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Water Development in Ethiopia's Pastoral Areas

A synthesis of existing knowledge and experience

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Abbreviations

CDD Community-driven Development
DFID UK Department for International Development
EC European Commission
ECHO Humanitarian Aid Department of the EC
ELMT Enhanced Livelihoods in the Mandera Triangle
ELSE Enhanced Livelihoods in Southern Ethiopia
EPRDF Ethiopian People's Revolutionary Democratic Front
EU European Union
FAO Food and Agriculture Organization
FDRE Federal Democratic Republic of Ethiopia
GIS Geographic Information System
GIZ German Agency for International Cooperation
GNP Gross National Product
GWI Global Water Initiative
HRF Humanitarian Response Fund
IDP Irrigation Development Programme
IIED International Institute for Environment and Development
IRC International Rescue Committee
IWRM Integrated Water Resource Management
LDC Local Development Committee
MDG Millennium Development Goal
MoARD Ministry of Agriculture and Rural Development
MoFA Ministry of Federal Affairs
MoFED Ministry of Finance and Economic Development
MoI Ministry of Information
MoWR Ministry of Water Resources
MST Mobile Support Team
MUS Multiple Use Services
NGO Non-governmental Organisation
OCHA Office for the Coordination of Humanitarian Affairs
ODI Overseas Development Institute
OFDA Office of US Foreign Disaster Assistance
OGPC Oromia Growth Corridors Plan
OPDC Oromia Pastoral Development Commission
OWWDSE Oromia Water Works Design and Supervision Enterprise
PA Peasant Association
PADD Pastoral Areas Development Department
PASDEP Plan for Accelerated and Sustained Development to End Poverty
PCAE Pastoralist Concern Association Ethiopia
PCDP Pastoral Community Development Project
PLI Pastoral Livelihood Initiative
PRA Participatory Rural Appraisal
PRSP Poverty Reduction Strategy Paper
PSNP Productive Safety Net Programme
PSNP-PAP PSNP Pastoral Areas Pilot
RDD Regional Drought Decision
RDP Rangelands Development Project
RDPP Regional Drought Preparedness Programme
RDPS Rural Development Policies, Strategies and Instruments
RiPPLE Research-inspired Policy and Practice Learning in Ethiopia
SC-US Save the Children USA
SNNPR Southern Nations, Nationalities and Peoples Region
UAP Universal Access Programme
UK United Kingdom
UN United Nations
UNDP UN Development Programme
US United States
USAID US Agency for International Development
WSDP Water Sector Development Programme
WSSDP Water Supply and Sanitation Development Programme
WSSP Water Supply, Sanitation and Hygiene Programme
WUA Water Users' Association

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Executive summary

In Ethiopia's arid areas, where pastoralism is the dominant livelihood, practical field experience over the past forty years indicates that water development divorced from an in-depth understanding of pastoral livelihoods can compromise sustainable development in the long term, even if it stems water shortages in the short term.

Pastoral water point construction significantly predates the involvement of the state and other actors. Customary water management practices were (and still are) tailored to a mobile livelihood system, which itself is a response to the requirements of dryland environments where climate is highly variable in time and space. Pastoralists use water management as a means to manage the wider rangelands, given that access to and availability of water affect who and how many have access to surrounding pasture and grazing areas. By carefully locating water points, especially in vulnerable dry season pastures, and regulating access through customary systems dependent on negotiation and reciprocity, mobility is both facilitated and made necessary. Mobility itself is a sophisticated response to the unique characteristics of dryland environments, and is central to ensuring that pastures can recover seasonally, allowing the pastoral livelihood to remain sustainable in an environment where other sedentary land uses have failed.

The healthy economic performance of the pastoral production system in some of the harshest landscapes in the country attests to its value. In Ethiopia, the livestock sector is a significant foreign exchange earner – in 2006, the country earned $121 million from livestock and livestock-related products (IIED and SOS Sahel, 2010). The direct value of pastoralism is estimated to be $1.68 billion per annum (SOS Sahel Ethiopia, 2008) – and this does not reflect substantial unofficial trade in livestock and livestock products.

From the 1970s, especially after the severe drought in 1973, pastoral regions became a focus of attention for government as well as national and international development and humanitarian agencies. Solutions to water shortages at the time were technocratic and top-down, with little consideration of pastoral livelihood strategies or the customary institutions underpinning them. The construction of large ponds, for example, made water available year-round, encouraging permanent settlement and perennial grazing in areas which were previously used only seasonally. Overgrazing and erosion were frequently observed around these water points, and increasingly sedentary herds amplified the incidence of human and livestock health problems.

Shifts in thinking regarding water development in pastoral areas are now emerging as a result of lessons learned over the past forty years. These shifts have been observed in practice in a number of government, development agency and NGO projects and programmes. Increased awareness and emphasis is now in evidence, that

- Water points can alter usage patterns for other resources, such as pasture, to the detriment of rangeland quality and livelihoods.
- Pastoral livelihoods are influenced by internal and external social, cultural and political aspects which often differ from those in sedentary highland communities.
- Pastoralists themselves have an important role to play in the water development process, especially given their detailed knowledge of the rangelands. Approaches are evolving, from end users simply expressing demand for water and being tasked with the operation and maintenance of water points, to involvement throughout planning, construction and management.
- Water development should be coupled with other development interventions in the rangelands, such as improving marketing opportunities for livestock and providing veterinary services.
- The 'software' component of any water development (embedding local capacity to operate,

manage and maintain) is as important as the physical infrastructure.
- Rehabilitating existing water points can help in avoiding the risks associated with new developments, especially when project duration is short (e.g. in emergency relief interventions).
- Linking emergency relief interventions to longer-term development objectives can reduce the risk of inappropriate or negative outcomes.
- Sustainability can be enhanced by increasing community buy-in to water development by requiring a cash or labour contribution; selecting simpler water point technologies which are familiar and have easily obtainable spare parts; and training a local cadre of artisans able to construct and maintain water points.
- Partnerships and dialogue can facilitate cross-fertilisation of ideas and approaches to development in the rangelands and reduce fragmentation.

Despite these shifts, water delivery approaches designed for sedentary communities continue to predominate. A paradox persists at the heart of national government policy on pastoral development in the rangelands, including the role of water within it. The short-term aim is to support customary pastoral production systems. But in the long term, national policy focuses on 'voluntarily' settling pastoralists by providing livelihood diversification opportunities, mostly around irrigated agriculture. Ambitious government targets for water supply and irrigation expansion incentivise hardware construction at the expense of participation and 'software' components. Technocratic approaches still predominate, despite instances of highly participatory methods geared towards understanding particular social, political, environmental and economic contexts, including customary institutions. Water is still too often developed in isolation from broader natural resource management, even though it is recognised as a key resource. It is also frequently developed without due attention to other critical development needs such as access to markets, health services for people and livestock and education. This is especially the case among short-term emergency relief and humanitarian responses, as opposed to longer-term development-oriented interventions.

Finally, an overarching constraint is incoherence in approach and weak communication between water development actors, including non-governmental organisations (NGOs), development agencies and government, creating an environment where it is easy for inappropriate water development to go unchecked.

Today's realities in many of the country's drylands cannot be ignored, including the facts that population is increasing, people require diverse livelihood opportunities which may lie outside pastoral production, and highland populations are being resettled to the lowlands. Ultimately, multiple needs and priorities in the rangelands must be acknowledged and all options fully and fairly explored to enhance national economic growth and ensure sustainable livelihoods – including pastoral livestock production.

To date, no broad overview exists of water development in Ethiopia's pastoral regions. This report fills this gap and presents a synthesis of experience over the past 40 years in the water development sector in the country's pastoral regions. It reflects on experiences derived from water developments undertaken by pastoralists, government, development agencies and NGOs, consolidating a diverse range of documentary evidence and the opinions of over 50 experts interviewed. Findings are evaluated and 'good practices' identified, culminating in a set of preliminary guidelines to inform water development in the pastoral context. These guidelines constitute the report's recommendations, including

- Promote the use of rigorous assessments to measure the impact of water developments on livelihoods and learn from documented 'good' and 'poor' experiences;
- Ensure water is developed as part of a participatory rangeland development process, with a prerequisite in-depth analysis of broader political, institutional, economic and environmental context to inform planning;
- Promote effective participation through the involvement of recognised institutions or groups representative of local communities. These groups or institutions may exist (customary institutions, water user associations (WUAs), pastoral associations) or may still need to be established. Additional understanding may need to be developed of customary institutions as dynamic, evolving entities;
- Simultaneously address other development needs in the rangelands besides the need for water (e.g. human and livestock health and access to markets) to effectively address vulnerability and poverty in the long term;
- Make better use of existing research to inform water development planning and implementation and promote knowledge-sharing between practitioners and projects, for example through learning and practice alliances;
- Increase the capacity of locally representative water users to plan, construct, operate, manage and maintain water points, fostering an environment in which communities (including pastoralists) are implementers rather than merely recipients of development;
- Promote coordinated and harmonised approaches among development and humanitarian practitioners working on water development in the rangelands.

1 Introduction

1.1 Context and rationale

Water development enables the provision of a vital resource to sustain humans, animals and plants in Ethiopia's arid areas. Pastoralism is the dominant form of livelihood in such areas. One definition of pastoralism is where more than 50% of income is obtained from livestock and livestock products and mobility is essential to avoid climatic risk and ensure sustainability. For centuries, pastoral communities have developed a sophisticated network of water resources – including rivers, rainwater and groundwater-fed permanent sources – and complex customary institutions through which to coordinate development and manage access. This system, including both its physical and its institutional components, critically ensures that the availability and exploitation of water resources does not jeopardise other resources, particularly by avoiding high concentrations of animals, which can threaten the health of the rangeland and livestock itself and lead to conflict.

Within the past 40 years, inspired especially by the 1973 drought, non-pastoral actors, namely, government, development agencies and non-governmental organisations (NGOs) have joined in contributing to water development with both positive and negative consequences. Hand-dug wells along rivers give communities much-needed access to clean water, whereas oversized ponds encourage sedentarisation and overconcentration of people and livestock in potentially vulnerable landscapes. Meanwhile, pastoral communities themselves

Promoting irrigated agriculture in Ethiopia

In the past 50 years, as per 2003 estimates, around 60,000 ha of key dry season grazing areas has been developed for irrigated agriculture along the Awash River. In Somali region, the Gode irrigation scheme has 27,000 ha earmarked for irrigation expansion. In South Omo in the Southern Nations, Nationalities and Peoples Region (SNNPR), large-scale commercial irrigation schemes are planned which may also result in the loss of key grazing lands. Estimates in 2003 indicate that about 1.9 million ha has been excised from the rangelands for crop production. This figure is undoubtedly higher today as irrigation expansion continues to be pursued in Ethiopia's pastoral regions.
Source: Yemane (2003).

continue to evolve their practices, with similarly negative as well as positive consequences. The proliferation of *birkado* – cement-lined underground cisterns – driven by pastoralists in Somali region in the 1960s has in some cases led to the overconcentration of people and livestock[1]. Lessons are being learnt by some (Gomes, 2006), but *birkado* continue to dominate the technology options offered by development agencies, who equate traditional technologies with sustainability, no matter how they are applied.

As much as water point development can have positive short-term consequences, practical field experience over the past 40 years indicates that, without an in-depth understanding of needs, land use patterns and ecological functions associated with pastoral livelihoods, resources and livelihoods themselves can be compromised in the long term. Water development also needs to be situated within the wider 'development' agenda – for example the encouragement of irrigation which is placing severe pressure on pastoral livelihoods and the resource base in arid regions.

To date, no broad overview exists of water development in Ethiopia's pastoral regions. This report aims to fill this gap and presents a synthesis of experience over the past 40 years. The purpose is first and foremost to inform and improve the quality of project partners'[2] work. It is also hoped that this synthesis will usefully inform the water development sector more broadly.

1.2 Scope and structure

This report considers water development undertaken by government, both regional and national, NGOs, development partners and pastoralists themselves – with that of the latter having evolved (and continuing to evolve) for far longer than the past 40 years. The findings are based on an extensive review of published and unpublished documents and over 50 in-depth interviews with development practitioners and representatives of government and donor agencies engaged in water development in pastoral regions.

The report maps the institutions, policies, programmes and activities of different actors, so as to understand who is involved; where and how they are undertaking water development; whether and how approaches have changed over the past decades; and what some of the current major interventions are (additional information in this regard is presented in Annex 2).

The analysis presented in the main report goes beyond an enumeration of actors and activities to evaluate what is and what is not working, not only within each actor's activities but also as these interact with other interventions and with the social, political and environmental context in Ethiopia's arid lowlands[3]. It is hoped that, in addition to facilitating learning among partners, the findings will inform other actors engaged in water development in pastoral areas, encourage reflection on current approaches and practice and assist in developing water programmes in pastoral areas which can address water shortages and meet the demand for water without encouraging conflict, rangeland degradation and the weakening of rangeland-dependent livelihoods.

The partners have specifically restricted the content of this report to a discussion of water development for livestock use (which by default often extends to direct human use) in arid areas of Ethiopia where livestock keeping is the dominant livelihood and where agricultural production is limited owing to insufficient and unreliable rainfall. These areas are inhabited predominantly by pastoralists (rather than sedentary land users) and generally are the lowland parts of the country. Regions covered in this review are Afar, Somali and the arid zones of Oromia and SNNPR (see Figure 1). This report does not include information from other pastoralist areas such as parts of Gambella, Benishangul-Gumuz and Tigray regions.

After this introduction (Section 1), the main report is structured in four sections. Section 2 introduces pastoralism in Afar, Oromia, Somali and SNNPR, and the relationship between pastoral livelihoods and water: current status and challenges and the customary management strategies that in many cases predate, but continue to evolve with, such challenges. Sections 3 and 4 provide an overview of the actors

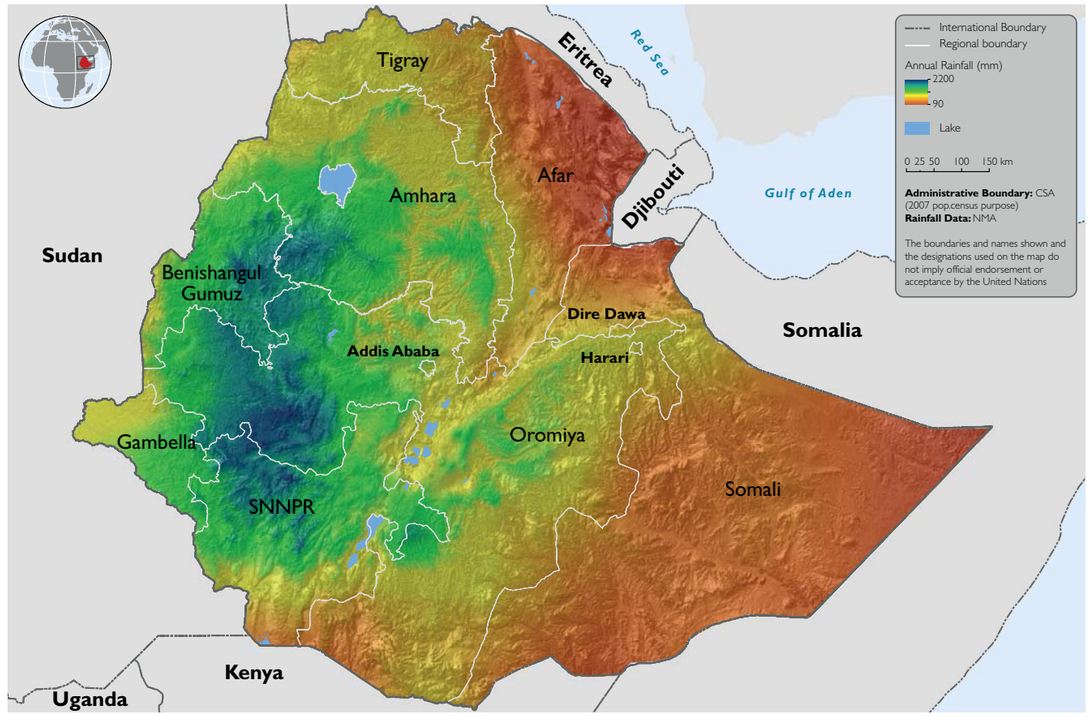

Figure 1 Annual Rainfall (as of 7 March 2012) (Source: UN OCHA, Ethiopia)

1. Though there is nothing intrinsically wrong with *birkado*, their construction in wet season grazing areas encouraged people to settle permanently around them, and to use rangelands year-round, leading to rangeland degradation and disease proliferation (Gomes, 2006).

2. The Research-inspired Policy and Practice Learning in Ethiopia (RiPPLE) Programme, originally funded by UKaid from the UK Department for International Development (DFID) through the Overseas Development Institute (ODI), now continuing as a project under Hararghe Catholic Secretariat; Save the Children USA (SC-US) working through the US Agency for International Development (USAID)-funded Enhanced Livelihoods in Southern Ethiopia/Enhanced Livelihoods in the Mandera Triangle (ELSE/ELMT) program; and CARE Ethiopia, working through the Howard G. Buffet Foundation-funded Global Water Initiative (GWI).

3. The report considers the government's drive to diversify pastoral livelihoods by introducing and expanding medium-and large-scale irrigation schemes and promoting more settled forms of livestock production. However, it is beyond its scope to give a detailed analysis of the socioeconomic ramifications of agricultural expansion and resulting sedentarisation.

that have become involved in the past 40 years and their different activities in relation to water development in pastoral areas. Section 3 covers the period up to the fall of the Derg regime in 1991 and Section 4 the period from 1991 to the present, framed by the current government's policies and programmes (at national and regional level) and the activities of its development partners and NGOs. These sections go beyond the descriptive, however, introducing the complex challenges that arise at the many intersections – between pastoralism and other livelihoods, water and other resources and customary and administrative institutions. Section 5 consolidates the analysis and draws out 'good practice' from the preceding sections and the contributions of experts interviewed. The report closes with a suggestion of principles which, it is hoped, can inform the development of guidelines for water development in the pastoral context.

The present report is a summary of a longer draft version produced in 2011. Data for the original report were collected over a two-month period in 2009 primarily in Addis Ababa but with visits to Afar, SNNPR and Somali Region. Semi-structured interviews were conducted with over 50 representatives from national and regional government, development organisations, donor agencies, research institutions and pastoral associations. An extensive review of published and unpublished documents was also conducted. An Ethiopian consultant was brought on board to focus on interviews and documentation review in Afar and Somali regions, to determine whether feedback at regional level corroborated findings at federal level. Data, viewpoints and documentation were also obtained through email communications with several international experts with expertise in pastoral development and with experience in Ethiopia. Additional literature was collected from experts and practitioners in the field and from resource centres in Addis Ababa and elsewhere.

2 Pastoralism and water: an introduction

2.1 Importance of pastoralism to livelihoods and the economy

Pastoral production remains the dominant land use in Ethiopia's lowlands, which occur below an elevation of 1500m and constitute between 54% and 61% of the country's surface area (Coppock, 1994). Pastoralists are defined variously in the literature as those who obtain more than half their income from livestock and livestock products and who characteristically practise mobility to avoid risk, respond to variable climatic conditions and ensure healthy livestock and rangelands. A further category of agro-pastoralists is defined as those who practise some degree of mobility but obtain less than half their income from livestock, with most of the remainder coming from crop cultivation.

In Afar region, pastoralists make up 90% of the estimated 1.4 million population, with the remainder practising agro-pastoralism (Figure 2). A total of 85% of Somali region's 4.4 million people are pastoralists, (FDRE, 2007; World Bank, 2008), and pastoralists also represent a significant proportion of the population in Oromia and SNNPR's arid lowlands (World Bank, 2008). Agriculture has to date extended to a relatively small area – about 0.3% of the total land area in Afar region and 5.5% in Somali region (ibid.). However, crop production is becoming more widespread in some areas. For example, in Oromia, where only around 5% of the land is under cultivation (OWWDSE, 2009) the area set aside for crop production in one study area has increased by a factor of 12, from 1.4% in 1986 to 16.3% in the late 1990s (McCarthy et al, 2001).

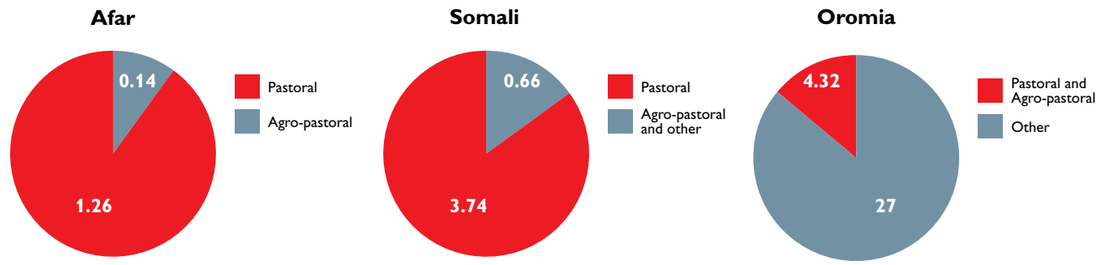

Figure 2 Pastoralist, agro-pastoralist and non-pastoral populations in Afar, Oromia and Somali regions (millions)
Sources: FDRE (2007); OWWDSE (2009); World Bank (2008).

Livestock production makes a major contribution to the national economy, generating significant foreign exchange ($121 million in 2006 – IIED and SOS Sahel, 2010), while pastoral livestock production contributes 30% of gross national product (GNP) and 90% of hard currency generated from live animal exports (Kassahun et al., 2008). The direct value of pastoral livestock production has been put at $1.22 billion per annum, with additional indirect values of almost half a billion from draught power, manure, tourism and rangeland products such as gums and resins (SOS Sahel Ethiopia, 2008). Unofficial earnings may exceed official figures significantly – Scott-Villiers (2006) estimated cross-border livestock sales in Somali region at three to six times the official figures for the whole country.

2.2 The pastoral livelihood strategy

Within the extensive rangelands of these regions, scarce and variable rainfall dictates the presence or absence of pasture on which livestock depend. The rainy season permits pastoralists to disperse over a wide area, while the grazing range contracts in the dry season around permanent water sources such as rivers or groundwater-fed wells. The high degree of mobility during grazing allows dry season grazing areas to recover between seasons and contributes to rangeland health by stimulating vegetation growth, fertilising the soil, aiding seed dispersal to maintain pasture diversity and preventing bush encroachment (Hesse and MacGregor, 2006). Comparison with areas around permanent settlements reveals higher levels of degradation than in open rangeland where mobile pastoralism is practised (Fuller, 1999).

The 'tragedy of the commons' hypothesis, which proposes that individual herders eventually overgraze and deplete open access pasture by indiscriminately increasing herd size (Hardin, 1968), does not reflect reality in the rangelands. In fact, access is not 'open', but rather is regulated through negotiation and reciprocity within a system of communal land tenure. Groups are often associated with specific territories which contain critical natural resources such as grazing land and water resources, but membership, and boundaries between these territories, is often 'fuzzy' to accommodate mobility in times of scarcity (Mwangi and Dohrn, 2006). The variable location of rainy season and dry season pastures from year to year increases the need for such a flexible system. Reciprocity is expected when the tables are turned (Beyene and Korf, 2008). Traditional institutions allow different clans or groups to be represented in decision-making regarding access to land and water (Gomes, 2006).

The persistence of the pastoralist livelihood strategy in much of the arid lowlands attests to its rationality and flexibility, but mobility is essential. Devereux (2006) finds that where mobility is unhindered, pastoral households are more

economically and food-secure than their settled counterparts, and that many pastoral settlements in Ethiopia were partially or entirely abandoned in the droughts of 2004 and 2006. Little et al. (2008) reach a similar conclusion, showing that households are less likely to lose their livestock assets and become food-insecure if they remain mobile. Despite this, tragedy of the commons thinking greatly influenced approaches in the early years of development in Ethiopia's lowlands, and continues to do so.

2.3 Challenges to pastoralism and the rangelands

Despite the positive contributions of pastoralism to livelihoods, the economy and rangeland health, certain realities cannot be ignored:

- Population increase, including via the resettlement of highland populations to the lowlands, who will likely require livelihood options based on agriculture;
- Stubborn encroachment of *prosopis juliflora*;
- Excision of grazing areas for irrigation, especially dry season pastures near to permanent water sources;
- Further demarcation and enclosure for uses such as national parks, private grazing and crop cultivation (including by pastoralists, as well as immigrants and refugees);
- Increased sedentarisation and the proliferation of water points, which promote settlement; and
- Poor rangeland management and continued degradation.

With powerful underlying drivers, including climate, conflict, poverty and demographics, these factors contribute to shrinkage of land available for grazing and reduced opportunities for mobility. Among Ethiopia's pastoral communities, the effects are decreased per capita holdings of livestock, an increased trend towards agro-pastoralism (Yemane, 2003) and more pastoral dropouts who seek petty labour in permanent settlements (Desta et al., 2008).

Pastoralism is not the only livelihood in the rangelands, and multiple needs and priorities as well as livelihood strategies must be explored fully and impartially to enable enhanced national economic growth without compromising sustainable livelihoods. This importantly includes mobile pastoral livelihoods. The policy response to date, however, has been incoherent and on the whole favours settled forms of livelihoods, which puts certain livelihoods at a disadvantage from the outset National government leans towards promoting settlement as a long-term objective, believing this to be the only lasting and sustainable solution to protect livelihoods. This attitude is shared by some donors, NGOs and development agencies. Others staunchly support mobility. Many NGOs continue to make water development decisions based primarily on technical considerations with insufficient consideration of livelihood dynamics and the risk of increasing sedentarisation. However, both NGO and local government staff recruited from pastoral areas have first-hand knowledge of the need for livestock mobility and seasonal recovery of rangelands.

2.4 Social organisation and customary institutions for land and water management

Identity plays a central role across Ethiopia in terms of who has access to what land. In Afar and Somali regions for example, clans or sub-clans are associated with specific home areas, although other groups are allowed access based on established relationships and negotiation (Getahun, 2004; Hogg, 1997). While different customary rules and regulations modulating water access and use exist among different pastoral groups across the country, these share a few common characteristics. In the wet season, anyone with grazing rights in a given area has access to water collected in

natural pans for as long as it naturally lasts, and therefore to surrounding pastures (Helland, 1980 in Sandford, 1983). For seasonal water points, like ponds, some regulation and labour may be required to maintain the water point (Helland, 1980; Hogg, 1997). Access to water from permanent water sources in dry season grazing areas is likely to be controlled more strictly – especially in times of scarcity – to support a limited number of people and livestock (Helland, 1980 in Sandford, 1983).

Customary institutions have evolved over time: they are not fossilised entities which conform to historical descriptions – a fact which should be kept in mind in the following overview of how pastoral groups in different regions manage land and water.

Afar

Land in Afar is divided into sultanates, which are further divided into tribe and clan territories (Getahun, 2004). Indigenous pastoral law determines access to and control of natural resources. Each clan usually presides over a number of strategic resources, such as wet and dry season grazing areas and water points. Decisions on access to and control of natural resources are made by the village council, which consists of the clan leader, clan elders, local wise men and a traditional rule-enforcing unit (Hundie, 2006). In the wet season, Afar livestock graze open rangelands managed by the different tribal units. However, scarcity of water in the dry season leads pastoralists back to the Awash River, which is the principal dry season water source. Grazing around the river is delineated and managed by clans through a leader's council (Getahun, 2004).

Borana

Ethiopia's Borana have some of the most elaborate water control and management systems in the country. In terms of access to land (pasture), management is traditionally the responsibility of territorial units (*deedhas*), the boundaries of which are porous and changeable depending on the resources available. A complex customary administrative structure, the *gaada*, administers the *deedhas*, according to the customs and laws of the Borana, the *ada seera* (Tache, 2000).

In terms of access to water, which in turn influences which pasture can be used when and by whom, access is determined on different bases depending on type and season. For ponds and pools that fill up in the wet season, a contribution to maintenance usually secures access. Construction, maintenance and cooperation around the use of ponds and surface catchments is usually undertaken at the level of the *reera*, a smaller territorial scale than the *deedha* – members are encouraged to use ponds in their own *reera* to avoid overusing neighbouring resources (Tache, 2000). When water levels in ponds are observed to be dropping too fast, precedence is given to the domestic use of the closest *ollas* (groups of households with associated cattle enclosures) and adult cattle are excluded in favour of calves. If necessary, even calves will be excluded and must be moved to other ponds or wells (Bassi, 2005).

Traditional wells are critical sources of dry season water and 'belong' to clans, as considerable labour inputs are needed for both construction and extraction of water. An individual, called the *konfi*, instigates the digging of a well, becoming 'father of the well', or *abbaa ellaa*, securing access priority and decision making privileges rather than absolute ownership. Though the *konfi* has decision making privileges with regards the well, he is closely observed by clan elders who make sure that he makes decisions in line with the customs and laws of the Borana (Helland, 1980). The *konfi* recruits assistance from within his own clan and from other clans and lineages in terms of obtaining the labour and the cattle necessary to sustain the digging crew during the construction work. Contributing clans thereby also earn access rights to the well. Borana who have not contributed to well construction may also be extended temporary access rights in times of need. Traditional regulations determine access to the well in terms of the day and the position in the queue for that day, overseen by the 'father of turns' (*abbaa herregaa*), who is chosen by the *abaa ella*. The number of positions in the queue depends on the amount of water available and the rate of water seepage[4] (Bassi, 2005).

Somali

Territories in Somali region are associated more closely with clans and sub-clans, with boundaries that have shifted historically on the basis of inter-clan power dynamics (Hogg, 1997). Prior to the 1960s, the Haud plateau was predominantly wet season grazing land, with associated permanent dry season water points located in Somaliland (Walker and Sugule, 1998). However, the construction, by pastoralists, of *birkado* in wet season grazing land allowed people to settle permanently around these structures, effectively establishing dry season nuclei across a formerly wet season landscape. *Birkado* are usually owned by wealthier individuals (or sometimes groups) who have the means to pay for the considerable construction costs. Those who cannot afford to construct their own *birkado* have to pay for access, on a negotiated basis but with the highest prices in the dry season (Gomes, 2006). The private ownership of *birkado* means potential exclusion from water access for those with no means to pay (or for other reasons), which in turn means exclusion from surrounding grazing forcing herders to seek out other *birkado* with more agreeable owners or provoking conflict over access (Devereux, 2006).

In areas with adequate groundwater, hand-dug wells are common, usually belonging to clans but sometimes owned individually. When water is plentiful, clan-owned wells are available for other clans living in the area and for those migrating in search of water, usually for free. However, access to water follows an established hierarchy, which is strictly enforced, especially in times of scarcity. The person who constructed the well and their family are first in line to the water, followed by clan members, with non-clan members last (Gomes, 2006). Deep wells, which require considerable labour for excavation and water extraction, follow a similar management system to the Borana's.

4. Each well has its own capacity to produce water. When pastoralists drain water out, the water accumulated in the bottom of the well decreases, but is constantly fed by seepage. Seepage varies with the season, affecting the number of cattle that can be watered daily. The use of mechanised pumps in the vicinity of traditional wells is likely to affect this capacity (Marco Bassi, Research Officer, African Studies Centre, University of Oxford, U.K, personal communication).

3 'External' water development, 1970s–1991

3.1 Rangeland and pastoralism under the Derg regime

Before the 1970s, protection and sustaining livelihoods received little attention in pastoral regions, and interventions concentrated on developing land for commercial irrigated agriculture along rivers. However, measures and policies implemented under the Derg regime (1974–1991) left a lasting impact on land and people in the rangelands, with a number of top-down solutions imposed and little participation from the grassroots. The most important were:

- Prohibition of controlled burning to manage the rangelands, which saw an increase in bush encroachment and shrinkage of the land usable for grazing;
- Aggressive promotion of agricultural expansion;
- Creation of Peasant Associations (PAs) as lowest-level administrative units;
- Enforcement of policies to sedentarise pastoralists (Kamara et al., 2002); and
- Land nationalisation in the highlands.

The 1975 Nationalisation of Rural Lands Proclamation in principle granted pastoralists rights to access grazing land, but in practice their priorities came second to those of the state (Elias, 2008), which was mandated 'to improve grazing areas, to dig wells and to settle the nomadic people for farming purposes' (Hogg, 1993). All commercial agricultural concessions granted under Emperor Haile Selassie were nationalised, and the regime aggressively pursued the expansion of state farms, with special support provided for agricultural development. Choice areas set aside for state irrigation projects often lay in key pastoral dry season grazing areas which were essential for livestock survival in times of drought (Helland, 2006).

PAs (similar to today's *kebeles*) effectively introduced a parallel system of natural resource governance in the rangelands alongside customary governance. Where pastoral groups previously negotiated access to land and water resources across fuzzy boundaries to permit mobility, PA boundaries 'legitimized and hardened clan-based claims to land and water resources', being loosely based on *maadda* [a traditional Borana territorial unit] in Borana and on the home areas of Somali sub-clans in Somali region (Hogg, 1997). PA chairmen, usually officials with the received wisdom of the agricultural highlands, but with little appreciation for traditional land management systems, were given authority to allocate land, preside over issues related to resource use and make decisions on water rights, effectively replacing traditional elders (Kamara et al., 2003). Individual pastoralists (and non-pastoralists) could disregard the codes and decisions of customary institutions and seek potentially more favourable outcomes from PA authorities (Sandford, 1983; Tache, 2000). Without formal recognition of communal tenure, individuals often sought to secure access by creating private reserves for different purposes within the commons (Helland, 2006).

3.2 Water development under the Derg

Shortly after the rise of the Derg regime, the World Bank and government-funded Rangelands Development Project (RDP) was initiated (1975), with an emphasis on developing water infrastructure. The RDP aimed to 'restructure' what were perceived 'low output traditional range practices' (World Bank, 1991) by promoting ranching and settled forms of livestock production. These interventions were seen as solutions to the perceived irrational and unproductive pastoral use of the rangelands (Hogg, 1993). In essence, the project did not recognise the productivity of mobile livestock production systems. On completion of the project, the World Bank

1970s

Increasing government, donors and development organizations interest in developing the rangelands.

1973 *Severe drought*

1975 *Rangeland Development Project (RDP) – first major non-pastoral development intervention in the rangelands.*

1974 *The Derg regime comes to power, and central government extends reach to community level through the Peasant Associations (PA), established as lowest administrative units. PA boundaries were based on ethnic boundaries, legitimizing clan-based claims to resources.*

Major events and policies: 1) ban on use of controlled burning for range management, 2) emphasis on agricultural expansion, 3) enforcement of policy to sedentarise pastoralists.

1980s

Considerable research undertaken refuting the 'tragedy of the commons' scenario in rangelands – much of it based on lessons learned from the RDP.

Global pressure for democratization and increasing emphasis on participation in development planning.

1984 *Severe drought*

1990s

Development partners continue to address service provision and respond to emergencies in pastoral areas, though donors shift focus away from development in lowlands.

Water Resources Management Policy (1999) to promote national coherence on water development.

1991 *Ethiopian People's Revolutionary Democratic Front (EPRDF) comes to power, introducing a decentralization policy with emphasis on participation in development planning.*

Water as well as pastoral development become regional responsibilities. Regional governments are responsible for drafting/implementing policies and plans in line with federal policies, plans, and strategies. Though central ministries still play an important role, especially in Afar and Somali regions.

Derg's sedentarisation policy revoked.

1994 *Pastoralism as a livelihood acknowledged in the Federal Constitution of 1994, but emphasis on expansion of agriculture continues.*

2000s

Major shift in pastoral development thinking towards holistic and participatory development (Pastoral Community Development Project (PCDP), Pastoral Livelihoods Initiative (PLI)). However, this is slow to translate into practice.

2010s

National strategies focusing on resilience, food security and livelihood transformation to achieve growth and climate change adaptation. Activities identified to achieve these objectives such as expanding irrigated agriculture or promoting social and economic services designed for settled communities, might, in the longer term, undermine pastoralists resilience.

Figure 3 Timeline of events influencing water development and the rangelands in Ethiopia

admitted there had been a lack of knowledge of pastoralists' behaviour and the drivers behind traditional land use practices (World Bank, 2001).One of the only project components where headway was made was in water point construction – mainly boreholes on ranches where water catchment was restricted and ponds in wet and dry season grazing areas. However, this took place top-down, with little understanding of pastoral dynamics and the logic behind pastoral natural resource management strategies. Construction of large ponds encouraged permanent settlement and year-round usage of surrounding pasture, leading to overgrazing and erosion and opening space for competing modes of production such as small-scale crop production (Gebre-Mariam, 1982). Insufficient recognition of customary boundaries between grazing areas, relationships and rights defining use of these and water's importance in traditional regulation of resource use led to frequent fighting around access to water points. Government retention of ownership and management by local administrations resulted in poorly controlled access (Sandford, 1983) and inadequate maintenance.

As Helland (1980) pointed out, although, technically, available pasture can easily be expanded by digging ponds or sinking boreholes, making water available freely strips existing social organisations of major functions, which include regulating labour inputs, access to water and control over pasture. He predicted that weakening the social control of existing management systems in this way would lead to long-term degradation despite short-term expansion of pastoral resources. Though factors implicated in rangeland deterioration are multiple and complex, Helland's hypothesis of 30 years ago seems to have come to bear.

3.3 Changes in thinking

Although early experiences in water development had obvious negative impacts in the rangelands, they also provided a valuable opportunity for practitioners and researchers to learn what works and what does not in the pastoral context. A key lesson learnt from the RDP is that the 'participation of intended beneficiaries in defining the project concept is fundamental' (World Bank, 1991). Towards the end of the 1980s, the World Bank funded the Fourth

Livestock Project, the first real attempt at rangeland development, with an emphasis on pastoral participation to avoid the pitfalls of previous approaches. While this attempt was hampered by the political situation at the time and by the costs of sustaining a bloated pastoral development bureaucracy (Hogg, 1993), approaches to participation continue to evolve: from end users simply expressing demand for water points, to assuming a role in operation and maintenance, to full involvement in all stages, including planning and construction.

The RDP and other such interventions across East Africa also prompted researchers to critically review the underlying thinking for the conventional, commercial rangeland development approaches promoted by the World Bank and others. This included the tragedy of the commons theory, as well as the assumption that rangelands constitute equilibrium grazing systems. Such systems are commonly found in temperate regions, where relative climatic stability means availability of feed is a relatively predictable limiting factor on expansion of the livestock population. But in the non-equilibrium systems of arid and semi-arid parts of Africa, 'extremely variable rainfall […] may have a much stronger effect than animal numbers on vegetation', requiring 'management in the sense of adaptive coping, rather than optimisation and control' (Behnke, 1994).

Water development in the rangelands is now focused more on protecting lives and livelihoods, and the pastoral production system is a recognised form of land use mentioned explicitly in the current government's Constitution, as well as in national development plans and programmes (e.g. the Plan for Accelerated and Sustained Development to End Poverty (PASDEP), the Productive Safety Net Programme (PSNP) and others). Implications for water development include increased awareness and recognition that

- Pastoral areas require a different approach to highland areas where sedentary farming practices predominate, and pastoral areas are not homogenous;
- The pastoral livelihood is influenced by internal and external social, cultural and political aspects, which differ between and within regions;
- Mobility is an important strategy to adapt to increasing resource variability;
- The existing natural resource base in a location (water and pasture) and the patterns whereby people use these resources are altered by water development;
- Water provision in the rangelands should be coupled with other development interventions to support and improve livelihoods, including improved livestock marketing opportunities, veterinary services and rangeland rehabilitation; and
- Scientific and customary knowledge can combine through grassroots participation.

Other lessons which apply in the rangelands and in water development more generally are:

- The critical importance of 'software' components for the sustainability of water developments. Innovations include promoting community buy-in to water development (either in cash or in kind); selecting water points for which construction materials and spare parts (where needed) are available at the local level; and increasing focus among practitioners on training local artisans to decrease dependency on external support;
- The potential for rehabilitation of existing water points to avoid the risks associated with new developments, especially when project duration is short (e.g. in emergency relief interventions); and
- The need to improve partnerships and linkages between different projects and programmes to streamline approaches to water development.

4 Water development, 1991–the present

4.1 The evolving landscape: actors and interventions

This section provides a brief overview of more recent and ongoing shifts in water development approaches among pastoralists, government (national and, increasingly, regional level) and development agencies and NGOs. The private sector is also an increasingly important player, for example in the development of irrigation schemes which may be in tension with pastoral activities, but a dedicated focus on their role is beyond the scope of this report.

4.2 Pastoralists

As noted, both government and donors have broadly acknowledged the importance of participation of pastoralists in water development. However, the extent to which participation occurs in practice varies, and principles are by no means mainstreamed across the country.

A starting point for greater participation which does appear to have been widely adopted is for interventions to be demand-led, at least in name. As water scarcity (and now pasture scarcity) is a persistent challenge, communities make appeals for water to government and development agencies/ NGOs, either to remedy water shortages or to open up new pasture. Direct appeals to development agencies and NGOs are possible where these external actors have previous experience in an area or with a particular community, and potentially avoid administrative biases within local government (e.g. in Jiiga *woreda* (district), Somali region, more water points can be observed in areas which are home to the majority of local administrative staff). Local baseline surveys are sometimes, but not always, carried out. NGOs and development agencies can also approach *woreda* offices, which are required to identify PAs or *kebeles* where there is a need for water, and organise community meetings to identify priorities. Appeals made to district government are in any case often delegated to NGOs and development agencies for implementation. However, to date there is no structured way in which local pastoral communities can demand water development support from local government or development agencies and NGOs, and sporadic expressions of demand generally result in a disjointed and uncoordinated response.

Furthermore, using a demand-led approach does not result in participation in and of itself: much deeper involvement is needed to ensure an appropriate and sustainable response. The influence pastoralists can exert on planning and siting of water points differs depending on the entity constructing (and funding) the facility and the type constructed. Communities tend to lead decision-making on the traditional structures they continue to develop themselves, such as ponds, springs and customary deep wells. For structures funded and constructed by non-pastoralists, especially those that are technically more complex (like boreholes), the extent to which communities participate in decision-making varies. Many donor agencies that fund long-term development place participation in planning, management and maintenance high on their agenda. However, for many NGOs and local government

WUAs in Ethiopia and relevance in the pastoral context

In the past 10 years, government and NGOs have introduced WUAs as a means for communities to take on the operation, management and maintenance of water points instead of, or often alongside, government. WUAs generally have about seven members meant to represent a cross-section of water users in a given locality. Training is provided to enable them to perform their duties, yet often more attention is given to establishing the WUAs than ensuring their effective operation. WUAs therefore suffer from weak management, operation and maintenance capacity. Often, water points are in practice managed by government, even though they are meant to be handed over to WUAs to manage. There is also limited consideration of the potential for synergies with customary water management systems.

bureaus, participation is often symbolic. How much communities contribute materially to the construction, operation and maintenance of water points also varies, although cost recovery is increasingly emphasised to encourage a sense of ownership of infrastructure. Eliciting payments for water from local communities remains a considerable challenge, whereas labour is provided more readily.

Whether organisations engage with communities directly or through the *kebele*, in both cases proposals must be submitted to regional bureaus for pastoral development or water, depending on the focus of the project. Following implementation, facilities are handed over either to the administrative authority or to Water User Associations (WUAs). Both NGOs and government increasingly encourage the setting up of WUAs to improve downward accountability and to enable communities to manage and operate local water points, rather than the responsibility lying solely with government or with the customary institutions that previously managed water resources

The above observations assume that non-pastoralists more than pastoralists determine the degree of participation. However, more recently, pastoralists have formed pastoral associations to directly and formally voice pastoral concerns to government (in Oromia region in 2006 and Afar region in 2008 – the former having been formally recognised by regional government). There is potential for such associations to organise and streamline communication between local communities and government (as well as development agencies) and open up necessary discussions on priority macro-level issues related to water and pasture at regional level.

4.3 Federal government

The EPRDF, which came to power in 1991, has pursued a decentralisation policy with the federal state devolved along ethnic regional lines. In this context, water development and pastoral development more broadly have become regional responsibilities (Figure 4). Nonetheless, federal ministries, strategies, laws, policies and programmes remain important and provide a framework for the regional levels.

Figure 4 Formal governance structure in Ethiopia

Ministries[5]

Three line ministries play a central role in guiding water development and pastoral development in the regions: the Ministries of Water Resources (MoWR), Agriculture and Rural Development (MoARD) and Federal Affairs (MoFA). By extension, the Ministry of Finance and Economic Development (MoFED) also influences planning. Table 1 indicates their nominal responsibilities, which result in a number of potential overlaps:

- There is an overlap in responsibility for water-related issues between MoARD and MoWR. Both are involved in irrigation development (MoWR develops large schemes, MoARD and the regions develop small and medium schemes) and both supply water for livestock (MoARD explicitly for livestock and MoWR for human as well as livestock consumption).
- MoFA is responsible for pastoral livelihood issues which cut across sectors, including agriculture and water. MoFA is therefore very involved in setting cross-sector priorities for these areas together with relevant ministries.
- Even though planning and implementation are regional responsibilities, central ministries are heavily involved in planning and technical expertise provision at regional level in Afar and Somali, and also in pastoral areas of Oromia and SNNPR.

However, there are also several notable efforts to enhance horizontal and vertical coordination:

- The Livestock Policy Forum under MoARD, with support from the Feinstein International Centre (FIC) at Tufts University, is a first-of-its-kind platform which brings together 70 NGO representatives, the private sector, bilateral and multilateral donors, Ethiopian research institutions,

5. The structure and ministries' responsibilities and names changed slightly in 2011 (after this report was written).

Table 1 Ministries involved in water and pastoral development in Ethiopia

Institution	Mandate
MoWR	Responsible for the country's water supply and for planning and implementing large-scale irrigation projects Sets policy and coordinates planning and development related to water in Ethiopia Produces strategies and programmes, develops and implements water sector laws and regulations, conducts studies and research activities and provides technical support to regional water bureaus Provides technical and institutional support to the emerging pastoral regions (Afar and Somali) to embed capacity at regional level to plan and implement projects
MoARD	Plans, develops and manages the country's agricultural resources and develops policies, strategies and programmes Develops small- and medium-scale irrigation projects and is also responsible for the livestock sector, including water development, primarily via ponds and birkado to harvest rainwater Through the Emerging Regions Development Coordination Office, provides coordination support to small-scale agricultural activities in Afar and Somali regions, as well as technical backstopping for Oromia and SNNPR when needed Oversees the Livestock Policy Forum
MoFA	Hosts the Pastoral Areas Development Department (PADD), which provides development and capacity-building support to emerging regions (Afar and Somali), assists in appropriately structuring government institutions from regional down to local level, drafts pastoral policies and designs specific development programmes for pastoral regions informed by the country's rural development vision and strategies. Facilitates vertical support between line ministries and regional governments, as well as horizontal support between regional governments of developed regions and those of less developed (emerging) regions Actively participates in preparing regional- down to woreda-level action plans, provides technical backstopping and is directly involved in monitoring and evaluation of development activities
MoFED	Responsible for budget allocations to line ministries and also engaged in national policy coordination, therefore plays an implied role in sectoral activities

Source: Tekele (2005).

professional associations and government departments (Behnke et al., 2008). This introduces a more livelihoods-based approach to emergency relief, allowing members to share and learn from field experience and developing guidelines on emergency livestock interventions.

- MoFA chairs an inter-ministerial board which brings together representatives from the various line ministries to take stock of current activities in pastoral regions and discuss planning. MoFA also facilitates the exchange of information between ministries and the regions.
- Emerging regions are given support by neighbouring developed regions, coordinated and facilitated by MoFA. Prior to 2008, support to Afar and Somali regions was provided by respective coordination departments under MoFA. Effectiveness has increased now they are subsumed under the new Ensuring Equitable Development Directorate, established in 2008, which has developed strategic goals and a roadmap to close the development gap between regional states over the next six years.

Policies, laws and strategies

A number of national development policies and laws have implications for water development in pastoral regions, including the Poverty Reduction Strategy Paper (PRSP) (2001); PASDEP (2006) and the Federal Rural Land Law 2005 (see Annex 1 for key details). These reflect evolutions in thinking. In the last 10 years the discourse has changed dramatically, from scant mention of pastoralism, and when mentioned cast in a negative light and in need of an overhaul to increase production through technical fixes, to highlighting mobility, the importance of customary institutions and supporting livelihoods. But these policies and laws also reflect the persistent paradox at the heart of the policy direction regarding pastoralism: whereas in the short term government aims to support customary pastoral production systems, the long-term focus is on 'voluntarily' settling pastoralists by providing livelihood diversification opportunities, most notably fixed on irrigated agriculture. Policy relating to water development may exacerbate the sedentarising effect. For example, MoFA's 2008 Draft Policy Statement for the Sustainable Development of Pastoral and Agro-pastoral Areas of Ethiopia states that 'in the long-term, the government envisions a stable pastoral and agro pastoral community through the facilitation of gradual and voluntary transition towards permanent settlement especially along the perennial river banks' (MoFA, 2008). However, many practitioners in the field believe sedentarisation will gravely exacerbate the challenges facing pastoral livelihoods. Tenure security for pastoral communal rangelands also does not seem high on the national or regional agenda.

Where the documents refer to what can be regarded as best practice principles, there is rarely a clear indication of how these are to be implemented (e.g. increasing understanding of communal range management strategies, as emphasised in the PASDEP). With regard to participation, development of the PRSP and PASDEP involved consultation with pastoralists, but in both cases these do not appear to have strongly influenced the final documents (Pastoralist Forum Ethiopia, 2009). In terms of the Federal Rural Land Law, a principal criticism is that the emphasis on private landholdings disregards the rationale of traditional communal landholding, which goes against the federal Constitution (Abdulahi and Adenew, 2007).

Programmes and projects

Federal ministries lead a number of projects and programmes involving water development in Ethiopia's pastoral regions, some of which address water specifically and others coupling water development with broader pastoral development (rangeland rehabilitation, improved veterinary services, etc.). The past 10 years have seen significant and various departures from a 'generic' approach to water development, whereby local government or NGOs develop water points based on community requests, selecting technologies from a menu of options and siting them according to hydro-geological context. The projects listed in Table 2 provide a range of examples, which integrate participation and other key issues (addressing other development needs, context specific planning, etc.) to different degrees.

The examples listed in Table 2 vary in terms of fundamental assumptions about what constitutes appropriate water development in the rangelands, which suggests that ministries as well as regional offices work independently of one another with little

Table 2 National government programmes and projects including water development components in pastoral

Lead ministry	Programmes
MoWR	The Water Sector Development Programme (WSDP), including the Water Supply and Sanitation Development Programme (WSSDP) and Irrigation Development Programme (IDP) The Water Supply, Sanitation and Hygiene Programme (WSSP) The Universal Access Programme (UAP)
MoARD	The PSNP Pastoral Areas Pilot (PSNP-PAP).
MoFA	The PCDP

coordination around water development issues and limited sharing of best practice. This creates an environment where it is easy for inappropriate water development to go unchecked. A short overview is provided here, and further details are presented in Annex 2.

A broad distinction can be made between MoWR-led programmes, which are aimed primarily at water development, with differing degrees of recognition for pastoralists as a sub-category of users, and MoARD and MoFA programmes, which focus on pastoral development generally but in which water development emerges as a major concern.

MoWR activities are marked by an emphasis on hardware, driven by ambitious targets embedded in the flagship UAP, which aims to provide access to safe water for 98% of the rural population by 2012. The particular needs of pastoral areas are recognised to varying degrees: the UAP refers to multiple uses of water (which could conceivably include livestock) but does not make separate reference to pastoral areas; the WSDP refers to water development for livestock in nomadic areas as a priority but has little specific

guidance; and special guidelines have been produced for implementation of WSSP in pastoral areas.

Programmes led by MoFA and MoARD, meanwhile, have an explicit focus on pastoralists' needs. The PCDP includes innovations such as Mobile Support Teams (MSTs), which are intended to facilitate the strong participatory and community-driven ethos of the project, helping communities to identify and express their priorities. The PSNP-PAP targets food security and has a strong focus on understanding

Use of natural resource and socioeconomic mapping and analysis in the PSNP

According to the draft PSNP-PAP guidelines, simple mapping kits should be used with the planning team, comprising the community leader at kebele level, four male-headed households representing different social groups, four female-headed households representing different social groups, one youth representative, one religious representative and others as required by the community. This involves:

- Marking obvious features on the ground, which could be pastoral unit boundaries, roads, hill tops, rivers, settlements, etc.;
- Adding more detail to the map, which includes the location of different natural resources such as pasture, water sources, agricultural land, forest, etc. and any areas where degradation is observed. Features of traditional natural resource management should be marked, including customary land divisions for grazing management, customary water management arrangements and patterns of mobility (of both local and visiting communities);
- Identifying and discussing any problems that exist in relation to mapped items, including natural resources, traditional systems, mobility and conflict. Different maps can be produced to capture different aspects, for example one for natural resources, one for social services and one for mobility;
- Jointly prioritising issues to be addressed and identifying potential solutions and community/external (public works) actions to rectify the problem.

Prioritised public works as identified through the above planning process should then be presented, discussed, amended and approved in a general assembly representing the wider community. Agreed-on public works should then be included in the kebele plan which is submitted to woreda level for approval.

Source: MoARD (2007b).

pastoral livelihood strategies and customary institutions, through tools such as natural resource mapping. Overall, federal government programmes show some evidence of considering and responding to the particularities of water development in pastoral areas, such as the complex interrelation between water and land resources and the role of traditional management arrangements. There is also evidence of ongoing learning: for example, Phase II of the PCDP emphasises development of small-capacity water points that will not encourage sedentarisation. Nonetheless, as Annex 2 indicates, there is often a gap between well informed and well-intentioned programme documents and implementation on the ground.

4.4 Regional government

Bureaus

Regional governments have the autonomy to adapt national plans and policies to suit regional contexts, and regional bureaus responsible for water, agriculture and rural and pastoral development prepare strategic plans touching on water. For example, in Afar region, the Bureau of Water Resources Development and the Bureau of Agricultural and Rural Development are both involved in planning and implementing water development for productive use (both water supply – which is also used by livestock – and small- to medium-scale irrigation). In regions where pastoralists represent only a portion of the total population, issues specific to pastoral livelihoods are handled by specialised commissions/bureaus dedicated to pastoral development (including water development, often a dominant feature). In Oromia region, this function is performed by the Oromia Pastoral Development Commission (OPDC); the Pastoral Affairs Bureau is the responsible entity in SNNPR. In regions considered entirely pastoral, agricultural and rural development bureaus assume this responsibility – the Agriculture and Rural Development Bureau in Afar region and the Natural Resources, Livestock and Crop Bureau in Somali region.

Regional plans and policies often do not differ substantially from national plans and policies, continue to emphasise agriculture and sedentary livelihoods and generally perceive water supply and irrigation projects to be designed primarily to serve people, even as they recognise that livestock are part and parcel of pastoral landscapes.

Policies and strategies

Regional governments are responsible for drafting policies and preparing and implementing plans, but these do not generally differ from the 'template' policies, plans and strategies at federal level. Policies related to land tenure are an exception: these are

prepared at regional level by agricultural and rural development bureaus and have important implications for the pastoral way of life, given reliance on communal lands. Regional-level policies related to land tenure in the focus regions include (Abdulahi and Adenew, 2007)

- **Afar:** The Afar draft Rural Land Administration and Use Proclamation (2009) recognises, as per the Constitution, that pastoralists have the right to the use of grazing land. Further, traditional communal grazing land cannot be privatised. This seems to extend exclusive rights to pastoralists over the use of communal rangelands. However, the proclamation also says that land is ultimately owned by the state and that communal land can be privatised and/or given to investors when considered appropriate and with the consensus of local communities.
- **Oromia:** The Oromia Rural Land Use and Administration Proclamation (2007) largely excludes pastoralists and does not recognise communal ownership. The term 'possession' is used in such a way as to focus on individual ownership.
- **SNNPR:** The SNNPR Rural Land Administration and Utilisation Proclamation (2007) recognises the existence of communal land and specifies how it should be registered, with some provisions to protect pastoralists.
- **Somali:** The regional government is currently in the process of drafting a new Land Use Proclamation.

In terms of relevant regional strategies, Oromia regional government is leading the four regions considered in this study, with at least some attention to the particular challenges encountered in the lowlands evident in its overall growth and development planning. The five-year Oromia Growth Corridors Plan (OCGP) was prepared in 2006 as a holistic regional development effort using water as an entry point. By tapping 'permanent' groundwater with deep wells and developing surface water harvesting, the OGCP aims to open up possibilities for multiple land uses, including livestock production as well as irrigation. An important underlying driver in development of the OGCP was a desire to explore the potential for resettlement from the overpopulated and degraded highlands.

A key feature is the pioneering use of land use planning to inform decision-making around the most appropriate use of different areas (utilising semi-detailed soil maps at district level), for example cash food crops, agro-industrial development, livestock production and resettlement (OWWDSE, 2008). Community consultations are held to discuss the plans, from which area development programmes are drafted. Land use planning for Borana zone revealed that two of three basins included, where dry season grazing areas are vital for pastoral livelihoods, are most suited for livestock production – this is possibly the first time a government programme has recognised that livestock production is more suitable than crop production in certain areas (Taye Alemayehu,[6] personal communication).

However, the development model for the OCGP still aims for 'voluntary' settlement of pastoralists in the long term. A total of 2,000km of planned water pipeline to transport water from boreholes to support multiple land uses, coupled with the delineation of livelihood zones with boundaries that are likely to harden over time, will certainly contribute to curtailed mobility. The OGCP also emphasises irrigation, including the setting aside of 36,000 ha for the Fentale I and II irrigation schemes, with the aim of shifting Kerrayu and Itu pastoralists away from dependence on 'unsustainable' pastoral production. A need for revision of pastoral land holding systems has been identified, on the grounds that planned multiple uses of lowlands will be beyond the management capacity of traditional pastoral institutions (Taye Alemayehu, personal communication, 2009). The pilot plan also makes explicit reference to the tragedy of the commons, especially with regard to 'herd management vis-à-vis the carrying capacity of the pastureland' (OWWDSE, 2009). However, the OGCP aims to succeed where previous projects promoting settled forms of livestock production have failed, by providing transport, communication, health, education and market information and services besides water.

This model is currently being imported by Somali and Amhara regions. SNNPR regional administration has also expressed interest in adopting such a model (Kaidaki Gezahegn,[7] personal communication).

6. Deputy General Manager of the Oromia Water Works Design and Supervision Enterprise (OWWDSE).
7. Bureau Head, Pastoral Affairs Bureau.

4.5 NGOs and development agencies

Development vs. humanitarian interventions

Besides government, the principal external actors intervening in development in pastoral areas are NGOs and development agencies. These provide construction and rehabilitation of water points, develop small-scale irrigation and work on capacity-building and training. A broad distinction between interventions aiming at long-term development and those of a humanitarian or emergency response nature (Table 3) persists. Given the short-term nature of humanitarian interventions, practitioners tend towards top-down, technical responses at the expense of planning, participation and sustainability. Limited communication or collaboration between emergency response and development donors and practitioners also frustrates ambitions for longer-term development. However, a few examples of livelihoods-based emergency interventions are currently underway in Ethiopia (e.g. USAID's PLI and the European Commission (EC)'s Humanitarian Aid Department (ECHO)'s Regional Drought Decision (RDD)), suggesting the beginnings of a trend among certain donors towards ensuring community resilience to shock rather than simply providing emergency relief. Coordination and communication between development-oriented NGOs and development agencies could also be improved, as individual organisations usually work in isolation from

government and one another. Just as for government, approaches run the gamut from conventional technocratic methods to those which are highly participatory and location-specific. Incoherence in approach to water development and weak linkages between practitioners creates an environment where it is easy for inappropriate and poor quality water development to go unchecked.

Highlighted programmes and projects

This section picks out certain programmes and projects being undertaken by development agencies and NGOs, primarily focussing on innovations being developed. While it is safe to assume that challenges do exist for these projects and programmes as well, the author did not have relevant documentation available at the time of writing. Projects include the USAID-funded PLI, the ECHO-funded Regional

Table 3 Water development in humanitarian response and development scenarios

Type	Duration	Activities	Push factors	Major donors
Emergency response	Typically 3–6 months	Water trucking Rehabilitation of water points Construction of water points	Increased incidence of drought and floods and weakened capacity to cope, aggravated by poverty and conflict, firmly entrenching the need for reactive emergency response	Office of US Foreign Disaster Assistance (OFDA), Office for the Coordination of Humanitarian Affairs (OCHA)
Development	A year or more	Rehabilitation of water points Construction of water points	Increased awareness that root causes of vulnerability must be addressed and adaptive capacity increased to decrease the need for, and dependence on, emergency response	USAID, European Union (EU), UN Development Programme (UNDP)

Drought Preparedness Programme (RDPP) and the GWI, funded by the Howard G. Buffet Foundation. In addition, a range of NGOs utilise a number of innovative approaches, such as geographic information system (GIS) mapping and local development committees (LDCs), which bring together traditional institutions with local government.

The PLI began in 2005 and is implemented by a consortium of international and local NGOs[8] (including two of the partners supporting this study) in Afar, Oromia (Borana) and Somali regions. The programme is currently in its second phase, PLI II, which runs from 2009 to 2013. It reflects the new emphasis of the donor, USAID, on taking a livelihoods-based approach to emergency interventions. Water development is undertaken within a broader landscape context, recognising the intricate relationship between water, pasture and pastoral mobility and the risks of water-related environmental degradation and conflict. Participatory natural resource mapping is used so as to benefit from pastoralists' detailed knowledge of the extent and quality of local rangeland resources, users of these resources and patterns of use. The maadda is used as the basis. Customary institutions and mobility patterns, as well as physical entities such as pasture and water resources, are identified using community feedback. Following this, problems related to natural resources are identified by communities and Kebele Associations officials (lowest level of administration) (who are closely involved and trained to use the tool), and a community action plan is prepared. Participatory resource mapping is currently being explored for the dheedha level, to better understand broader mobility patterns which can affect and be affected by water development interventions.

New water points are constructed under the PLI, but a strong emphasis is put on rehabilitating existing water points, as well as training and contracting local masons to carry out this task. The PLI also focuses on other development needs in the rangelands, including veterinary health and access to markets. Important lessons arising from the programme include the following:

- Community contributions are easier to obtain where customary institutions prioritise the intervention, organise the labour and carry out the work.[9]
- Customary institutions are capable of assuming responsibility for maintenance and already manage a large number of traditional water points.
- Harmonisation between NGOs, and with government, is possible through regular communication and careful coordination. Programme staff work closely with woreda Water Resource Development Offices to identify water points in need of rehabilitation and organise workshops to bring together NGOs, grassroots community groups and local government. Tufts University organises regional technical coordination meetings in Afar and Oromia as fora for consortium members to inform local government on project progress and to harmonise practice and approach (CARE Ethiopia, 2008). Close linkages with the Livestock Policy Forum under MoARD have been an effective way for the project to communicate lessons learnt in the field for the benefit of a wide audience.
- The PLI is the first project in the rangeland to gauge the impact of interventions on livelihoods, through the use of participatory impact assessments pioneered by Tufts University.

The RDPP, begun in 2007, is another example of an emergency intervention with a livelihoods emphasis in the rangelands. Like the PLI, it brings disparate actors together to work towards a common goal. The Food and Agriculture Organization (FAO) coordinates the programme, which is implemented by numerous development agencies and NGOs.[10] Access to water for humans and livestock is a prominent theme, with priority given to traditional, affordable technologies familiar at the local level (Schimann and Philpott, 2007). However, given the limited timeframe of the programme (18 months), emphasis is placed on the strategic distribution of water points to open up existing pasture, as opposed to rehabilitating heavily degraded areas. In order to correctly distance and place water points, focus is placed on mapping existing water infrastructure as well as the physical attributes of an area. The mid-term evaluation of the RDPP recommended the mapping techniques be applied across drought preparedness activities in the Horn of Africa region (ibid.). However, it also observed that

- Opening up pasture by strategically constructing water points carries the risk of permanent settlement and the conversion of rangelands for farming purposes, and therefore must be planned very carefully.
- Very little can be said to date about the direct and indirect impacts of water developments on livelihoods, as impacts on livelihoods are not monitored.
- A large number of water points are non-functional. For example, 60% of Somali region's *birkado* are damaged and unused, calling into question the building of new birkado versus rehabilitating existing structures.
- Constructing water pans by mechanical means to collect surface water, as practised in the RDPP, is costly and, when not done properly, leads to structural damage.
- WUAs, which require cash contributions, especially for motorised systems, are very often unsustainable; organisation of water point management should be decided by communities themselves if management is to be sustainable.
- External support should be limited to technical input and the provision of financial facilities to cover costs exceeding the immediate capacity of the community.
- Water point designs are often inappropriate and of poor quality, suggesting a lack of technical skill. Furthermore, standard technical designs are rarely adapted or adjusted to suit the local context.

The GWI, initiated in 2007 and funded by the Howard G. Buffet Foundation, focuses specifically on water development as a means of improving pastoral livelihoods. The GWI consortium in Ethiopia is active in the Borana zone of Oromia region[11] and is led by CARE International, a partner supporting the production of this review. Like the PLI and the ECHO programme, the GWI brings together NGOs to harmonise approaches and increase effectiveness. The project aims to ensure that vulnerable populations have reliable access to clean water without compromising dignity, rights, culture and the natural environment (GWI, 2008). The GWI emphasises capacity-building and the 'software' aspects of water schemes, and promotes water for multiple uses (human consumption, livestock and small-scale irrigation). In its first phase, the project concentrated on rehabilitating existing water points (wells, ponds, boreholes, etc.); construction of new schemes was also envisaged up to 2011. CARE, under the GWI, has developed a how-to guide for practitioners to recognise and avoid water-triggered conflict in water development planning (Demeke, 2008), and an Integrated Water Resource Management (IWRM) strategy has been developed (Pankhurst, 2009).

As recommended by the strategy, CARE and programme partners have established and are supporting certain key structures at *woreda* level and below, to facilitate participatory and context-appropriate planning and monitoring and to enable exchange of learning. A *woreda* development coordination committee includes community representatives (including representatives of customary institutions and women), representatives from local government sector offices and NGOs working locally. This has actively participated in and facilitated participatory monitoring sessions to review implementation during the pilot phase of the GWI and facilitated the identification and prioritisation of interventions and target groups for the longer-term portion of the GWI initiative. This latter role has also been fulfilled by the community-based participatory monitoring group, established to ensure representative participation of all social groups within a community in planning and monitoring, comprising local leaders, leaders of customary pastoral institutions, elders and women. The *woreda* learning alliance includes NGOs, community groups and local government. This has held three fora to review the experiences and best practice of stakeholders. Through these, partners have harmonised programme

8. NGO partners in Phase I included SC-US, Save the Children UK, the International Rescue Committee (IRC), Agricultural Cooperative Development International/Volunteers in Overseas Cooperative Assistance, the Global Livestock Collaborative Research Support Programme under the Pastoral Risk Management project, Tufts University, CARE International, the US Forest Service and Action for Development.

9. Community contributions were not initially required by SC-US but were introduced following a review of the programme in Afar region (CARE Ethiopia, 2008).

10. ECHO partners include DanChurchAid , Save the Children UK, Action Contre La Faime, Vétérinaires Sans Frontières, FARM AFRICA, Cooperazione Italiana, Caritas/Hararghe Catholic Secretaria, Cordaid and Oxfam GB.

11. The GWI is also active in the Rift Valley, but this is not a pastoral area and therefore is outside the scope of this report. The GWI consortium in Ethiopia comprises CARE International, Oxfam US and Catholic Relief Services along with local Ethiopian NGOs.

implementation approaches and identified gaps to be addressed, including the need for wider coordination among stakeholders in the programme area.

The strategy also recommends that non-controversial interventions be prioritised, such as water point rehabilitation, rather than new water points such as permanent or deep wells and large capacity water points, which can affect mobility. As a result, the programme focuses mainly on upgrading or rehabilitating existing permanent and temporary water supply sources, with the aim of improving water quality and access and reducing the time and labour required to collect water from source. The CARE team aims to do this based on the decision of customary water resource management groups. The pilot and long-term programme includes

- Rehabilitation/upgrading of five ponds, four malfunctioning motorised water supply sources and three traditional wells (increasing water availability, efficiency, water point protection and ease of access);
- Expansion of two already established groundwater supply systems to facilitate access by additional users;
- New developments (deep wells and/or surface water harvesting systems) in areas where there is no permanent water sources within a short distance, including two hand-dug shallow water wells and one rock catchment for rainwater harvesting; one new deep well is planned, informed by in-depth technical and socioeconomic considerations to identify and mitigate impacts on mobility and livelihoods; and
- Supplementary water supply technologies such as ten rainwater harvesting systems constructed across five schools.

In keeping with the strategy's recommendation to analyse equity of access to water, with particular consideration of women's concerns and needs, CARE has developed a seasonal calendar through a participatory process which identifies basic information on trade, division of labour and access to resources by different gender groups disaggregated by age and sex.

CARE has also supported the establishment of community-based groups to manage water supply and sanitation facilities, once they are developed. These have a special focus on building on existing customary knowledge and finding avenues of merging modern and traditional methods in ways which empower communities, avoid altering traditional well management systems and ensure the enhanced involvement of women. Management groups received training on improved water and sanitation practices and on operation, management and maintenance of the systems developed.

Innovative approaches by local NGOs: A decade ago, Pastoralist Concern Association Ethiopia (PCAE) introduced the concept of LDCs in Somali region. These are based on traditional institutional structures and are chaired by local elders, but also bring in local government for the purpose of dialogue and consensus-building. Clan or sub-clan heads sit on the committee to ensure representation from different allegiances and interests. Once the LDC is formed, a mapping exercise takes place which identifies areas with water potential and sets criteria for water point site selection. However, according to PCAE, the approach is not without challenges, for example where community decisions are at odds with the wishes of local administrations (Abdida'ad Ibrahim,[12] personal communication).

The German Agency for International Cooperation (GIZ) and SOS Sahel in Ethiopia have pioneered mapping approaches to better understand the location and relation of physical resources (including water, pasture and other land), settlements and infrastructure. Lay Volunteers International Association has developed a GIS-based atlas for parts of Borana in Oromia region, which identifies existing water resources, water points and pasture. FAO has also produced maps on behalf of the ECHO RDD consortium, which identify different land uses, surface and groundwater resources, different types of water points, towns, roads and other features. The IRC conducts comprehensive surveys of all water developments (and functionality) in its areas of work, such as in Mieso, Daro Lebu and Boke *woredas* in Oromia region. Such work appears to be influencing government, as indicated by the Oromia regional government's promotion of land use maps to guide development decision-making for the region. Regional government in Somali region has also recently put together a comprehensive assessment of all existing water infrastructure.

12. Executive Director, PCAE.

5 Lessons learnt and ways forward

5.1 Good practice: the practitioners' perspective

The over 50 interviews held in the course of this study led to the identification of a set of 'good practice' principles, on which there was broad agreement (Table 4).

Despite widespread agreement on these principles, it should be noted that very little has been done to systematically assess the impacts of water development on livelihoods in the rangelands. Furthermore, as the examples in Section 4 show, good practice is achieved only in a few instances. Much that occurs in the water development sector

Table 4 'Good practice' principles for water development in pastoral areas

Issue	Good practice principle
Understand the rangeland context for effective planning	Understand the broader natural resource base and grazing patterns before planning and constructing water points – making water development part and parcel of natural resource management and recognising that water availability and use affect the way other natural resources are used and managed Understand local contexts and dynamics, including social, political and cultural aspects in a given location Identify existing water points and explore options for rehabilitation to improve what is already there
Rehabilitate and develop water points with sensitivity to rangeland dynamics and pastoralists' needs	In rangelands, select technologies that do not encourage settlement and adequately space points to alleviate pressure on any single water point Couple water development with other pastoral development interventions (e.g. access to markets, veterinary health, rangeland rehabilitation) Promote meaningful engagement with water users in the planning and implementation phase of any interventions and promote the use of participatory/consultative methods, avoiding reliance on external agents
Secure sustainability through capacity-building, user contributions and use of customary institutions and practices	Strengthen the management, operation and maintenance capacity of water users and select technologies for which construction materials and spare parts are locally available Understand existing traditional water management systems and strengthen customary institutions, building on their know-how for water scheme management Promote user buy-in and commitment by requiring a labour/cash contribution to construct water points

(in pastoral areas as well as elsewhere) continues to follow business as usual based on a technocratic model, with little community participation and little emphasis on issues beyond putting in place physical infrastructure. The following section reviews the main underlying challenges, as well as expanding on the above principles.

5.2 Unpacking the challenges and reviewing successes

Fragmentation: an overarching obstacle to good practice

An overarching problem, not necessarily picked up on by the principles in Table 4, is fragmentation of responsibilities and a lack of overarching coordination, which impedes uptake of good practice. This leads to water interventions that are sectorally driven, either for domestic consumption, livestock use or agriculture. But pastoralists use water for multiple purposes, regardless of the intended purpose of the water point. This is beginning to be recognised by many practitioners, who now often construct troughs intended for livestock watering attached to water points intended for domestic use. Multiple use of water is also beginning to be recognised in federal plans and policies, such as the PASDEP and UAP. In Oromia region, steps are being taken to address the sectoral disconnect (see box). However, no common guidelines exist for the development of water for productive use in the pastoral context.

Meanwhile, a huge diversity of approaches, tools and technologies persists between the different actors. The sheer number of NGOs and development agencies working on water development in pastoral areas is shown in Figure 5. Between humanitarian and development practitioners, the diversity arguably extends to a fundamental difference in aims.

This lack of coordination is not lost on the government and the various development and humanitarian assistance actors in Ethiopia. Many coordination groups, fora and consortia have been established to promote communication and common approaches on a wide array of issues (Table 5). However, water issues are then fragmented between different coordination groups, which are either project-specific or related to particular themes such as emergency relief or agriculture/food security, and

Platform for integrated water development in Oromia region

The OPDC implements projects focused on pastoral livelihoods, often with water delivery components, whereas water and agriculture sectoral bureaus plan and implement water supply and irrigation projects in both pastoral and highland regions. In 2009, a structural amendment was made at regional level to allow for better coordination between the OPDC and sectoral bureaus. A new board was created at the behest of the regional president and cabinet, to be hosted by the OPDC and to ensure that the strategies and interventions of sectoral bureaus are better suited to the pastoral context. Sectoral bureau representatives must present their intended development plans for pastoral areas during board meetings, and the task of the OPDC is to ensure these consider the realities in the region's lowlands.
Source: Abebe Wolde,[13] personal communication.

are all led by different agencies. The sheer number of coordination groups and fora suggests there is much coordination but little harmonisation. Where water is a central topic (such as in coordination fora on access to safe drinking water), discussions concentrate on water for human use rather than water for livestock or agriculture.

Partnerships and dialogue between different stakeholders are beginning to emerge outside these formal fora, indicating cross-fertilisation of ideas and approaches between actors. The PSNP is actively promoting knowledge-sharing and partnerships with NGOs to address capacity shortages within government. Furthermore, at regional level, the OGCP invites NGOs and donors to participate in implementation, and regional implementers are learning from NGO experiences in Borana, such as the PLI's experience with controlled burning of the rangelands.

On the humanitarian front, dialogue between major humanitarian donors such as the Humanitarian Response Fund (HRF) under OCHA and OFDA under USAID is occurring for the first time, in acknowledgement of the need for better

13. OPDC Deputy Commissioner.

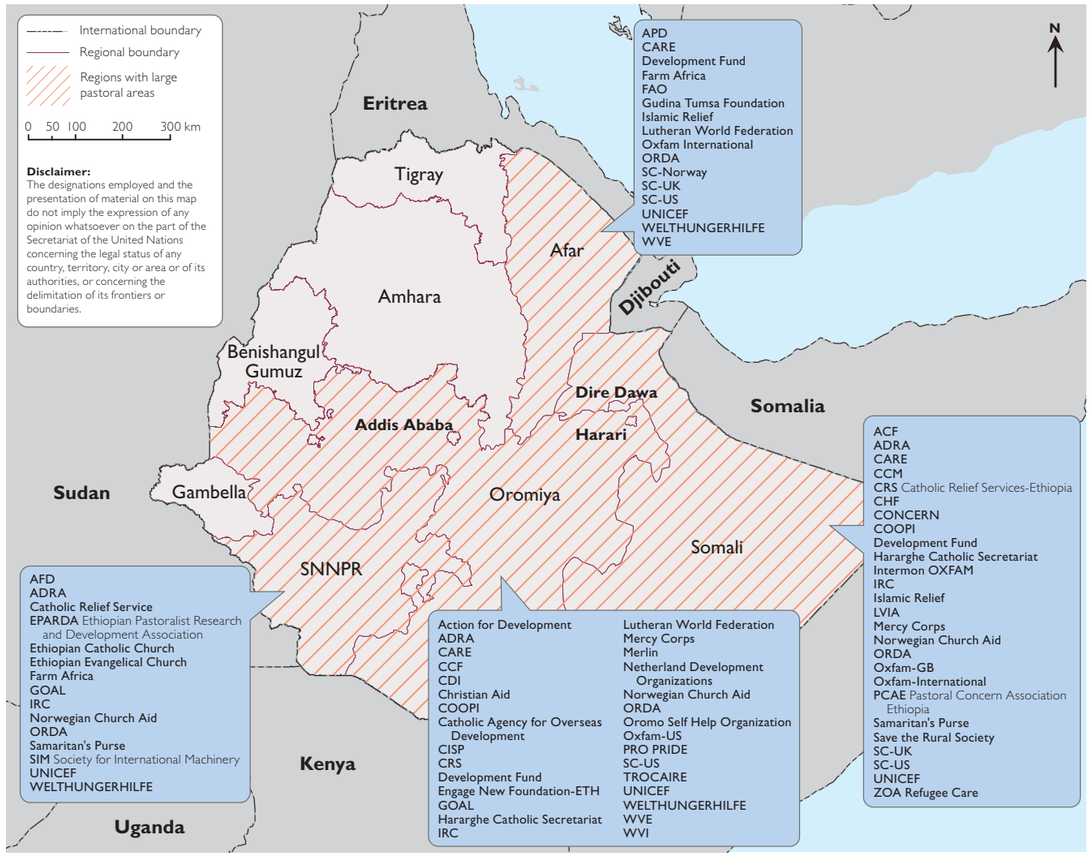

Figure 5 NGOs and development organisations working (in 2009) on water development in pastoral areas of Ethiopia*
Source: OCHA (2009).

coordination. There is also interest among humanitarian donors in improving the effectiveness of emergency interventions by tapping into the experience of development programmes – evidenced by the impact assessments produced under USAID's PLI to help gauge the effect of emergency relief on livelihoods and long-term development, identify weaknesses and improve practice.

There is a wide range of guidelines for water development, participatory mapping and conflict-sensitive planning in Ethiopia and the wider region (Annex 1). These could provide a foundation for developing a specific set of guidelines on water for productive use in pastoral regions. The existence of multiple coordination groups concerned with development and development-oriented emergency relief in pastoral areas serves as a good opportunity to mainstream developed guidelines into practice. Section 5.3 presents a preliminary set of these, which could inform the development of comprehensive guidelines.

* Institutions represented here work on water supply or irrigation or both in the capacity of relief or long term development. Data compiled from OCHA 3W as well as other sources.

Good practice unpacked

Understand the rangeland context for effective planning

The first set of 'good practice' principles (Table 4) relate to understanding context. The irony of developing water to satisfy demand is that, as much as it can alleviate immediate pressures in the short term, it can potentially bring with it lasting and serious negative impacts, when local needs, land use patterns and ecological functions are not sufficiently

Table 5 Selected coordination efforts relevant to water and pastoral development in

Focus	Fora
Emergency relief	Overall coordination of emergency interventions led by OCHA Coordination forum for all PLI projects (led by Tufts University)* Coordination forum for all ECHO RDPP projects (led by FAO)* *These have joined, and the joint coordination group is now led by regional agricultural bureaus.
Development	Coordination group for the Agricultural Growth Programme under the Rural Economic Development and Food Security subgroup of the Donor Assistance Group, led by the World Bank. A livestock/pastoral working subgroup has been formed by MoARD, USAID, FAO, Tufts University and the EC to promote livestock production as a vehicle for agricultural growth The Livestock Policy Forum Coordination group for the PCDP, led by the World Bank Coordination group for the PSNP, led by the World Bank with a taskforce for pastoral areas
Natural resource management	Initially supported under the ELSE/ELMT programme, the Natural Resource Management Technical Working Group, currently housed in SC-US, is made up of members from NGOs, government (federal, regional and local), donors and development agencies. It provides a forum for information and experience exchange, including, potentially, on water. Currently, sub-groups are being established at regional and/or zonal levels
Regions/zones	Multiple theme-based coordination groups, led by regional or zonal government.

Source: Gijs Van't Klooster[14] and Fiona Flintan[15] (personal communication, 2009).

considered. It can potentially undermine rather than promote development and sustainable livelihoods.

Water in pastoral regions is part of the broader natural resource base, and decisions related to water among pastoralists are *de facto* decisions related to pasture. Pastoralism as a livelihood is a highly evolved economic, social, cultural and political response to a landscape where natural resources are variable in space and time. Insufficient attention to how pastoralists use and manage natural resources within this broader livelihood context, and lack of a coherent and streamlined approach to water development, often results in water interventions which contribute to the disruption of elaborate and highly developed natural resource management systems, unsustainable land use and heightened potential for conflict.

Water development is still largely worked on as a standalone issue divorced from broader natural resource management and broader development. Some actors have begun to address this disconnect. The government's PSNP aims to understand customary natural resource use and the type and extent of different natural resources in specific areas, including degraded landscapes, as well as existing customary resource management systems. It does so through the use of participatory natural resource mapping, which allows practitioners to get a feel for local needs and concerns. The PLI uses a similar approach, and the OGCP is working to increase understanding of existing natural resources and land

14. FAO.
15. ELSE/ELMT and Natural Resource Management Technical Working Group.

uses through a comprehensive land use mapping and planning exercise.

A particularly contentious issue at the intersection of natural and social, economic and political issues is the tension between settled agriculture (particularly irrigation) and 'mobile livelihoods' such as pastoralism. To enable understanding on the topic of water use for irrigation in the Ethiopian context, a separate undertaking is recommended on how the expansion of irrigated agriculture will enhance or handicap local livelihoods. Detailed economic analysis is required to determine whether it is more profitable as well as socially beneficial, for the state and for local people, to develop land for irrigation, to maintain and improve rangelands for pastoral livestock production or to explore a combination of the two. Having said this, several authors argue that regardless of the profits to be had from farming, 'the economic losses and social costs of declining pastoral production often outweigh it' (Scott-Villiers, 2006)[16]. This together with documented experience which shows that lowlands require a different approach to water development than agricultural areas where rainfall is less spatially and temporally variable.

Pre-existing water developments are also an important part of the context. Ethiopia is still littered with non-functional and disused water points, and conflict, settlement and environmental degradation are still evident around them. This trend is not limited to SNNPR but is observed across regions, for example 60% of Somali Region's *birkado* are damaged and unused (Schimann and Philpott, 2007). In Oromia, a recent survey conducted by the IRC shows that, of the 14 boreholes in Daro Lebu *woreda* in 2005, 12 were functional and 2 non-functional. Of the additional 15 boreholes constructed in the same *woreda* since 2005, 7 are non-functional and 8 are functional (Figure 6).

Extremely ambitious water development targets for water supply, as outlined in the UAP, the PASDEP and the WSDP (Section 4.3), based in part on meeting Millennium Development Goal (MDG) targets, are likely to see continued heavy emphasis on infrastructure development at the expense of sustainability and appropriateness. The policy emphasis on outputs is shared by project reporting systems, which currently focus on reporting numbers of schemes built at the expense of measuring quality or effectiveness. For example, one report which states that '10 wells were improved' does not say anything about accessibility, availability, affordability, quality and acceptance – the five standard indicators of service provision (MoARD, 2008).

In this light, it is especially important to consider the potential for rehabilitating existing facilities, rather than developing yet more new ones without sufficient resourcing to ensure their sustainability. The current lack of coherence in approach is recognised by all

16. The Reinforcement of Pastoral Civil Society in Africa project is underway to encourage fairer, more balanced treatment of pastoralism as an important contributor to development and the economy, targeting government partners and civil society up to 2011, and led by the Feinstein International Center (Tufts University) in partnership with the International Institute for Environment and Development (IIED).

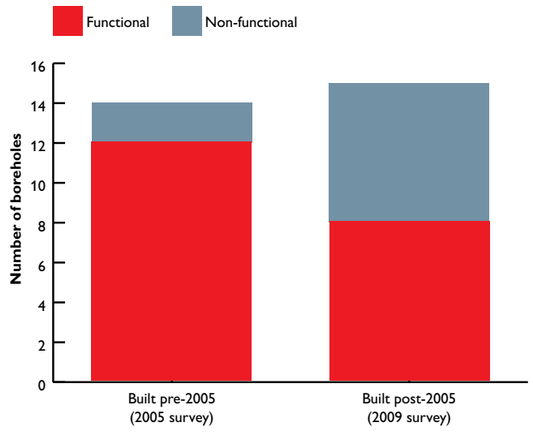

Figure 6 Functionality of boreholes in Daro Lebu *woreda*, Oromia region Source: in-house surveys conducted by IRC in 2005 and 2009

actors as an impediment to sustainable development in the rangelands. However, some donors, development organisations and government programmes (such as the PCDP) are beginning to rehabilitate existing water points as a cost-effective means of availing water, and also as a way to avoid disrupting mobility patterns and disagreement over new water points.

Rehabilitate and develop water points with sensitivity to rangeland dynamics and pastoralists' needs

With a proper understanding of context, it is then necessary to design and implement water development interventions so the needs of pastoralists (and other stakeholders) are met, without disturbing the complex environmental, social and economic dynamics of the rangelands (Table 4). A first fundamental principle is to ensure water users are engaged meaningfully from the early planning stages. The WSDP highlights that 'the most important policy and regulatory interventions in terms of their negative impacts on the environment were those impositions which increasingly and cumulatively eroded the rights of individuals and communities to use and manage their own resources' (MoWR, 2002). Grassroots participation is clearly enshrined in Ethiopia's Constitution, and since 1991 an increasing emphasis on community participation has been observed in policies, strategies and programmes relating to water development in pastoral areas (and elsewhere). However, while there has been important progress, more can be done to ensure local contexts are understood and considered; land users are involved to guide and inform what is and is not appropriate; and existing customary land management strategies are built on. Persistent challenges are as follows:

- Inadequate definition of 'community', insufficient regard for local economic, social and political factors and inappropriate intervention scales (e.g. not commensurate with livelihood zones) jeopardise selection of community members representative of the different social, livelihood, wealth, age, religious and gender groups.
- Lack of clarity over what 'participation' entails (how and to what extent different interests are to be involved) means multiple approaches to increasing participation, with little dialogue to share experience on what does and does not work.
- Increased involvement of communities in management and maintenance has not been matched by increased involvement in planning, making it harder to secure buy-in and increasing the risk of disrupting social and ecological patterns.
- Limited capacity-building for communities and groups acting on their behalf (e.g. WUAs) undermines attempts to involve and transfer ownership. Indicators focus on physical interventions, with little understanding of how to measure capacities built.

By prioritising communities and individuals expressing their own concerns, ambitions and needs, water may emerge as only one development priority among several in the rangelands. Consultation for the PCDP found water and pasture development were top priorities for pastoralists; for agro-pastoralists (who more often have secure access to water), health posts and schools were more often cited as priorities (Assaye Legesse,[17] personal communication). The OGCP recognises that an integrated development approach which addresses other crucial needs such as access to markets and health facilities, among other services, is indispensable if livelihoods are to be protected and improved. A second priority for interventions sensitive to rangeland dynamics is therefore to consider the development needs of different stakeholders, potentially coupling water development with other pastoral development interventions (e.g. access to markets, veterinary health, rangeland rehabilitation).

The third priority in this regard is a thorough understanding of context to select and place water points so they do not encourage settlement or overuse, either of water or pasture. Very little has been done to date to systematically track impacts of water development on livelihoods, but trial and error over many years has created more awareness on the negative impacts of poorly planned water interventions, especially in terms of large-capacity or permanent water points. In Ethiopia, researchers have identified negative consequences related to size and capacity of water points since the 1980s, most notably since the RDP of the late 1970s. These include settlement around water points; appearance of competing land uses, such as agriculture in rangeland areas; other forms of privatisation, such as fencing portions of the rangelands for private use (seen by some as an attempt to buffer the rangelands against conversion for crop production); overconcentration of livestock around water points; range degradation; excessive and uncontrolled use of water infrastructure leading to breakage and water shortages; deforestation for charcoal production; reduction of available palatable perennial grass; over-abstraction and lowering of the water table; salinisation and salt-water intrusion; and conflict over the control of water points (Gomes, 2006).

There is increasing recognition of these implications by government, donors, NGOs and pastoral communities themselves. The GWI's recently developed IWRM strategy for Borana zone notes that permanent water points constructed in the rangelands are likely to affect mobility (Pankhurst, 2009), originally pointing to deep wells and permanent ponds but now also including *birkado*. Originally intended as temporary water catchments, *birkado* now often function as year-round water sources thanks to continuous refilling via water trucking, especially in Somali region (Beruk Yemane[18] and Ced Hesse,[19] personal communications). Even though much *birkado* construction was (and is) instigated by pastoralists, pastoralists themselves have become more aware of their negative impacts and

17. Senior Agricultural Economist, World Bank, Ethiopia
18. Oxfam GB Pastoral Programme Coordinator.
19. IIED Principal Researcher, Climate Change Group.

also vocal about ways to mitigate them. Gomes (2006) notes that *xeer* (traditional agreements between elders of structurally distant groups on the ethnic Somali genealogical charter) have emerged in parts of Somali to limit the establishment of new water sources around existing settlements as well as in wet season grazing areas. MoFA's PCDP highlights that smaller temporary water catchments are more suitable in wet season grazing areas to avoid settlement and its associated problems. It also emphasises the rehabilitation of existing water points, where possible. MoWR's WSSP recognises the negative impacts associated with large capacity water points in the rangelands, recommending that points not exceed a size which waters a maximum of 4,500 cattle a day and be spaced about 20km apart. Nevertheless, water developments promoting the sedentarisation of pastoralists continue to be observed in Ethiopia, as we have seen.

The current strategic policy direction, including continued prioritisation of irrigation and the expansion of agriculture in the rangelands, is perhaps the most important driver. If government policy and strategy objectives remain as they are, land available for grazing is likely to be reduced (especially key dry season grazing areas), pastoral access to rivers to become further obstructed, exacerbating water problems, and mobility to be further undermined. Finding common ground between national, regional, sub-regional and local priorities will be essential to ensure national economic growth can occur unimpeded but without compromising sustainable development that responds to local needs.

Secure sustainability through capacity-building, user contributions and use of customary institutions and practices

Even the most carefully planned, designed and implemented interventions will fail if adequate attention is not given to issues of sustainability. Table 4's third set of principles are not afterthoughts that can be left until water developments have taken place. Rather, they need to be considered from the earliest stages. Unless capacity to operate, manage and maintain water points locally is prioritised actively in project planning, the proliferation of unsustainable and inappropriate water points is likely to continue. Development-oriented projects have begun to put more effort into the software aspect of interventions, including building local capacity to operate and manage schemes. However, these are dwarfed by much more widespread short-term emergency relief projects. The short-term nature of the latter, where projects are typically up to six months in duration, puts pressure on implementing agencies to address water shortages and meet targets at the expense of appropriate planning and ensuring sustainability, which requires much more time. Proper planning, prior to any new physical interventions, is itself likely to take six months (Warner and Abate, 2005). A nascent trend is the introduction of a longer-term livelihoods approach to humanitarian interventions as seen under USAID's PLI and ECHO's RDPP (Section 4.5), which focus on rehabilitation and simple water infrastructure in areas outside settlements. Such projects increasingly promote rehabilitating existing water infrastructure (especially in more complex schemes).

Developing effective structures for user management, operation and maintenance can be facilitated by increasing links to existing, customary institutions. Similarly, utilising traditional water technologies that are familiar to users could build on an existing repository of know-how, as well as increasing the likelihood that construction materials and spare parts (if applicable) will be available. The PSNP explicitly recognises traditional institutions, including the *Gaada* system in Oromia, the *Guurti* and clan elders in Somali and the *Medaa*[20] in Afar, and aims to ensure representatives are consulted in the identification of beneficiaries and their knowledge on rangeland and water issues is used to ensure public works are compatible with extensive livestock production. It should be noted, however, that customary institutions may not represent all livelihood groups in a given area (Muir, 2007), and often do not represent the needs and views of women. Some form of hybrid arrangement may be more appropriate, combining traditional structures with others such as water user and pastoral associations. A further issue which requires further exploration is the fact that customary institutions have evolved with time – whereas development practitioners often view these institutions as fossilised entities retaining a set of characteristics described in historical texts.

A final principle widely identified as good practice is to seek contributions of labour and/or cash for water developments. The government's PCDP requires a community contribution of 15%, 5% of which is expected in cash. Cash contributions are usually harder to secure than labour. Here again, traditional institutions can help – the PLI Phase I found that contributions were easier to justify and obtain where such institutions had a strong role in organising the work. However, consideration should also be given to the cost recovery policy of other programmes in the area. For example, there remains a fundamental difference between the government's PCDP and PSNP (which overlap in nine *woredas*). The PSNP pays cash for public works whereas the PCDP entails a mandatory 5% cash contribution from communities for all infrastructure developments. Where cash for work is the common practice, it is difficult to secure monetary contributions (dialogue has begun between the PSNP and PCDP to iron out differences in approach – Belayhun Hailu,[21] personal communication). Established programmes often set the bar for the maximum communities will contribute (Behnke et al., 2008). Diversity in community contribution requirements is especially large among NGOs, which may perceive this issue as a way to establish a niche in the face of competition for donor funds and community attention.

5.3 Recommendations

Picking up on the principles outlined above, this section presents a preliminary set of guidelines for water development in pastoral areas, based primarily on three existing sets of guidelines, used as an example to kick-start dialogue (MoARD, 2008; Thorne, 2009; Warner and Abate, 2005). This is not meant to be prescriptive, but rather is intended to set the stage for potential further discussion towards an agreed set of guidelines. Discussion among key stakeholders in the water development sector in Ethiopia can be envisioned to result in a full set of common guidelines for water development in the

20. Customary institution in Afar region.
21. Senior Officer, Knowledge Management and Participatory Learning Unit of the PCDP Program

pastoral context, flexible enough to allow for context-specific planning. Use of these guidelines should be streamlined through existing coordination fora on development and emergency interventions in pastoral regions.

Planning

Local needs and opportunities need to be understood during the planning stage of any water intervention, with paid attention to context and existing water systems (and their management structures). The planning stage is critical and often requires considerable time and effort (six to twelve months for long-term interventions[22]) to ensure an intervention is appropriate, will satisfy demand and will be sustainable in the long term. Key components are as follows:

- **Stakeholder mapping:** A comprehensive stakeholder analysis at local level can help in understanding who the different potential resource users are (the 'community' who will benefit) and also who may stand to gain or lose from water interventions (e.g. upstream and downstream users along rivers). As part of this process, exploration of current access patterns to water is recommended, to identify local customary institutions and representatives and understand existing water management strategies and relationships between groups. Engaging with community leaders in an area is important to avoid conflict over water points. It is also important to identify local non-pastoral groups and those not represented by customary institutions (e.g. immigrants, Internally Displaced Persons, refugees).
- **Community involvement and participation:** Participatory methods of community engagement should be used to identify local concerns and needs, with room for dialogue and negotiation between planners and communities on the most suitable type/placement/size of water points. These approaches will also enhance buy-in and commitment at the local level. Planners should engage with local groups representative of the different resource users in the area, including customary institutions. Groups should also reflect the different wealth strata in the community and include women and vulnerable groups. Participatory natural resource mapping can be used to understand the extent and quality of existing pasture and water and different land use patterns. Once generated, maps provide a visual device around which planners and community representatives can discuss concerns and needs regarding water, within a

broader landscape/natural resource management context. A sound assessment of demand for water should also be undertaken, based on human and livestock population estimates (if available) as well as local authority records, and should accommodate projected change in demand.
- **Project type:** Three basic forms of intervention can be considered:
  - Removal of existing inappropriate water sources. Water points may be inappropriate for many reasons, including being beyond the financial or technical capacity of local people to use or repair or being placed in contentious locations;
  - Rehabilitation of non-functional or poorly performing points. Increased attention to the potential for rehabilitation is especially important in the case of emergency interventions, where the project lifecycle is limited. In all cases, careful attention should be given to the potential for conflict between existing users and potential new users attracted to an increased water supply;
  - Development of new water points. This option should be reserved for instances where the above options have been exhausted and the need for and potential impacts of introducing new water points has been carefully evaluated, with remedial measures identified to tackle negative effects. Planners should explain the available technological options and help communities, through a process of dialogue and knowledge-sharing, to select the most suitable technology to satisfy local needs. This requires attention to cost, hydrological and geological context, expressed needs and capacities of the community, familiarity and simplicity of the technology and local availability of construction materials, spare parts and technical support. The placement and capacity of water points also should be discussed thoroughly with stakeholders.

In addition, consideration should be given to the potential for the project to address other development needs such as human and livestock health and access to markets, either directly (funds permitting) or in partnership with other programmes.

Implementation

Implementation can be regarded as effectively being a continuation of the planning process, building on participation and dialogue already established.

- **Management arrangements:** It is essential to establish clear and equitable management systems for water points at the earliest stage of implementation (potentially at the planning stage, building on prospective users' participation in planning processes).
  - Communities should be assisted to establish water management committees (or variations thereof), representative of all groups with a stake in the development. Committees should help define and manage water interventions. To avoid misuse of the water point, it is imperative that water management committees be seen by the wider community as a credible entity which represents all user groups, including pastoralists and non-pastoralists (e.g. immigrants, Internally Displaced Persons, refugees) as well as vulnerable groups and women. Committees should also be expected to report on progress to the wider community and to local government.
  - Such committees should build on and strengthen existing customary resource management systems rather than importing new systems external to the pastoral context. Customary systems and institutions have often developed as tried and tested responses to the context and culture, and can therefore help to diffuse or prevent conflict over water. At the same time, customary systems and institutions are often poorly understood, and are constantly evolving. Moreover, a combination of formal management committees and customary institutions is recommended, as the latter on its own may not reflect the full constituency in an area and may not be representative of non-pastoral groups (Muir, 2007).
- **Cost recovery:** To enhance community commitment to maintaining the water point and ensure it is sustainable beyond the lifetime of the project, a community contribution of cash and/or labour towards construction or rehabilitation of water points is recommended.
- **Training:** Local community members (e.g. water management committee members and local artisans) should be trained in construction, management, operation and maintenance to embed capacity at the local level.

Sustainability

To ensure sustainability of schemes once built, the following is recommended:

- Continuing to assist communities to operate schemes for some time after project completion if needed;
- Helping communities to prepare a plan outlining routine maintenance and repairs which should be accepted and followed;
- Encouraging water management committees to report to the community and possibly to local government technical bureaus;
- Promoting and enhancing linkages between communities, local government and the private sector so potential challenges related to water

22. This may be shorter if there is an existing relationship between the implementing organization and the community.

point operation and maintenance can be overcome. Pastoral associations may provide a vehicle for such communication. Preferably, agreements should be facilitated with technical bureaus and the private sector to assist should major interventions (maintenance, etc.) be needed in the future;

- Conducting external evaluations of projects to track progress and monitor impacts, for example on livelihoods; and
- Making better use of existing research to inform water development planning and implementation and promote knowledge-sharing between practitioners and projects, for example by establishing learning and practice alliances.

In the long term, the aim should be to create an enabling environment where local groups representative of water users in a given area have the capacity and authority to construct, operate, manage and maintain water points, as appropriate, effectively making them implementers rather than merely recipients of development.

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Annex 1:
National strategies and laws influencing development in pastoral areas

Policy/strategy	Relevance to pastoral development
Poverty Reduction Strategy Paper (PRSP) (2001)	Emphasises irrigation development in the lowlands and supports the long-term vision of sedentary livelihoods for pastoralists Mentions mobile service provision (e.g. health and education) to accommodate mobile pastoralism in the interim Acknowledges the importance of integrating drinking water supply with pasture, encouraging promotion and construction of ponds and other water harvesting technologies and construction of water points close to range resources Recognises that pastoralists possess important traditional knowledge that should be considered and brought on board to make national policy more relevant for pastoral regions
Plan for Accelerated and Sustained Development to End Poverty (PASDEP) (2006)	Guides all development activities from 2006 to 2010 Echoes the PRSP in terms of emphasis on irrigation development in the lowlands as well as the long-term vision of sedentary livelihoods for pastoralists Deeper discussion of pastoralism-related issues as compared with the PRSP, e.g. recognises that mobility and livestock are central to the pastoral system and that restricted mobility disrupts livelihoods Recognises that formal institutions have limited understanding of pastoral communal range management strategies, which is a challenge for pastoral livelihoods
Rural Development Policies, Strategies and Instruments (RDPS) (2001)	Since agricultural development is earmarked as a central economic growth strategy, guides development in rural areas to achieve rapid growth in the agricultural sector, principally through crop cultivation In pastoral areas, short- and medium-term strategies focus on availing water for livestock production, with little mention of how this should be approached. In the long term, pastoralism is seen as an unsustainable livelihood and sedentarisation is encouraged with irrigated agriculture as a core livelihood activity Recognises the value of strengthening customary land management practices as well as the value of local pastoral knowledge. Participation is mentioned explicitly

Policy/strategy	Relevance to pastoral development
Poverty Reduction Strategy Paper (PRSP) (2001)	Emphasises irrigation development in the lowlands and supports the long-term vision of sedentary livelihoods for pastoralists Mentions mobile service provision (e.g. health and education) to accommodate mobile pastoralism in the interim Acknowledges the importance of integrating drinking water supply with pasture, encouraging promotion and construction of ponds and other water harvesting technologies and construction of water points close to range resources Recognises that pastoralists possess important traditional knowledge that should be considered and brought on board to make national policy more relevant for pastoral regions
Ethiopian Water Resources Management Policy (1999)	Developed to address the lack of a comprehensive water resource management strategy and ambiguous or unattainable targets and plans Recognises livestock water as an integral part of water sector and emphasises its importance for lowland areas Promotes decentralised water management, emphasising clear roles, strong vertical links and capacity-building. Encourages meaningful participation through structures including WUAs In terms of irrigation, promotes medium- to large-scale irrigation for food security at national level and small-to medium-scale projects for household-level food security; calls for co-existence of irrigation projects with indigenous peoples
Federal Rural Land Law (2005)	Supports the private holding of land, be it for individual farmers to claim agricultural land or for pastoralists to claim a portion of the rangelands Does not recognise the rationale of traditional communal landholding
Draft Policy Statement for the Sustainable Development of Pastoral and Agro-pastoral Areas of Ethiopia (2008)	Calls for recognition of needs of pastoralists and agro-pastoralists in all national policy and planning frameworks, including in relation to climate change and local governance Envisions a long-term 'gradual and voluntary transition towards permanent settlement especially along the perennial river banks', supported by water harvesting and multi-purpose dams for irrigation

Sources: MoFED (2001; 2006); MoI (2001); MoWR (1999).

Annex 2:
Major government water and pastoral development programmes

Water development programmes with implications for pastoral development

The UAP: The flagship national programme for water supply development, the UAP was launched in 2005, with the objective of providing access to safe water to 98% of the rural population by 2012. The UAP envisages a major focus on hardware construction, with 110,460 new rural water supply schemes planned between 2009 and 2012 – implementation guidelines are only currently being drafted. Pastoral areas are not explicitly recognised, nor are the different needs of mobile and sedentary communities. User participation is envisaged, but selection criteria for user committees are based on criteria imported from the highlands, leaving potential for conflict with lowland customary institutions and social structures. In the past five years, Multiple Use Water Services (MUS) principles have been promoted to meet water demand for both domestic and productive uses (Faal et al., 2009), for example by constructing livestock troughs around water points designed for human supply. Multiple uses are currently mentioned the UAP (as well as the PASDEP), though only briefly.

The WSDP: The ambitious UAP targets have been incorporated into MoWR's WSDP, a 15-year programme commencing in 2002. Although 'soft' components such as participation and local capacity-building are mentioned in the WSDP, there is a risk that these will be trumped by pressure to deliver on the 'hard' outputs of new water supply schemes. Pastoralists are mentioned explicitly at points within the WSDP, and provision of water for livestock in nomadic areas is listed as one of six priorities. However, there is little clarity on how exactly their needs are to be met. Participation through the involvement of community organisations is encouraged, with special attention to the potential interaction of community institutions and local government.

Within the WSDP, sub-programmes focus respectively on water supply and sanitation and irrigation. The WSSDP promotes stakeholder participation throughout water point development and subsequent operation and maintenance. It focuses on hardware, relying principally on groundwater (deep wells, hand-dug wells and spring development) for Afar, Oromia, SNNPR and Somali. Use of domestic water supply for livestock is discouraged unless there are no surface sources available nearby, in which case cattle troughs may be constructed at domestic water sources. Additional interventions include river-based water schemes for Somali, and birkado and ponds for livestock in SNNPR. The IDP also saw an increased target, in line with the PASDEP, for development of an additional 430,000 ha of irrigated land by 2010, to be achieved through a mix of federal large-scale schemes (roughly half the total) and regional small- to medium-scale schemes. A total of 83% of investment for the latter category is targeted at four regions, including Oromia and SNNPR with their significant pastoral populations (MoWR, 2002).

The WSSP: A final important MoWR-led intervention is the WSSP, which aims to construct 5,500 community-managed schemes in rural areas, including Afar, Somali, Oromia and SNNPR (MoWR, 2009). In 2006, two years into the programme, it was realised that special implementation guidelines were required for pastoral areas (Giovannetti, 2006). These guidelines recognise different settlements according to levels of pastoralist presence, the importance of mobility and risks related to sedentarisation, over-sized schemes and importing solutions from the highlands. While these are important considerations, the guidelines nonetheless appear to follow the conventional wisdom that selection and placement of water points should be guided by technical and cost considerations, rather than by potential impact on interactions between local people, livestock and landscape.

Pastoral development projects with implications for water development

The PCDP: In terms of specific pastoral development programmes, the PCDP is a $60 million, 15-year, 3-phase project, launched in 2001 by MoFA, which was developed in response to failed top-down interventions in pastoral areas. The PCDP is jointly funded by the Ethiopian government, the World Bank and the International Fund for Agricultural Development (IFAD), and emphasises the World Bank's Community-driven Development approach (CDD),[23] along with the use of tools such as Participatory Rural Appraisal (PRA)[24] (Assaye Legesse,[25] personal communication) to promote participation. Local communities are meant to be responsible for project design, implementation and management, and receive technical training for these roles. MSTs are to work closely with communities to assess and address capacity gaps and to act as facilitators between the community and sectoral experts at regional/woreda level (Assaye Legesse, personal communication). However, the project completion report for Phase I (implemented 2003–2008) notes that MSTs were overstretched, and the community-driven approach was not able to meet high expectations (World Bank, 2009a).

Community consultation has nonetheless seen water emerge as a priority issue, especially for pastoralists, for whom it ranks equal first with pasture. However, while interventions are demand-driven, water point technologies are selected by the woreda water bureau, depending on water resources and funds available and the agro-ecological context. Social and environmental impacts are also meant to be considered, but this occurs only rarely (World Bank, 2009a). Phase II is currently underway (2008-2013) and aims to increase the emphasis on understanding social dynamics, measuring social and livelihoods impacts and financing small schemes such as hand-dug wells, birkado and hafir dams, to avoid the negative consequences of larger schemes such as encouraging settlement and overgrazing (World Bank, 2008).

The PSNP-PAP: MoARD, meanwhile, has more recently turned its attention to pastoral livelihoods under its PNSP, which was originally launched in 2005 as part of the Food Security Programme. The overall emphasis is on increasing food security to reduce reliance on food aid (World Bank, 2009b). The PAP was integrated into the PSNP in 2007, working in areas including nine woredas in Somali, six in Afar, three in Oromia and three in SNNPR, with the aim of developing guidelines for scaled-up implementation. The PSNP-PAP includes a number of important innovations with regard to working in pastoral areas, including (MoARD, 2007a)

- Timing projects according to seasonality of lowland livelihoods;
- Public works to be developed in the context of livelihood and landscape zones rather than political demarcations such as kebeles, and with attention to settlement and mobility patterns;
- Involvement of traditional institutions, such as the Gada system in Oromia, to increase understanding of, for example, the potential impacts of public works on pastoral livelihoods; and
- The use of natural resource and socioeconomic mapping and analysis.

A progress report in 2008 indicates that, despite these bold innovations, familiar problems have arisen around recruiting and retaining competent staff, insufficient engagement with target communities and weak coordination, reporting and information-sharing. Such lessons were not necessarily being heeded as political pressure mounted to roll out the PSNP in pastoral areas.

23. The World Bank broadly defines CDD as an approach which gives community groups and local government control over planning and investment decisions and operates on 'the principles of local empowerment, participatory governance, demand responsiveness, administrative autonomy, greater downward accountability, and enhanced local capacity'. It also states that 'given clear rules of the game, access to information, and appropriate capacity and financial support, poor men and women can effectively organize in order to identify community priorities and address local problems' by working together with local government and other institutions (Dongier et al., 2002).

24. Distinguished by 'the use of local graphic representations created by the community that legitimize local knowledge and promote empowerment' (http://www.iisd.org/casl/caslguide/pra.htm).

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Annex 3:
Water development guidelines

Common, agreed-on guidelines for water development in pastoral areas do not exist in Ethiopia. This frustrates moves towards streamlining practice in the water development arena. However, there are a number of existing guidelines on water, participatory mapping and conflict-sensitive planning. These may prove useful as a foundation on which to build a broadly applicable set of guidelines for water development for productive use, which are versatile enough to allow context-specific planning in pastoral rangelands. These include the following:

- Implementation guidelines for water supply, sanitation and hygiene projects in pastoral areas (Giovannetti, 2006). Developed by MoWR, these guidelines are meant to guide the PCDP's and WSSP's water interventions for domestic use, but provisions are also made for livestock watering;
- National guidelines for livestock relief interventions in pastoralist areas of Ethiopia (MoARD, 2008). Developed by MoARD, this set of guidelines includes a subsection on emergency provision of water to livestock as well as guidelines on participatory natural resource mapping;
- The Livestock Emergency Guidelines and Standards. This international set of guidelines, developed in 2009, includes a subsection on the minimum standards for the provision of water (Thorne, 2009);
- The international humanitarian Sphere guidelines (Sphere Humanitarian Charter and Minimum Standards in Disaster Response), which include a section on water, sanitation and hygiene;[26]
- Guidelines for the development of small-scale rural water supply and sanitation projects in East Africa. This set of guidelines was funded by USAID and produced by Catholic Relief Services (Warner and Abate, 2005);
- Introductory volume and guidelines on participatory rangeland management, lead by SC-US and the ELSE/ELMT Technical Working Group. These documents present a process of participatory rangeland management built on the success of participatory forest management, so providing a framework for community-led land use planning and resource management in pastoral areas (Flintan and Cullis, 2010).
- Guidelines on participatory resource mapping, developed independently by the government's PSNP and also by USAID's PLI. These can be used to help plan water development interventions in a manner which is highly context-specific. A published version of these guidelines is being produced by SC-US as part of a series of guidelines for practitioners focusing on aspects of participatory rangeland management;
- Guidelines for conflict-sensitive programming, developed by CARE Ethiopia for pastoral areas in Borana zone, Oromia region, under the GWI programme (Demeke, 2008). This set of guidelines has relevance in multiple pastoral settings and can help to inform water development planning.

26. http://www.sphereproject.org/.

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