback to individual decisions, all of this without any of the actors involved understanding the whole system or attempting to push the entire system in any particular direction.

Yet human beings can and do take conscious actions to mould their environment—to influence, shape and sometimes *control* the social-ecological systems in which they live. Unfortunately, when human beings do have the capacity to mould their environment and to affect the way that social-ecological systems function, they tend to undermine rather than enhance resilience. For example, managers often try to control change in natural systems, often with the aim of maximizing the production of one particular species, but in so doing produce unintended consequences for the system as a whole (Holling 1978; Holling and Meffe 1996; Carpenter and Gunderson 2001). On the other hand, when the vision of stakeholders broadens and begins to encompass the system, rather than just some desired elements within the system, they begin to have the potential to enhance resilience. The aim of this kind of intentional action can be seen as a continuum that ranges from the very basic aim of maintaining the system, through enhancing resilience and changing the way the system works, to the much more ambitious aim of transforming the system. Across this entire continuum, four main principles stand out. Management that builds resilience is management that involves learning to live with change and uncertainty, nurturing diversity for reorganization and renewal, combining different types of knowledge for learning, and creating opportunity for self-organization (see Table 5.1).

From the verbs and phrases listed in Table 5.1, it can be seen many of these principles and strategies are attitudinal or cognitive: for example, *learning*, *expecting*, *expanding…to knowledge of function*, *recognizing*. Other strategies in the list refer to

Table 5.1: Building resilience and adaptive capacity in social-ecological systems

Learning to live with change and uncertainty
Evoking disturbance
Learning from crises
Expecting the unexpected
Nurturing diversity for reorganization and renewal
Nurturing ecological memory
Sustaining social memory
Enhancing social-ecological memory
Combining different types of knowledge for learning
Combining experiential and experimental knowledge
Expanding from knowledge of structure to knowledge of function
Building process knowledge into institutions
Fostering complementarity of different knowledge systems
Creating opportunity for self-organization
Recognizing the interplay between diversity and disturbance
Dealing with cross-scale dynamics
Matching scales of ecosystems and governance
Accounting for external drivers

Source: Folke et al. (2003: 355). Used with permission from Cambridge University Press (blanket permission: www.cambridge.org/uk/information/rights/permission.htm).

practices, actions or objectives: for example, *evoking disturbance*, *nurturing ecological memory*, *building process knowledge into institutions*. The list as a whole can be seen as a description, in general terms, of *what to do* in order to enhance resilience. However, an important issue—one of the issues that animates this research—is what stakeholders need in order to carry out these strategies, or, in other words, what characteristics provide *the capacity* to learn to live with change and uncertainty, to nurture diversity, to combine different types of knowledge, and to create opportunities for self-organization. This research, therefore, draws a distinction between resilience (an emergent property that includes social components), the kinds of *strategies* that stakeholders can take in order to intentionally enhance resilience as summarized in Table 5.1, and the *capacity* needed to do so. The previous chapter examined the first of these three, the resilience of the Gabra system; this chapter examines the second and third, strategies that stakeholders are applying to influence the system and their capacity to do so.

It was argued above that there is a need in north-central Kenya for stakeholders to be proactive and take intentional action to enhance social-ecological resilience. The need for resilience is too urgent to be left to gradually (re-)emerge. This process of building resilience must be led by the people who live and create their livelihoods within that social-ecological system. As argued at the beginning of this thesis, important decisions about life and livelihoods should include the people who will be most affected by those decisions, and that ultimately development processes should be led by these people. Thus, in north-central Kenya and presumably many other settings as well, the need for capacity—the capacity to influence resilience—is as important as the resilience itself.

5.2.2 Adaptive Capacity and the Capacity to Influence Resilience

Some authors (e.g., Walker et al. 2004; Gunderson et al. 2006; Lebel et al. 2006) are recently using the term *adaptability* to refer to the capacity of human actors to influence resilience. I have chosen not to follow this usage primarily because the terms *adaptability* and *adaptive capacity*[10] are already loaded with meanings, many of which are not compatible with using them to refer to the capacity of humans to influence resilience. In biology, *adaptability* can refer to the capacity of a species, population or individual to become adapted to a certain range of environmental conditions. If *adaptability* can refer to the capacity of a non-human species then it would not seem the best choice of terms to refer to a human capacity that is based on agency and intentional action. Furthermore, many of the usages of *adaptability* or *adaptive capacity* in relation to human systems make no explicit reference to resilience[11].

Nevertheless, the term *adaptive capacity*, when it refers to human actors, might include the capacity to influence resilience as one of its elements. That is to say, one way that people within a system can adapt to change is to influence the resilience of that system. In this thesis, adaptive capacity, generally, is understood as referring to the capacity of some entity (a human or non-human individual or population, a species, an ecosystem, an

[10] *Adaptability* and *adaptive capacity* are treated as synonymous in this thesis and in much of the literature on the subject (e.g., Intergovernmental Panel on Climate Change 2001; Smit and Wandel 2006).

[11] For a review of literature on adaptive capacity see Gallopín (2006) and Smit and Wandel (2006).

institution, a social-ecological system, etc.) to become adapted to a certain range of conditions. Specifically for human beings it can be defined as the capacity of any human system from the individual to humankind to maintain or increase the quality of life of its individual members in a given environment or range of environments (Gallopín et al. 1989). This capacity includes, but is broader than, the capacity to influence resilience. For example, adaptive capacity may include the ability to take advantage of opportunities, including opportunities that lie outside the boundaries of any particular stability domain (Gallopín 2006). For entities within a system, it may also include the capacity to become more adapted to the range of contingencies pertaining in that system in a way that may or may not have any impact on the resilience of the system as a whole.

This understanding points to another important distinction, that which exists between adaptive capacity and adaptness (Dobzhansky 1968; Gallopín 2006). Dobzhansky (1968) notes that a high level of adaptness is not the same as having a high level of adaptability. A species or an ecosystem or, presumably, a social-ecological system may be highly adapted to a particular environment and a specific range of changes within that environment, yet have little capacity to adapt to new changes and stresses.

This shows again why the distinction between the resilience (including social elements) and the intentional capacity of human actors to *influence* resilience is important. A social-ecological system may be resilient to a certain range of disturbances and impact from external drivers, and the human beings in that system may be well-adapted to living within it (adaptness); yet the same human beings may not have much capacity to influence the direction that the system takes. When external conditions change in a way that undermines resilience or that produces shocks and stresses that are too great, this capacity to influence resilience becomes very important.

5.2.3 Factors in the Capacity to Influence Resilience

Various authors have begun identifying the elements that comprise adaptive capacity, including the capacity to influence resilience. Armitage (2005), in considering collective action in relation to community-based resource management, suggests that three main

elements are important: focus (clear goals and direction), capabilities (competencies and skill sets) and will (attitudes, worldviews and commitment to community-based resource management). Adger (2003) also relates adaptive capacity to collective action, and highlights social capital as being critical. Exploring *social capital* further, some authors (Gunderson et al. 2006; Walker et al. 2006) have emphasized leadership, social networks and trust. Walker and coauthors (2006) hypothesize that the capacity to influence resilience is primarily determined by the absolute and relative amounts of all forms of capital—social, human, natural, manufactured, and financial—and by the system of institutions and governance.

Another important element of adaptive capacity seems to be cross-scale and cross-level linkages (Olsson and Folke 2001)[12]. In terms of management, those systems that consciously address issues of scale and level through strategies such as appropriate institutional interplay, co-management and bridging organizations, tend to be more successful both at assessing problems and at finding sustainable solutions (Cash et al. 2006). Whereas such linkages can be considered a key component of resilience, those particular types of vertical linkages between human actors (communities, organizations, institutions and individuals) which contribute to a systemic view and to conscious deliberation and collective action, may also be important contributors to the capacity to influence resilience. Polycentric and multilayered institutions, in particular, can contribute to this capacity by improving the fit between knowledge, action, and social-ecological contexts (Lebel et al. 2006). Other factors related to institutions and governance include participation, which builds trust, deliberation, which builds shared understandings, and accountable authorities who pursue just distributions of benefits and risks (Lebel et al. 2006). Factors contributing to the capacity to influence resilience that relate closely to shared understandings include learning and having stakeholders whose mental models at least partially overlap (Walker et al. 2006).

[12] A distinction is made here between *scale* and *level*. *Scale* refers to a particular the spatial, temporal, quantitative, or analytical dimension used to measure and study a phenomenon. *Levels* are the units of analysis that are located at different positions on a scale (Cash et al. 2006).

For the most part, scholarship focusing on the capacity to influence resilience is quite recent (see especially, Walker et al. 2004, and various contributions to *Ecology and Society* 2006, v.11(1)). Thus, the list of characteristics presented in the previous paragraphs must be seen as tentative.

5.3 Findings: Who is and is not Influencing Resilience and Why?

5.3.1 Influencing Resilience from Within the System: (Lack of) Examples

Much of the literature on pastoralists extols their flexibility, coping capacity, and ability to adapt to new stresses and shocks, and rightly so. Yet, this research suggests that there are very few examples of collective action by Gabra communities that go beyond the level of maintaining the existing system. There are sources of innovation within the Gabra system, but these sources of innovation tend to change relationships, not create brand new types of relationships. The question that is being asked in this chapter is not whether there are social phenomena that contribute to resilience in the Gabra system. There certainly are and some of these were identified in Chapter Four. Rather, as stated above, the objective of this chapter is to identify ways in which various stakeholders are and are not taking deliberate action to influence the resilience of the Gabra system, and thereby identify factors that contribute to the capacity to influence resilience.

One approach that I have taken to exploring this question has been to look at responses to growing environmental problems. For example, a critical problem is overgrazing in the vicinity of settlements. This is becoming more and more a concern around some Gabra towns such as Kalacha and Balesa. A similar problem is the loss of trees around settlements. Thus far, the responses to these problems have been relatively modest. Communities are developing new rules and strengthening existing rules related to the cutting of trees and requiring foora herds to be taken far from settlements and from key water sources (see Chapter Four). In addition, some settlements, with the facilitation of the German NGO GTZ and the National Environmental Management Authority (NEMA), have established a new community institution, the Environmental Management Committee (EMC). My experience in the town of Kalacha suggests that the EMC there

is quite organized and is taking modest but encouraging steps to protect the flora in the vicinity of the town. However, respondents working at the District level in Marsabit said that generally the capacity of these committees in most communities where they have been established is still very limited.

Another approach to exploring the question of how Gabra communities are attempting to influence the resilience of the social-ecological system in which they live was to begin with the "CRIC" list of elements of system identity—the components, relationships, sources of innovation, and sources of continuity—which were identified in Chapter Four. Part of the research, in other words, involved searching for ways in which communities might be attempting to influence these system elements and the way that they elements work, and/or how they might be attempting to introduce new essential elements into the list. This part of the research involved searching, for example, for conscious, collective efforts to expand the diversity of the livestock species mix, to enhance traditional stock friendships and restocking mechanisms, to influence pasture regeneration processes, to improve groundwater recharge processes, and so on. It also involved searching for efforts at introducing *new* elements into the system. For this line of inquiry, the pivotal category in the CRIC schema is *sources of innovation*. But here the above-mentioned distinction between resilience and the capacity to influence resilience must be reiterated. The question is not whether there are social sources of innovation—there are. As shown in Chapter Four, the imprecise nature of territorial boundaries and overlap in lines of authority, for example, are particularly important. The task of this chapter—identifying ways in which stakeholders are taking deliberate action to influence the system and its resilience—involves identifying conscious, collective attempts to introduce innovation.

This research found that, generally, such deliberate, collective action on the part of Gabra communities is quite minimal. There does continue to be some level of dynamic self-organization in the system: people continue to establish new stock friendships, to dig new wells, and, for those who are able to remain mobile, to adjust their migrations according to where rain has fallen and take their herds to new locations that they personally have not tried before. However, these practices can hardly be considered *new*;

rather, they represent aspects of the standard package of practices that the traditional pastoral system has been built upon. They are features that contribute to the resilience of that system, but they do not represent examples of attempting to change the way the system functions or of *enhancing* its resilience. One exception, however, can be found in responses to increasing concentration of people and livestock around settlements and reliable water sources. As described in the previous chapter, some permanent settlements are adopting rules for the surrounding territory requiring that during the dry season, people only keep the minimum number of livestock needed to satisfy basic milk needs.

Yet another approach that was taken for investigating endogenous attempts to influence resilience and to introduce new features into the way the social-ecological system functions involved searching for forms of collective action and of community-led development that are new, that go beyond what Gabra communities have traditionally done. Obviously, examples of collective action and mutual help are many: digging wells; traditional stock sharing and restocking mechanisms; collective enforcement of rules relating to use of pastures, sacred sites, water points, and flora near water points; organizing security against livestock theft; etc. However, *new* forms of collective action or of community-led development seem to be few and tend to be on a relatively small scale. In some of the permanent settlements, community-based organizations—women's groups in particular—have raised some modest funds to construct simple buildings or rainwater harvesting tanks. In a small number of other cases, the community as a whole has organized the building of school classroom blocks or some other structure. One example is the efforts of the Balesa community a few years ago when, with little outside assistance, it constructed a block of classrooms for a primary school. A small group of persons in the community took the lead: particularly one nursery school teacher who had been teaching his classes under the tree, and the Assistant Chief. They organized a public baraza and called people from the settlement of Balesa and from nomadic camps in the vicinity, and at that meeting it was decided that every household should make a contribution of livestock. Generally, every household contributed one or two sheep or goats, and a few contributed a cow. Later, a little outside help was added: from the catholic Bishop and from the NGO World Vision. A few local people lent loading

camels to assist with the work, especially the hauling of water from the wells to the construction site a few hundred metres away. In this way, the community itself built a school block of six classrooms and then GTZ added two more classrooms. But typically, this kind of community-initiated, community-driven development seems to be absent or where it does exist, it is on a smaller scale than what took place in Balesa. These types of activities, furthermore, seem to be confined to permanent settlements.

On the whole, therefore, it seems that endogenous attempts to influence the resilience of the Gabra social-ecological system are few and are quite limited. Faced with increasing shocks and stresses and drivers such as population growth and sedentarization, the Gabra community is on the defensive. There are pockets of innovation (for example, some of the dynamic women's groups in settlements such as Kalacha that are raising funds for their own activities, running simple micro-credit schemes, and so on), there are examples of community-initiated, community-driven development (for example, Balesa's actions to construct a school block), and there are some examples of Gabra communities taking action to deal with new stresses (for example, the development of rules requiring foora herds to move far from some settlements and key water sources). Generally, however, in Gabra communities the collective capacity needed to actively enhance the resilience of the social-ecological system and influence the way the system works seems to be low.

Several respondents were asked why this should be the case, with questions such as, "Why do we not see more examples of community-initiated, community-driven development?", "What does your community lack that it does not do this more often?", and "What did your community have which other communities lack that let you [undertake some particular initiative]?" A sample of the actual responses can be found in Box 5.1, and are summarized in Table 5.2. Five broad factors emerged in participant responses to these kinds of questions: having capital, having the ability to accumulate and protect capital, leadership, unity, and vision. Capital referred both to material capital whether in terms of livestock, cash or some other form, and human capital. Both those respondents who were speaking of examples of communities driving their own development and those who were speaking of the inability of communities to do so

Box 5.1: Factors contributing to (or lacking for) community-initiated, community-driven development: examples of particular factors mentioned by respondents

"Knowledge"

"Others started before us. They had knowledge before us."

"Facing a problem. Having a problem leads you to look to see what you can do."

"Leadership. There is a proverb: as the homestead is, so the owner is. Disunity is caused by people not coming together. Unity comes from people coming together, coming together to share ideas. We came up with one boma [one herd of contributed animals]. The assistant chief was the only educated person around, so he was given goats and sheep to start teaching. One animal per month. That is how the idea came. That is how unity and leadership help."

"Unity between the people. For example the school [which was constructed by the Balesa community]. Even loading camels were lent for the work."

"Maybe not having financial capacity, not having a market for our animals."

"The harsh environment. There is recurrent drought. If there were enough rain, there would be no problem."

"People learn at different levels. We are starting now; others started before. We need to learn from them."

"One problem is drought. Another is lack of market for our livestock."

"One is we are lacking in resources. Like we [Borana] people around Bagaga, because of the conflict between Gabra and Borana, all of our animals have crossed the border. There are very few animals around here. Secondly, there is lack of knowledge about development activities. We know nothing about development."

"Mostly, it is unity between people outside the town and people in the town. The elders outside the town and the elders in the town, they are united. So whenever they come for an area meeting, the issue is being raised that, 'How are we going to raise ourselves up? Without any help from these NGOs? What are we going to do? How can we initiate any different activity, and in case we need we can go back to them for help.' And so normally these two people are all united."

Q.: *What can the NGOs do to help people help themselves more?*
A.: "One is to interact more and have a very good relationship, so that there are more seminars, more training, more trips, more tours. So that we can go outside and see how other communities are living, how they are improving their lives. These are the things that will give us heart to do more development activities…. The most important thing is knowledge. We should be given enough knowledge."

Table 5.2: A categorization of factors that, according to respondents, enable community-initiated, community-led development

Factor	Explanation
Capital	
• Financial	Financial/material resources needed to carry out activities.
• Human	Knowledge, training.
The capacity to accumulate/ protect capital	In particular, the ability to avoid devastating losses, such as from drought.
Leadership	One or more persons championing an idea, driving the collective action process, and mobilizing support.
Unity	Community members deliberating together on their mutual problems and having a desire to confront them collectively.
Vision	This includes having to face a problem, and the will to act that results from this. It is connected with knowledge but relates more to having an understanding of the possibilities, rather than to skills.

Note: This table summarizes and categorizes responses of Gabra respondents to questions such as, "Why do we not see more examples of community-initiated, community-driven development?", "What does your community lack that it does not do this more often?", and "What did your community have which other communities lack that let you [undertake some particular initiative]?"

emphasized the importance of having the wherewithal to take action, especially in terms of financial capital or in converting livestock into financial capital. The capacity to accumulate and protect capital was a slightly different factor, involving especially the ability to avoid devastating losses such as from drought—having capital in the form of livestock is of no use for development activities if that herds are regularly decimated by drought before they can be invested elsewhere. In terms of human capital, respondents particularly emphasized knowledge and education. Other key factors included leadership (having one or more persons championing an idea and driving the process), and unity among the people involved. Lastly, several respondents emphasized factors which in Table 5.2 are summarized under the heading "vision". This entails the catalyst that comes from facing a problem, and having an understanding of the problem and of possible alternatives. Before considering some of these factors and their contribution to

collective capacity within the social-ecological system, a set of stakeholders that do seem to be taking steps to fundamentally influence the Gabra social-ecological system are examined.

5.3.2 Influencing Resilience from Without: Formal Sector Agencies

Whereas the collective capacity needed to actively enhance the resilience of the social-ecological system and influence the way the system works seems to be low within Gabra communities, some formal sector agencies—NGOs and to a lesser extent some government agencies—are able to have more profound impacts on the system. Interventions have included the introduction of new institutions, new practices and new technology. The National Environment Management Authority, together with GTZ, has been facilitating the creation of Environmental Management Committees at Sub-Location level. Various agencies have been augmenting traditional restocking mechanisms with their own restocking programs. PISP, for example, has been engaged in restocking and in a variety of water-related activities that are having some impact on the way that the social-ecological system functions. In this section, some of PISP's interventions and their impacts are discussed.

PISP's water-related interventions can be grouped into five categories: institution building, emergency interventions, time-saving technologies, new types of water points, and developing strategically located water points to increase access to underused pastures. The first three of these five categories of intervention are mentioned only briefly. Institution building includes working with local stakeholders to form water users associations or some other kind of water committee. However, PISP, more so than some development agencies, puts a great deal of emphasis on working with and through traditional institutions (see Chapter Six for a more detailed discussion of the relationship between PISP and traditional Gabra institutions). Among the water-related emergency interventions, undertaken not only by PISP but by many of the agencies working in the area, is water tankering. During droughts water has been brought by lorry, sometimes to settlements without reliable water (such as Hurri Hills and Balesa), and sometimes to remote pastures that otherwise could not be used. The latter strategy helps to relieve

grazing pressure on degraded pastures around permanent water points. Emergency assistance has also included maintenance and provision of fuel for boreholes. While the coping capacity that emergency assistance provides can be criticized for not being endogenous, for not being cost-effective, and for potentially not being sustainable, it is helping to reduce livestock loses and human suffering, at least in the short term.

Time-saving technologies have included improvements to traditional wells. Traditional Gabra wells have steps inside the shaft one and a half to two metres apart. Depending on the depth of the well, three, four or five people can be inside, each person standing on one of the steps, together forming a vertical chain to pass buckets of water up. The improvements that PISP facilitates involve cementing the wellhead and adjacent troughs, and building up the height of the wellhead. From a both a technical and economic standpoint, this kind of intervention is very modest. PISP could have opted to reinforce the entire shaft of the wells with concrete and to cover them and install mechanical pumps; instead, it chose to make only minor changes to the traditional design. Nevertheless, these improvements save great amounts of time. Normally the traditional wells, built at the edge of seasonal rivers, are filled with silt every rainy season, and desilting these wells and rebuilding the mud troughs requires a many person hours of labour. But with the wellhead built up above ground level, the siltation problem is greatly reduced, or, depending on the local topography and height of the wellhead, completely eliminated. I helped a group of well owners and other men in Balesa to do a "quick and dirty" calculation to quantify the time spent on cleaning and refurbishing wells after the rains each season. Together we calculated that the amount of labour required to maintain and desilt improved wells is typically less than one third the labour required at traditional wells.

However, the greater impact on social-ecological resilience has probably come from the new types of water-related infrastructure and technology that PISP has introduced and from work on water points in pasture locations that are water-scarce and therefore underutilized. PISP has introduced a number of new types of water-related infrastructure that were previously unknown in Gabra communities: underground rainwater harvesting

tanks, sand dams, small dams across ravines, and siphon pumps. It has endeavoured to ensure that the new technical knowledge becomes embedded in Gabra communities. In the early years of PISP's operations, elders were taken on tours of other parts of Kenya to see sand dams, underground rainwater harvesting tanks and other technologies firsthand. On an ongoing basis since PISP began operations, local artisans have been trained in constructing and building the new technologies and local elders have been immersed in decision making regarding siting new structures and targeting beneficiaries.

An example of this kind of work can be seen in what PISP has done in and near Balesa. Balesa is a settlement situated beside the Ririba, a seasonal river that typically has free flowing surface water for only a handful of hours every year. Balesa was originally the site of a number of traditional wells, and before anyone had settled there permanently, it was a destination for some nomadic Gabra immediately after the rainy season for a month or two, after which the wells would dry up. Eventually, people began to settle in places such as Balesa and El Hadi which is upstream from Balesa along the Ririba. PISP assisted the community to construct rainwater harvesting tanks to collect water from the roofs of the various buildings of the primary school. This not only benefits the school, but also provides a reserve for the whole community in times of drought, as well acting as a reservoir to receive water brought in by tankers during emergencies.

Also, in the late 1990s, PISP began working with the Balesa and El Hadi communities to construct sand dams across the dry river bed. Seven sand dams were constructed in the immediate vicinity of Balesa. When the seasonal river flows it carries along a large amount of sand. The sand dams are typically built down to a depth of about two metres, and after just a few rains in the area upstream, the sand dams have completely filled with sand.

> "We are now able to get water from those wells because of the sand dams. Prior to the sand dams and other things we used to face big, big problems. Animals would not stay around. Vehicles would be sent to North Horr for water. There was a shortage of water. All the livestock would be sent far but the household and the people would stay…. Livestock stay around now for longer. When they stay around we are able to get milk, sometimes we even slaughter. That helps."
>
> - A man from Balesa

> "Especially the sand dams have helped us. Previously, when it rains, the river just flows and the water goes away…. In the past we had a lot of trouble getting water…. Because of the sand dams we are saved so much time! Before, even at night like hyenas, you go and spend the whole night there, even leaving your children alone for the night."
>
> - A woman from Balesa

Any further water flow that is trapped behind the dam remains protected beneath the sand, with greatly reduced evaporation. Also, the sand dams, by trapping water for some time, allow for increased infiltration into the groundwater. Wells nearby on the edge of the river benefit from the improved groundwater levels, and the main results that residents of Balesa reported has been the increased length of time that the wells remain productive and the improved recharge rate. Before the sand dams, depending on the amount of rainfall, wells would yield water for another month or two after the rains. With the sand dams, the wells are productive for two to four months, sometimes lasting until the next rains. Also, in the past when the dry season was beginning and the wells were nearing the end of their productive period, the rate of recharge would be very low and a lot of time would be spent waiting for the water. With the sand dams, the recharge rate is much higher and a great deal of time is saved.

PISP's activities have been carried out through a large number of distinct projects with funding from various donors, and because many of these projects did not involve rigorous baseline studies or elaborate monitoring and evaluation plans, it is difficult to provide a clear, quantified expression of the impact of these activities. However, the overwhelming positive assessment of PISP that my respondents gave made it clear to me that PISP is having a significant impact. The two main constraints to livestock raising in Marsabit District are lack of water and lack of good pasture. As many informants told me, "The problem is that a place either has water and no pasture or pasture and no water". All of these water-related activities help in some way to overcome this problem, both improving ongoing livestock productivity and reducing loses during droughts.

Interventions by PISP that are having an impact on resilience are summarized in Table 5.3, according to the CRIC framework. Some of these impacts are a result of enhancing

Table 5.3: Ways in which PISP is influencing resilience

System Elements that PISP is Influencing or Introducing	Actions Taken to Influence the Element
Components	
Livestock	Re-establishing household livestock holdings through restocking
Water points	Providing water points in new locations Providing new types water-related infrastructure
Relationships	
Water-pasture-livestock relationships/herd mobility	Creating new water-pasture-livestock relationships by opening up new pastures with strategically located water points
Sources of Innovation	
Tours/exchange visits	Promoting innovation by taking Gabra on learning tours of other parts of Kenya and exchange visits
Sources of Continuity	
No PISP activity observed in this regard	

water sources and increasing storage. More settlements now have water sources that can support the human population through a drought, and for many Gabra communities a drought is now less of a stress than it once was. As the new water sources often also provide water for livestock, the improvement in water sources also means that in locations which have reasonable pasture resources mobility is less crucial than it once was. Previously, it was devastating for a household to lose all its camels, especially when this coincided with a drought—without camels, the family cannot move in search of water and pasture. Now, if a household's camels are stolen or die from drought or disease, the household may have to drop out of the mobile economy but at least they may still have the option of settling and keeping sheep and goats because of improved availability of water in places such as Balesa. In this research I encountered several respondents who had settled in or near a town after the 2005-2006 drought but who nevertheless hoped to rebuild their herds of sheep and goats and eventually replace their camels and return to the nomadic life. NGO Restocking activities through which people

are provided with camels aim to make this possible. The challenge will be for these households to obtain sufficient camels. As discussed in the previous chapter, a household needs at least three loading camels to be properly mobile. Whether or not PISP and other agencies engaged in restocking can help many household back across this threshold remains to be seen, but the programs do seem to be a step in the right direction.

While the new water sources that PISP is facilitating may be contributing to sedentarization, they have helped reduce human suffering during that drought, and generally, people's ability to cope with droughts has been enhanced. The small settlement of Forole, where PISP has been particularly successful, represents a good example. In the 2005-2006 drought, which was particularly severe, Forole required almost no emergency water tankering, unlike most other Gabra towns. In Balesa and other locations, respondents reported that the work that PISP has facilitated at various water points reduced their need during the last drought to trek livestock extraordinary distances moving from water point to water point. Some respondents pointed out that these interventions provide more options for movement of livestock by opening up underused pastures as well as also reducing the imperative to risk one's life and herd by moving into "enemy" territory in search of pasture. Overall, people's ability to cope with droughts has been enhanced simply by making water more available.

The point of this section is not to argue that all of the interventions undertaken by PISP and other formal sector agencies are unreservedly positive. Emergency interventions in particular may be only delaying problems rather than truly eliminating them, and the impacts of sedentarization deserve careful attention. Rather, what the above discussion is meant to emphasize is that formal sector agencies like PISP are influencing the way that the social-ecological system functions and enhancing some aspects of the resilience of that system. They are affecting some of the CRIC elements that comprise the identity of the system and are introducing new elements into the system. They are working with local communities in doing so, but it is the external agencies that have the capacity and that are the driving force. The next section examines what features allow formal sector agencies to have this impact, in a sense from *outside* of Gabra communities—that is to

say, what characteristics give them the capacity to influence resilience, a capacity that seems to be much weaker *within* Gabra communities.

5.3.3 Factors Contributing to the Capacity to Influence Resilience

This section very briefly mentions one of the main factors that seems to contribute to the capacity to influence resilience—access to capital—and then considers in depth another of these factors—vertical institutional linkages. Differing access to capital is one of the key dissimilarities between communities and community institutions on the one hand and some of the formal sector agencies that are taking steps to influence resilience on the other. These formal sector agencies include NGOs such as PISP and government agencies such as the Arid Lands Resource Management Project (ALRMP). The current ability of Gabra communities to raise funds seems quite limited, being restricted to occasional campaigns in which people contribute livestock on a voluntary basis. PISP, on the other hand, receives funds from a variety of international sources. ALRMP is funded largely by the World Bank.

Another contributor to the capacity of organizations such as PISP and ALRMP seems to be the array of linkages that they have to other institutions. As can be seen from Table 5.4, PISP has had relationships with numerous donor agencies: international NGOs, bilateral donors, and even private individuals and one private foundation. At levels of social organization below PISP, stakeholders include a wide array of community-based organizations, traditional institutions, and government institutions. At intermediate levels of social organization, especially district level, the most important stakeholders for PISP are the multistakeholder bodies the District Steering Group (DSG) and the Water and Environmental Sanitation Coordination Group (WESCOORD), as well as the government agencies that coordinate these two groups, the Arid Lands Resource Management Project (ALRMP) and the Water Services Board (WSB) respectively.

For comparison purposes, Figures 5.1 and 5.2 summarize some of the most important institutional linkages for PISP and one of the communities in which it works: Balesa. Selection of institutions and linkages for inclusion in these diagrams is based on an

Table 5.4: Past and present stakeholders that have been most important to PISP and its water-related activities

Organization/Institution	Type of Organization/ Institution	Level of Social Organization				
		Community	Location, Sub-Loc'n, Ward, & Traditional Home Range	District/ Constituency	National	International
Bunting family	Private donor					X
World Alliance of Mobile Indigenous Peoples (WAMIP)	Network					X
UNDP	International/multilateral org.				X	X
DFID	Bilateral donor agency				X	X
SNV	Bilateral donor agency/NGO				X	X
Water Aid	NGO				X	X
CORDAID	NGO				X	X
Caritas	NGO				X	X
Red Cross	International/multilateral org.			X	X	X
ITDG	NGO			X	X	X
Maji na Ufanisi	NGO				X	
Members of Parliament	Government institution			X	X	
Arid Lands Resource Management Project (ALRMP)	Government institution			X	X	
District Steering Group (DSG)	Multi-stakeholder consultative body			X		
Water and Environmental Sanitation Coordination Group	Multi-stakeholder consultative body			X		
Water Services Board (WSB)	Government institution			X		
Constituency Development Fund (CDF)	Government institution/ community-based org.			X		
Korra meetings	Traditional institution	X	X	X		
Yaa Councils	Traditional institution		X			
Chiefs and Assistant Chiefs	Government institution		X			
Councillors	Government institution		X			
SMCs	Community-based org.	X				
Abba elas and abba heregas	Traditional institution	X				
Project implementation cttees	Community-based org.	X				
Water users associations	Community-based org.	X				

X — Level at which organization/institution is/was based

Level at which organization/institution is/was actively linked to PISP

Note: The term *institution* in this table includes corporate institutions, institutionalized processes, and individuals serving in institutionalized roles.

Acronyms Used in Table 5.4 and Figures 5.1 and 5.2

ALRMP	Arid Lands Resource Management Project
CDF	Constituency Development Fund
CORDAID	Catholic Organization for Relief and Development Aid
DSG	District Steering Group
IIRR	International Institute for Rural Reconstruction
ITDG	Intermediate Technology Development Group
MP	Member of Parliament
SMC	School Management Committee
WESCOORD	Water and Environmental Sanitation Coordination Group

overall assessment of interviews and observations in the field. The institutions and linkages shown are restricted to those that are most important for activities related to water.

The most important horizontal linkages that PISP has at the present time are to the multistakeholder consultative bodies, the DSG and the WESCOORD. The DSG includes the District Commissioner or his representative, heads of government departments, NGOs, and international agencies operating in the District (e.g., UNICEF, Red Cross, etc.). Its two main functions are coordination of development activities in Marsabit District, and planning of drought preparedness and relief activities. ALRMP—a long-standing project that has essentially become a permanent government agency under the office of the President—has a key role in the DSG, especially for drought-related activities. WESCOORD is a consultative body that has the same classes of stakeholders as DSG, but specifically those involved in water-related activities. Its main function is coordination of agencies working in the water sector, and the Water Services Board acts as its secretariat. The DSG and WESCOORD play an important role in communication between PISP and the District administration, government departments, and other development agencies.

PISP has numerous upward vertical linkages (only three are shown in Figure 5.1), almost all of them being relationships with funders. It has no significant upward linkages with government institutions except through government departments at the district level and

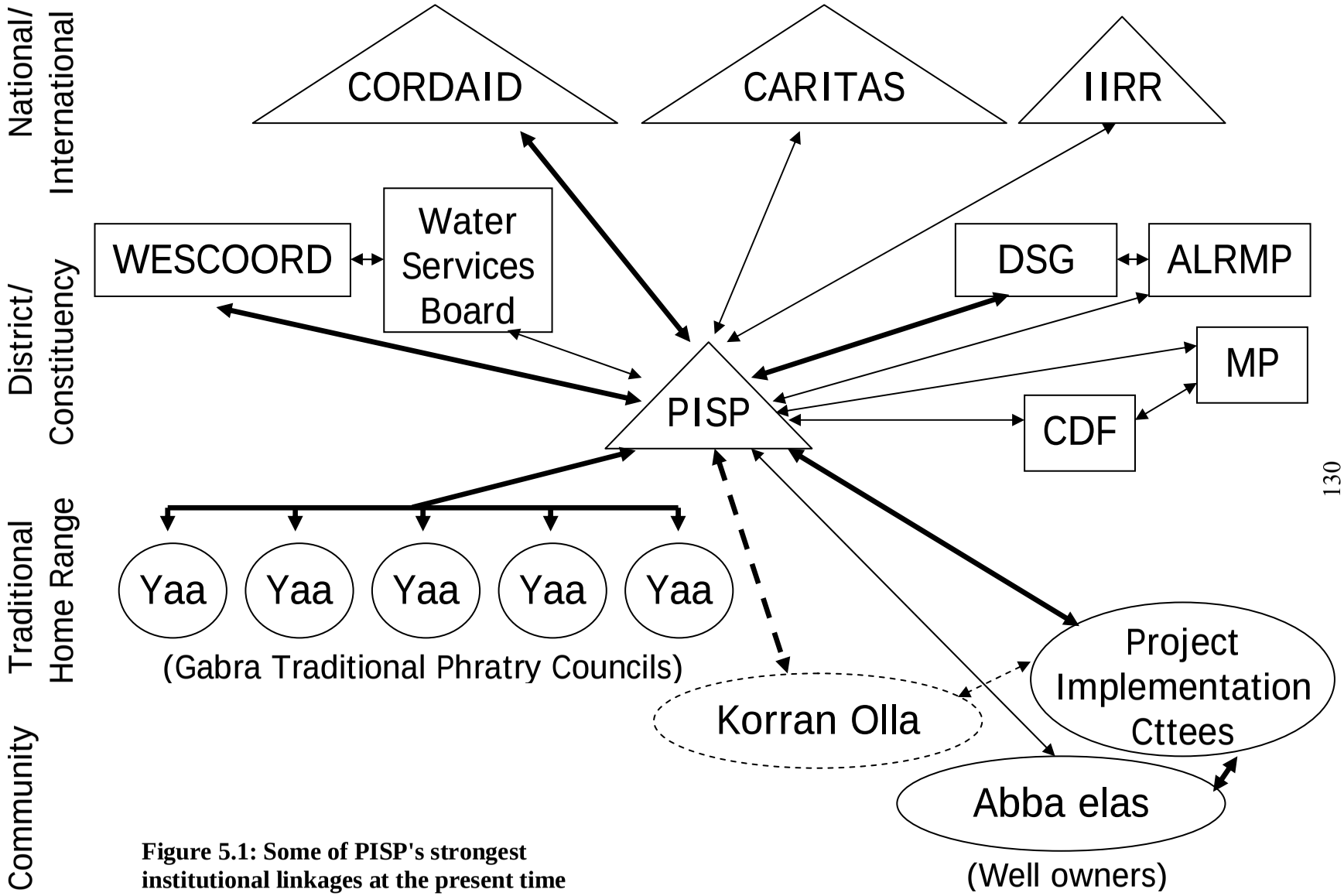
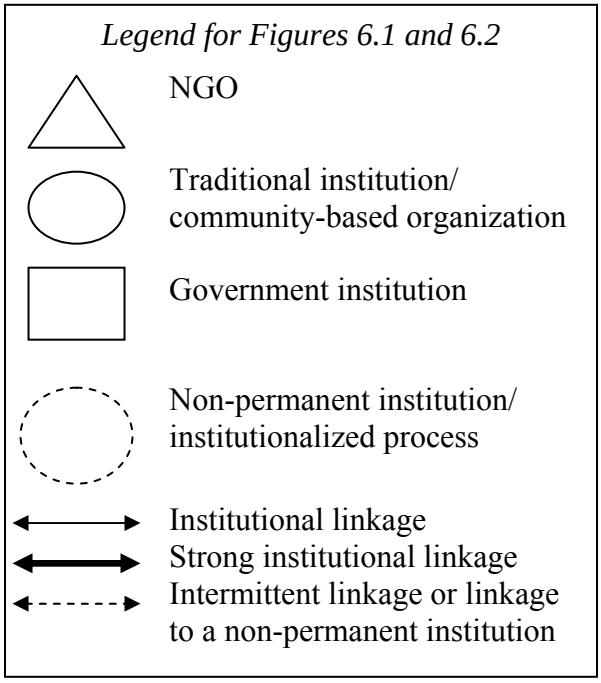


Figure 5.1: Some of PISP's strongest institutional linkages at the present time

through the MP. This reflects the nature of the work of PISP, being focused on local level development—PISP has not tried to seriously involve itself in advocacy, policy issues, or pastoral issues at the national level.



Downward vertical linkages are many, including to government institutions such as chiefs, assistant-chiefs and counsellors; to community-based organizations and local committees such as water users associations and project implementation committees overseeing the construction of new water infrastructure; and to traditional institutions such as abba elas (well owners) and as the five Yaa councils for the Gabra's five phratries.

One downward linkage deserves particular mention: PISP's interaction with the traditional meetings known as *korra*. Personnel with most if not all NGOs working with pastoralists in northern Kenya think of themselves as working closely with traditional institutions. However, this typically means working with *permanent* institutions. PISP, on the other hand, as a matter of course will relate to Gabra communities through leaders such as chiefs, through community-based organizations and local committees, *and* through korra meetings, especially korra meetings held at the level of the town or nomadic camp. This is discussed further in Chapter Six.

Key institutional linkages for the town of Balesa are shown in Figure 5.2. Aside from the institutions already mentioned above, some of the key institutions in Balesa include the Water Committee, Women's Well Committees, heregas, abba heregas, and the Chief. Whereas in some communities where PISP is helping the community to construct some kind of water infrastructure and it has had the community establish a temporary Project Implementation Committee, in Balesa, the task of liaising with PISP on water

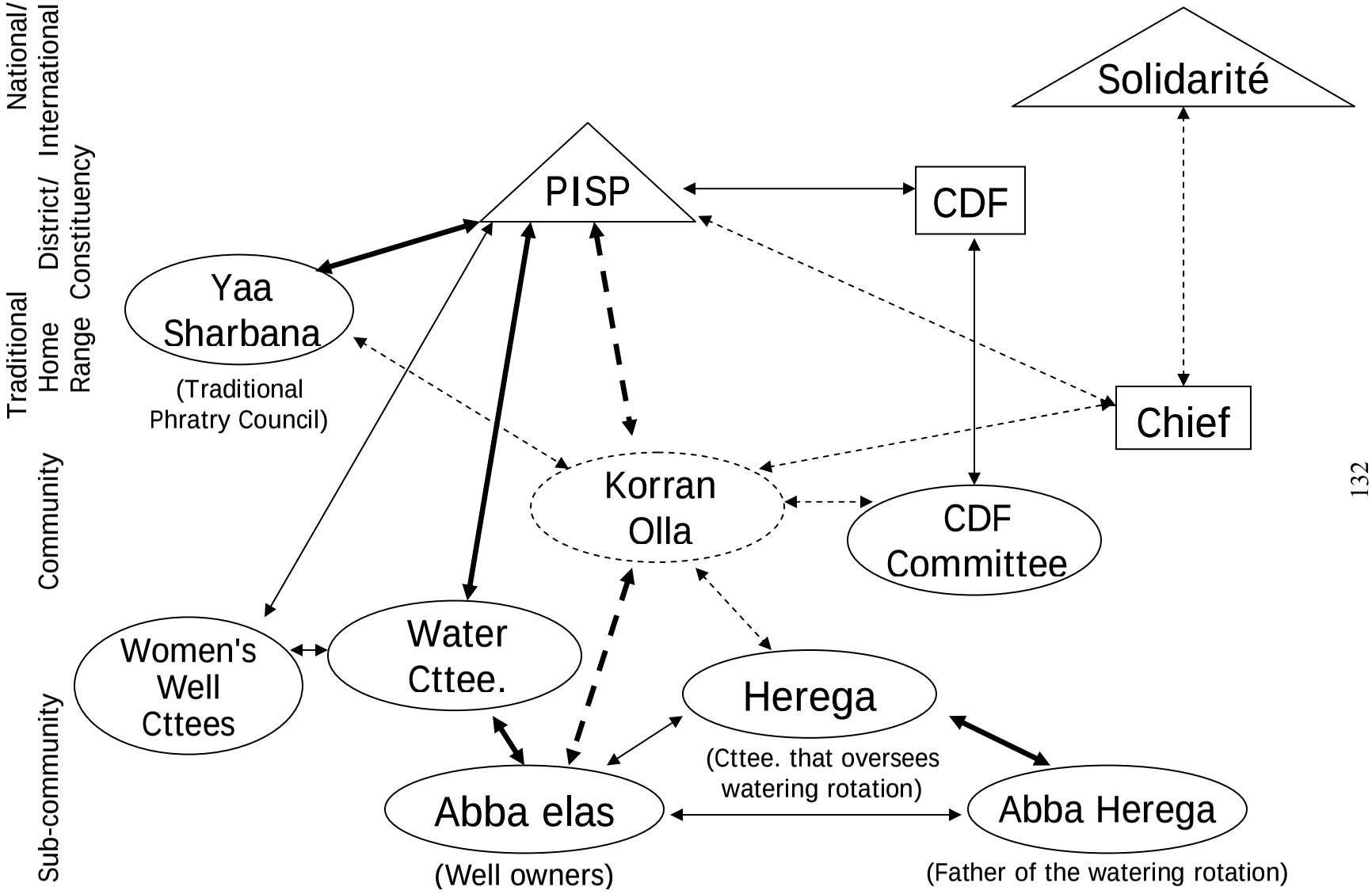


Figure 5.2: Linkages of key institutions for the town of Balesa

infrastructure projects falls to the permanent, four-person Water Committee. Essentially, the function of this committee is to act as the first point of contact for PISP when it is carrying out activities such as its recent project of assisting well owners to improve their wells. Balesa also has two Women's Well Committees, one for each of the two neighbourhoods of Balesa that have covered wells with hand pumps. These wells provide water solely for human consumption. Another important institution is the *herega*. The term *herega* refers to the cycle of turns by which people bring their livestock to particular wells—without a slot in the herega, one does not have the right to water one's livestock. *Herega* refers equally to the committee that oversees the rotation of turns. In this sense, the herega is essentially a committee-of-the-whole—all livestock owners with a slot in the rotation may participate in meetings and decision making related to livestock watering. Also, each herega has one abba herega (lit. "the father of the watering rotation"). Another important institution is the Chief. In Kenya, chiefs are government appointees. They represent the Provincial administration and their primary role relates to policing and security. However, they are also important entry points for visitors to the community.

Aside from PISP, there is only one other NGO currently active in Balesa, the French organization Solidarité. Of course, there are other institutions and stakeholders, both traditional and modern, but only those that are most important for water and sanitation issues have been mentioned here.

In comparing Figures 5.1 and 5.2, one important point to note is the difference in terms of upward vertical linkages. PISP has numerous linkages to higher levels of social organization, both directly (e.g., to funders such as CORDAID) and indirectly (through district level government agencies such as the Water Services Board). On the other hand, the only upward linkages reaching as high as district level that the community has are to two NGOs: PISP and Solidarité, and the relationship with Solidarité is relatively insignificant, existing only by virtue of a new project for the construction of pit latrines. Another upward linkage is to Gabra clans (not shown in Figure 5.2) and to Yaa Sharbana, but neither the clan institutions nor the Yaa councils have any significant upward

institutional linkages except to PISP. Other upward linkages include to the Constituency Development Fund and the Member of Parliament, and through the Chief and Counsellor. These latter linkages are all rather limited in scope. To summarize, although the community has a number of upward vertical linkages, most of them are either weak or very narrow in their mandate.

5.4 Discussion

5.4.1 Why Institutional Linkages and Capital are Important

The above examination of who is and is not influencing the resilience of the Gabra social-ecological system suggests at least two key characteristics that make such action difficult for communities and community-level institutions. Gabra communities such as Balesa have limited capacity for collective action to influence the way that their social-ecological system works, and thereby its resilience, because of their limited scope for raising capital and their institutional marginalization[13]. Human and financial capital are severely limited, and in this harsh environment useful natural capital is dispersed over large areas. As noted in Chapter Four, markets are not well-developed, and therefore the main form of capital held by households—livestock—is not easily converted into other forms. Furthermore, as suggested by Figure 5.2, initiatives aimed at enhancing social-ecological resilience and/or improving livelihoods depend to a great extent on a very narrow range of linkages to organizations and institutions at the district level and higher.

PISP, on the other hand, has at least two characteristics in its favour. The first is that it has much better access to funds than any community-level institutions, which is in part a result of the second characteristic, its strong network of linkages to other institutions. Gabra communities, unlike most NGOs, tend to have few vertical linkages that reach to the district level and beyond. Institutional linkages contribute to the capacity to influence resilience by facilitating the flow of information and capital. So, while PISP, as a small

[13] Other features such as those mentioned in Table 5.2 above (leadership, unity, vision) are likely important as well. I have chosen to focus on institutions and institutional linkages.

organization, can only do so much, it is able to influence the social-ecological system in ways that community institutions cannot.

The introduction of sand dams into north-central Kenya by PISP is a case in point. Institutional linkages to donor agencies provided the funds to make sand dams possible. Institutional linkages to other NGOs exposed PISP personnel to the sand dam technology. Later, PISP exposed various Gabra from Balesa and elsewhere to this technology by taking them on tours of other parts of Kenya and by training artisans. Institutional linkages to Gabra institutions and communities made implementation possible. Gabra individuals and institutions in Balesa, on the other hand, are not linked to other institutions and other levels as thoroughly as is PISP, expect indirectly by virtue of their connection to PISP, and it is difficult to imagine how they themselves could have spearheaded the sand dam endeavour without PISP's assistance.

More broadly, the fact that PISP has an *array* of institutional linkages is important. Different donors will fund different kinds of projects, and so having connections with a number of donors gives PISP the opportunity to try different things. A diversity of projects funded by a diversity of donors means that PISP is more likely to find particular projects, technologies and strategies that work well and have significant impacts. Having a diversity of downward linkages gives PISP various options for how and with whom it will work at the community level. Having a diversity of both horizontal and vertical linkages, furthermore, creates the opportunity for a greater flow of information, thereby exposing PISP more broadly to new practices and technologies such as sand dams.

Because the capacity to influence resilience depends upon these kinds of institutional linkages, the capacity resides in the network of linkages almost as much as it does in PISP. That is to say, it is a systemic capacity. Community-level and traditional Gabra institutions are a part of this network of linkages. However, because particular Gabra institutions have fewer institutional linkages and because PISP has more linkages and a wider variety of linkages, Gabra institutions rely more on PISP than PISP relies on any particular Gabra institution. In the terminology of social network analysis (Hanneman and Riddle 2005), PISP can be said to have a high level of *centrality* in the network. So

while the capacity to influence resilience is systemic, it is possible to identify where in the system this capacity primarily lies.

It should not be assumed that it is always preferable to have more vertical linkages. Complex systems thinking suggests that a social-ecological system should have linkages to the larger system of which it is a part, but that *too much* connectivity can come at the price of resilience. For a system to continue to exist as a distinct entity, it must maintain boundaries, even though those boundaries will be porous (Waltner-Toews 2004). This can be understood in terms of panarchy. A system that is too thoroughly linked to levels above is more susceptible to disturbance from that level cascading downwards (Homer-Dixon 2006; Young et al. 2006). In practical terms, vertical institutional linkages make it possible for funds to flow into the system from above; but this can lead to dependence and vulnerability if the funds dry up. And if vertical flow of information increases to the extent that it overwhelms the flow of information *within* a system, then local knowledge and social memory can be lost. This is a concern everywhere that traditional societies are grappling with modernization. In the case of PISP, however, its approach seems balanced. While bringing new knowledge into the Gabra environment, it also respects and draws on traditional customs and knowledge.

5.4.2 Alternative Objectives and Strategies for Formal Sector Agencies

That the capacity to influence resilience lies more with formal sector agencies which can be considered "external" to the social-ecological system than with communities and community level institutions suggests that these agencies may be providing adaptations rather than improving adaptive capacity. The kinds of actions that they take—providing new types of water sources and water sources in new locations, introducing new forms of restocking, and introducing new institutions such as Environmental Management Committees—are influencing resilience but having only a limited impact on the capacity of communities to do so. The training of local artisans that accompanies new kinds of water infrastructure is positive, but little is being done to improve the capacity of communities to raise their own funds or to provide them with their own, direct linkages to important institutions at higher levels. Expressed another way, some formal sector

agencies may be improving *adaptness* within the social-ecological system without building much *adaptive capacity*.

Distinguishing resilience from the capacity to influence resilience is critical for distinguishing alternative entry points for agencies that are concerned with social-ecological resilience. New water sources in remote pasture areas, new *types* of water sources and new institutions may all be important contributions to the resilience of the Gabra social-ecological system. In the long run, however, actions that create capacity within Gabra communities to undertake such activities themselves will likely have more lasting impact. A shift to a new way of working for NGOs and other external agents—a way of working in which building the capacity to influence resilience is central—will require a radical paradigm shift in the way that these stakeholders conceive of their role. It will also require them to work towards transforming the institutional environment at all levels. Based on the above discussion, I suggest three broad and interrelated strategies that development agencies might adopt in order to contribute to this transformation and thereby help increase and broaden systemic capacity (see Table 5.5). Firstly, as described above, Gabra communities and community-level institutions have a limited role in introducing innovation and novelty into the system. Therefore, one strategy that development agencies can adopt in order to build capacity in the system is to foster innovation and novelty, as opposed to simply introducing innovations. Secondly, given that institutional linkages are important in the capacity to influence resilience and that communities and community-level institutions tend to have few such linkages, helping communities and their institutions to increase the number and strength of cross-scale and cross-level linkages could also be effective. Thirdly, as noted above, the ability to accumulate and protect capital is also important, and so development agencies would do well to assist communities to develop this capacity.

One key issue for innovation and novelty is the nature of the novelty—is it novelty that represents new relationships and reorganization (self-organization) within the system, or does it involve the introduction of new *kinds* of components and relationships into the system? Another issue is the *how* and *who* of introducing innovation and novelty into the

Table 5.5: Development agency strategies that can contribute to systemic capacity to influence resilience

- Foster innovation and novelty (as opposed to simply *introducing* innovations),
- Help local communities and their institutions to increase the number and strength of cross-scale and cross-level institutional linkages (as opposed to themselves *being* the link), and
- Improve the ability of local stakeholders to accumulate and protect capital (as opposed to simply *providing* that capital).

system? Another issue is the *how* and *who* of introducing innovation and novelty into the system—in other words, what role do communities and community-level stakeholders have in selecting and generating innovations? In practice, fostering innovation and novelty that come from and through the grassroots level will require the creation of opportunities for learning from what has been tried in other locations and for deliberation among a wide range of stakeholders. Deliberation is important for ensuring that local actors have opportunities to assess and reflect on their situation and to be part of the learning process. PISP has done well in this regard, for example by taking people from various Gabra communities to observe practices and technologies in other parts of Kenya. However, more than this is needed.

Facilitating institutional linkages can also contribute to the creation of learning opportunities. Furthermore, an important subset of these institutional linkages will be linkages related to deliberation processes. That is to say, there is a need for new deliberation opportunities, especially those (a) that allow voices from the grassroots to participate in decision-making at the District level and above and genuinely influence decisions, and (b) that are linked to key organizations and institutions such as the County Council, government departments and NGOs. This strategy of increasing institutional linkages related to deliberation processes might include both the *creation of new venues* of deliberation in which stakeholders from the community level sit at the same table with stakeholders from government, NGOs and donor agencies, and the *broadening of existing*

venues of deliberation to include voices from the grassroots level. Novelty, innovation and linkages that cross scales and levels could all benefit from new kinds of learning and deliberation opportunities that link community-level stakeholders to institutions, decision-makers, government line agency staff and researchers at various levels, as well as to other communities.

NGOs can play important roles as bridging organizations by providing a linkage to higher levels of social organization, and thereby creating possible channels for resources to flow downward and for information to flow both directions (Cash 2001; Folke et al. 2005), and indeed it seems that PISP does play this role. However, increasing the number of upward linkages that communities and community institutions have can help to limit the power that particular bridging organizations may have as brokers. While PISP is playing an important role as a bridging organization, Gabra communities should not have to rely on PISP when having a wider range of vertical linkages would increase their own capacity for action. Given the relatively low level of education and literacy among the Gabra pastoralists, expanding institutional linkages from the community level may require the creation of new, additional bridging organizations to facilitate communication with higher level organizations and institutions. This would broaden the channels for flows of information and resources, and thereby improve the capacity of Gabra communities to take collective action.

Donor agencies and development policymakers and programmers have an important role to play in facilitating approaches that build adaptive capacity, including the capacity to influence resilience. One key point of leverage that these kinds of stakeholders have is the way that they define goals and success, and the way that they measure success through indicators. For example, many donor agencies put a great deal of emphasis on outputs and outcomes in terms of discrete achievements: number and quality of water tanks built, number of livestock distributed, number of households assisted, number of households enabled to cope with the drought without emergency relief, etc. An approach that focuses on building capacity might use some of the same indicators but also measure indicators that consider *who* initiated, led and funded the activities: the community or the

NGO. Capacity-centred indicators would also look for examples of communities and community institutions raising their own funds in a systematic and ongoing way, and examples of community-initiated, community-driven development. All of this suggests that donor agencies, policymakers, development programmers, and implementing agencies all need to carefully consider both their approach to helping communities to adapt to a changing world, and how they measure success.

5.5 Summary

In situations such as that which pertains to pastoralists in north-central Kenya, creating the conditions in which social-ecological resilience can re(emerge) will likely be insufficient to ensure that people have adequate livelihoods and to overcome vicious circles that force people out of pastoralism and into a poverty trap. Instead resilience needs to be proactively created. Unfortunately, in the areas where this research was conducted, few Gabra communities or Gabra institutions seem to have much capacity to influence resilience. On the other hand, some formal sector agencies at the District level and above do seem to have a more substantial capacity to influence resilience, based in part on better access to capital and more substantial cross-level institutional linkages.

Because this capacity mostly lies with external agencies rather than with Gabra communities and institutions, these agencies are providing adaptations and increasing adaptness, rather than building adaptive capacity. They are enhancing resilience but not necessarily doing much to build local capacity to influence resilience. A radical shift in their way of thinking and working is needed—a shift that sees building the capacity to influence resilience as their prime mandate. If they were to try to build this capacity, three broad and interrelated strategies might be adopted. Firstly, this research has found that Gabra communities and community-level institutions have a limited role in introducing innovation and novelty into the system. Therefore, one strategy that development agencies can adopt is to foster innovation and novelty. Secondly, as noted above, institutional linkages are important in the capacity to influence resilience but communities and community-level institutions tend to have few such linkages. For this

reason, helping communities and their institutions to increase the number and strength of cross-scale and cross-level linkages could also be an effective strategy. Lastly, it was observed that the ability to accumulate and protect capital is also important. Development agencies should assist communities to develop this capacity. One broad aspect of what this would look like in practice—specifically what this shift would imply for the practice of participation—is explored in the next chapter.

It was argued in Chapter Four that in Gabraland pastoralism in its traditional form is probably no longer viable. The scale of shocks and stresses that the Gabra face, drivers such as growth in the human population, and the emergence of a vicious circle involving loss of livestock, sedentarization and destitution, together leave little hope that the Gabra as a whole can return to living as they did fifty years ago. Establishing the conditions in which problems such as degradation of rangeland surrounding permanent water sources have been overcome and in which people are able to create a reasonable livelihood will require a social-ecological system that is resilient. But this will have to be a resilient system that, while including many elements of traditional pastoralism, also has new elements, especially new livelihoods. In other words, there may even be a need to go beyond actively enhancing the resilience of that existing system and to create a *new* stability domain, to create a fundamentally new set of relationships and dynamics. Achieving this will require greater capacity for collective action than currently exists within the Gabra social-ecological system.

A traditional Gabra korra meeting.

Photo by Lance W. Robinson

Chapter 6: Rethinking the Rationale for Participation—Institutions, Capacity and Interdependence

6.1 Introduction

In Chapter Four it was argued that shocks and stresses such as drought, livestock diseases and theft of livestock, as well as the extreme variability of the climate in which most dryland pastoralists live, have compelled pastoralist systems to evolve a high level of resilience. In the case of the Gabra social-ecological system, however, that resilience has been eroded by factors such as growth in the human population, and in recent years a different stability domain—a perversely resilient poverty trap—is becoming more dominant. Chapter Four concluded by arguing that a new stability domain is needed—a system that is distinct from both traditional pastoralism and this poverty trap. In order to create such a possibility and push the system in that direction, capacity will be needed. As noted in Chapter Five, however, the capacity to influence resilience is quite weak in Gabra communities and institutions. That capacity seems to be stronger in some formal sector agencies. However, these agencies are doing more to provide adaptations that to build adaptive capacity. NGOs and other agencies working with pastoralist communities can do more to build the capacity to influence resilience, and a key lever at their disposal is the ways that they engage with local communities, approach decision-making, and undertake the practice of *participation*. This chapter examines approaches to participation and decision-making.

6.1.1 "Rationales for Participation" as an Approach to Analysis

Development discourse is well known for being subject to the rise and fall of buzzwords. In the late 1980s, the buzzwords on the rise included *bottom-up*, *participation* and *participatory*. Top-down approaches were recognized as having been hugely unsuccessful, and the importance of consulting with "beneficiaries" and ensuring their participation were identified as being critical to achieving real development. Gradually, participation became more than a buzzword—it was institutionalized in the practices of

NGOs and the requirements of donor agencies. This was accompanied by the emergence and re-emergence of numerous participatory methodologies.

Participation, or at least meaningful participation, can be thought of as an inclusive process in which stakeholders are involved in, and, more importantly, have some level of control over decisions that affect them, and must be distinguished from mere involvement (Arnstein 1969; Pretty et al. 1995; Robinson 2002; Stewart and Sinclair 2007). Any critical consideration of participation, therefore, must include attention to issues of decision-making—issues such as who decides, how they decide, and what it is that they are able to decide about. Development agency practice, however, sometimes reflects a much weaker understanding of the word *participation*, sometimes using it to refer to interaction or involvement in discussions that do not entail meaningful input into key decisions, and even to refer to "participation" in project activities, for example by contributing manual labour. In academic literature on participation, on the other hand, there is widespread commitment to the belief that participation should be something more substantial than this. For example, participation is discussed in relation to its role in citizenship and the creating and claiming of rights (Cornwall 2004; Gaventa 2004; Williams 2004), as a form of empowerment or emancipation (Freire 1968; Fals Borda 1979; Rahman 1995), and as an element of transformative learning (Sinclair and Diduck 2001; Mezirow 2003).

A number of different conceptions, emphases, principles, and criteria related to participation have been expressed in both the academic literature and development agency grey literature. A variety of mental models and scripts related to participation also exist in the minds of environment/development and professionals. In this chapter I explore some of these ways of thinking about participation, approaching the analysis from my standpoint as a development practitioner. The starting point in this analysis is the way that practitioners think about participation—their explicit logic and their assumptions—and what these imply for practice. The research process involved asking, directly to participants and also to myself in analyzing my findings, questions such as the following:

- What does this person/organization mean by "participation"?
- Why do they think it important to use a participatory approach?
- What are they trying to achieve?
- How does this way of thinking translate into practical action?
- In relation to some particular decision-making process, who was involved in making the decision?
- How did they decide?
- And, just what was it that they made decisions about?

I found it helpful to use rationales for participation as a conceptual framework to ask and think about these kinds of questions.

I use the word *rationales* in the plural because they are more than one, and because they are distinct and not necessarily compatible. There is, furthermore, some degree of overlap, and none of these rationales necessarily provide a perfect representation of the philosophy and practice of any particular individual or organization; indeed, an individual may adhere to (or an organization manifest in its way of working) aspects of more than one rationale. Instead, these rationales should be seen archetypes and mental models that articulate and help to shape thinking about participation.

In the literature on participation there are some identifiable theories and schools of thought, and while there is some correspondence between some of this literature and the rationales discussed in this chapter, the alternative rationales should not be interpreted as representing fully articulated theories. Academic literature does have some influence on development practice and on the practice of participation, but so do other factors such as habit, institutional culture, and unexamined assumptions, as well as development practitioner reasoning that may or may not have any relation to academic theory on participation. The approach being used here is to identify the cognitive elements—reasoning, assumptions, aims, principles and criteria—that comprise the thinking and discourse of development practitioners and that are manifested in the way that their organizations work. While it may not be often that these elements are subjected to critical reflection, they often work together in an internally coherent way. It is this

internally coherent set of cognitive elements that I refer to as a *rationale*. The aim of this chapter, therefore, is to identify the rationales that guide the approach to decision-making and participation taken by various formal sector agencies, especially NGOs involved in the water sector, and assess the appropriateness of these alternative rationales in the context of the Gabra social-ecological environment.

In interviews with many key informants from NGOs, government agencies, consulting companies, and universities doing development work and water-related projects in Kenya I explored people's thinking about participation. As described in Chapter Two, I also directly observed the way that PISP, and to a lesser extent other organizations such as the Water Resources Management Authority and the international NGO Food for the Hungry, involve beneficiaries in decision-making. These interviews and observations, together with a review of academic literature on participation, helped me to conceptualize and articulate the various rationales referred to below. In an iterative process, the rationales in turn became a filter for analysis of the data.

Therefore, the organization of this chapter is also iterative. After a consideration of recent scholarly debates about participation (Section 6.1.2), the chapter moves back and forth between findings and analysis. First I present my findings regarding conceptions of participation found with development agencies in Kenya generally (Section 6.2.1) and then analyze these conceptions by considering them as representing two different rationales for participation: *participation as a means for effective implementation*, and *participation as building community capacity* (Section 6.2.2). These rationales correspond to some of the thinking around participation that has been criticized by various authors. Many of those criticisms correspond to a third rationale: *participation as empowerment*. I then follow a similar strategy in considering the Gabra approach to collective decision-making, presenting the finding of the research (Sections 6.3.1) and then an analysis that articulates the Gabra rationale for decision-making (Section 6.3.2). Section 6.4 describes the approach to participation of PISP. PISP is an interesting case to consider in that while there are many aspects of PISP's approach that reflect the *building community capacity* rationale, there are aspects of how PISP works that are distinct from

the typical *community capacity/institutional* approach. It is in part because of these distinctive aspects of its approach that PISP was a finalist for the 2004 Equator Prize. The Discussion section of the chapter argues that the findings around Gabra approaches to decision-making and the approach adopted by PISP both help to highlight weaknesses in the rationales for participation that are common in the development industry and ways in which these rationales are inappropriate in the context of the Gabra environment (Section 6.5.1). An alternative rationale is then suggested: *participation as building systemic capacity* (Section 6.5.2).

6.1.2 Populist Participatory Development and its Critics

The populist forms of participatory development which rose to prominence in the late 1980s and in the 1990s, and especially the rise of its most well-known variant, Participatory Rural Appraisal, quickly attracted strong criticism. The landmark event in the backlash was the publication of *Participation: The New Tyranny?* (Cooke and Kothari 2001). Most of the authors contributing to the volume focused primarily on questions of power and highlighted the need to move beyond methodological revisionism and make a critical assessment of the "participatory development orthodoxy". Critiques from within this orthodoxy, they argued, had not sufficiently addressed questions of power, and had not taken seriously the possibility that participatory development itself is part of the problem. In reviewing recent literature on participation, Hickey and Mohan (2004) identify four common arguments made against the populist form of participatory development:

- that there is a tendency for many practitioners to treat it as a technical method of project work rather than as a methodology for empowerment,
- that it has an insufficiently sophisticated understanding of how power operates,
- that it has an obsession with the “local”, as opposed to wider structures of injustice and oppression, and
- that it has an inadequate understanding of the role of structure and agency in social change.

While many of the criticisms of mainstream, populist participatory development have been valid, the critiques have sometimes been unproductive and "potentially disabling" (Williams 2004 p. 103). For example, the conception of power in many of these critiques has been just as reductionist and simplistic as that of the mainstream (Masaki 2004; Williams 2004). What these critiques have done is to have prompted many authors to attempt to reconceptualize the nature of participation based on a more sophisticated understanding of what power is and how it operates. What is common across these various responses is an emphasis on transformation—transformation of development practice, of social relations, institutional practices and so on (Cornwall 2004; Gaventa 2004; Hickey and Mohan 2004; Williams 2004). This response is encapsulated in *Participation—From Tyranny to Transformation?* (Hickey and Mohan 2004). Contributors to this volume conceive of *participation* as a right of citizenship (Gaventa 2004) or as the practice of multi-scaled citizenship (Hickey and Mohan 2004; Williams 2004).

Contributors to the *Transformation* volume, while considering participatory democracy, social movements, and other forms of direct citizen action, also discuss examples of NGO approaches that go beyond the typical NGO project participation model: the REFLECT approach to literacy and empowerment, advocacy and building community capacity for capacity, helping grassroots organizations to form federations, and rights-based approaches generally. Nevertheless, both the *Tyranny* critique of mainstream participation and the reaction to that critique which emphasizes transformation agree that development NGOs "face severe limitations in seeking to be genuine agents of transformative development through participatory approaches" (Hickey and Mohan 2004: 163). If participation is the practice of multi-scaled citizenship and can be equated to the act of claiming rights, then it cannot be contained within the framework of discrete development projects. How then are the personnel of development NGOs to conceive of their role? This chapter attempts to contribute to answering this question.

6.2 Development Agency Approaches to Participation

6.2.1 Findings

CONCEPTIONS OF PARTICIPATION

In this research, various research methods, as outlined in Chapter Two, contributed to an exploration of the approaches to participation and the rationale(s) underlying these approaches. Some of the interviews with formal sector stakeholders—personnel from NGOs (PISP and others), government agencies and consulting companies and people who were otherwise involved in development and/or water resources management—were particularly important. People's thinking about participation and participatory development was explicitly discussed in thirty-eight (38) such interviews, in which questions such as those presented in Section 6.1.1 above, were asked (see also Appendices 2B and 2D). For analysis, I used an ethnographic content analysis approach. The aim of this analysis was to identify principles, values, and recurring themes that respondents consider to be important for the practice of participation. The result is summarized in Table 6.1.

The numbers in the table should not be taken as representing hard, quantitative data. The interviews were not based on structured questionnaires, and the percentages associated with particular themes that were identified are partly a result of what issues I chose to probe in the interviews. For example, the fact that four interviews referred to the importance of vision and sixteen interviews referred to sustainability, does not mean that sustainability is four times more important to my respondents than vision. Instead, the percentages merely give broad indications of the thinking of the respondents. In particular, the principle of inclusivity is probably more important to my respondents than suggested by the table below, as it was not an issue that I pursued in many of these interviews. In the table, respondents from all organizations and types of organizations are lumped together—I chose not to break down responses according to organization because, on the whole, respondents tended give similar sorts of answers.

Table 6.1: 38 Interviews on participation and decision-making with personnel from NGOs, government agencies and other formal sector agencies—principles and themes considered important for the practice of participation

Principle/Theme	Percentage (no.) of interviews in which the principle was mentioned
Sustainability	42 % (16)
Empowerment	32 % (12)
Sense of ownership	32 % (12)
Analysis	13 % (5)
Vision	11 % (4)
Efficacy	7.9 % (3)
Respect/civility	5.3 % (2)
Inclusivity	5.3 % (2)
Peace	5.3 % (2)
God, prayer	5.3 % (2)
Consensus/unity	5.3 % (2)
Tradition	5.3 % (2)

Note: The numbers shown are based on ethnographic content analysis, coded using the NVivo software (see Section 2.4).

One set of themes that that arose frequently in the interviews summarized in Table 6.1 reflected an instrumentalist way of thinking about participation. For example, *sustainability* was a common theme in these interviews, and often the respondents were not talking about environmental sustainability as a factor that should be considered during decision-making/participation processes, but rather, merely the sustainability of project interventions and outcomes. Sometimes they were speaking of sustainability in a broad and encompassing way that included both environmental sustainability and project sustainability. In other words, participation is seen as something that contributes to the sustainability of projects and of project deliverables such as new water infrastructure. Another issue repeatedly emphasized was the need to foster a sense of ownership—ownership of development processes and, more commonly, ownership of particular

projects and infrastructure—in order to ensure the ongoing success of those processes, projects and infrastructure. Similarly, in a few interviews *efficacy* and effective project implementation were explicitly mentioned as part of the rationale for using a participatory approach. This research, therefore, supports the claim that some of what passes for participation in development work is decidedly instrumentalist, its purpose being to help implementing agencies to achieve other, more tangible ends. Comments from respondents that reflect this kind of thinking about participation are shown in Box 6.1.

Box 6.1: Participation is often considered a means to effective project implementation

"In fact ownership is key, the key issue. Because without the community in any project, that project is not sustainable."

- A manager in a government agency

"What is more important is ownership. Most donors don't have specific resources for training, the issues of ownership and the future handling of the project. But PISP ensures with visits that the communities are really on board from the word Go."

- A PISP staff member

"And areas where there is no involvement and participation of WRUAs or communities and stakeholders you will realize that to achieve your task will be very difficult. And if the task is achieved, it will not be sustainable. There will be short-term results. But we want long-term results in terms of water resources management."

- A Water Resources Management Authority staff member

Nevertheless, another set of ideas seems to be most prominent in the minds of all the PISP staff that I interviewed, as well as in the minds of many other interviewees (Box 6.2). PISP and other NGOs working in north-central Kenya are helping community members to form self-help groups, Location Development Committees, Water Users Associations (WUAs), and so on. The Water Resources Management Authority is helping communities throughout Kenya to form Water Resource Users Associations. And they are all encouraging people to participate in these bodies, channelling resources and decision-making through these bodies, and, to the extent that resources allow, providing training for these bodies.

As well as emphasizing the importance of community ownership, many respondents tended talk a great deal about the link between participation and capacity building. In

Box 6.2: Building capacity

"If you could look at our logframe, there were funds identified for building capacity of PISP as an organization, there were funds set aside for building the communities, the community structures, WUAs. Because you can talk about the community, but when the project finishes what are you leaving behind?"

- A former staff member of an NGO that supported PISP in its early years

fact, the way that people who live in permanent settlements tend to think of NGO-organized events reflects the emphasis that the NGOs tend to place on training, as well as the scarcity of analysis and deliberation in their participation processes. Many of the people whom I encountered in Gabra settlements who speak English will refer to any kind of meeting organized by an NGO as a "seminar"—that is to say, people whom I encountered in Gabra communities generally expect events organized by NGOs to involve training, not analysis and deliberation around matters of mutual concern. The focus on training was clear on one occasion when PISP organized a four-day workshop in Hurri Hills for a group of communities in the area—both settled and nomadic—after the construction of two new water points was completed. One of the two new water points included two dams across a small ravine and a gravity-operated pipe system to bring water from the dam to a more accessible spot. As the people had no experience with a water source such like this, the question of how to manage the site and allocate access was not straightforward. A number of important decisions had to be made including whether and how much to charge for the water, and how to structure the committee that would manage the water points. The second water point was a relatively large pan—much larger than the only other pan in the vicinity—and the two new water points brought with them the possibility of attracting more people and more livestock to the area, and along with that concerns about what might happen to pastures in this area which had never had reliable sources of water. PISP arranged for personnel from the Water Services Board, Ministry of Health, and the National Environment Management Authority to facilitate the workshop, all of whom saw their role as providing training. In this, the first formal opportunity that community members had to sit together and discuss how the water points would be managed or to discuss the broader implications of having these new sources of water, most of the participants' time

was spent on listening to lectures and participating in generalized discussions on hygiene and sanitation, the 2002 Water Act, the hydrological cycle and HIV-AIDS.[14]

During the course of the field research, I had the opportunity to witness a handful of community events organized by government departments or by NGOs other than PISP. Only one of those was built around participants being involved in analysis and deliberation—this was a "Participatory Integrated Community Development Workshop" organized by the Arid Lands Resources Management Project in which participants went through a process of resource mapping, assessing needs, developing a local plan, and so on. The other events that I witnessed were either trainings that offered little scope for participants to make important decisions or sessions in which local community-based organizations reported back to the NGO supporting them on their use of micro-credit funds or some other activities.

One of the criticisms of mainstream, populist approaches to participation is the assumption of community solidarity, an assumption was also reflected in the ways that most of my respondents talk about participation. I asked many of them, "If participation is about empowerment, who are you trying to empower?" The most common answer was, "The whole community." I found no agencies working in north-central Kenya that are explicitly pursuing a radical agenda of empowerment of marginalized groups within communities. From my research, only two examples of NGO activities come close to representing an empowerment agenda in relation to marginalized groups. One is the plans of the Catholic Diocese Development Office (DDO) in Marsabit to assist pastoralist communities to engage in lobbying and advocacy at the Locational and perhaps District levels. In particular, this would involve communities lobbying for funding and other assistance from government for development of water sources. The other example is the programmes that many NGOs have aimed at improving the educational and economic status of women.

[14] How PISP handled this situation is discussed briefly below (Section 6.4.2).

A related criticism of mainstream approaches to participation is that they tend to focus narrowly on the local level—"community participation" generally means participation at the *community* (i.e., village or neighbourhood) level. Of the organizations that I encountered during this research, few emphasized any kind of participation by beneficiaries in decision-making processes at levels higher than the village or cluster of villages (Box 6.3). Events organized for consultation with beneficiaries typically happen at the community level or, when the settlements are very small, at the level of a cluster of communities or a Sub-Location. The above-mentioned project of DDO that aims to assist pastoralists to engage in lobbying at the District level is an exception. PISP also departs from the "community participation" mould in some ways by actively participating in large deliberative events held among the Gabra (see Section 6.4.2). On the whole, however, PISP's approach to participation can also be characterized as "community participation".

Box 6.3: Little emphasis on participation beyond the community level

Q: [After discussing the approach to community-level participation of a particular project…] In this project, is there any form of consultation or planning with beneficiaries that takes place at larger scales?
A: "No. There is nothing."
- Staff member of an NGO working in the water sector in north-central Kenya

Q: Are there institutions planning for management of water resources at the District level?
A: "I think the short answer is 'no'."
- Director of an NGO working in the water sector in north-central Kenya

Q: [After discussing community-based management of water points…] What about planning for water resources at the next scale up?
A: "There is no institution that is doing it. But it is a concern for all."
- Staff member of an NGO working in the water sector in north-central Kenya

The work of the Water Resources Management Authority in promoting the formation of Water Resource Users Associations (WRUAs) is somewhat different, in that WRUAs are sometimes structured as associations of a variety of *stakeholders* rather than as an organization of a *community*. The WRUA concept in Kenya's ongoing process of reforms to the water sector has been modelled after experiences around Mt. Kenya, where associations of different stakeholder groups were created largely as a means of dealing with conflict over

water resources. Nevertheless, WRMA's approach does seem to adopt an institutional approach: the aim is to help communities/stakeholders to form a local institution—a WRUA—which can assist with conflict resolution, be a focal point for collective management of water resources, and be a conduit through which funds are channelled to the community for water resources management.

Only a few respondents referred to themes that related to communities taking stock of their situation, analyzing needs and opportunities in a broad way, and planning for the future. Five of the thirty-eight respondents referred to analysis as taking place through participation processes (Box 6.4) and four referred to participation processes as involving the development of some kind of collective vision (Box 6.5). Other respondents more commonly spoke of participation in relation to defined projects rather than in relation to some kind of open-ended process of community planning.

Box 6.4: Analysis within participation processes

"We have looked at this issue and asked what people can do within their own setup, their own local way of doing things. We analyze with the people why what is happening is happening. If people are felling trees indiscriminately, why are they doing this? If water points are not being maintained or are being destroyed, why is this? In doing this analysis we draw on their own knowledge."

- Staff member of an NGO

"Once they have agreed, let us start from this side, this particular priority, then the next question is how do we start. The solution comes from the community. We ask them, 'You have identified a site. Now what are you going to do about it?' We analyze what are their strengths. What are the gaps? What can other people do to come in and fill. They agree, 'we can do this'. We also weigh ourselves. We see what others can do."

- Officer of a government agency

"Now this was done after the community, the WRUA members, they sat together. They prioritized. They did resource mapping. They did problem tree analysis. They realized these are the problems affecting them. And they ranked and prioritized their problems. And after that prioritizing they realized they must protect the catchment, they must rehabilitate the catchment, fence it, have river bank pegging so that they can increase the flow and improve the quality of the water.... We did resource mapping. We did something like drawing on the ground and we mapped the resources. And chapatti diagrams."

- A Water Resources Management

Box 6.5: Participation processes contributing to a collective vision

"The other things was to look at the strategic direction. They were working with a very traditional community. We wanted them to look at the vision of the community."

- A former staff member of an NGO that supported PISP in its early years

"We are supposed even to try to have MOUs with the WRUAs. Why? Because we want them to have a vision. We want them to have a goal. We want to have a structured relationship."

- A Water Resources Management Authority staff member

On the whole, the practical implications of the ways in which NGO and government agency staff tend to think about participation, as reflected in the principles and themes identified in Table 6.1, are several. Firstly, the involvement of beneficiaries in decision-making processes related to NGO and government activities tends to take place in relation to projects. Participation, in practical terms, sometimes entails these agencies consulting with local stakeholders to obtain their input into the design of projects. Often, however, the beneficiary control of project decisions is limited in scope, allowing them, for example, to identify where a new water tank may be sited and to negotiate their level of contribution to its cost, but not allowing them to direct the project to, say, excavate a pan rather than a build a tank. Secondly, as mentioned above, this participation occurs primarily at community level. Some of it takes place through open community meetings convened by the agency, some of it through more focused consultations with smaller groups such as male elders, or members of a particular community-based organization (CBO). Also, much of it takes place through local organizations—either small membership-based organizations (CBOs, Water Users Associations, etc.) or committees that represent the entire community (Environmental Management Committees, Location Development Committees, etc.). Some of the participation processes initiated and facilitated by formal sector agencies takes place at the Sub-Location or Location level, but the majority takes place only at the level of individual settlements.

PARTICIPATION PROCESSES AND INCLUSION OF NOMADS

The institutional model of participation that dominates in development and water resources management work that I observed has particular difficulties for application among mobile pastoralists. Typically, one of the main vehicles through which participation takes place in the development of new water infrastructure, as well as poverty alleviation activities in general, is representative committees: WUAs, project implementation committees, self-help groups and so on. According to the logic of this approach, such groups and committees form part of the institutional framework that can allow people some degree of collective voice and input into decision-making. These groups and committees are also used to channel both state funding and external aid to communities and local development efforts.

Among pastoralists, however, representative committees tend to be dominated by people who have left the nomadic lifestyle and have made homes in permanent settlements. NGO and government agency personnel whom I interviewed were essentially unanimous in admitting the difficulties they face in involving mobile pastoralists (Box 6.6). Even when efforts are made at the outset to involve mobile pastoralists and have them select representatives to serve on a committee, the next time that development agents want to meet with that committee they are likely to find that many of its members have, quite literally, moved to greener pastures. And in the kind of vast territories that many dryland pastoralists inhabit—ultra-rugged terrain poorly served by even the most basic roads—expecting personnel from NGOs or governmental agencies to seek out particular individuals who have been selected as committee members is hardly realistic.

The difficulty of allowing for participation through the usual vehicles, such as representative committees, is sometimes recognized by nomadic people themselves. One NGO officer whom I interviewed cited an example when his organization was helping to construct underground rainwater harvesting tanks. After struggling for over a year to keep the nomadic elders involved, the elders themselves said it was not realistic:

> What you are doing is really noble and it will help our community. But due to our nature we are mobile. And if you keep following us wherever we go, we are pretty sure the project will not be implemented. You can

Box 6.6: Difficulties faced in involving nomads

"Nomadism is also a challenge. Committee members are moving and are sometimes hard to find, especially during drought."

- Staff member of an NGO working in the water sector

"The challenge which is there actually because they don't have a permanent place, they're shifting in search of pasture and water. You find that the group which you are addressing here, next month you come you get a new group. So that is the challenge we are having."

- Staff member of the Water Resources Management Authority

"In the case of Burgabo [borehole], the committee is just from [the settlement of] Turbi. Pastoralists move around. They are not well represented. Shurr [another borehole] is similar. It's a weakness, because it's the pastoralists who use the water and they are not well-represented."

- Staff member of the Water Services Board

"We deliberately left the town people and worked with the nomads, especially Yaa Galbo. They identified committees and people who would be the links between PISP and the community. But over time it proved to be difficult. For example, when we started constructing those underground tanks at Burgabo. Yaa Galbo said we should do those tanks in remote rangelands. That was the thinking. Then we told them, fine, we have agreed. We said, then you will need to make access road to that area. But then nobody was ready. We followed them from Turbi to Maikona, because by that time they had moved."

- A staff member of PISP

"Development agencies tend to use the settlement as an entry point. Often because of convenience. So decision-makers end up being in towns…. For example, a project in Turbi. The chief said only people settled should benefit from the project. Opinion leaders are in towns and look to those who are close."

- A private consultant working in the water sector

involve us in decision-making, but as for actual supervision, we are not able. So please work with the people in town to ensure that this work gets done.[15]

[15] This statement represents the NGO officer's recollection of what the elders said, so it is not verbatim. But subsequent interviews with elders confirmed the gist of the statement.

6.2.2 Analysis: Three Different Rationales for Participation

In this section, I outline three different rationales for participation, based on the above findings and on a consideration of different perspectives on participation in academic and grey literature (see Table 6.2). Two of these could be seen as falling under the broad heading of "mainstream participation", but I suggest that, as rationales, they are distinct. These rationales are *participation as a means for effective implementation* and *participation as building community capacity*. The third alternative is the more radical alternative to the mainstream ways of thinking about participation, with a rationale of *participation as empowerment*.

One of the criticisms of mainstream, populist participatory development has been that participation is treated simply as a tool, a means by which an implementing agency such as an NGO or government agency attempts to achieve its own ends, especially the smooth implementation of a policy, programme or project. In this way of thinking, supposedly participatory approaches are used not because participation is a right, not as part of a strategy of empowerment, but merely as *a means to effective implementation*. This rationale was reflected in many of interviews summarized in Table 6.1 above, as manifested in the themes and principles of sustainability (of project interventions), efficacy, and community ownership. Many development professionals consider community ownership of projects and of the outputs of projects to be important because when people do not feel that they own the project activities, they are unlikely to sustain them; when they do not feel that they own the new water tank for instance, they are unlikely to maintain it. This view is sometimes referred to as "instrumental participation" (Nelson and Wright 1995; White 1996; Chinsinga 2003; Bliss and Neumann 2008). Participation carried out in this mode is not necessarily formulaic or fake participation: an organization that bases its work on this way of thinking may allow participants genuine control over decision-making, albeit with the ulterior motive of advancing its own objectives. But most proponents of participatory approaches, whether in populist variant or in more radical forms, would complain at least that instrumental participation is likely to be superficial participation. At its worst, this rationale leads to agencies using participation as "a means for top-down planning to be imposed from the bottom-up"

Table 6.2: Three different rationales for participation

	Rationale For Participation		
	Participation as a means for effective implementation	Participation as building community capacity	Participation as empowerment
Explanation	Instrumental participation: participation used as a means to an end, usually the external agency's end.	The institutional approach: participation of community members in community institutions. Community-based natural resources management is often based on this rationale.	Marginalized or oppressed people are the target of participation, and eventually themselves challenge the powerful and attempt to claim the right to participate in decision-making. This rationale is more typically manifested in social movements and political struggles than in the work of large, bureaucratic development agencies.
Aim	To avoid opposition and/or achieve some tangible purpose: e.g., smooth implementation of a project.	To build the capacity of communities by creating the institutional and participatory means through which a community makes decisions.	To empower marginalized/ oppressed groups.
Approach	Involving community members in some aspects of the decision-making process for a project or programme.	Creating and strengthening community institutions, and promoting inclusive participation in these.	Engagement in, and challenging of, political processes. Creating and claiming spaces of participation.
How Success is Measured	• Community ownership of project. • Opposition to the project is minimized. • Smooth implementation. • Project sustainability.	• Community capacity increases and is applied in other areas. • Community on its own begins to address other problems and aspirations.	• Marginalized groups are included in decision-making in a meaningful way. • Marginalized groups demand their rights from the more powerful.

(Hildyard et al. 2001:60). It should be noted, though, that participants themselves sometimes base their thinking on this rationale and engage in participatory processes, and even manipulate those processes, not because participation is valued in itself but because it is seen as a means to a pragmatic end (White 1996; Hviding 2003; Mansuri and Rao 2004).

The second rationale is *participation as building community capacity*. This rationale is distinct from instrumental participation insofar as it aims at enabling people, and especially enabling *communities*, to have greater control over their lives and resources. In this rationale, as with the former, community ownership and efficacy are considered important, but with an added emphasis on institutional development and capacity building. It is this rationale that typically lies behind what Cleaver (1999) has called "institutional models of participation". Agencies working from this rationale will typically try to ensure that the relevant local institution or institutions are at least minimally inclusive of groups within the community. Participation, in other words, is measured by participation in committees and other institutions (Cleaver 1999; Cleaver 2005). In this research, the emphasis on institutions was seen in the way that agencies typically try to work through CBOs and representative committees, and to help communities to form such bodies. The aim is to empower the community as a whole, for example by establishing the institution(s) through which the community can manage local natural resources, or by strengthening such institutions where they already exist.

This rationale thus blurs the *means-ends* distinction: participation contributes to an end (building the capacity of the community, promoting CBNRM, etc.); but creating the institutional and participatory means through which this happens are part and parcel of the end itself. Whereas the success of instrumental participation is measured in outputs and outcomes—avoidance of opposition to a project, smooth implementation of a project, etc.—in the *community capacity* rationale, success is measured by evidence of the community, through its institutions of participation, applying its capacity. For this reason, training and capacity building are considered important, and, as described in the previous section, this emphasis was certainly observed in the study area. According to this way of thinking about participation, in the case of a CBNRM programme for instance, what is ultimately important is not the success or failure of a particular project; what is important is that the community institutions involved in managing local resources continue to allow for meaningful participation and that those institutions continue to increase in capacity and to apply that capacity in new activities.

It is this model of participation that critics of populist participatory development typically have in mind when lodging the second and third of the four common grievances described by Hickey and Mohan (2004) and summarized in Section 6.1.2 above: that populist participatory development does not confront power and that it is obsessed with the local and with community. Participation based on the *building community capacity* rationale emphasizes local, "community" institutions. This community focus tends to include an emphasis on physical boundaries, which reflects the need for clear administrative arrangements and often has more to do with the delivery of material benefits than with any real social arrangements on the ground (Cleaver 1999; Cleaver 2001).

Critics of populist participatory development and of CBNRM argue furthermore that there is nothing inherent in this way of thinking that directs attention to differences in power and interests *within* communities (Brosius et al. 1998; Agrawal and Gibson 1999; Cleaver 1999; Francis 2001; Mohan 2001; Brown 2002; Goldman 2003; Nygren 2005). As described in the previous section, respondents, if they spoke of empowerment, were typically aiming at empowering the entire community. Criticism of this approach is sometimes taken further to suggest also that imposition of a requirement of participation, in the absence of means to counteract local power structures, can lead to a reinforcing of local power structures and even enhancing of social capital for elites while undermining more general social capital that benefits the poorest (Kumar and Corbridge 2002). In addition, this approach can lead to a variety of local institutions—community based organizations, local NGOs, committees, traditional authorities, and others—being empowered at the expense of truly representative institutions, especially elected authorities (Ribot 2006).

These criticisms of the *community capacity* rationale are exemplified in several contributions to the *Tyranny* volume. Many of these authors argue that mainstream participatory development, through its naïve assumptions about the way that power operates and its unwillingness to confront power, has depoliticized participation. This criticism implies a third rationale: *participation as empowerment*. This is not

"empowerment" of entire communities based on an assumption of community solidarity. Whereas *participation as building community capacity* tends to assume that such solidarity exists, the *participation as empowerment* rationale tends to assume conflict. In this view, decision-making is seen as a process in which competing interests divide up access to resources and exercise their power over others. Literature on power and participation sometimes makes a distinction between *power over* and *power to*. *Power over* is controlling power, a finite resource which is used by those who have it against those who do not. *Power to* is generative or productive power, the capacity or "power" to accomplish something (Rowlands 1997). The type of *power* with which the *participation as empowerment* rationale is primarily concerned is *power over*—the power that some people and groups have *over* others. *Power to*—the capacity or "power" to accomplish something—tends to be not nearly as important. This rationale, in which participation is seen as an end in itself, is more likely to be manifested in social movements and political struggles than in the work of large, bureaucratic development agencies.

6.3 Collective Decision-Making Among the Gabra

6.3.1 Findings

PROCESS INSTITUTIONS IN PASTORALIST DECISION-MAKING—THE KORRA

Section 6.3 takes a similar approach to Section 6.2, examining approaches to collective decision-making among the Gabra. Particular attention is given to traditional institutions and traditional approaches to decision-making. This and the next sub-section focus on the korra, a type of meeting of Gabra elders hold on an "as needed" basis. Following that, some of the principles, values and themes that emerge in the way that Gabra respondents talk about decision making are presented. Then in Section 6.3.2, I analyze the Gabra approach to decision-making using the same *rationale* framework developed in the previous section. The rationale behind the traditional Gabra approach to decision-making is contrasted with the rationales for participation that have been described above. This comparison—a comparison between the ways in which the Gabra make collective decisions among themselves and the ways in which external agencies carry out

"participation", and between the way the Gabra think about their collective decision-making processes and the way that personnel of external agencies think about participation—may, to some readers, seem inappropriate. However, as noted at the beginning of this thesis (Section 1.4.1), participation is about decision-making—having meaningful input into the decisions that affect one's life. An examination of the Gabra way of thinking about decision-making processes can help shed light onto how development agency personnel think about their processes for participation and decision-making.

In nomadic pastoralist societies, much of the deliberation and important decision-making takes place in occasional meetings, scheduled as the need arises. Among the Gabra, important decisions are made by *korra*, meetings that are organized at various levels of social organization, from the nomadic camp, to the cluster of camps, up to the clan and the phratry[16], and the entire Gabra nation. Such meetings can appear very informal—any elder in the vicinity is welcome to participate, people will come and go, some of the old men will sleep through much of the meeting, etc.—nevertheless, such meetings are institutionalized in the culture and are expected to be held before key decisions can be made. This kind of meeting appears typical of nomadic pastoralist groups. Maasai *enkiguena*, for instance, are very similar to Gabra *korra*: both typically begin with the sharing of news; both emphasize consensus, unity and equality; both have two broad types, meetings to decide on matters of mutual interest, and meetings to arbitrate a dispute or judge a case; and both are *meetings* as opposed to a council of elders or some other permanent, standing institution[17]. Other nomadic pastoralist groups have similar institutionalized processes. The Pokot for example, inhabiting western Kenya and eastern Uganda, have *kokwo* meetings at which key decisions such as which pastures should be grazed are made (Moore 1986; Bollig 2006). The Rendille, inhabiting north-central Kenya, have meetings of the elders called *ur'uuri mejel*.

[16] *Phratry*, a group of clans. All Gabra belong to a clan, and by virtue of that clan, to one of five phratries.

[17] For a detailed description of Maasai enkiguena, see Goldman (2006) and Spencer (2003).

Pastoralist groups do have permanent institutionalized bodies, such as clan or phratry councils: for example, Rendille clans each have a *naabo*, and each of the Gabra's five phratries has a *Yaa* council. There are also permanent institutionalized positions such as the Gabra *jalaab*, judges who preside over cases of wrongdoing and who represent the Yaa. And while both the assertions of many respondents and my observations of the way that most Gabra respond to these institutions make it clear that these kinds of institutions are still very much respected by most Gabra and still play an important role in decision making for Gabra communities, the role of an institutionalized *process*—the korra—is far more important than these standing institutions (see Table 6.3 and Box 6.7). Indeed, one of the functions of the jalaab is to convene korra meetings.

Respondents clearly indicated that deliberation and decision-making for nomadic Gabra pastoralists are highly democratic (at least for the male half of the population). One of the central, overriding principles is *consensus*, and respondents said that meetings will last for several days if necessary so that consensus can be achieved. From my observation, during the meetings various points of view will be patiently considered, the participants

Box 6.7: Many important decisions are not made by the Yaa but by korra meetings held for the whole arda (locality)

"Such meetings have been called several times. But never has the meeting been called because of pasture. Always for water. For example, this pan. It has been called several times by the Yaa. And elders from other ollas have also called such meetings and even called the Yaa. And when the Yaa has called such meetings, they don't order people to move. It doesn't decide for the people. The people decide together. Most animals are sent for foora, or to other places where there is water, and so few animals are left here. So such meetings are always called."

- A man from a nomadic camp in Hurri Hills

"PISP didn't have a meeting with us. They just sent a message, so we decided ourselves how to distribute the camels. The others elders from other nomadic camps were also involved. We couldn't meet alone; we had to involve them."

- An elder from Yaa Algana

"The Yaa does not make decisions [on redistribution of livestock] alone. Elders from the outskirts will go there and the decision is binding. But there is no case of the Yaa deciding separately."

- A man from a nomadic camp near Kalacha

Table 6.3: Examples of decisions being taken in korra meetings rather than by other institutions

- Restocking in the El Gade area. The NGO the Pastoralist Integrated Support Programme (PISP) provided fifty camels to people who had lost animals during the drought to restock. PISP's main contact and entry point was Yaa Algana (the council for the Algana phratry), which was situated in this area. The Yaa, rather than deciding itself who would benefit from the restocking exercise, called a large korra for all the small settlements and nomadic camps around.
- A new water committee in Hurri Hills (part 1). Upon the completion of two new water sources—a pan and a small reservoir created by damming a narrow gorge—residents from nomadic and settled communities in Hurri Hills selected representatives for a new water committee. PISP held a workshop for the committee and the idea of charging user fees for the water was discussed. There was broad consensus that user fees should be charged, but committee members insisted that they did not have the authority to make such a decision. Instead they decided to organize a large korra for the communities around.
- A new water committee in Hurri Hills (part 2). For various reasons the large korra in Hurri Hills was never held. Then after several dry months that had passed since the completion of construction, heavy rains filled the new pan and reservoir. Knowing that people and their livestock needed water, a handful of committee members and other opinion leaders decided to open both water sources and charge a modest fee (KES 50—less than $1.00 per herd per watering). The user fees were strongly resisted by some because of the way the decision had been made: i.e., it had not been decided in a korra.
- Restrictions on grazing in Hurri Hills. Elders in Yaa Gara and other communities in Hurri Hills had been discussing the need to limit grazing near the water points in area. In particular, there was general agreement that foora animals (the "dry herds" that are not needed by the household for daily milk consumption) should be sent away, and that pastures within walking distance of the water points should be reserved for the milk herds. However, Yaa Gara would not come to this decision itself. According to one elder of the Yaa, "Once we call the area korra meeting and pass the rules, we don't expect any foora animals around."
- Irib (traditional restocking). When someone has animals stolen, men of the same miilo (lineage) will organize a korra to decide on restocking. In reply to the question of whether the decisions of that meeting are enforceable, one respondent said, "Yes, the decision is binding. Even if you are not in the meeting, they shall go and inform you and you'll comply." Other respondents expressed similar sentiments.

- Committees in permanent settlements. Most settlements in Gabraland have a growing number of committees—Environmental Management Committee, School Management Committee, Women's Wells Committee, etc. But several respondents in various settlements explained that these committees make few substantive decisions on their own. Instead, general community meetings are called.
- Chiefs, Councillors, Divisional Officers, etc. have no special status. Another example of the primacy of the korra is the way that a number of respondents told me that in the korra, people with authority from the formal sector have the same standing as any other elder: "In a baraza it is mostly the DOs or chiefs that feature in the meeting. They are the ones who mostly participate. But in the korra, whether they are there or not there, the meeting can proceed.... But in the korra whether the DO, DC or chiefs are there, they are just like any other person."

normally repeating what others have said before offering their own opinions and reasoned arguments. The korra is a deliberative forum: I witnessed examples both of participants making compromises based on the arguments and pleas of others, and of people changing their minds during the course of discussions.

As well as emphasizing consensus, korra meetings are very egalitarian. People occupying government positions, such as chiefs, assistant chiefs and counsellors, have no special standing at a korra unless the issue under discussion touches directly on the mandate of their position. Numerous men whom I interviewed emphasized this point: "When the Chief comes to the korra he is just another one of the elders." Even elders from the highly respected Yaa will have no special status at lower levels of social organization.

Part of the moral force behind korra meetings is inclusivity (see Box 6.8). When it is a large korra for people from more than one community, the meeting will be planned in advance and messages sent to outlying nomadic camps. Numerous times during my fieldwork among the Gabra I heard comments such as, "We can't decide that now. People from [some particular nomadic camp or cluster of camps] aren't here. Let's wait and organize a proper meeting." Even the Yaa council, the paramount institution in Gabra society, does not reserve all high level decision making to itself, but instead often

Box 6.8: Nomads, korra and inclusivity

"But there are some decisions that are made, even those who are far can be called. Especially if it is a decision that involves very many people and affects them and a decision has to be made on something."

- A man in Balesa

"Even if the people who follow the animals are not members of any of these committees, the town people cannot make decisions alone. They must be involved."

- A man in Balesa

"In korra, there is nothing like short notice. People must be given enough time so that they could prepare themselves for the meeting. And among preparation for the meeting, everyone who has been invited for the meeting must come with soror, milk for the meeting, and if possible goat for the meeting."

- A jalaab (traditional judge) in Balesa

Q: How can the voice of those who shift far and are still very nomadic get into decision making?
A: "In such cases we usually call a big meeting, a korra. And any issues are discussed while they are present. Even if they are only around here for one month they must attend."

- A man in Hurri Hills

Q: The new rock catchment at Afkaba will require a permanent committee. How can nomads be enabled to participate in the decision-making?
A: "For that case, we will organize a big korra to see how we can overcome such a problem: if there is to be a committee, some will leave and some will stay behind. So before the committee is chosen they will call for a big korra. How to overcome that difficulty of members moving away is to discuss it at a korra."

- A man at a nomadic camp near the Afkaba rock catchment

convenes more inclusive meetings to be attended by people from settlements and nomadic camps from all around. The principle of inclusivity also influences the timing of korra. Because korra are often ad hoc, organized when needed, they can be timed according to seasonal grazing patterns and other factors to make it possible for the largest number of people to attend.

The nature of the korra as an inclusive, democratic forum can be seen in the way that Gabra think of the korra as compared to another type meeting that has become very common, the baraza. *Baraza* is a Kiswahili word meaning "assembly". In the area where

I conducted my research, it typically refers to a public community meeting. In Gabra communities barazas are usually called by the government - appointed Chief or Assistant Chief or by the elected Councillor. NGOs will sometimes use barazas as one of their vehicles for public participation. However, many of my Gabra respondents indicated that they think of the baraza as the way that meetings are held "in town" (in permanent settlements). While attendance is open to anyone, according to my respondents, the communication is usually one-way: the Chief, Councillor and perhaps invited persons such as a District Commissioner or Divisional Officer will be the only ones to speak. A korra, on the other hand, "is an open forum" (see Box 6.9).

Box 6.9: Korra vs. baraza

"Korra is an open forum. But in town it is usually only the Chief or Councillor and such people who speak. But in korra it can be anyone."

- a man in Hurri Hills town

"One difference is that in a baraza, it is usually called by the Chief or Councillor. Usually three people are given a chance to speak: the Chief, the Councillor and one or two opinion leaders."

- a man in Hurri Hills town

"…for baraza it is one person's forum. Like the DO [Divisional Officer] called a baraza, then only the DO gives a speech, and no one else is given a chance to talk. But in korra it is an open forum. Anyone is free to talk and give his suggestion in korra. But in a baraza, people are called, the DO or someone talks then says, 'You are free to go.' No one is invited to give out their ideas or comments…. There was a korra that you attended in my olla when you were staying with us. Just compare between that meeting and a town meeting. You will see the difference."

- the abba olla of an olla situated near Kalacha

"In korra it is an open discussion…. It is open and everyone expresses his concerns and contributions. But in case of baraza, the Chief calls a meeting, gives his instructions and then says you can now break."

- an elder of Yaa Gara

The importance of korra was driven home for me at one workshop that I attended—the workshop in Hurri Hills that was mentioned above (Section 6.2.1). As mentioned above, some of the facilitators really conceived of the workshop as being about training. Nevertheless, PISP staff recognized that some important decisions regarding the two new water points had to be made, including whether and how much to charge for the water, and how to structure the committee that would manage the water points. However,

participants in the workshop, all of whom had been selected to sit on a new committee for the water points, refused to make those decisions, making comments such as, "We are a very small committee to decide on this", "All the representatives must go home to their respective places to discuss this", and "We have been selected but it is not only for us to decide. We must call the community and meet."

This emphasis on inclusivity, executed through a non-permanent meeting rather than through a permanent institutionalized body such as a committee or a traditional Yaa council, is part of how the traditional Gabra system for decision-making overcomes the problem of including nomads that vexes NGO and government personnel. Whereas these outsiders have difficulty involving and including nomads, in Gabra society inclusivity is catered for by having key decisions made at opportunistically scheduled korra meetings rather than by permanent institutions.

An interesting development can be seen in some Gabra settlements. A hybrid form of meeting is emerging—a meeting that is both korra and baraza. In the town of Balesa, for example, when there is a need for a public meeting that encompasses Balesa, nomadic camps in the vicinity, and usually Yaa Sharbana as well, the meeting may involve both the jalaab and the government-appointed Chief. A jalaab living in Balesa described it to me in this way: "The Chief himself cannot implement that decision alone. He needs support from jalaab. And jalaab needs the support of the Chief. So it was like going together, both." These kinds of meetings are more likely to involve formal sector stakeholders such as NGO personnel than purely traditional korra meetings.

POLYCENTRICITY AND LINKAGES ACROSS LEVELS OF SOCIAL-ORGANIZATION

The Gabra institutional environment is, in many ways, polycentric[18]. There are multiple, overlapping forms of community, identity and allegiance: political party; religion; phratry, clan and lineage (Ki-Borana: *gosa*, *balbala* and *miilo*); town; Location. Authority is also distributed across multiple institutions, both traditional and modern. The delineation of authority between these institutions is, furthermore, overlapping and

[18] See Ostrom (1996; 2005) and McGinnis (1999) for a discussion of polycentric institutions.

flexible. This corresponds with what other researchers have observed about pastoralist societies (van den Brink, R. et al. 1995; Goodhue and McCarthy 2000; Fernandez-Gimenez and Le Febre 2006) including the Gabra (Haro et al. 2005): that both territorial boundaries and lines of authority are traditionally imprecise and flexible, and institutional arrangements tend to be fluid.

Furthermore, institutions, at various levels of social organization, are interlinked. The institutions of korra and jalaab play an important role in these linkages. Korra are organized at various levels of social organization and connect levels of social organization to each other. For example a korra held for a cluster of nomadic camps is likely to have a representative of one of the five Yaa councils. In addition, elders serving in the position of jalaab are representatives of the Yaa and are a key link between the Yaa and communities. They are often the ones to call for the meeting, and the will attend and thus be in a position to inform the Yaa of the results of the meetings. When a large meeting is needed, involving many localities and perhaps one or more towns, the Yaa itself may call for the meeting.

For the Gabra, korra meetings also represent one point of linkage between the traditional institutional system and formal sector institutions. Gabra respondents indicated that chiefs and counsellors will participate in korra meetings and sometimes themselves ask a jalaab to call such meetings. Respondents similarly indicated that "modern" committees in Gabra settlements such as an Environmental Management Committee often will not try to make a decision, but rather call for a general meeting of community members. However, these kinds of connections between formal institutional processes and the traditional korra meetings are informal and ad hoc; they are not formally recognized by the bylaws and constitutions of such committees.

GABRA CONCEPTIONS OF DECISION-MAKING

In dozens of interviews with Gabra respondents, I asked questions that paralleled the kinds of questions that I posed to staff of NGOs and other formal sector agencies about principles, values and aims associated with participation (see Section 6.2 above). As with

the interviews with agency personnel, I conducted content analysis of these interviews with Gabra respondents to identify principles and values, recurring themes, and so on. The results are summarized in Table 6.4.

As can be seen from the table, principles such as inclusivity, consensus and unity are prominent. The principle of inclusivity has already been mentioned in connection with korra meetings. The Gabra, recognizing their mutual interdependence and guided by the aim of collective survival, strive to ensure that all concerned parties are included in decisions that affect them. It can be seen why the kind of emphasis on conflict inherent

Table 6.4: 68 Interviews on decision-making with informants in Gabra communities—principles and themes considered important in decision-making

Principle/Theme	Percentage (no.) of interviews in which the principle was mentioned
God, prayer, blessings	49 % (33)
Tradition	31 % (21)
Peace	24 % (16)
Inclusivity	18 % (12)
Consensus/unity	12 % (8)
Respect/civility	8.8 % (6)
Analysis	7.4 % (5)
Truth	7.4 % (5)
Empowerment	5.9 % (4)
Forgiveness/compassion	4.4 % (3)
Deliberation	4.4 % (3)
Justice	2.9 % (2)
Vision	2.9 % (2)
Sense of ownership	1.5 % (1)

Note: The numbers shown are based on ethnographic content analysis, coded using the NVivo software (see Section 2.4).

in what I have called the *participation as empowerment* rationale is not apparent in the principles sited by my Gabra respondents. Contrary to the empowerment model, decision-making is not seen as a process of differing interests competing over resources. Unity is, in a certain sense, assumed. There may be conflicts (between lineages within the same clan, clans within the same phratry, between phratries, between settled people and nomads); nevertheless, when people come together to make collective decisions it is assumed that they should aim for unity and should try to reach consensus on solving problems together. This is not to suggest that people do not sometimes attempt to gain political advantage over the others. The ideals of Gabra decision-making are ideals—not all people live up to the ideals, but these are the ideals, nevertheless.

Other principles mentioned in the table above such as respect/civility and forgiveness/compassion are part of the same general ethic. Interdependence implies relationships, and the importance of relationships is reflected in the importance accorded to being respectful and civil in meetings. Forgiveness is particularly important in those korra that are convened to judge a wrongdoing. People who break traditional laws or customs or who cause harm to others are frequently fined when the elders gather in a korra to judge their case; but the fines are, in a sense, symbolic, insofar as they are almost never collected. Similarly, Gabra elders will often refrain from handing over someone who has broken Kenyan law, preferring instead to solve such matters within the Gabra community and leaving open the opportunity to forgive the offender. Even law-breakers are part of the network of interdependence.

The importance of God and prayer in decision-making also reflects this view of interdependence in at least two ways. Firstly, there are the social expectations associated with prayer at meetings. "Prayer and blessings" is one of two phrases that I frequently heard from people trying to explain to me how Gabra conduct meetings. Meetings are expected to begin and end with prayer, and in their explanations, respondents frequently linked this with the need for unity and consensus. People may have disagreements, but it is important to continue discussions until consensus has been reached and a sense of unity established, and people are able to pray together.

Secondly, Gabra notions about God, prayer and blessings reflect a certain understanding of the nature of interrelationships between God, nature and human beings. The second of the two phrases that I heard dozens of times in discussions about decision-making was "peace and rain". Peace and rain are the two things that any Gabra hopes for, and are the subject of their prayers. Peace and rain are, however, qualitatively different from each other in at least one important respect: rain is sent by God; peace is the responsibility of man. While my time among the Gabra was too short for me to develop a comprehensive description of the Gabra worldview, I believe that I did observe a number of clues as to the nature of Gabra cosmology. Gabra traditional religion is not pantheistic or animistic—Gabra do not see spirits inhabiting every rock and tree. Instead there is a clear separation between God, humanity and the natural environment, but with important connections that link each to the other two. Many important features in the environment—the degree of fertility of soils, the nourishing power that a particular pasture has or does not have, and especially the rain—all depend upon the will of God. The Gabra thus depend upon God, but also bear their own responsibility—to work hard at taking care of their animals, to effectively manage their herds, to respect tradition, and to maintain unity among themselves and peace with their neighbours. God, in turn, responds to the actions of the Gabra, blessing their efforts and their herds according to whether they have lived up to these responsibilities. Gabra decision-making processes are consistent with this view of the world: they should serve to maintain and promote unity among the Gabra, and to reflect in social relationships the greater interrelationships (God-nature-humankind) that exist in the world. The approach to decision-making reflects a confidence that solutions to problems of collective survival can be found and that unity among the Gabra is both possible and desirable.

6.3.2 Analysis: The Rationale Behind the Gabra Approach to Decision-Making

Gabra who still live the traditional pastoralist life must cope with an environment that is harsh, and extremely variable and unpredictable. As with dryland pastoralists generally, their social, political and economic systems are highly adapted to life on the margins, and these systems support livelihoods in the most difficult of situations. The capacity to

respond to the environment is paramount and the Gabra approach to decision-making reflects the environment that they live in.

The various principles and values that guide the Gabra approach to decision-making can be summed up in the idea of *interdependence*. One of the primary ways that Gabra spread risk in their difficult environment is through a variety of social networks. Livestock are redistributed throughout Gabra society, and physically to throughout Gabra territory, through a variety of social mechanisms. Almost all people will at some point need to rely on the help of other members of these social networks, not only in terms of loans and gifts of livestock, but also help in military/security terms and help in terms of access to water. Gabra depend on each other, and as they make decisions and take action in response to their environment, the survival that they aim for is *collective* survival.

On the other hand, Gabra society cannot be characterized as having a collectivist ethic. The Gabra as a whole benefit from having people engage in a *variety* of strategies: possessing different mixes of livestock species; using different pastures, some in the heart of Gabraland, some in remote, dangerous areas that are used more by other ethnic groups than by the Gabra; and using these various pastures at varying times. The fact that Gabra have varying strategies helps to spread risk. Furthermore, individuals whose herds increase as a result of their own hard work, a result of their particular choice of strategy, and a result of luck, can expect to benefit from this—there is no expectation that traditional mechanisms for livestock redistribution should create parity in terms of herd size. So in their thinking, Gabra are neither thoroughly individualistic nor thoroughly collectivist.

To summarize traditional Gabra thinking about collective decision-making as a rationale, it is a rationale based on a recognition of interdependence. The underlying aim is collective survival and thus there is an emphasis on collective decision-making. Inclusivity is important, as with the *building community capacity* and *empowerment* rationales. Unlike the *participation as empowerment* rationale, however, it assumes unity rather than conflict. Respect, civility and compassion are emphasized in communication. The approach is flexible, including both the standing, corporate institution of the Yaa

council and korra meetings scheduled as and when needed, with division of responsibility and authority among these and other institutions not clearly delineated. Success is measured by the extent to which a decision-making process leads to consensus and maintains unity.

Box 6.10: Lack of planning for the future

"Planning for the future at the community level it's not in our culture. Such planning is more subtle. It takes place at different levels. But, 'sit together, let's plan', that's very unlikely."

- A Gabra staff member of a government agency

"Gabras easily forget. We don't think about the future. The same drought can repeat at a certain time in their life. Rain comes, they fantasize what will come. In the past it would come after eight years. This time drought comes after just one season. Let's think about the future. What will become of us? How will we manage? …. We lack that forum. We lack that kind of thinking."

- A Gabra staff member of PISP addressing a community meeting

"On the issue of drought it is God who brings it. It is a common thing in Gabra that you should not think about how to prepare before it comes, or how to make it not happen. There is this proverb in Gabra where you say, a place where you go during drought you think of when it is raining."

- A Gabra man from Kalacha

The above discussion is not meant to idealize Gabra society or decision-making processes. Judged against my own biases and beliefs, there are a number of ways in which Gabra decision-making processes are in need of improvement. Generally, Gabra collective decision-making seems to me to be somewhat slow and reactive—much of Gabra decision-making revolves around responding to the environment, rather than planning proactively for the future (Box 6.10). While collective decision-making processes that are proactive and forward-looking may be rare, I would suggest that given the current state of Gabra life and livelihoods (see Chapter Four) there is an urgent need for exactly that kind of decision-making. In addition, despite what was said earlier about the importance of inclusivity in the ways that Gabra traditionally make collective decisions, it bears repeating that this inclusivity does not extend to the female half of the population. Women are not allowed to participate in korra meetings. In Gabra settlements, they can and do participate in barazas and other "modern" forums, but they

are mostly shut out of korra meetings, which is the venue where a lot of important decision-making takes place.

6.4 The Approach to Participation of PISP

6.4.1 A Summary of the PISP Approach

In various ways, PISP ensures some level of community involvement in decision-making related to PISP activities[19]. This has included large needs assessment activities involving Participatory Rural Appraisal. These have sometimes been conducted in partnership with other agencies such as the Arid Lands Resources Management Project, and have typically been conducted on a Yaa/phratry basis according to the traditional range used by that Yaa and involving the Yaa itself and nomadic camps and settlements in the same area. They have not been conducted on a regular basis, being treated not as part of the planning for specific projects but as strategy sessions which guide PISP activities for some time to come. The last one conducted was several years ago.

On a more regular basis, PISP may ask for a chief or assistant chief to organize a baraza in one of the settlements, but more commonly the venue that PISP staff use for interacting with beneficiary communities is the traditional korra meeting. PISP's approach of engaging with communities in korra is described in more detail in the next section. PISP staff also interact very frequently with the Yaa councils in the areas where they are working, consulting with the elders of the Yaa on the progress of projects in the area and on any other needs or concerns that the Yaa may have. It is through consultations in korra and with the Yaa that needs are reassessed and new projects discussed. PISP staff will also interact with a number of CBOs, especially women's groups. In projects that involve construction of some kind of water-related infrastructure, PISP will often request that the community establish a Project Implementation Committee. The purpose of this temporary committee is to oversee implementation of

[19] PISP was a finalist for the 2004 Equator Prize under the UNDP's Equator Initiative program. The Equator Prize recognizes initiatives that aim to reduce poverty through conservation and sustainable use of biodiversity. Web site: www.equatorinitiative.org.

the project, coordinate the community contribution, and so on. Generally, though, the majority of PISP interactions with community members, including those interactions involving some kinds of decisions that need to be made around projects, are informal, including participating in korra meetings and informal personal interactions.

6.4.2 PISP and Traditional Institutions

The rationale that seems to underlie PISP's approach seems to largely conform to the *participation as building community capacity* rationale and to take an institutional approach to participation. Depending upon the particular project or programme, they assist communities to form bodies such as WUAs and project implementation committees. These bodies and others such as School Management Committees are some of their main contact points for the communities that they work in. Furthermore, PISP staff tend to see themselves as working with and for the entire community rather than for any particular disadvantaged groups within the community. For example, they do not usually push in a direct way for women in their beneficiary communities to be included in decision-making, preferring to take an indirect approach to empowerment of women. However, as stated above, none of the ways of thinking about participation that have been discussed above provide a perfect representation of the approach to participation of any particular organization, and there are certainly elements in PISP's approach that are distinctive.

What is most distinctive about PISP's approach is the way it relates to traditional Gabra forms of decision-making and works with and through traditional institutions. Of course, there is nothing particularly unique about an NGO in Africa "working with traditional institutions". For PISP, however, the connection to traditional culture and traditional institutions is particularly strong. Not only has PISP always regularly consulted with the traditional Yaa councils, for the first few years after the formation of PISP, one of the Yaas was represented on PISP's board of directors. Unlike most other NGOs working in the area, *all* of PISP's field staff are locals. All three persons who have served as executive director since PISP's inception have been Gabra. But more telling than this is the way that local Gabra people see PISP. On one occasion I organized a meeting of key

informants in the settlement of Kalacha. All of the participants in this meeting were either residents of Kalacha or of nomadic camps that were, at that time, situated close to Kalacha. I led the participants through a diagramming exercise in which they indicated the institutions that are important for decision-making related to water resources, and the connections between these institutions. Participants mentioned institutions such as the herega, the Yaa, and the government appointed Chief. In the process of creating the diagram we (the participants and myself) decided that external institutions would not be included. A discussion then ensued about whether to include PISP in the diagram. In the end, the participants in this meeting decided that PISP should be included: "After all, they are one of us."

What most clearly distinguishes PISP's relationship with traditional institutions is the way that it works with a particular process institution: the korra meeting. Personnel of most NGOs that work with pastoralist groups tend to think of themselves as working closely with traditional institutions. Indeed, working with traditional institutions is part of the standard discourse in NGO work in Africa. However, personnel whom I interviewed from NGOs and other agencies, when speaking of these traditional institutions, were usually speaking of standing institutions: institutionalized bodies (such as the Gabra Yaa councils) and institutionalized positions (such as the Gabra jalaab). Few respondents put much emphasis on, or even mentioned, the kinds of meetings described above (Gabra *korra*, Maasai *enkiguena*, Pokot *kokwo*). This is perhaps not surprising given that in the colloquial thinking of many people *institution* is synonymous with *organization.* Of fifteen interviews with key informants (personnel from various NGOs and government agencies) in which working with traditional structures and institutions was discussed, only in five of those interviews was the respondent clearly speaking of these kinds of ad hoc meetings with elders. Four of those five interviews were with people connected to PISP.

PISP staff, as a matter of their normal practice, consult with local community members through the institution of the korra on all matters from assessing community needs, to setting priorities, and, most commonly, to check in on the progress of various projects.

At the level of a single nomadic camp or a cluster of camps, the korra is relatively informal. Indeed it is informal enough to imagine that it could be essentially "invisible" to an outsider. At a higher level, when larger korra are organized involving participants from a wider area, again PISP personnel would often be represented. This, in fact, as an important way that PISP supports existing mechanisms for deliberation at levels beyond the community level—by participating in large scale korra as one of many stakeholders, rather than by initiating a process of its own. Occasionally, such korra are planned for all Gabra, as occurred in 2002 in Kalacha. Elders from throughout Gabraland and from all five phratries participated. Personnel associated with PISP also participated and supported the meeting, but without assuming any special role. PISP field staff, most of them being Gabra themselves, are easily accepted in korra, and can easily relate to them. Their discussions in these meetings are not restricted to PISP project activities—as would any Gabra visiting another nomadic camp, when PISP staff sit in on a korra meeting they will share news and discuss everyday issues of concern such as rainfall, livestock movements, and security and livestock theft.

Sections 6.2.1 and 6.3.1 above described a workshop in Hurri Hills that had been organized by PISP after two new water points had been constructed. The way that the resource persons (recruited for the workshop by PISP from various government agencies) facilitated the workshop left little opportunity for discussing how the new water points would be managed, what rules might be needed, and so on. PISP's approach in this situation was to subsequently organize an informal meeting of a few people who had been at the meeting, some elders from Yaa Gara and a few other local stakeholders to discuss the way forward for the new water points. It was mutually decided to hold a large korra for all people living in the area. The Yaa was to organize the meeting at an appropriate time in the coming year when maximum participation from nomads could be assured, and it was agreed that they would inform PISP so that it could also participate.[20]

[20] This small meeting occurred shortly before the completion of the field research and so I was not able to witness that korra that was to be scheduled.

Informality seems to pervade the PISP approach generally. Much of the important deliberation that takes place between PISP staff and community members takes place informally: in informal korra at the level of individual settlements and nomadic camps, in one-on-one and small group conversations, and in informal meetings with different committees and CBOs. While there are dangers in this approach—notably a loss of transparency, the possibility of manipulation, and possibility of excluding people from decision-making—it also has the effect of emphasizing relationships. Just as traditional Gabra decision-making itself emphasizes human relationships, so too do PISP staff, and this helps to support a habit of engaging in dialogue and deliberation.

6.4.3 PISP and the Empowerment of Women

When PISP staff sit in korra, they function within the traditional norms of the korra. In a sense, a korra held the level of a single nomadic camp or a cluster of camps is nothing more than the elders sitting under a tree. Notably, the elders are all male. PISP staff do not lobby for women to be allowed in korra meetings, nor do they take the exclusion of women as a reason for refusing to relate to korra. Undoubtedly, various motivations are at play here, and vary between individual staff members. One motivation is a respect for the culture, of which these staff members are themselves a part despite some level of separation from it by the fact of their immersion in modern life: formal education, formal employment, residence in Marsabit town, etc. In interviews and conversations, PISP staff consistently emphasized respecting the culture. But another motivation is simply strategy: in this very traditional society, taking a militant stand on the inclusion of women would undoubtedly raise vehement objections from many Gabra, undermine PISP's relationship with local Gabra communities and elders, and quite possibly produce a backlash that undermines the position of women rather than strengthening it. The former director of PISP (who left PISP during the course of my field research to contest the parliamentary seat in the national election) was one of the PISP personnel who emphasized this point. He said, for example, that it had taken years of building relationships and trust just to get to the point of being able to discuss delicate issues such as family planning with some people.

Instead, PISP has adopted a gradual and indirect approach. Firstly, women are not excluded from all aspects of decision-making connected to PISP activities. As well as consulting with communities through korra, dialogue and decision-making take place in individual conversations, meetings with particular committees and CBOs, workshops, barazas, and the kinds of hybrid meetings such as sometimes take place in Balesa. Women are permitted at all these kinds of venues. Secondly, PISP is trying to improve the status of women through its education and micro-enterprise programmes and other activities. One of PISP's most common activities in the water sector is helping communities to construct rainwater harvesting tanks—some underground, harvesting water from hillsides, and others above ground, harvesting runoff from roofs. In this activity, PISP has settled on the strategy of working with small CBOs rather than with entire communities or with any traditional institution, and in a number of communities the best-managed, best-maintained tanks have been those owned by women's CBOs.

A number of informants in settlements where PISP is working have told me that the strategy is working: education, economic empowerment, and success at managing their own water tanks have contributed to an increase in respect for women generally and an increased willingness to involve them in collective decision-making. The results are most apparent in a settlement such as Kalacha, where PISP, other NGOs and government agencies seem to be having an effect. Many local committees in Kalacha now have strong representation from women and women sit as executives and in one case—the Environmental Management Committee—as chairperson. In 2007, PISP carried out a restocking exercise in Kalacha and the surrounding area for people who had lost animals during the previous drought. Community members were asked to form a temporary committee to handle the distribution. They decided themselves, apparently without any suggestion from PISP, that the committee should be fifty percent men and fifty percent women.

6.4.4 PISP's Approach to Participation: Intimations of an Alternative Rationale

The above discussion should not be inferred as suggesting that PISP represents some kind of heroic ideal of participatory development. While its commitment to participation and

its practice of it are stronger than with most other NGOs that I have had the opportunity to work with and observe over the years, there are many ways that it could improve. For example, there is a tendency to put a great deal of emphasis on tangible outputs (focussing on number of tanks built, number of wells refurbished, etc.), partly under pressure from donor deadlines and reporting requirements. Also, as already mentioned, the work of PISP conforms in many ways to the institutional model of participation, and thus some of the criticism that has been levelled against this approach are also applicable to PISP. However, this institutional focus and the tendency to have communities form institutions that mimic Western-style bureaucratic organizations are offset to a certain extent in a couple of important ways. Firstly, in the approach used by PISP, the idea of "working with traditional institutions" is not restricted to working with traditional *bodies;* the process institution of the korra also figures prominently in PISP's way of working. Secondly, the emphasis on relationships, dialogue and deliberation moderates somewhat the emphasis on formal, institutionalized bodies. These characteristics of PISP's approach offer clues to an alternative rationale for participation, which I will attempt to articulate in section 6.5.2 below.

6.5 Discussion: the Need for an Alternative Rationale for Participation

NGO and government agency approaches to participation observed in this research conform mostly to two different rationales for participation: *participation as a means for effective implementation* and *participation as building community capacity*. In the case of the former, participation is seen instrumentally, as when emphasis is placed on "a sense of ownership" in order to ensure sustainability of project interventions. In the case of the latter, there is an emphasis on participation taking place in and through community institutions such as WUAs. A third rationale, manifested in literature on participation that is critical of the other two rationales, assumes that conflict is the norm and aims at empowerment of marginalized groups. The rationale that underlies the Gabra approach to collective decision-making is distinct from all three of these, and it highlights ways in which they may be inappropriate in the Gabra setting. The weaknesses of these three

rationales are discussed in Section 6.5.1 and then an alternative rationale for participation is suggested in Section 6.5.2.

6.5.1 Weaknesses of the Empowerment Rationale and the Community Capacity Rationale

The emphasis on standing, corporate institutions that characterizes the community capacity rationale is particularly problematic for mobile pastoralists, as can be seen in the way that WUAs or other committees end up being dominated by people who live in permanent settlements. If participation is, as I have suggested, essentially about decision-making, then a comparison to the Gabra rationale and approach to decision-making is instructive. The social-ecological system in which the Gabra live and create their livelihoods is harsh, highly variable, and highly unpredictable. This is an environment that compels *both* a diversity of individual strategies and responses, *and* a high degree of social cohesion and mutual assistance. As described above, Gabra society, adapted to survival in this context, is one that is characterized more by an ethic of interdependence than by either the individualism of Western society or by a communal ethic. The approach to decision-making is flexible, as can be seen for example in the way that korra can be scheduled as and when needed. The approach involves deliberation, as can be seen in the way that korra are conducted. And relationships are important, as can be seen in the values and principles that Gabra emphasize.

An understanding of this ethic of interdependence and of the traditional Gabra approach to collective decision-making compels a re-examination of the typical ways of thinking about participatory development. In the kind of social-ecological environment in which the Gabra live, both the *participation as building community capacity* rationale (which underlies the institutional model of participation) and the *empowerment* rationale have critical flaws. This is not to say that the central concerns of either of these two ways of thinking—based on empowerment for marginalized groups or on institutions and capacity building—is unimportant; however, each of these two rationales neglects considerations that are crucial for life and livelihoods in a place like Gabraland.

The imperative for collective survival in a harsh and unpredictable environment requires interdependence, which is manifested, for example, in traditions surrounding redistribution of livestock. These traditions help to limit, although not eliminate, disparities in wealth. In traditional Gabra decision-making, furthermore, unity is assumed to exist. The imperative for survival is an imperative for *collective* survival. In this kind of social environment, empowerment of particular sub-groups as a social ideal does not have favourable soil in which to grow, whether this ideal were to be advanced by certain actors from within Gabra society or by development agencies coming from outside. Furthermore, from the point of view of the average Gabra, any development agency that attempts to assist Gabra people and communities while putting something at the centre of its work other than enhancing capacity to cope, adapt and survive, whether that something is empowerment of marginalized groups, citizenship, or social transformation, is ignoring the prime, overarching need of the Gabra.

I do not mean to suggest that those who are guided by the *participation as empowerment* rationale are uninterested in whether or not people are able to cope with droughts or other disasters, or that suffering interests them only when it is a result of disparities in wealth and power. Nor is it my contention that such disparities are unimportant or that development agencies working with dryland pastoralists should ignore empowerment of the poorer and marginalized segments of pastoralist societies. But generally, literature that discusses participation as empowerment tends not to pay much attention issues of adaptability and collective capacity to cope. Furthermore, research that links issues of resilience, coping and adaptation with participation and decision-making is scant. While issues of disparity in wealth and power, of marginalization, and of other forms of inequality were not central to this research, some interesting and important research questions certainly lie in an examination of the effect that disparity may have on collective capacity to cope with droughts and other shocks and stresses.

In the *participation as empowerment* mode of thinking, decision-making is seem as a process in which competing interests divide up resources and access to resources. This way of thinking is closely linked to a particular understanding of what socio-political

power is and how it operates. As noted by Masaki (2004), many critics of mainstream participatory development have tended to have a notion of power that was static and binary. Power is treated as a reified entity. Someone has it; someone does not have it. It is treated as being absent from any social situation until the one possessing it decides to use it. This is a notion in which power is *power over*; *power to* merits little consideration. But for a people such as the Gabra, *power to* is of vital importance, in particular, power to take action to cope with and recover from shocks and stresses. Development agencies should be as concerned about *what* a participation process gives people power to do as they are about *who* has power over *whom*.

An understanding of the traditional Gabra approach to decision-making also sheds light on shortcomings in the institutional model of participation. This model, based on a rationale of *participation as building community capacity*, tends to be *community* participation. As described above, most participation processes facilitated by NGOs and other agencies observed in this research, take place at the level of individual settlements. However, as already discussed, among the Gabra and other nomadic pastoralist societies *community* is not a discrete phenomenon. Pastoralists have numerous, overlapping communities and numerous, overlapping identities. Pastoralist institutional regimes tend to reflect this, with institutions having flexible and overlapping domains of authority. Participation that is conceived of in terms of communities can oversimplify relationships and identities that are multiple, nested and overlapping. The need for a more sophisticated understanding of community is particularly important for participation processes being implemented among pastoralists but certainly applies to other groups as well.

As well as conceiving of participation in relation to "communities", the *community capacity* rationale also emphasizes institutional structures, along with participation *in* and participation as taking place *through* these structures. The rationale behind the traditional Gabra approach to decision-making, on the other hand, puts more emphasis on relationships. This is reflected in the prominence that principles such as respect, civility, consensus, inclusivity and forgiveness hold in the way Gabra tend to think about

collective decision-making. With the exception of *inclusivity*, these are principles that are seldom mentioned in typical NGO discourse on decision-making. Among the Gabra, when collective decisions need to be made, little attempt is made to identify one particular institution that is the most appropriate arbiter of that decision. Instead, effort is made to identify all the individuals and institutions which have a stake in the decision and include them in the decision-making process. It is not simply that Gabra individuals, families and communities are interdependent in terms of livestock, livelihoods, and access to resources; interdependence is reflected in the mode of decision-making and in the way institutions relate to each other. Given that capacity to cope and adapt is so important, it is not incorrect for the institutional approach to participation to emphasize capacity building. But what both the above discussion and findings presented in Chapter Five highlight is that collective capacity lies as much in an institutional regime—in the entire suite of institutions and the linkages between them—as it does in individual institutions.

6.5.2 An Alternative Rationale: Participation as Building Systemic Capacity

In response to the inadequacies of the *building community capacity* and the *empowerment* rationales, I will attempt to articulate an alternative rationale for participation. The elucidation of this rationale draws on my description of the processes, principles, and rationale that characterize Gabra decision-making and on the findings of this research related to social-ecological resilience and the capacity of human actors to influence resilience. While these ideas emerge from a particular case study they are, I believe, applicable generally. The proposed rationale can be described as *participation as building systemic capacity*. As with the *community capacity* rationale, institutions are assumed to be important and building capacity is taken as a central aim. Institutions are one of the key ways in which human beings express collective agency. As argued in the previous chapter, for example, where Gabra communities are lacking in the capacity to influence resilience they are lacking in institutional capacity. However, in this rationale collective capacity, especially the capacity to influence resilience, is seen as residing not so much in individual institutions as in the entire suite of institutions in a governance

system and in the relationships between these institutions, and thus the capacity that is desired is systemic.

The approach that has been used in this chapter, based on identifying rationales for participation, entails questioning of what participation is for. For some, participation is for improving implementation of projects and programs. For others, participation is about giving *communities* more control over their local circumstances and building their capacity. For others, participation is about redistributing power and emancipating marginalized and oppressed groups. While an individual may find elements that he or she agrees with in all of these rationales, insofar as they entail different understandings of what participation is for, they lead in different directions and are not completely reconcilable with each other. For example, if participation is about helping communities to have more control over their local circumstances, it may sometimes result in participation processes taking longer or even result in those communities resisting the implementation of certain projects, which would be directly at odds with the *effective implementation* rationale. If participation is about *redistributing* power to marginalized groups, it may sometimes require reducing the capacity of "communities" if those communities are dominated by powerful groups.

Thus the alternative that is suggested here, while it reflects some of the concerns of the other rationales, should be seen an alternative more so than being complementary. It is an alternative in which power, identities, and communities are seen as being fluid and overlapping and as being based on relationships that exist within complex social-ecological systems that are nested across levels. This rationale holds that participation should take place throughout this complex system, and its aim is to build capacity throughout the system. As noted in the previous chapter, it is by creating and strengthening relationships and institutional linkages at various levels of social organization that stakeholders within a social-ecological system develop the collective capacity to influence that system and to adapt. To the extent that participation is about empowerment, empowerment here is focused neither on discrete communities not on static groups within communities. Rather empowerment is seen as being an ongoing,

fluid process that takes place through relationships that exist throughout the system. The *systemic capacity* rationale is contrasted with the *building community capacity* and *empowerment* rationales in Table 6.5.

In this perspective, the development of institutions must go beyond individual institutions and should include the development of the institutional *environment*, in part through the establishment of appropriate vertical and horizontal linkages. Furthermore, the social entities for which capacity is desired—the actors in this social process—are multiple. These may include "communities" in the conventional sense and marginalized groups within communities; but they may also include other identities, interests, groups and institutions at various scales. This rationale calls for participation that takes place at multiple levels of social organization through an array of interconnected processes and institutions, and is thus consistent with the idea that transformative participation involves the practice of multi-scaled citizenship (Hickey and Mohan 2004; Williams 2004).

Seeing the world in terms of interdependence provides us with a way to think about community without taking the simplistic view that communities are unitary entities lacking internal differences and competing interests. It allows us to accept that "community" may be a useful concept without us having to ignore differences of interests, identity and power *within* communities. This way of thinking suggests that identities, loyalties, interests and communities are multiple, overlapping, and exist at various scales and levels. It thus allows for the possibility of overcoming the false dichotomy of helping the community versus helping marginalized people and groups within the community.

This rationale also suggests a different way of conceiving of identities. The *community capacity* rationale and the *empowerment* rationale both tend to see the world in terms of identities and interests that are static: either people are seen as belonging to *a community* or they are seen as belonging to one of various groups with each having its own particular interests and its own particular portion of power that it can exercise in favour of those interests. The alternative that I propose is to see the social world not in terms of static

Table 6.5: Participation as building systemic capacity contrasted with other rationales

	Rationale For Participation		
	Participation as building community capacity	Participation as empowerment	Participation as building systemic capacity
Explanation	The institutional approach: participation of community members in community institutions. Community-based natural resources management is often based on this rationale.	Marginalized or oppressed people are the target of participation and eventually themselves challenge the powerful and attempt to claim the right to participate in decision-making. This rationale is more typically manifested in social movements and political struggles than in the work of large, bureaucratic development agencies.	Participation that takes place at multiple levels through interconnected processes and institutions. Participation entails participation of multiple, overlapping interests, groups, identities and communities.
Aim	To build the capacity of communities by creating the institutional and participatory means through which a community makes decisions.	To empower marginalized/ oppressed groups.	To build capacity within and throughout a social-ecological system by creating and strengthening relationships and institutional linkages at various levels of social organization.
Approach	Creating and strengthening community institutions, and promoting inclusive participation in these.	Engagement in, and challenging of, political processes. Creating and claiming spaces of participation.	Strengthening the democratic institutional environment.
How Success is Measured	• Community capacity increases and is applied in other areas. • Community on its own begins to address other problems and aspirations.	• Marginalized groups are included in decision-making in a meaningful way. • Marginalized groups demand their rights from the more powerful.	• Marginalized groups are included in a meaningful way in decision-making at multiple levels. • Social relations are trans-formed so as to open up spaces for participation • Improvement in the response of stakeholders to shocks and stresses. • Improvements in the capacity of stakeholders to proactively influence their social-ecological system.

identities but in terms networks of relationships, as this reflects the reality of multiple, overlapping identities that characterizes almost any society, including that of the Gabra.

This understanding is consistent with the conception of power found in the transformative participation discourse (Masaki 2004; Williams 2004). Power is not seen as a substance that the powerful exercise over the powerless, but rather, as described by Nelson and Wright (1995), as a complex phenomenon consisting of discourses, institutions, actors, and flows of events. This conception of power, together with a broad strategy of strengthening the democratic institutional environment, opens the possibility for multiple avenues of empowerment. Development agencies interested in empowering a particular marginalized group need not be locked into fighting a zero-sum game by extracting power from the powerful in order to empower that group in relation to one particular institution.

The implications of this way of thinking for development agency practice are many. It suggests that building collective capacity, including the capacity to influence resilience, entails not only strengthening individual institutions, but strengthening the entire network of institutions through which people collectively make decisions and take action, in part by establishing and strengthening those relationships between institutions that allow for both a diversity of strategies, responses, and ways of thinking, *and* a high degree of social cohesion and mutual assistance. It suggests a need for NGOs and their donor agencies to take their application of participatory development beyond the community-level. Whereas this research found little in the way of development agencies providing opportunities for grassroots voices to impact on decisions taken at higher levels, this rationale implies a moral imperative for people to have opportunities for meaningful participation at multiple levels of social organization. It suggests a need for broadening and strengthening inclusivity in decision-making processes at multiple levels, and promoting reflection on, and challenging, dominant norms and discourses.

At the beginning of this chapter, it was noted that the literature on transformative participation challenges NGOs to reconsider what their roles are in promoting participation. The above discussion implies ways to meet this challenge. NGO

approaches that would be based on the on the *systemic capacity* rationale can be summed up as strengthening the democratic institutional environment and might include activities and strategies such as the following:

- Creating and building the capacity of discrete organizations and institutions, but also…
- Establishing linkages between institutions, especially across scales and levels. As described in Chapter Five, such linkages are part of what provide the collective capacity to influence resilience. This strategy could include the creation of networks of nested institutions and nested deliberation processes. Examples to draw upon include many approaches to participatory watershed management, a strategy of linking grassroots organizations in federations, and community-based regional development.
- Promoting deliberation. As noted earlier in this chapter, NGO participation processes often provide only limited opportunity for analysis and deliberation. This strategy could involve both facilitating deliberation in existing decision-making processes and the creation of new deliberation processes. In particular, there is a need for the nesting and linking of deliberation processes across levels of social organization. Among the ways that NGOs might do so are by creating new venues for communities to engage in mutual deliberation, for example on a watershed scale, and by using their influence to ensure than grassroots voices have access to forums of deliberation which already exist at higher levels.
- Mobilizing marginalized groups to participate in, and claim a voice in, decision-making processes at various levels, thereby broadening and strengthening inclusivity at these various levels.

NGOs, in other words, can have a facilitating role. Even while engaged in tangible endeavours such as helping communities to obtain new water infrastructure, they can pursue an underlying aim of building systemic capacity by strengthening the democratic institutional environment.

Some aspects of the methodology used by PISP offers clues to as to how this rationale might be realized in practical action. One of these aspects relates to PISP's approach to

working with traditional institutions: PISP does not work only through traditional *bodies*, but also through the process institution of the korra. Secondly, there is a certain emphasis on relationships, dialogue and deliberation in the way that PISP staff operate, which helps to moderate a tendency to focus on formal, institutionalized bodies. Similarly, the kinds of mechanisms of multi-level participation that are sometimes promoted in relation to watershed management are instructive. Admittedly, in this realm too there can be an overemphasis on institutionalized bodies at various watershed levels, and not enough attention to given to decision-making *processes*; but the idea of participation taking place at multiple, interconnected levels is one that should be applied more widely.

This implies a need for an alternative set of criteria and indicators for measuring success. Success, according to the *systemic capacity* rationale, would be assessed by impacts such as the following:

- Marginalized groups are included in a meaningful way in decision-making at multiple levels
- Social relations, including institutional relationships, are transformed so as to increasingly open up spaces for participation
- Improvement in the response of stakeholders to shocks and stresses
- Improvements in the capacity of stakeholders to proactively influence their social-ecological system.

6.6 Summary

This research found that development practice in north-central Kenya exemplifies many of the common criticisms of mainstream approaches to participation, and reflects two different rationales: *participation as a means for effective implementation* and especially *participation as building community capacity*. Much of the literature criticizing mainstream approaches to participation reflects a third rationale which I have called *participation as empowerment*. On the other hand, the way that the Gabra make collective decisions, and to a certain extent the work of PISP, suggest an alternative way to think about participation and decision-making. In this alternative rationale,

participation is about building capacity within and throughout a social-ecological system, in part by creating and strengthening relationships and institutional linkages at various levels. The capacity that is provided by such relationships and linkages is part of what provides the capacity for stakeholders to take collective action to influence the way that their social-ecological system works and thereby its resilience, and in this way to adapt to changing circumstances. In the next chapter (Section 7.4.2), I provide one example as to what this might look like in practice.

Chapter 7: Conclusion

7.1 Two Re-examinations of What this Research is All About

The more that we see how different phenomena are connected to each other, the more complex the world seems. In fact, *complexity* itself has been equated to the number of non-equivalent descriptions that can be made for a system (Casti 1994). The more complex the system, the more problematic becomes the task of defining its boundaries, of deciding what is to be considered part of the system and what is to be considered external, of what is and is not important. One approach to dealing with this is reductionism. If, however, one wishes to *study* complexity rather than overcome or ignore it, one is faced with a set of dilemmas. *Which and how many interconnections should I deal with? What scale(s) am I interested in? Which and how many of the innumerable potential vantage points for viewing the system should I adopt?* This chapter begins with a re-examination of the purpose and objectives of the research. In doing so, I limit myself to two such vantage points. Following that, in Section 7.2, I provide an overview of the findings according to each of the three objectives. Section 7.3 considers the significance of this research for theory. The consideration of the significance of the research for development and water resources management policy and programming which follows in Section 7.4 is first presented in the form of six strategies that formal sector agencies might adopt for building local capacity to influence resilience. As an illustration, I consider what some of these strategies suggest for the practice of participation in relation to a particular case: community-based water resources management under Kenya's 2002 Water Act. I conclude with a brief look at some questions that arise from this research.

7.1.1 Collective Capacity to Influence Resilience—A Capacity for Development

This research is about development. Broadly, the questions that it has asked have been asked from the point of view of the environment/development professional and the kinds of organizations that the environment/development professional works for. If development is a process in which individuals, their communities and their institutions

uplift themselves in the pursuit of justice and progress, then a central element must be the building of capacity. Development is not a package that can be delivered, especially one delivered from the outside. Rather, it advances through an interlinked process of action and dialogue that depends upon collective capacity—capacity to learn, to plan, and to act. In addition, questions of how decisions are made and who makes them—questions of participation—are of central importance. Development that happens without meaningful participation of the planned beneficiaries of that development is something that is being done *for* and *to* them rather than *with* and *by* them, and hence is not development at all. It may sometimes have some beneficial impacts, but it does not represent people uplifting themselves. This is not to say that NGOs and other "external" actors have no legitimate role to play. Indeed, aside from providing resources and expertise, development actors have an important role in creating and fostering those kinds of dialogue and decision-making processes which allow communities, and groups and individuals within communities, to have control over the decisions that affect them, and which build capacity.

Broadly, the capacity that interests me is the capacity for collective action in pursuit of development. Specifically, the capacity that I have chosen to focus on in this research is the capacity to influence social-ecological resilience. Resilience is important because the world does not stand still—not ecosystems, not climate, not economics, not politics. The resilience of *social-ecological systems* is important because individuals, their communities and their institutions depend upon the broader social-ecological systems within which they exist. If these systems cannot maintain themselves in the face of unpredictable change, then there is little hope for people being able to uplift themselves. The capacity to enhance resilience, therefore, is a capacity for development. Government agencies involved in promoting water resources management, NGOs, and other development actors have the potential to build this capacity in the communities with which they work.

The purpose of this research, therefore, has been to examine ways in which the approaches to public participation used by agencies involved in water resources

management among pastoralists can affect this capacity. This question has been approached through three objectives. First, I have identified the essential elements that comprise the Gabra social-ecological system and that contribute to its resilience. Secondly, I have identified ways in which various stakeholders are and are not taking deliberate action to influence the resilience of the Gabra system and identified factors that contribute to the capacity to influence resilience. Lastly, I focus on a critical element in the interaction between formal sector agencies and local communities: participation and decision-making. I have identified the rationales that guide the approach to decision-making and participation taken by various formal sector agencies, especially NGOs involved in the water sector, and assessed the appropriateness of these alternative rationales in the context of the Gabra social-ecological environment.

One element which links these various concerns—concerns related to resilience, to the building of capacity generally and the capacity to influence resilience in particular, and to participation and decision-making—is institutions. Institutions are key social components of social-ecological systems. They are venues through which people make and carry out collective decisions. And they are also vehicles through which people take collective action in pursuit of development. For these reasons, some attention has been given to institutions throughout the thesis across three main areas of inquiry—the role of institutions in resilience, in the capacity to influence resilience, and in participation and decision-making. These three areas of inquiry correspond to the three specific objectives of the research.

7.1.2 Pastoralists and Resilience

This research is about pastoralists. It might be said that shocks and stresses are the defining features of pastoralist systems. The most common of these shocks and stresses—livestock diseases, theft of livestock, and especially drought—all challenge the capacity of households and communities to maintain livelihoods and to survive. But social-ecological systems based on traditional pastoralism, and the livelihoods within those systems, evolved a level of resilience that has allowed them to maintain themselves. Unfortunately, policy and development programming over the years have tended to erode

the resilience of pastoralist systems. Various authors have pointed out ways in which policy and programming over the years have failed pastoralists, often because of a lack of understanding of pastoralism and of the environments that pastoralists typically inhabit (Ellis and Swift 1988; Scoones 1995; Scoones 2004). While some of the distinctive features of pastoralist environments and livelihoods—e.g., high levels of uncertainty and variability, the importance of flexibility, the need for mobility—have been recognized in much of the recent scholarship on pastoralists, this understanding has made only very modest inroads into policy and development programming aimed at pastoralists (Davies 2008). Pastoralist peoples deserve better from policy and programming than they have thus far experienced. Given that traditional pastoralism is a more sustainable, a more ecologically and economically rational form of livelihood than any alternative that has yet been seriously offered to people living in very arid environments, these people deserve policy and programming that, at the very least, does not make life in the harshest and most marginal of conditions even more difficult.

But this requisite—that policy and programming not undermine resilience—is no longer sufficient. Many pastoralist groups now face new shocks, stresses and drivers impacting on their systems. According Gabra respondents in this research, these include droughts that come with greater intensity and frequency, a climate which no longer conforms to old patterns and is becoming increasingly unpredictable, and conflict with neighbouring groups that has escalated to new levels. I would suggest that this list should also include an ever growing human population and local government units that are getting smaller and smaller. The kinds of interventions undertaken by organizations such as PISP, therefore, are essential in order to avoid humanitarian catastrophes. More fundamentally, however, the scale of the drivers, shocks and stresses impacting on the Gabra social-ecological system, and the emergence of a vicious circle involving loss of livestock, sedentarization and destitution, together create a situation in which there is an urgent need to proactively build social-ecological resilience. For Gabra pastoralists, and presumably for many other pastoralists around the globe, it is no longer enough to simply create the conditions in which resilience can gradually re-emerge. And since pastoralist

communities themselves should be in the lead in this process of building resilience, there is a need to help build their capacity to do so.

The reasons for doing so go beyond the pastoralists themselves and any sense on the part of outsiders of either responsibility or altruism; pastoralists and their dryland environments should be seen as important to us all. Drylands make up approximately 41% of the earth's land area and are inhabited by more than two billion people (Safriel et al. 2005). Degradation of the world's dryland ecosystems, along with the vulnerability of the people who depend on these ecosystems, has already been identified by the recent Millennium Ecosystem Assessment as one of the world's "outstanding" environmental problems (Millennium Ecosystem Assessment 2005). In addition, disruption of pastoralist livelihoods has potential repercussions for security. Conflict involving pastoralists is of concern for a number of reasons: it can lead to displacement and sudden migrations of affected people; when pastoralists become involved in conflict their very mobility brings with it the possibility of propagating conflicts across borders and making them international; and pastoralists often have a history of successful opposition to state control (Nori et al. 2005). Ensuring that pastoralist systems are reliably able to provide adequate livelihoods has the potential to help prevent such conflict.

There are several factors to consider for any process of building the capacity of pastoralist communities to influence resilience. Firstly, water is an obvious entry point both for enhancing resilience and for building the capacity to do so. Water is the main constraint on production, and many agencies are already involved in water-related activities. Secondly, two components that must be prominent in any effort toward building the capacity to influence resilience are institutions and decision-making processes. These various issues come together in the stated purpose of this research: to examine ways in which the approaches to public participation used by agencies involved in water resources management among pastoralists can affect the collective capacity of pastoralist communities and institutions to influence social-ecological resilience. Each of the three objectives, furthermore—dealing with resilience, the capacity to influence

resilience, and participation—has direct relevance for pastoralist policy. The next section reviews the main findings of the research according to these four objectives.

7.2 An Overview of the Findings

7.2.1 The Resilience of the Gabra Social-Ecological System

The Gabra inhabit a land that is characterized by extreme variability across both time and space both in terms of rainfall and availability of forage, and they must cope with shocks and stresses such as drought and livestock theft that are unpredictable and potentially devastating (Chapter Four). The livelihood strategies of the Gabra, their practices and their institutions are (or at least traditionally *were*) well adapted to this environment and form part of a social-ecological system that is (or not too long ago *was*) resilient and able to maintain its identity in the face of these shocks and stresses. Elements that define the identity of the Gabra social-ecological system, categorized according to components, relationships, sources of innovation and sources of continuity (CRIC), have been summarized in Table 4.4. A key feature of many of these elements is flexibility: flexibility in the mix of livestock species that a household may keep, rules governing the commons that are applied with varying degrees of rigidity, a decision-making system based on traditional meetings (korra) that are held on an as-needed basis, ambiguity and overlap in decision-making authority, etc.

Identifying individual elements that comprise the identity of the social-ecological system is essentially an analytical approach. In Chapter Four, I have also tried to develop a more holistic understanding of the Gabra social-ecological system by considering possible thresholds and indicators for some of the system elements, by identifying vicious and virtuous circles, and by describing the system in terms of influence diagrams. This holistic perspective together with a recognition that resilience has in recent years been eroded suggests a need for stakeholders to envision an alternative system—a new stability domain—one that would probably have many of the features of traditional pastoralism, but that would also have a wider array of livelihood options and in which markets would be better able to convert large numbers of livestock into other forms of

capital at the onset of droughts. This approach provides a new perspective on current debates on pastoralism, in which various questions are being debated: e.g., whether pastoralists represent prime examples of adaptive capacity or of vulnerability, and whether it is in a sense too late to revive traditional pastoralism (Devereux and Scoones 2007; Nori and Davies 2007; Sandford 2007).

7.2.2 Who is Influencing Resilience and How?

The second objective of this research has been to identify ways in which various stakeholders are and are not taking deliberate action to influence the resilience of the Gabra system, and in this way to identify factors that contribute to the capacity to influence resilience (Chapter Five). It was found that Gabra communities and institutions are, on the whole, taking only modest steps to influence the way their social-ecological system works and enhance its resilience. On the other hand, actors that are influencing resilience more significantly include some NGOs such as PISP, and government agencies such as Arid Lands Resource Management Project (ALRMP). There are probably several factors that provide these agencies with the capacity to influence resilience, but this thesis has focused primarily on one: the number and strength of vertical and horizontal linkages that they have to other organizations and institutions. These linkages become channels for information, resources and partnerships that taken together constitute capacity to "get things done". Given that the capacity resides in the network of linkages as much as it does in any particular organization or institution, it can be seen as *systemic*. On the other hand, some organizations or institutions—PISP and ALRMP, for example—can constitute key nodes in this network, which allows them to utilize this capacity in ways that Gabra communities and institutions cannot. But insofar as it is these formal sector organizations rather than Gabra communities and community-level institutions taking steps to build resilience, they are providing adaptations much more than they are building adaptive capacity.

These distinctions—between providing adaptations and building adaptive capacity, between resilience and the capacity to influence resilience—highlight the need for a radical paradigm shift in the way that formal sector agencies like PISP conceive of their

role. While PISP is doing impressive work, in order to build systemic capacity within beneficiary communities, it, and organizations like it, should consider three interrelated strategies: fostering innovation and novelty (as opposed to simply *introducing innovations*), helping local communities and their institutions to increase the number and strength of upward institutional linkages that they have (as opposed to themselves *being the link*), and improving the ability of local stakeholders to accumulate and protect capital (as opposed to simply *providing that capital*). I expand on these strategies in Section 7.4, below.

7.2.3 Rationales for Participation

The third objective of this research deals with approaches to participation used by formal sector agencies, especially the rationales that guide these approaches (Chapter Six). The rationale that is dominant in the thinking of most of the formal sector agencies that I encountered in this research and in the minds of their personnel is the rationale that I have called *participation as building community capacity*, corresponding closely to what has been called the institutional model of participation (Cleaver 1999). This rationale and the assumptions and ideas that it entails are quite different from the principles that underlie the way collective decisions are traditionally made among the Gabra. The Gabra approach to decision-making is influenced by the overarching goal of ensuring collective survival and by a notion of interdependence. While the Gabra approach to collective decision-making and the rationale that informs it should not be idealized, this approach and rationale are influenced by the nature of the environment and the way the Gabra live within it, and are, in many respects, adapted to that environment. An understanding of the Gabra approach to decision-making suggests ways in which some of the prominent approaches to participation—including both the mainstream, populist approach and its *Tyranny* critics (Cooke and Kothari 2001)—have fundamental weaknesses.

I suggest instead an alternative rationale—*participation as building systemic capacity*—which would have as its aim the creation and strengthening relationships and institutional linkages at various levels of social organization in order to build the adaptive capacity of multiple groups and communities within a social-ecological system. This rationale calls

on NGOs and other formal sector actors to promote participation and inclusivity of decision-making at multiple levels of social organization through an array of interconnected processes and institutions, to foster deliberation processes that are nested across levels, and to help create and strengthen vertical institutional linkages for their beneficiary communities. A reaction to the *Tyranny* critique is exemplified in contributions to the volume, *Participation: From Tyranny to Transformation* (Hickey and Mohan 2004). While I have not taken transformative participation as a starting point or described the *systemic capacity* rationale with the sort of language used in the transformative participation discourse, this research can be seen as a contribution to this literature and to the task of conceptualizing an approach to participation that is distinct both from mainstream, populist participation and from the approach adopted by many of the *Tyranny* critics.

7.3 Significance of the Theoretical Contributions of This Research

This thesis has referred a few times to the unique characteristics and exigencies that characterize the biophysical environment in which dryland pastoralists such as the Gabra live and create their livelihoods. Pastoralist systems are adapted to deal with these characteristics, but in the case of the Gabra social-ecological system resilience has been eroded in recent years at a time when shocks and stresses are becoming greater. Unfortunately, Gabra communities have little capacity to proactively build the resilience of the social-ecological system, especially when action is needed beyond the local level. NGOs and other formal sector actors working with pastoralist communities can help to build this capacity, in part by helping communities and community-level institutions to increase the institutional linkages they have to higher levels of social organization. One way that they can do this is through their approach to participation and decision-making at multiple levels. What is needed is an approach that facilitates and promotes participation of grassroots voices at multiple levels, that involves deliberation that is nested across levels, and that helps communities and their institutions to establish linkages to other levels.

The above-mentioned characteristics of drylands used by pastoralists are usually understood in terms of non-equilibrium ecological dynamics and a set of views that is referred to as "the new rangeland ecology" (Behnke et al. 1993; Scoones 2004)—a set of views which, it has been suggested, have constituted a new paradigm in this field (Briske et al. 2003; Vetter 2005; Campbell et al. 2006). Much recent scholarship specializing in pastoralists accepts this paradigm and is based on a belief that traditional mobile pastoralism is an adaptation to non-equilibrium dryland environments that is both economically and ecologically rational. Nevertheless, much work remains to be done in developing theory that is relevant to pastoralists. This research has contributed in a number of ways to developing such theory: for example, ways of conceptualizing institutions and institutional regimes that recognize the importance of process institutions and institutional linkages, and ways of assessing the resilience of pastoralist systems.

However, the most important theoretical contributions of this research relate to advancing resilience theory—exploring its implications, actualizing it in the form of frameworks, and providing alternative ways of conceptualizing various issues. By applying the CRIC framework, for example, this research has explored ways in which *resilience* and its related concepts can be taken beyond the level of metaphor and contribute to in a systematic way to integrated forms of assessment and planning. In addition, various authors have recently begun exploring what is entailed in the capacity to influence resilience and to transform social-ecological systems (see especially, Walker et al. 2004 and various contributions to Ecology and Society 2006, v.11(1)). By furthering knowledge on factors that contribute to this capacity, this research contributes to knowledge on how human beings can learn to live sustainably within their environments and manage their actions in relation to those environments.

This research has shown how an approach informed by resilience thinking is relevant for theory on participation. In particular, insights derived from resilience thinking together with an analysis of both formal sector and Gabra approaches to participation/decision-making suggest an alternative way to conceptualize participation. For example, this alternative way of thinking about participation calls for participation that takes place not

only in relation to discrete institutions but throughout an entire institutional regime. The institutional content of participatory development and participatory water resources management needs to consider not only particular corporate bodies, but also relationships, decision-making processes, and the flow of information between institutions. An approach to participation informed by resilience thinking, furthermore, suggests ways of overcoming weaknesses in other rationales and approaches to participation, such as the narrow focus on corporate bodies of the institutional model of participation. Another example of the promise of the resilience thinking—hinted at but not explored in any depth in this thesis—can be seen in its providing the foundation for an understanding of the way that power operates that is more sophisticated than the understanding that informs both the mainstream approach to participation and many of its critics.

This alternative way of thinking about participation also constitutes the most important way in which this research contributes to resilience theory. The resilience literature has already identified participation as being important in that it builds trust (Blann et al. 2003; Folke et al. 2005; Lebel et al. 2006), increases appreciation of diversity (Blann et al. 2003), provides legitimacy (Walker et al. 2002), and can build knowledge and help to feed knowledge into management practices and decision-making processes (Folke et al. 2002; Walker et al. 2002; Blann et al. 2003; Folke et al. 2005). But on the whole, this literature has not explored the fundamental implications of resilience thinking for participation. This thesis does that, providing a starting point for a resilience-based theory of participation. Participation based on this way of thinking would be participation that builds the capacity of human stakeholders in complex social-ecological systems, especially the capacity to enhance resilience. This way of thinking about participation calls for participation that goes beyond the community-level, and for institutional linkages that cross scales and levels in a way that allows for grassroots voices to influence decision-making throughout a social-ecological system. These linkages themselves can be active components in making a system more resilient.

7.4 Significance of this Research for Development Policy and Programming

7.4.1 Six Strategies for Building the Capacity to Influence Resilience

In Chapter Five, three strategies were identified as being important for building the capacity to influence resilience: fostering innovation and novelty, strengthening vertical institutional linkages, and improving the ability to accumulate and protect capital. Looking more broadly at all of the main findings of this research, three other strategies emerge for building capacity of local stakeholders to influence resilience and, more broadly, capacity for collective action in the context of complex social-ecological systems. Thus, to begin a discussion of how this research is relevant to development policy and programming, these strategies are summarized here and discussed in relation to each other (Figure 7.1). The list of strategies is not intended to be exhaustive, but rather represents those that emerge most directly in this research.

Four of these strategies are aimed at developing the factors that comprise the capacity to influence resilience:

- Improve the ability to accumulate and protect capital
- Broaden and strengthen inclusivity in decision-making processes at multiple levels
- Increase the number and strength of vertical institutional linkages
- Promote nested deliberation

These strategies revolve around information and capital: improving knowledge and the ability to share knowledge, creating capital, improving the flow of information and capital. Other potential contributors to the capacity to influence resilience were suggested in Chapter Five—leadership, unity and vision—and could conceivably included with *information* and *capital* at the centre of the Figure 7.1, but these have not been explored in this research. The other two strategies relate to stakeholders—both local stakeholders and external agencies—taking action with that capacity:

- Identify and measure key thresholds and threshold indicators for essential elements of the social-ecological system

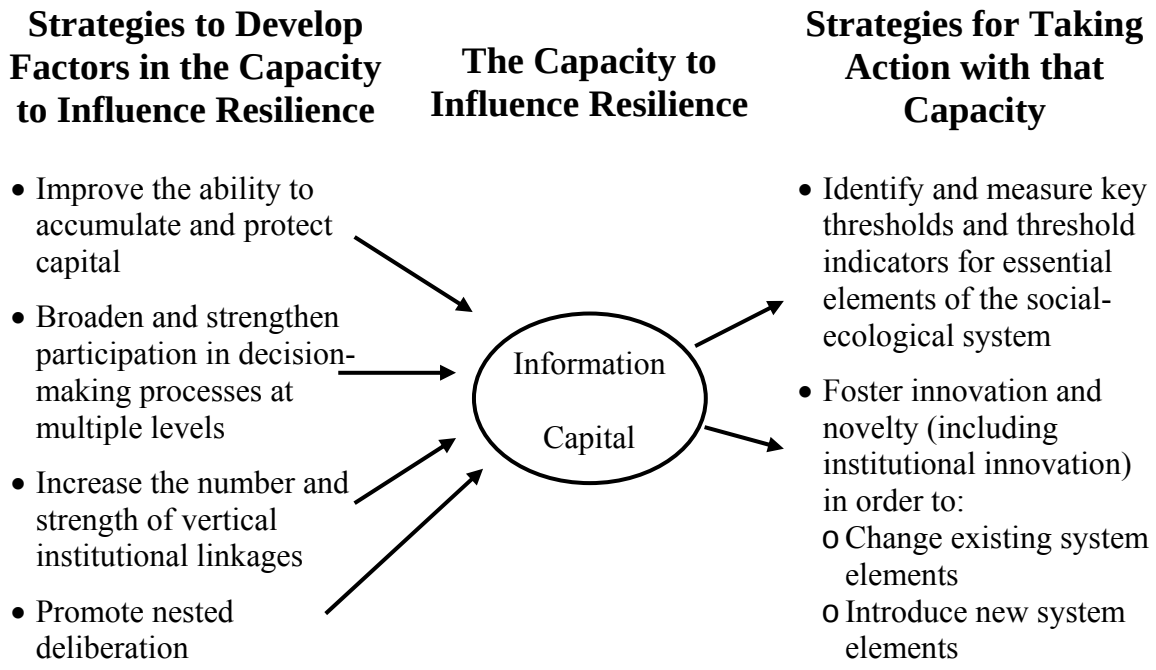


Figure 7.1: Six strategies to build the capacity of local stakeholders to influence resilience

- Foster innovation and novelty (including institutional innovation)

Each of the six strategies is summarized in turn below, with references to the appropriate chapter where the issue has been discussed more fully.

1. Improve the ability to accumulate and protect capital. Capacity for collective action involves financial and human capital, and potentially other forms of capital as well if these can be mobilized for use by local stakeholders. Furthermore, stakeholders must not only have the capital; they must also have the ability to protect it. Whereas Gabra individuals and households are able to accumulate capital in the form of livestock, currently, Gabra *communities* have limited mechanisms that allow them to accumulate capital beyond the level of occasional projects to which people are asked to contribute

livestock. Ways in which capital can be accumulated for collective action on a *regular and systematic basis* are doubly rare. Communities and community organizations apparently have little ability to raise their own funds. And whereas forest communities, for example, have access to concentrated natural capital in the form of timber and non-timber forest products, pasture resources are widely dispersed and best mobilized via livestock. However, livestock numbers are regularly decimated by droughts, and, for a variety of reasons such as poor roads and poorly functioning markets, not efficiently converted into financial capital. Until the ability of Gabra organizations and communities to raise capital is improved, their capacity for collective action, including their capacity to influence resilience will be hampered. (See Chapter Five).

2. Broaden and strengthen participation in decision-making processes at multiple levels. The dynamics which influence resilience occur at various scales and across scales, and the human decisions which impact on social-ecological systems are taken at various levels of social organization. Decisions about policy, legislation, taxation, and funding priorities impact on people, their local environment and their livelihoods just as do decisions about individual projects and other purely local matters. Participation in the decisions that affect one's life is a basic right and, given that important decisions are taken at various levels, participation at "higher" levels is part of that right. Improving on participation at multiple levels entails extending participation processes vertically to allow people from the grassroots meaningful opportunities to deliberate on and influence decision-making at these higher levels. It also entails broadening participation to marginalized groups who are currently excluded from decision-making processes. Wise decision-making requires information, and improving participation in decision-making at various levels will allow for knowledge held by stakeholders who are otherwise excluded to enter into the decision-making process. Both as a matter of rights and as a matter of efficacy, therefore, government, NGOs and other development actors should aim at broadening and strengthening participation in decision-making at multiple levels. This can be achieved, at least in part, by formal sector agencies using their power to push for decision-making processes to be made more inclusive both vertically and horizontally (see Chapter Six).

3. Increase the number and strength of vertical institutional linkages. One reason that NGOs such as PISP and government agencies such as the ALRMP are able to mobilize capital in ways that community level organizations and institutions are not is the linkages that they have across levels of social organization (see Chapter Five). The connections that communities and community-level institutions have to national and international level institutions are few, and many of the most important connections that they do have are through organizations like PISP. Linkages to institutions at higher levels of social organization can help to provide access to funds and information, as well as providing the possibility of influencing factors such as regulations and policy. Therefore, any effort at building the capacity of Gabra communities must work to increase the number and strength of institutional linkages that communities and their institutions have to higher levels of social organization. This strategy would include establishing relationships and creating and adapting institutions that would link actors across levels. Participatory watershed management and strategies that involve federating grassroots organizations as a means of scaling up provide some examples.

4. Promote nested deliberation. This strategy overlaps with the previous two. The way that collective decisions are traditionally made among the Gabra reminds us that not all institutions are organizations and that deliberation processes have an important role to play in decision-making. The institutionalized deliberation process of the korra meeting, held at various levels of social organization, provides an interesting example for development agents promoting participation. It is an example that suggests that deliberation processes are needed at multiple levels and that they should be linked to each other across levels (see Chapter Six). NGOs and their donors pursuing this strategy could both create new venues for deliberation that link community-level actors to each other and to actors operating and higher levels, and use their influence to ensure that grassroots voices are able to participate in existing venues for deliberation at higher levels.

5. Identify and measure key thresholds and threshold indicators for essential elements of the social-ecological system. In order to proactively enhance the resilience of the social-ecological system, stakeholders will need to decide where in the system to intervene, and

thus will require information. This can be accomplished in part by bringing together stakeholders and mobilizing the knowledge, both "traditional" and "scientific", that they already have. Some of the knowledge needed, however, may need to be created. In this connection, it will be important to identify and measure on an ongoing basis, key indicators that can help stakeholders to assess how the system is doing. A framework for developing such indicators is the CRIC framework that was described in Chapter Four. In short, it will be helpful for stakeholders to identify key elements that make the social-ecological system what it is, identify thresholds for these elements, and identify and begin measuring indicators for these thresholds.

6. Foster innovation and novelty (including institutional innovation). Another need is to foster innovation and novelty, including institutional innovation, to do so at various scales, and to do so throughout the adaptive cycle. This can be conceived of as changing existing CRIC elements of the system and introducing new elements. The tendency in a social-ecological system is for novelty, innovation and new relationships to emerge primarily after the system has been shaken by some disturbance and has passed through a release phase. In situations such as that which pertains to the Gabra, where people depend so directly on fluctuating resources such as rainfall, pasture and livestock, that release brings with it a great deal of human suffering. The social-ecological system will reorganize eventually; the hope is that novelty, innovation and reorganization could be fostered proactively without the system first having to go through a dramatic collapse. Fostering innovation and novelty that come from and through the grassroots level will require the creation of opportunities for learning from what has been tried in other locations and for reflective deliberation among a wide range of stakeholders. (See Chapters 4 and 5).

7.4.2 Participation as Building Systemic Capacity, and Kenya's 2002 Water Act

Of these six generic strategies, it is the three concerning institutions, participation and decision-making (nos. 2, 3 and 4) that most directly relate to the purpose of the research. Therefore, in order to highlight the implications of this research for the practice of participation, those three strategies are applied to a particular case, community-based

water resources management under Kenya's 2002 Water Act. As already discussed (Chapter Three), the Water Act envisions that the primary institutional mechanism for actualizing management of water resources at the local level will be Water Resource Users Associations (WRUAs). Much of the work of the Water Resources Management Authority (WRMA) at the local level is focused on facilitating the formation of WRUAs and providing support to WRUAs.

WHY WRUAS ALONE ARE NOT THE ANSWER

The importance of meaningful participation at multiple levels of decision-making, of institutional linkages, and of nested deliberation, together with an understanding of the distinctive nature of the Gabra approach to decision-making, suggest that a narrow focus on a single corporate body—the WRUA—is not likely to produce the best results for promoting community-based water resources management among the Gabra or other mobile pastoralist groups. For mobile pastoralists, standing, institutionalized bodies face challenges in terms both of inclusivity and of continuity of officers/representatives: it is difficult for a permanent committee or association to ensure inclusion of nomads in decision-making or to maintain continuity of leadership when the constituency of that committee or association is nomadic. Yet nomadic pastoralists can and do make collective decisions. One feature of the rationale for participation that I suggest—*participation as building systemic capacity*—is a recognition that not all institutions are organizations and that not all collective decisions need to be made by organizations. Among the Gabra for example, the institutionalized process of the korra traditionally has been at least as important as standing, corporate institutions. Traditionally, the Gabra have been able to at least partially overcome the challenges of inclusivity and continuity by investing at least as much authority in occasional meetings, scheduled according to seasonal movements and according to need, as they invest in standing institutions.

The *systemic capacity* rationale, together with an understanding of pastoralist decision-making processes, also highlights the idea that there are more dimensions to decision-making than simply what body is making the decision. Questions such as, "Which body has decision-taking authority?" and "Who is included in that body?" are important but

insufficient. Decision-making also involves other dimensions such as norms, relationships, personal and institutional goals, and procedures and processes. Indeed, some institutional regimes vest final authority for taking decisions in certain procedures and processes and not in a body at all. An organization whose board of directors answers to and is subservient to an Annual General Meeting is one example. In other words, an approach to institution building that focuses only on corporate bodies runs the risk of being too simplistic, and for mobile pastoralists, being neither effective nor inclusive. The lesson for water resources management among pastoralists in Kenya and elsewhere is that planners and policymakers need to look beyond institutionalized bodies such as WUAs and WRUAs. Furthermore, agencies that are promoting water resources management, such as WRMA in Kenya, should not always be in a rush to form new bodies such as WRUAs.

It should not be inconceivable for mobile pastoralists to have some level of meaningful participation in decisions that require them to interact with formal sector actors such as NGOs and government departments. However, allowing meaningful participation to take place will require effort on the part of the agencies involved. More importantly, it will not often be achieved through methods borrowed unthinkingly from work among settled agricultural populations. An alternative to the focus on representative committees, informed by the three generic strategies referred to above—meaningful participation at multiple levels of decision-making, institutional linkages, and nested deliberation—is discussed below.

AN ALTERNATIVE APPROACH: THE FOSTERING OF DELIBERATION

An understanding of the role played in pastoralist decision-making by traditional meetings held at various levels of social organization also reminds us more generally of the importance of deliberation processes. For the fostering of bottom-up water resources management, agencies such as WRMA in Kenya should remember that deliberation processes are at least as important as permanent bodies such as WUAs and WRUAs. When deliberation is nested across various levels, effective participation at one level of water resources management can meaningfully impact on decisions made at other levels.

Whenever possible, agencies such as WRMA should endeavour to ensure that deliberation at one level is linked to deliberation that takes place at other levels.

Practically, this could involve organizing workshops and conferences, as well as piggybacking on pre-existing venues for multi-stakeholder deliberation such as District Steering Groups, and Water and Environmental Sanitation Coordination Groups. To a certain extent this is happening already, especially at District level; however, the promotion of deliberation processes for water resources management must be made systematic and must also include the local level. Currently, systematic attention is given to helping local stakeholders to form a permanent body—a WRUA; systematic attention is not given to promoting deliberation at the local level or to connecting local level deliberation to deliberation that occurs at higher levels.

Furthermore, in regions such as northern Kenya, nested deliberation processes promoted by formal sector agencies should connect to and work with traditional pastoralist deliberation processes. A strategy of working with traditional meetings, as opposed to simply working through a new committee such as a WRUA, is likely to allow for greater inclusivity for nomadic pastoralists, and stands a greater possibility of acceptance and support from nomadic communities. It must be recognized though, that traditional pastoralist meetings are not necessarily ideal. Among the Gabra, for example, women are not allowed to participate in these meetings. So deliberation can and should also take place in other settings as well, such as the kinds of open community meetings that people are accustomed to from their contact with NGOs. Such deliberation processes would include meetings held, both in the traditional format and other formats, for the purpose of discussing and strategizing questions of water resources management. PISP is one example of how formal sector agencies can relate to traditional pastoralist meetings. Furthermore, as NGOs and government agencies further involve themselves in institutional development in these communities, there is an opportunity for the positive elements of the traditional form of decision making to be strengthened and to contribute a strategy of community-based water resources management. Generally, however, this will

not happen if the institutional development that takes place focuses on committees based in the permanent settlements.

WHAT ROLE FOR WRUAS?

The above discussion is not meant to suggest that mobile pastoralists in the arid and semi-arid parts of Kenya should never form WRUAs. Rather, what should be primary, both in time and importance, are ongoing, systematic processes of nested deliberation. A strategy such as this borrows from ways of making decisions and institutions that are adapted to the pastoralists' mobile lifestyle, and, where appropriate, such a strategy would directly involve these institutions. WRMA might play a role of facilitating this kind of multi-level deliberation in which various stakeholders, including traditional institutions, elected representatives, NGOs, and pastoralists in general, come together to assess the state of water resources in their area and plan for the future. This need not wait until WRUAs are formed, although where WRUAs do exist they should of course be represented. Furthermore, a strategy focused on bringing stakeholders together and promoting deliberation would create opportunities for these stakeholders to begin ascertaining mutual problems and opportunities, and identifying interconnections of relevance to them (upstream-downstream interconnections, land-water interconnections, and human activity-"natural" processes interconnections). These interconnections are the "integration" of integrated water resources management, and it is in these interconnections that the social drivers for WRUA formation are likely to be found. There can be no universal prescription outlining the roles that WRUAs should play. The nature of particular WRUAs—their size, scope and focus—should emerge from ongoing deliberation processes and from the interconnections and drivers that these processes identify.

Nevertheless, I can offer a few speculations about where WRUAs might fit in an overall institutional regime for community-based water resources management and its various deliberation processes. Firstly, the suggestions above imply that for any WRUAs whose constituency includes a significant number of mobile pastoralists, consideration should be given to structuring the WRUA such that some decision-taking authority be placed in

traditional-style pastoralists meetings, rather than with an executive committee. Secondly, decision-taking authority for water resources management might ideally be distributed among various stakeholders and institutions, rather than being concentrated in WRUAs or in any other kind of permanent body. If, in a sub-catchment or a District, WRUAs are present, they would an important, but not the only, standing institution responsible for making decisions about water resources management. Systematic processes of nested deliberation in which a WRUA is one among many sets of stakeholders and institutions involved could also provide a framework for scaling up water resources management from the micro-catchment and WRUA level up to the level of basin-wide management.

7.5 What More? Polycentric Governance, Unity, Leadership and Vision

Part of the aim of what I have called the *participation as building systemic capacity* rationale is strengthening of the democratic institutional environment. Referring to the institutional *environment* emphasizes the point that one must look beyond particular institutions to the entire network of linkages and relationships through which collective decisions are made. In practice, this might conceivably include the strengthening of particular organizations, but it would also entail strategies such as strengthening institutional linkages both vertically and horizontally, broadening and strengthening inclusivity in decision-making processes at multiple levels, bringing together diverse stakeholders from various levels in processes of dialogue and deliberation, and promoting reflection on, and challenging, dominant norms and discourses.

As the field research unfolded I found myself more and more thinking about the need in north-central Kenya for the democratic environment as a whole to go beyond short-term problem-solving and undertake a serious examination of the past, present and future. In particular, I began to see a need for some sort of integrated assessment involving a wide variety of stakeholders in order to address some of the problems that I have identified. The CRIC framework is one possible tool that could contribute to such an assessment. That is to say, an integrated assessment would require an appraisal of the history and the

current situation by the stakeholders involved, and structuring that appraisal according to the CRIC framework could be a useful sensemaking strategy. Various other techniques, such as scenario building, could also be useful elements of an integrated assessment.

More broadly, I think this research highlights the relevance of the idea of polycentric governance. *Participation as building systemic capacity* is participation based on a notion of polycentric governance. And many of the questions that this research has not been able to answer in detail are questions about polycentric governance:

- How can institutional linkages best be created and fostered?
- Which of the various qualities of polycentricity—flexibility, overlap, ambiguity—are desirable under what circumstances?
- Under what circumstances are clearly defined roles, rules, boundaries and lines of authority appropriate and under what circumstances are flexibility, overlap and ambiguity important?

In exploring the capacity to influence resilience and what formal sector agencies might do to build that capacity in the communities that they work with, I have focused on the role of capital and especially of institutional linkages. However, in Chapter Five, I also referred to three other, more intangible characteristics that, according to my respondents, are important: leadership, unity and vision. These are features which, perhaps because of their intangible nature, agencies such as NGOs seldom see themselves as having a role in promoting. This may be a mistake: as contributors to the capacity to influence resilience, these features deserve more careful attention both from development agencies and from academics.

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Appendix 1: Timetable of Research Activities

Research Phase	Dates	Activities Carried Out In…
Reconnais-sance Visit. Aug.-Sept. 2006	21/8 – 28/8/2006	Nairobi
	29/8 – 10/9/2006	Marsabit & various PISP beneficiary communities
	11/9 – 15/9/2006	Nairobi
Primary Field Research – Preparatory Work. Jan.-Mar. 2007	12/1 – 23/1/2007	Nairobi
	23/1 – 5/2/2007	Marsabit
	5/2 – 13/2/2007	Nairobi
	13/2 – 24/2/2007	Marsabit
	24/2 – 27/2/2007	Various PISP beneficiary communities
	28/2 – 14/3/2007	Marsabit
	15/3 – 18/3/2007	Various PISP beneficiary communities
	19/3 – 22/3/2007	Marsabit
	23/3 – 30/3/2007	Nairobi
	30/3 – 7/4/2007	Marsabit

Research Phase	Dates	Activities Carried Out In…
Primary Field Research – Intensive Research April-Nov. 2007	8/4 – 23/4/2007	Sub-case: Kalacha/Afkaba
	24/4 - 2/5/2007	Marsabit
	3/5/2007	Various PISP beneficiary communities
	4/5 – 12/5/2007	Sub-case: Kalacha/Afkaba
	13/5/2007	Various PISP beneficiary communities
	14/5 – 23/5/2007	Marsabit
	24/5 – 7/6/2007	Nanyuki and Nairobi
	8/6 – 15/6/2007	Marsabit
	16/6 – 17/6/2007	Sub-case: Kalacha/Afkaba
	17/6 – 25/6/2007	Sub-case: Balesa
	26/6 – 1/7/2007	Marsabit
	2/7 – 7/7/2007	Secondary case: FHI-Hula Hula
	8/7 – 13/7/2007	Marsabit
	17/7 – 24/7/2007	Sub-case: Kalacha/Afkaba
	25/7 – 3/8/2007	Marsabit
	4/8 – 19/8/2007	Vacation
	20/8 – 21/8/2007	Nairobi
	22/8 – 27/8/2007	Secondary case: WRMA-Kopulio
	28/8 – 31/8/2007	Nairobi
	1/9 - 3/9/2007	Marsabit
	4/9 – 7/9/2007	Various PISP beneficiary communities
	8/9 – 20/9/2007	Marsabit
	21/9 – 28/9/2007	Sub-case: Hurri Hills
	29/9 – 7/10/2007	Marsabit
	8/10 – 10/10/2007	Sub-case: Hurri Hills
	11/10 – 18/10/2007	Marsabit
	19/10 – 28/10/2007	Sub-case: Balesa
	29/10 – 4/11/2007	Marsabit
	5/11 – 19/11/2007	Nanyuki and Nairobi
Follow-up and Validation Visit. May-July 2008	28/5 – 5/6/2008	Nairobi
	5/6 – 9/6/2008	Marsabit
	10/6 – 11/6/2008	Sub-case: Hurri Hills
	12/6 – 14/6/2008	Sub-case: Kalacha/Afkaba
	25/6 – 25/6/2008	Sub-case: Hurri Hills
	26/6 – 27/6/2008	Sub-case: Balesa
	28/6 – 1/7/2008	Marsabit
	2/7 – 10/7/2008	Nairobi

Appendix 2: Guides for Semi Structured Interviews

Appendix 2A: Guide for "Shocks and Stresses" Interviews with Gabra Respondents

The Household[21]

- Are you the head of this wora? If not, who is?
- How many ibidda are in this wora? How many people are there? How many of those are here now? How many have traveled or are living elsewhere?

Mobility

- Are your herds all around here now? Where are they?
- Where do you usually move in the dry season?
- Is there a place you usually move in the rainy season?
- What were the movements of herd this year, last year, etc.?
- Are you practicing foora?
- How do you decide where to send your herds?

Livelihoods

- I would like to ask some questions about your livelihood
- In your household, where does most of your livelihood come from?
- From livestock? Which livestock? From milk? Blood? Selling animals?
- What other sources of food or money does your household have?
- Which of these sources of livelihood are more important? Which are less important?

Stresses and Shocks

- What are some of the things that affect the food and income coming to your household?
- People often suffer setbacks to their livelihoods. For example, a drought may result in livestock dying. Besides drought, what other stresses and shocks have you faced?
- For each stress and shock:
    - What did you do when that happened?
    - How do you deal with that when it happens?
    - How do you survive and rebuild your livelihood when that happens?

[21] These interview guides do not include notes on introductory comments: what was said to respondents to introduce the researcher and research assistant, describe the purpose of the research, affirm that the questions asked would be confidential, ask permission to record the interview, etc.

- What other stresses and shocks have you and your household faced?
- Looking at all of these stresses and shocks—(list those which the interviewee has mentioned)—what are important things that you and your household does to prepare yourselves so that the stresses aren't so painful?
- How do you and your household recover?
- Is there anything that you do before any such problems come along to avoid the problems or to minimize their effects?
- Which stresses and shocks affect you most?
- Think of one particularly severe stress/shock. Tell us what happened, how it affected you and your household and its livelihood, and what you did in response.

Resilience at Larger Scales

- We have been talking about you and your livelihood. If we look not just at your household, but at this community as a whole or at all Gabra, is there anything else that you haven't mentioned that the community does, or that the elders do, or that the Yaa does that helps to ensure that people are able to withstand shocks and stresses?
- Does the Yaa or the korran olla have any responsibility to help people be prepared, or to ensure that the Gabra people are prepared for whatever problem may come?
- How does the miilo make the decision to help someone who has lost animals to raiders?
- Is there some group or meeting that are particularly important for helping people to withstand shocks and stresses?

Changes Over Time

- What are the main changes that you have seen over the years that affect water, pasture and livelihoods?
- Have any new elements come into your livelihood over the years?

Other Questions to Ask Throughout the Interview When Appropriate

- For some particular action or decision: Who decides? How is it decided? Do other people influence or have input into the decision?
- For some particular action or decision: Are there any particular rules or customs or committees that tell you when to do this [or how to decide this]?

Appendix 2B: Guide for Semi-Structured Interviews with PISP Personnel

The Approach of PISP

- What has changed over the years in what PISP does?
- What has changed over the years in the way that PISP operates?
- I understand that PISP, from its early days, was in consultation with the Yaa councils, especially Yaa Galbo. Tell me about this relationship.
- There are different scales of leadership structures: traditional, government, civil society. There are communities, clans, phratries, and entire ethnic groups. There are various levels of government. At what level does PISP consult with institutions, organizational structures and leaders?
- What does participation mean to you? To PISP?
- It has been said that participation is at least partly about empowerment. Is PISP trying to empower any of these institutions or groups?
- What external stakeholders influence CBWRM at the community level (besides PISP)?
- What stakeholders have been important to PISP over the years?
- Are any of these relationships out of the ordinary or unusual? Positive or negative?
- Aside from donors, what other organizations and institutions does PISP maintain linkages with? What kinds of linkages?
- What motivates partnerships and other linkages?
- What are the factors that influence whether your relationship with some of these stakeholders are negative or positive?
- Have there been institutions or organizations that have hampered the work of PISP, even if inadvertently?

Knowledge

- I understand that PISP more or less pioneered sand dams in this area. So there was a certain amount of technical know-how needed to make PISP work. Where did this knowledge come from?
- What role does indigenous knowledge play in PISP's activities?
- What about knowledge about the social aspects – community mobilization, for example?
- What about knowledge about running an organization?
- To what extent has learning-by-doing played a role?

Appendix 2C: Guide for Semi-Structured Interviews on Gabra History

Critical Times

- When have been some of the important or crisis times like this in Gabra history?
- What happened at that time

Key Leaders, Events and Decisions

- Can you think of any great leaders in Gabra history? What did they do?
- How did they make decisions?
- Can you think of any important times in Gabra history when one of the Yaa or maybe all of the Yaa had to take some important action?
- What happened?
- How did they make decisions?

Peacebuilding

- In the past, there have been times when there has been conflict with neighbours: Rendilles, or Dassanech, or even sometimes Boranna. But then peace was made. How was peace made with these neighbours?

Resilience at Larger Scales

- Is there anything else that you haven't mentioned that the community does, or that the elders do, or that the Yaa does that helps to ensure that people are able to withstand shocks and stresses?
- Does the Yaa or the korran olla have any responsibility to help people be prepared, or to ensure that the Gabra people are prepared for whatever problem may come?
- Are there some groups or committees that are particularly important for helping people to withstand shocks and stresses?

Changes Over Time

- What are the main changes that you have seen over the years that affect water, pasture and livelihoods?

Other Questions to Ask Throughout the Interview When Appropriate

- For some particular action or decision: Who decides? How is it decided? Do other people influence or have input into the decision?
- For some particular action or decision: Are there any particular rules or customs or committees that tell you when to do this [or how to decide this]?

Appendix 2D: Interview Guide for Respondents with Formal Sector Agencies Other than PISP

Their Approach

- Would you say that your organization is using a participatory approach? What is your philosophy of participation? What is a participatory approach?
- What is the intervention that your organization is doing? What kind of water infrastructure?
- How was it decided what kind of water infrastructure?
- What is your organization's approach to entering a new community? Is a general community meeting held? Do you meet with elders?
- How are decisions about the activity made? Who makes them? Who does the NGO deal with – traditional elders, a new committee, existing committee?
- There are different scales of traditional leadership structures. There are communities, clans, phratries, and entire ethnic groups. At what level does your organization consult with traditional leaders and institutions?
- What about government structures and elected representatives? Who does your organization consult with?
- Is there community contribution to the construction? How is it decided what the contribution will be?

Power, Empowerment, Marginalized Groups

- It has been said that participatory approaches are at least partly about empowerment. Who is your organization trying to empower?
- Do you assist marginalized groups to participate?
- Who are the marginalized groups in your communities? Who are the powerful people?

Pastoralism

- We talk about "community participation". But for nomads, how do you define the community?
- Will the activities of this project help people to withstand or recover from the next drought?
- Is it contributing to settlement?

More on Their Approach

- What do you do to try to ensure community ownership and ongoing maintenance of the infrastructure?
- Does this project involve consultation and participation at scales larger than the community? Do committees from various communities come together? Is

there some kind of meetings, discussion or committee at Division or District level that this project contributes to? Other projects of your organization?

- What are the challenges that you face in implementing a participatory approach?
- Would you say that your organization's approach to community participation is successful? How do you measure success?

Sunset over the Chalbi Desert near Kalacha.

Photo by Lance W. Robinson