

**Lessons from the Equator Initiative:
Institutional Linkages, Approaches to Public Participation,
and Social-Ecological Resilience
for Pastoralists in Northern Kenya**

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Chapter 1: Introduction

1.1 Background

This research project is one of several case studies that have been conducted by a coordinated team at the Natural Resources Institute, University of Manitoba in partnership with the International Development Research Centre and the United Nations Development Program. The projects use a common research framework and emphasize two areas: community self-organization and institutional linkages.

This case study examined one of the finalists for the 2004 Equator Prize, the Pastoralist Integrated Support Programme (PISP), which is an NGO based in northern Kenya. PISP works with pastoralists in one of the most arid parts of Kenya. Since its formation in 1996, its main emphasis has been assisting communities with rainwater harvesting and other water-related activities, although in recent years it has expanded its programming to include education and microfinance projects.

This research project focused on the approaches and strategies for public participation used by NGOs and other development agencies promoting in integrated water resources management (IWRM), especially among pastoralist populations. The study was also concerned with social-ecological resilience, putting particular emphasis on institutional linkages and on the factors that allow groups of stakeholders and communities to collectively influence resilience. The study examined, among other things, how different approaches to participation can affect the collective capacity of human actors to influence the resilience of a social-ecological system.

1.2 Purpose and Objectives

The purpose of the research has been to examine the relationship between the approaches to public participation used by agencies promoting IWRM and the collective capacity of human beings to influence the resilience of the social-ecological system in which they live, and to examine factors that affect this relationship. It has the following objectives:

- To examine the effects of the public participation strategies used by agencies promoting IWRM on local institutions and deliberation processes and on the collective capacity of human beings to influence the resilience of the social-ecological system in which they live
- To analyze the dynamics of the relationship between the introduction of participatory development processes, capacity to influence resilience, and external drivers such as government policies
- To identify policies and strategies that can be used by NGOs and other development agencies to foster those consultative processes that will contribute to the capacity to influence social-ecological resilience.

1.3 Methods

The household and community level research focused on three communities selected from among locations where PISP is currently working and engaging with local communities. The data collection methods included documentary research, key informant interviews, semi-structured interviews with men and women from several communities, and, using techniques from Participatory Rural Appraisal, focus group sessions, impromptu meetings, and organized community meetings. In order to identify key features of the social-ecological system and elements of its resilience, some of the interviews involved the collection of narratives around disturbance, shocks, stresses, and how people manage through these.

Approximately 160 interviews were conducted, including interviews with community members, local leaders, and personnel from PISP and from numerous other non-governmental, governmental and donor organizations. A translator assisted in interviews at the community level, as most respondents spoke little or no English.

1.4 Theoretical Background

For its conceptual foundation, the research draws primarily on the scholarly literature on social-ecological resilience. The Resilience Alliance (2006) describes the concept of *resilience* in this way:

Ecosystem resilience is the capacity of an ecosystem to tolerate disturbance without collapsing into a qualitatively different state that is controlled by a different set of processes. A resilient ecosystem can withstand shocks and rebuild itself when necessary. Resilience in social systems has the added capacity of humans to anticipate and plan for the future.... “Resilience” as applied to ecosystems, or to integrated systems of people and the natural environment, has three defining characteristics:

- The amount of change the system can undergo and still retain the same controls on function and structure
- The degree to which the system is capable of self-organization
- The ability to build and increase the capacity for learning and adaptation.

Resilience is an emergent property of systems, “one that cannot be predicted or understood simply by examining the system’s parts. Resilience absorbs change and provides the capacity to adapt to change” (Berkes et al. 2003: 5-6).

The research also draws on other facets of the emerging complexity paradigm in the social sciences and interdisciplinary fields such as conservation-development, particularly recent scholarly work relating to commons and commons institutions that is distinct both from the mainstream rational choice approach associated with the early work of Elinor Ostrom (e.g., 1990) and from the social-practice approach adopted by many critics of Ostrom (e.g., Johnson 2004). In this perspective, social-ecological

systems are assumed to exist at multiple scales, each system being nested within and part of a larger system. Of particular importance to this research is the notion of *cross-scale institutional linkages*, linkages that connect the flow of information, decision making, and dynamics across levels of social organization.

The research also contributes to scholarly thought on participation and participatory approaches to development, natural resources management, and in particular water resources management. Since their rise to prominence, populist approaches to participatory development have attracted criticism, especially in relation to participatory development's unwillingness or inability to address issues of power in a serious way. While the criticism has not always been constructive or even fair, it has sparked some level of rethinking and a new school of thought exemplified by contributions to the volume *Participation: From Tyranny to Transformation? Exploring New Approaches to Participation in Development* (Hickey and Mohan 2004). However, in applying the concepts being promoted by the transformative participation school to the field of water resources management, it can be seen that more work is yet to be done. In particular, academic literature has not given sufficient attention to seemingly successful instances of participatory development and natural resources management in relation to the issues being considered here: deliberation, adaptability, cross-scale dynamics, etc. In particular, this research aims at broadening the kinds of issues that are usually considered by the transformative participation school and by considering the relationship of participation to the dynamics of complex social-ecological systems. This is also relevant to theory on community-based water resources management, especially as it relates to some of the peculiarities of dryland areas in sub-Saharan Africa.

Chapter 2: The Study Area

2.1 PISP

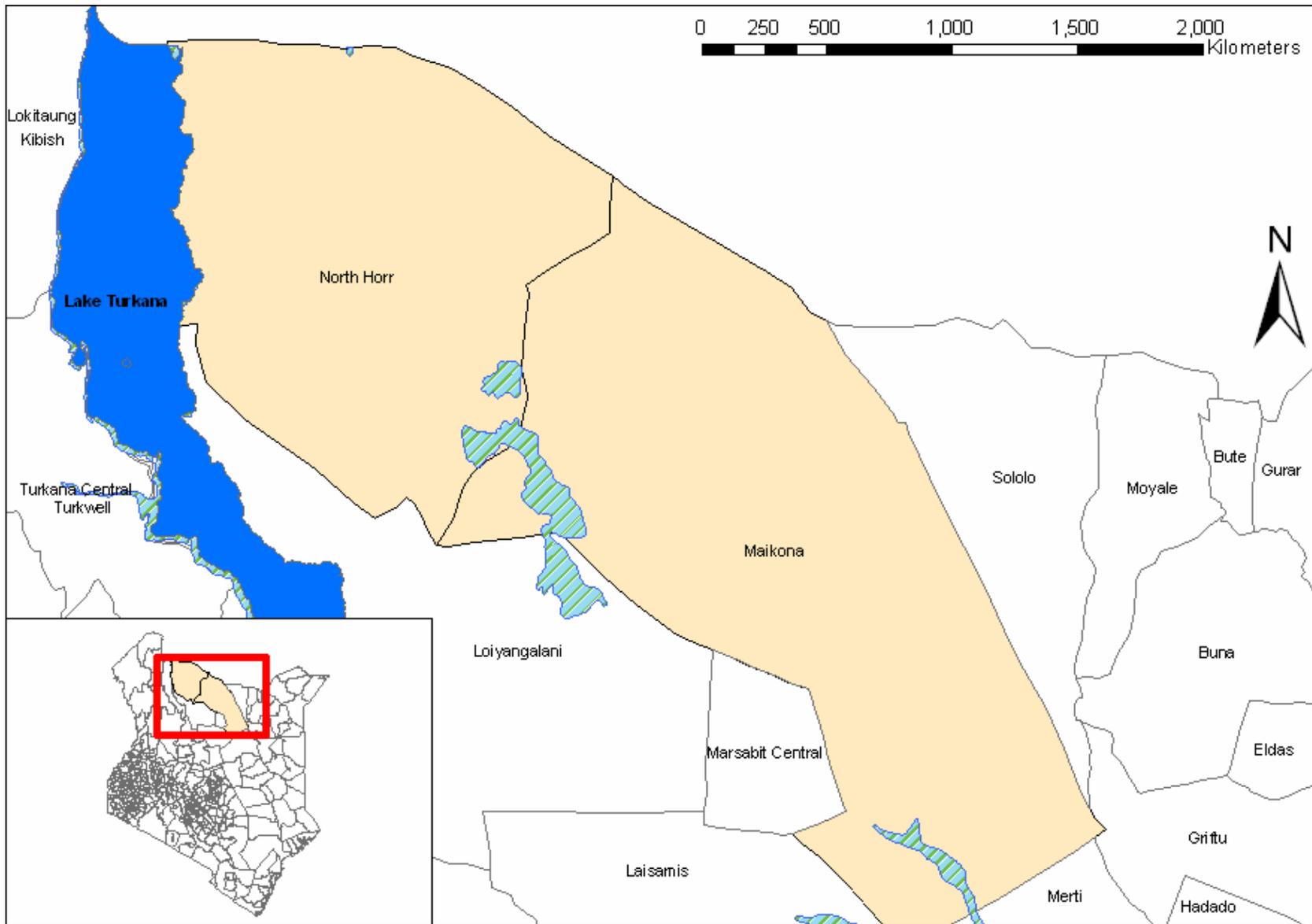
The research focuses on a single case study based on an IWRM initiative in Africa: the Pastoralist Integrated Support Programme (PISP) in Kenya. PISP, which was a finalist for the UNDP's Equator Prize in 2004. PISP is a Kenyan NGO that was founded in 1996 by a group of local development practitioners in consultation with the *Yaa Galbo* traditional council of elders pertaining to one of the Gabra nation's five phratries¹. Over the years it has attracted funding from a variety of donors, including CIDA, the Catholic Organization for Relief and Development Aid (CORDAID), Oxfam, SNV and others. Its focus has been on facilitating community-based water supply and management among the pastoralist populations of Marsabit District, initially among the Gabra ethnic group but recently among other ethnic groups as well.

2.2 The Gabra

Most of the ethnic groups in Marsabit are pastoralists. These include the Gabra, Dassanech, Rendilles, Turkana, Borana and Samburu. Livestock raising is the primary economic activity in Marsabit District and agriculture and horticulture are confined almost entirely to the Mount Marsabit area (Kariuki and Mango 2003). The main ethnic group that PISP works with, also one of the most populous ethnic groups in the District are the Gabra, who traditionally are a pastoralist people living in north-central Kenya and parts of southern Ethiopia. While in the past two decades, many Gabras have settled in towns (in Gabra usage, any permanent settlement regardless of how small is called a "town") a significant percentage are still nomadic and livestock still represents the foundation of the economy. Even settled Gabras each year still send herds and some family members long distances in search of pasture and water. Among those still primarily engaged in the traditional lifestyle, milk accounts for over 60% of household food consumption (McPeak 2003). The livestock mix that Gabras 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 strategy for Gabra households 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).

¹ Phratry: a group of clans. The Gabra have five phratries.



Map developed from GIS Data source from ILRI (2005)

Figure 1—Divisions in Marsabit District where PISP Activities are Concentrated

The Gabra also practice a form of opportunistic mobility that involves herd-splitting (McPeak 2003; Pastoralist Integrated Support Programme 2004). A milk herd is kept in the vicinity of the home and a mostly dry foora herd is taken far from the home. The foora system helps to limit both human and livestock density and reduce competition for forage and water (Pastoralist Integrated Support Programme 2004).

The only type of water sources over which 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). Regulations around seasonal watering points such as rain pools, puddles and ponds and less stringent (Pastoralist Integrated Support Programme 2004). The land around wells is carefully managed, and for the Gabra and Borana peoples the relationship between the well owner and the well is considered as the relationship between a husband and wife. For example, cutting down trees in the area around a well without the owner’s permission is equivalent to shaving off the hair of a man’s wife and would be accompanied by appropriately severe penalties (Pastoralist Integrated Support Programme 2004). Penalties for inappropriate use of watering points or pasture include fines. However, the traditional institutions 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). For these reasons, the pastoral commons in Marsabit District may represent an ideal case for further examining Holt’s (2005) analysis of the dynamics and process of the emergence of commons institutions and conservation attitudes vis-à-vis changing population density, technology and resource pressure.

2.3 Balesa

In the presentation of the findings of the research below, particular attention is paid to Balesa, a town of about 2,650 people where PISP has been working since the year 2000. It is situated to the west and downwind of Hurri Hills, and because of this it is extremely hot and arid. However, it is located beside a lagga (a dry river bed) that 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 Gabras who still live the nomadic life, and at the time of the research, several *ollas* (nomadic camps) 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.

Chapter 3: Research Findings

3.1 Community Organization

3.1.a Origins of the Project

In the early 1990s, the international NGO Intermediate Technology Development Group (ITDG) did a Participatory Rural Appraisal exercise in the small town of Turbi in Marsabit District, northern Kenya. Participants included elders of *Yaa Galbo*—one of the five traditional councils of the Gabra ethnic group—and other Gabra community members. Water was identified as a key need. For example, in the town of Turbi, where the PRA was conducted, the nearest permanent water source was 32 km. away, and the next closest 72 km. away. Other small centres such as Forole and Hurri Hills were in similar situations. Some of these places had shallow wells which would be exhausted in the dry season. While the participants identified water as the most pressing need, ITDG had funding only for livestock health. ITDG, one of the only NGOs working in the area, assisted Gabra communities on animal health issues for several years, and then Yaa Galbo reiterated that it would like to now work on water issues.

One of the staff of ITDG's Marsabit office connected the elders to another international NGO, Water Aid, and specifically to the manager of a project called *Maji na Ufanisi* (Water and Development). The manager of this project arranged a tour of the area and she also consulted with elders from Yaa Galbo. There were no local NGOs in the Marsabit District at this time—only international NGOs. The idea came up of forming a local NGO, and she encouraged the elders to do so. A few months later, the elders of Yaa Galbo decided to accept the idea, and they and elders of the other sections of the Gabra ethnic group approached Dr. Bonaiya Godana, the Member of Parliament for the only Gabra-dominated constituency in the District, seeking his assistance in starting the organization. The organization that emerged was PISP, the Pastoralist Integrated Support Programme. Dr. Godana helped to steer PISP's registration process through the bureaucratic channels, and the organization was registered that same year, 1996. At almost exactly the same time, *Maji na Ufanisi* was being transformed from a project of Water Aid into an independent Kenyan NGO. A local board had already been formed for the project and this became the nucleus of the board of directors of *Maji na Ufanisi* the new NGO. So *Maji na Ufanisi* and PISP were formed at almost the same time, and the relationship continued for a few years after, with *Maji na Ufanisi* as a national-level NGO sourcing funds and providing capacity building to PISP, a district-level NGO. Also, in May of that year, *Maji na Ufanisi* and the newly created PISP conducted a in-depth PRA exercise with Yaa Galbo and with people in neighbouring nomadic camps. Over the next few years similar PRA exercises were conducted with the other Yaa councils. These activities helped to guide the direction of PISP in the subsequent years.

Then in 1997 there was a drought, and *Maji na Ufanisi* and PISP secured funding for relief work. A survey was done, and *Maji na Ufanisi* also took elders on a tour of communities elsewhere in Kenya to see what kinds of water-related activities these communities had done. Based on this exposure, the elders identified sand dams and

rainwater harvesting as appropriate technologies for them. During the drought, PISP began to work on rainwater harvesting tanks. It also quickly became involved in providing emergency fuel for boreholes, repairing boreholes and providing generators for the boreholes. The drought became the first real test of PISP's capacity as a new organization, giving it an immediate urgent mission around which to focus its work.

3.1.b Leadership and Key People

i) Individuals

From the beginning, PISP had an active board of directors, unlike many other small, local NGOs in Africa which tend to remain firmly under the control of the founder/director. In that sense, there was not any person who singularly stands out as central to the formation of PISP. The first staff members of PISP worked as unpaid volunteers for several months until funding was found. In addition, several key individuals played facilitating roles. One of these was the above-mentioned officer of ITDG. As well as having helped initiate the relationship between Gabra elders and Water Aid that was key to the founding of PISP, once the organization was formed he, through ITDG, provided office space to the new Executive Director, brought him along to various meetings and workshops, and generally assisted him with networking and searching for funds.

Other important individuals included the Member of Parliament Dr. Godana and the manager of Maji na Ufanisi. Both played a nurturing role in the early days of the organization. Dr. Godana also served on the board of directors and, as mentioned above, assisted with the organization's registration. In addition, the manager of Maji na Ufanisi took an active interest in PISP's development and ensured that Maji na Ufanisi helped PISP to develop the capacity of its staff, put key management/administrative systems in place, etc.

As PISP developed its institutional structures and broadened its linkages to other funding agencies and other organizations, the roles of these individuals diminished in importance. Eventually the Manager of Maji na Ufanisi and the officer of ITDG moved on to new positions and ceased playing any active role in PISP's activities. In 2006 the Member of Parliament was killed in a plane crash.

One other individual deserves mention. The current Executive Director, Francis Chachu Ganya was hired in 1999. He has played a key role in the maturation of PISP from being a young, small organization into a professional NGO. He greatly broadened and increased PISP's funding base and continued the development of proper management and administrative systems.

ii) Organizations

In the early days of PISP, Yaa Galbo played an important role. Although it is the traditional leadership council for only one of the five sections of the Gabra people, its elders indicated that PISP should be an organization for all Gabra and indeed for all pastoralists in the area. Elders from Yaa Galbo participated in numerous discussions that took place before the formation of PISP, and in the early years after registration were

included on the board of directors. In recent years, the special role of Yaa Galbo has diminished, but PISP still frequently consults with it as well as with the other four Yaas.

Important donor organizations and international NGOs supporting PISP in the early years included DFID, SNV, and, as mentioned above, Water Aid and ITDG. Currently, CORDAID is PISP's most important donor, but there are several others.

3.1.c Funding and Other Resources in the early years

- ITDG: office space, in-kind human resources especially securing funding
- Water Aid/Maji na Ufanisi: capacity building for staff and board of directors, project/programme funding (funding primarily from DFID)
- DFID: project/programme funding
- SNV: Executive Director's salary, laptop computer, Landrover.
- Bunting family (philanthropists from the United States)/Northern Kenya Fund: funds for construction of office, vehicles, emergency relief funding, funding for administration/overhead, funds for scholarship programme

3.1.d Knowledge

The donor agencies with which PISP works have played an important role in the knowledge that contributes to PISP's activities, in particular through ongoing training and capacity development for PISP staff. In addition, external technical experts, especially engineers, are brought in on an as-needed basis.

Many of PISP's water-related activities involve technologies that were previously unknown in Gabra communities, technologies such as underground rainwater harvesting tanks, sand dams, small dams across ravines, and siphon pumps, and so do not draw on indigenous technical knowledge. However, PISP has endeavoured to ensure that this new knowledge becomes embedded in Gabra communities. Local artisans have been trained and local elders are immersed in decision making regarding siting new structures. In the early years of PISP's operations, elders were taken on tours of other parts of Kenya to see sand dams and underground rainwater harvesting tanks firsthand. When construction relates to water sources for which Gabras do have a great deal of traditional knowledge, e.g. shallow wells, the design of improvements involves close consultation between local beneficiaries, PISP personnel, and artisans.

The use and incorporation of traditional knowledge is more pronounced in the area of institutional arrangements and management of water sources. PISP personnel frequently consult with the five Yaa councils, local elders and *abba elas* (well owners, lit. "father of the well"), and management of water sources is mostly based on traditional management practices. In the case of shallow wells, PISP introduces no changes to the ownership and management of the shallow wells that it helps to refurbish and improve—the wells continue to be managed according to clan structures, each well overseen by its *abba ela*, with access governed by the traditional *herega* committee.

NGOs doing the kind of work that PISP is doing will often speak of creating hybrid institutions that combine some of the elements modern committees with traditional institutions in one way or another. What is perhaps not so common with such NGOs, is to incorporate *informal* traditional institutions into decisions making. For PISP, on the other hand, one of the ingredients of its success seems to be its interaction with informal institutions. Even in cases where the management a water source such as a large rock catchment or a large pan serving several communities is taken on by a “modern” committee with a chairperson, secretary and so on, the traditional institution of the *korra* meeting continues to play an important role in decision making (see section 3.2.b below).

3.2 Cross-scale Linkages

3.2.a Main Stakeholders

As can be seen from Table 1, 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.

Interestingly, one category of stakeholder that does not seem very important to PISP is formal networks. Only one network, the World Alliance of Mobile Indigenous Peoples (WAMIP), seemed to merit inclusion in Table 1, and even it is not particular significant to PISP. It may be that at district level the need for networking with other peer organizations is largely fulfilled by PISP’s participation in the DSG and WESCOORD.

3.2.b Institutional Linkages

As an example of community-based resource management and poverty reduction, this case is best considered at two levels. At one level is PISP and at the other level are the communities with which it works. PISP *supports* and *facilitates* activities at the community level, but by definition it is at the community level that the resource management and poverty reduction activities take place. In the next two subsections, I discuss institutional linkages first for PISP and then for the town of Balesa, a community with which PISP has been working since the year 2000.

i) PISP’s Institutional Linkages

The most important horizontal linkages that PISP has at the present time are to the multistakeholder consultative bodies, the District Steering Group and the Water and Environmental Sanitation Coordination Group. The District Steering Group includes the District Commissioner or his representative, heads of government departments, NGOs,

Table 1: 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 1 and Figures 2 and 3

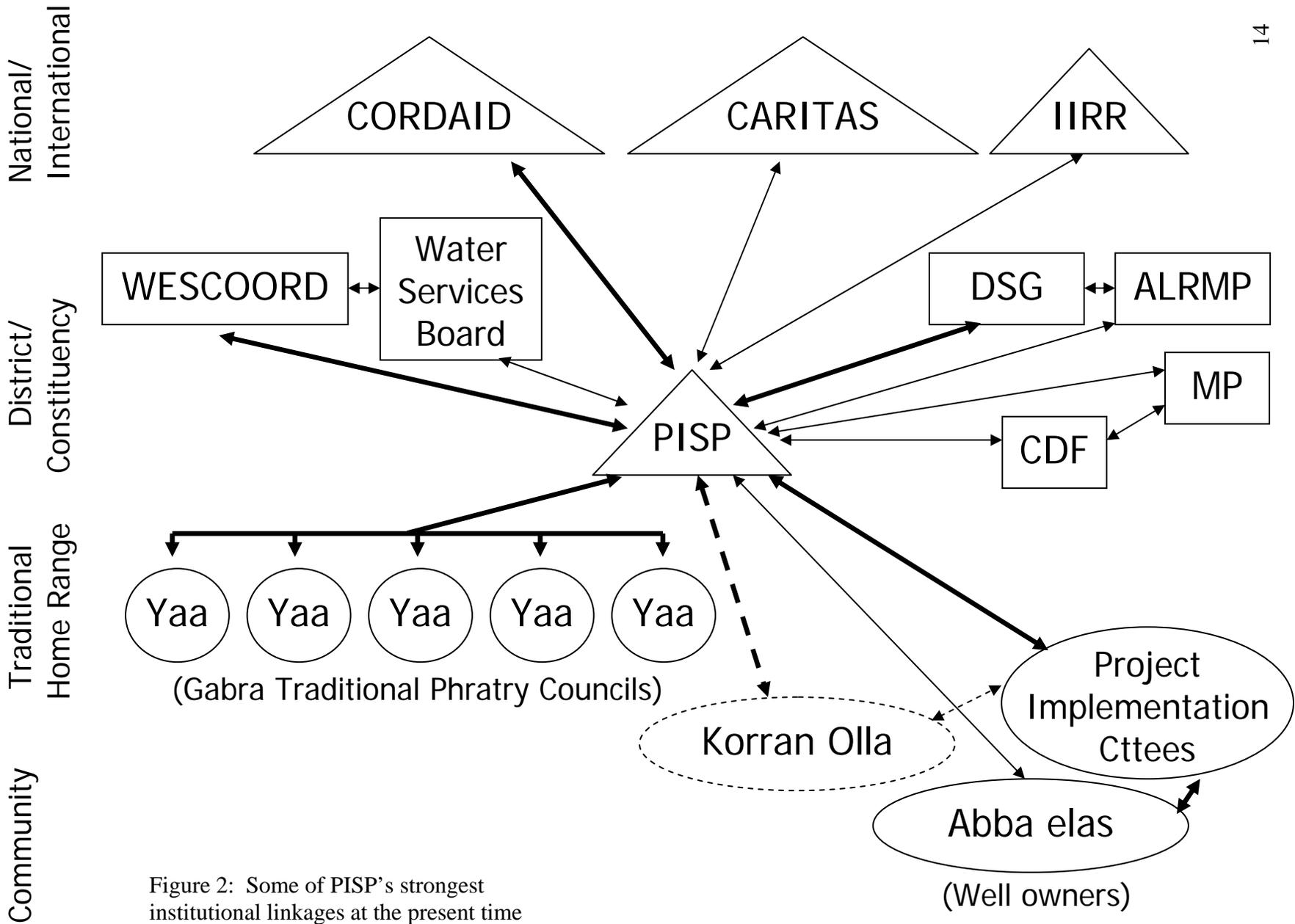
ALRMP	Arid Lands Resource Management Project
CDF	Constituency Development Fund
CORDAID	Catholic Organization for Relief and Development Aid
DSG	District Steering Group
IIRR	International Institute for Rural Reconstruction
ITDG	Intermediate Technology Development Group
SMC	School Management Committee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

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. The Arid Lands Resource Management Project—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 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 2), 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 formerly through the late MP, Dr. Bonaiya Godana. 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.

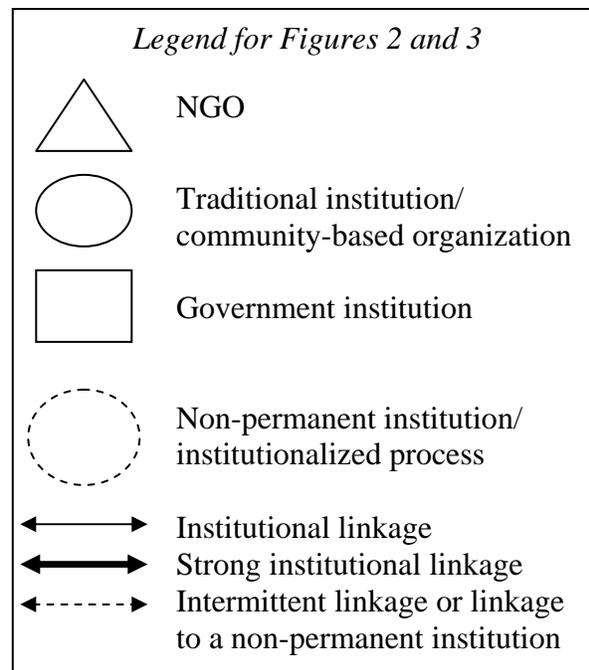
Downward vertical linkages are many, including to government institutions such as chiefs, sub-chiefs and counsellors; to community-based organizations and local committees such as water users associations and project implementation committees overseeing the construction of new water infrastructure; and 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. Traditional Gabra decision making depends a great deal on *korra*, meetings that are held at various levels of social organization on an ad hoc basis as the need arises. There are various permanent institutions in Gabra society, including corporate institutions such as the Yaa councils, and institutionalized positions held by individuals such as *jalaab* (which can be roughly translated as “judge”); however, *korra* meetings are at least as equally important for collective decision making. *Korra* meetings are held at various levels from the *olla* (nomadic camp), to the cluster of camps, to the entire *arda* (location), to *korra* meetings



at which the entire Gabra nation is represented. *Korran olla*, korra meetings within a particular olla, can appear to be very ad hoc and informal, with men coming and going and no clear agenda. They are, nevertheless, institutionalized in the culture and it is taken for granted that they will be held for any important collective decisions.

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 olla.

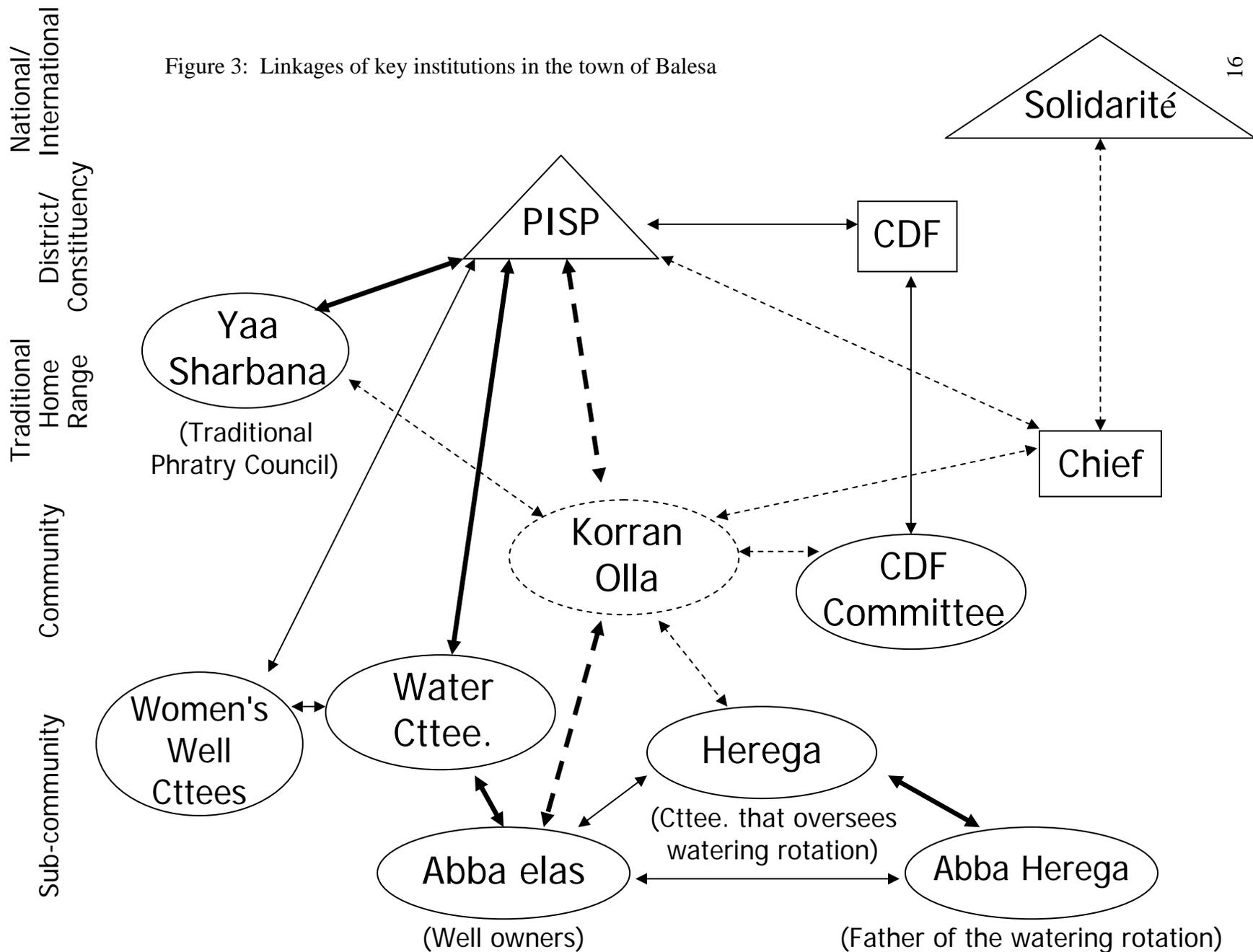


ii) Institutional Linkages in the Town of Balesa

Aside from the institutions already mentioned above, some of the key institutions in Balesa include the following. Whereas in some communities where PISP is helping the community to construct some kind of water infrastructure and it had the community establish a temporary Project Implementation Committee, in Balesa, the task of liaising with PISP on water 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, and it 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

Figure 3: Linkages of key institutions in the town of Balesa



traditional and modern, but only those that are most important for water and sanitation issues have been mentioned.

In comparing Figures 2 and 3, 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 that reach 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 3) and to Yaa Sharbana, but neither the clan institutions nor the Gabra Yaas themselves 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. This impacts upon the community's capacity for collective action. Initiatives aimed at enhancing social-ecological resilience, improving livelihoods and so on depend to a great extent on the community's relationship with PISP, which, as a small organization, can only do so much.

By contrast, NGOs such as PISP, and other actors such as the Arid Lands Resource Management Project that operate at the district level can and do influence vulnerability and social-ecological resilience. The result, however, is that these actors seem to be providing communities with adaptations rather than improving the communities' own adaptability.

3.3 *Biodiversity Conservation and Environmental Improvements*

The main focus of PISP is poverty reduction and capacity building for pastoralists—conservation is not high on PISP's list of priorities. On the other hand, it has been argued that pastoralism itself protects biodiversity, especially through the mechanism of herd mobility². Many of PISP's activities aim to maintain pastoralist livelihoods through programs such as restocking, in which households that have suffered devastating losses of livestock due to theft and/or drought are provided with camels. Thus, to the extent that PISP is supporting nomadic pastoralism, it may be indirectly helping to conserve biodiversity; however, this question was not examined in depth for this study.

² For a discussion of pastoralism as conservation, see especially the web site of the World Initiative for Sustainable Pastoralism, www.iucn.org/wisp.

On the other hand, some of PISP's water-related activities have a direct though modest effect on flora and fauna. Much of PISP's operational area is desert or near-desert, and open water sources such as rock catchments and large pans help to support birds, baboons and other wildlife, especially when the human population in the vicinity is low. Indeed, a number of informants situated near to the recently rehabilitated and improved rock catchment at Afkaba, stated that they appreciated the work that had been done but that it was attracting too many baboons. Another small effect can be seen in the immediate vicinity of sand dams such as those at Balesa in that tree growth seems to benefit.

3.4 Poverty Reduction

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 monitoring and evaluation plans, it is not possible to have an overarching quantitative statement of the how many people have benefited how much. Nevertheless, in the town of Balesa for example, the entire population, about 2,650 people, has benefited from PISP's water-related activities. Wells are productive for more months of the year, water is also available in roof catchment tanks, and less time is spent each season rehabilitating traditional hand-dug wells.

Across PISP's operational area, direct benefits from its water-related activities have included the provision of clean drinking water; pans, rock catchments and seasonal wells remaining productive for longer periods; and reduction in the time spent collecting water and rehabilitating traditional wells each season. In addition, PISP's water-related activities both directly and indirectly help people cope with droughts. Direct help has included emergency water tankering and rehabilitation and provision of fuel to boreholes. All of PISP's other water-related activities have an indirect impact on the capacity to cope with droughts simply by making water more available.

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 productivity and reducing losses during droughts.

The town of Balesa has benefited from a wide variety of the various water-related activities that PISP has been engaged in and represents a good example of the impact of these activities. For example, rainwater harvesting tanks that collect water from the roofs of the various buildings of the primary school not only benefit the school, but also provide 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.

More importantly, seven sand dams have been built 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 areas north of Balesa, the upstream vicinity of the dam has filled with sand. Any further water

flow that is trapped behind the dam remains protected beneath the sand, with greatly reduced evaporation. Wells nearby on the edge of the river benefit from the improved groundwater levels, and the main benefits that residents of Balesa reported has been the increased length of time that

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

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. With the sand dams the wells are productive for two to four months. 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.

Another activity in Balesa has been the rehabilitation and improvement of traditional shallow wells. These wells are dug at the riverside and include a number of steps, about every one and a half metres, from the surface down to the water level. When animals are being watered one person will stand on each step and buckets are passed up and down simultaneously in an efficient rhythm, often with the people singing as they do so. The wells include a reservoir where the person at the top step dumps the water, and a trough that flows from the reservoir. The well head, the reservoir and the trough are all constructed of earth, occasionally with a few stones to reinforce it. Each rainy season as the river floods, silt and sand wash back into the well, and usually damage or destroy the trough. Thus each season after the rains have finished, a great deal of time is spent repairing the well and removing the fresh silt. PISP's work has included cementing and raising the well head to prevent silt washing in, and rebuilding the reservoirs and troughs with concrete. Typically PISP covers 70% of the cost and the well owner 30%. 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. A

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

traditional well can take about 280 person-days to clean/refurbish, a value of about KES 56,000 if all of that labour were to be paid. A well may only require around 98 person-days to clean/refurbish (a value of about KES 19,600). Clearly, the shallow well improvements are a great time-saver.

As a result of all of these

improvements, 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 to seek out remote pasture and water points in the last drought. As well as providing more options for movement of livestock, it also reduces the imperative to risk one's life and herd by moving into "enemy" territory in search of pasture.

3.5 Detailed Analysis of Community-Based Conservation

3.5.a Mechanisms, Dynamics, Drivers

In a sense, the drought of 1997 acted as a catalyst for the formation of PISP. However, with or without that particular drought, what seems important is that Gabra communities had genuine ongoing needs and faced numerous difficulties on an ongoing basis—recurring drought was just one of these difficulties, although clearly one of the most critical. But more important than that drought itself was the fact that there were a number of individuals dissatisfied with the ability of Gabra communities and households to cope with droughts and other shocks and stresses: in particular, elders of Yaa Galbo, the Member of Parliament, personnel from international NGOs such as ITDG and Water Aid, and the first staff members of PISP who worked as unpaid volunteers for a number of months until funds were found. Several of these individuals each made important, sustained contributions, contributions which taken together led to the formation and maturation of the new NGO.

Another important mechanism for the growth of PISP and the development of water infrastructure in Gabra communities relates to PISP's approach to participation and to the network of institutional linkages through which information is transmitted and decisions are made. Rather than relate to and work through only the most obvious permanent community institutions, as many NGOs tend to do, PISP consults with communities and community members at various levels and in various ways. PISP personnel consult with local leaders such as chiefs, consult with community-based organizations and local committees, consult with the five Yaa councils, and participate in and occasionally organize community-wide barazas (public meetings). They also engage in dialogue through informal korra meetings that are held at various levels of social organization including the town or olla, clusters of ollas, and entire locations (*ardas*). Korra meetings are particularly important for inclusivity of decision making where nomadic pastoralists are involved. Given the mobile nature of traditional Gabra society, it is difficult for permanent corporate institutions to always be inclusive—when it is time for the committee or council to meet some people will always have moved somewhere else. Traditional Gabra decision making caters for inclusivity by having informal korra meetings that function alongside permanent institutions like the Yaa councils. Korra meetings, properly timed according to seasonal migration patterns, allow for discussions

to be held and decisions to be made when the greatest number of people are likely to be available at a particular place. Two other elements that enter into this network of dialogue in which PISP personnel and Gabra community members engage are *analysis* and *deliberation*. Some of these interactions can be focus on narrow logistical questions (“Where should the sand dam be located?” “How will livestock access the refurbished rock catchment?”); but often discussions deal with more fundamental issues—analyzing problems, needs and opportunities, and deliberating on courses of action.

3.5.b Learning

The most important learning that has taken place within PISP has related to what works and does not work within the local culture and livelihood patterns. For example, in the early days, one of PISP's activities was the construction of hillside rainwater harvesting systems with underground tanks, located in remote areas of good pasture that lacked water. Devising social and institutional mechanisms to allow for maintenance and protection of the tanks proved to be impossible, and PISP abandoned this particular kind of activity. More fundamentally, PISP has learned a great deal about how to work with traditional institutions. For example, at the beginning, one of the Gabra's five Yaa councils was represented on the board of directors. Eventually it was realized that the tasks and role to be played by the board of directors of an NGO, having to deal with the modern system, bureaucracy and so on is quite different than the role that the Yaa plays and that these elders were equipped to deal with. PISP learned, furthermore that participation, ownership and involvement of traditional institutions does not necessarily mean that members of these traditional institutions need to operate in the alien environment of legalities, bureaucracy and so on.

3.5.c The Impact of PISP's Work

PISP is recognized by donors, government agencies and other stakeholders at both district and community level as one of the most capable and effective NGOs in the District. Aside from the community-level impacts already mentioned, PISP's success is demonstrated by the degree of community ownership of the infrastructure that it helps communities to put in place. Personnel from other NGOs who were interviewed consistently spoke of the difficulty of instilling a sense of community ownership, and often this sense of community ownership is taken as both the primary purpose for using a participatory approach and the primary criteria by which the success of a participatory approach is measured. While this conception represents an admittedly a narrow understanding of participation, it must be said that on this level PISP is very successful. But more broadly, PISP's approach to participation seems to be successful because of its incorporation of three key elements: inclusivity, analysis and deliberation.

Aside from the impacts described in Sections 0 and 3.4 above, PISP's water-related activities are having varying effects on pastoral livelihoods and on settlement patterns. PISP has engaged in restocking, providing livestock, most importantly camels, to households that suffered severe losses due to drought and/or theft. This helps to maintain pastoralist livelihoods and mobility. On the other hand, many of the water projects, such as the sand dams and rainwater harvesting tanks at settlements such as Balesa seem to be

contributing to settlement. Respondents tended to praise the developments. Because of increased availability of water, families are less stressed during dry seasons and droughts. Children are able to attend school, and other livelihood activities such as trading are more accessible. The new pattern that has emerged is not complete sedentarization: while there is a permanent household, part of

the herd and some family members (men and boys) are sent long distances to find pasture. While the sedentarization is not total, it does mean that permanent settlements and their immediate surroundings have an increasing concentration of people and livestock with inevitable consequences for pasture. Many respondents in Balesa reported that the amount of pasture had declined in recent years, although it should be noted that most residents believe that poor rains is a much more important factor than concentration of livestock. Interestingly, people living in ollas—people still living a relatively nomadic life—tended to be more critical of settlement and concentration and their impacts on pasture. Disentangling the benefits and losses resulting from the kinds of water projects that can contribute to sedentarization will not be an easy task, but is something that PISP will have to consider in the coming years.

I don't believe that the reduction in pasture around Balesa is because of livestock and the increased population. It has finished because of lack of rain.

- A man from Balesa

It is true [that settlement has led to a reduction in pasture]. You cannot find good pastures around town. Even in town there is now less rainfall. But overgrazing does not cause permanent damage.

- A man from an olla temporarily located near Balesa

3.5.d Resilience of Communities, Livelihoods and Management Systems

The direct impact that PISP's water-related activities have had on social-ecological resilience is a result of enhancing water sources and increasing storage. For many Gabra communities, a drought is less of a stress than it once was. The improvement in water sources also means that mobility is less crucial than it once was. Previously, it was devastating to 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 mobile economy but at least they may still have the option of settling and keeping sheep and goats. More settlements now have water sources that can support the human population through a drought, and sometimes even a small number of sheep and goats for each household as well. In this research I encountered several respondents who had settled in or near a town after the 2005-2006 drought but who hoped to rebuild their herds of sheep and goats and eventually replace their camels and return to the nomadic life.

3.5.e Capacity for Resource Management and Influencing Social-Ecological Resilience

While PISP has been very successful in assisting communities to develop and improve water infrastructure such as rock catchments, sand dams, and improved shallow wells, and in instilling a sense of ownership in these facilities, its work is limited in two important ways. Firstly, it is yet to engage in a profound way in water resources management or to assist communities to do so. The work has mostly focused on capturing and storing water and not on undertakings such as catchment protection, tree planting, or aquifer monitoring. Secondly, as discussed in section 3.2.b above, PISP is helping communities and households to improve their social-ecological resilience and to be able to cope with shocks and stresses, especially drought. However, it is doing so mostly by *providing adaptations* rather than by *enhancing community capacity to adapt*.

One factor at play in both of these limitations—not engaging seriously in water resources management and not enhancing adaptive capacity—is the nature of institutional linkages that exist for community level institutions. A Gabra community’s institutional network tends to have few vertical linkages that reach to the district level and beyond. A related issue which severely limits community capacity to take up challenges such as water resources management or proactively attempting to enhance social-ecological resilience is the lack of capitals at the local level: human and financial are severely limited, and in this harsh environment useful natural capital is dispersed over large areas. Because of undeveloped markets, the main form of physical capital—livestock—is not easily converted into other forms of capital. Community capacity is, as a result, hampered. One way that PISP is attempting to address the problem of limited human capital, not explored in this report, is by emphasising and supporting primary and secondary education for Gabra pastoralists.

Building resilience and capacity for coping among pastoralists in northern Kenya is a constant struggle insofar as the pastoralist lifestyle faces numerous stresses: a general climatic drying trend, increasing frequency and severity of droughts, division of territories into ever smaller local government units (creating territories that are smaller than a nomadic household’s normal range of movement), and increasing intensity of inter-ethnic conflicts. But the most subtle and perhaps most important of these stresses is the growing human population. For a household to have a viable livelihood as nomadic pastoralists, a certain minimum number of livestock are needed. For Gabras a key part of that threshold is a minimum number of camels, which, according to interviews conducted in this research project, seems to be approximately seven camels per household, assuming that some will be loading camels, some will be mature, reproductive females, and some will be colts. Without a minimum number of loading camels a household can no longer move and can no longer take advantage of water points that may be located two or three day’s walk from good pastures. The Gabra population has more than quadrupled since 1969 (Ganya et al. 2004) and it seems likely that the human population has now grown significantly beyond what the traditional pastoralist social-ecological system can support—in other words, the minimum number of livestock per household multiplied by the number of households (now more than four times what it was less than forty years

ago) is more than the land can support. If this is the case, the efforts of PISP and other agencies to support and maintain the pastoralist lifestyle through programs such as restocking is battle that cannot be won, even in the absence of the other stresses that were mentioned³. Alternative livelihoods and a viable alternative social ecological system will need to be envisioned and promoted.

3.5.f Recommendations

PISP has done very useful work to this point in reducing vulnerability to drought by helping improving water storage, but now that that issue has been at least partially addressed it would seem that PISP should intensify its attempts to build community capacity. Such an undertaking would include increasing efforts at developing human capital. PISP has already started on this with its education programme and with training that it does for community-based organizations, but must continue and expand efforts in this area. Developing community capacity should also include helping community institutions to create more of their own upward institutional linkages. It should also include gradually giving communities and their institutions more control over the planning and implementation of the projects that PISP supports, including allowing project funds to be managed by community institutions.

A larger issue is that PISP must, ideally along with other governmental and non-governmental organizations working in the District, envision and promote alternative livelihoods and, more broadly, an alternative social-ecological system. Currently there are few options open to people in Marsabit District away from Marsabit town: out-migration, (for a very few) employment with governmental or non-governmental agencies, traditional nomadic pastoralism, or settling in one of the towns and relying primarily on relief food. As mentioned above, because of the growing population, the traditional pastoral livelihood seems to be becoming less and less viable. Alternative livelihood options and/or ways of greatly increasing the productivity of pastoralism are needed, but what these might be are by no means obvious. PISP and other dynamic actors in northern Kenya should consider it a matter of utmost importance to find, create, and foster viable alternatives.

3.5.g Transferability of Lessons from this EI Case

- The initiation of successful local organizations such as PISP requires committed individuals at various levels of organization who are willing to support the new undertaking
- In working with rural and traditional communities, attention must be paid not only to the obvious, permanent traditional institutions but also to informal and non-permanent institutions, such as, in the case of the Gabra, korra meetings.

³ This issue mirrors a current debate for in scholarship on dryland pastoralism generally. See http://www.future-agricultures.org/pastoralism_debate.html.

- NGOs and other agencies promoting development, social-ecological resilience and the capacity to cope with shocks and stresses should not only provide communities with adaptations but also help them develop their own capacity to adapt.

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