Rangeland fragmentation in traditional grazing areas and its impact on drought resilience of pastoral communities: Lessons from Borana, Oromia and Harshin, Somali Regional States, Ethiopia

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EXECUTIVE SUMMARY

In early 2011 REGLAP (Regional Learning and Advocacy Programme) supported a comprehensive literature review of the impacts of land fragmentation in the rangelands, in Ethiopia, Kenya and Uganda. One of the recommendations of the report was that more in-depth case studies needed to be carried out. In response, Save the Children/UK commissioned case study research in Somali and Oromia regions of Ethiopia. This report summarises the findings of this research.

A key tool used in the research was community resource mapping. In the case of Borana (Oromia), this was done across the Golboo traditional grazing zone\(^2\) or dheeda. In Somali region this was done across Harshin District following administrative boundaries but incorporating movement that might be required in and out of the District. The mapping was used as a visual starting point for an in-depth discussion over several days on how resource availability and access has changed; how land use has changed as a result; and the causes, processes and impacts of these changes.

In Borana, herd mobility has been and for the majority of pastoralists continues to be, the main strategy used to manage risk and utilise the range resources communally and sustainably. Customary institutions still play a critical role in the management or resources and controlling access to them. However, both the pastoral system and pastoral societies are coming under increasing pressure due to rangeland fragmentation.

In Borana, the primary causes and processes of rangeland fragmentation are:

i) the breakdown and disenfranchisement of the pastoral systems due to state marginalisation and the peripheral status of many pastoral areas;

ii) conflict including between the Boran and the Gabra, though the relationship has significantly improved in the last few years;

iii) water schemes (including water points) that were developed without thoughtful planning, consultation/participation of local communities and consideration of long term impacts on the health and productivity of the rangeland and pastoral societies as a whole;

iv) large scale bush encroachment and threats of invasion of non-local plants;

v) resource privatisation including expansion of private enclosures, water points and cisterns, ‘farmlands’, ranches and sedentarisation;

vi) unsystematic settlement patterns; and

vii) population pressure.

Impacts include (i) rangeland degradation; (ii) wealth differentiation and poverty for the majority; (iii) breakdown (and in some cases a revitalisation) of customary institutions and systems; (iv) conflict due to unclear access to resources and competition; and (v) risk of rangeland and livelihood collapse and increased vulnerabilities as ability to overcome drought has reduced and more risky land use practices such as crop production have been taken up.

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\(^2\) Golboo dheeda covers parts of Miyo, Dirre and Dillo districts in Borana see Annex 2.
The southern rangelands of Ethiopia are likely to become even more fragmented in the future as the Oromia Water Works Construction Enterprise (OWWCE) is working on the development of a number of irrigation projects in the region, which will have both direct and indirect impacts on pastoral areas. Another project to pipe water to permanent and semi-permanent settlements (along a network of 2000 km) is also likely to encourage further agriculture resulting in loss of grazing land and restrictions on mobility. The impact of this is already being seen in Golbbo dheeda.

Although the Oromia Regional Government is supporting pastoral development in general through service provision and infrastructure development, emerging issues of resource insecurity and rangeland fragmentation are posing profound challenges to sustainable prospects of pastoral production in the region.

In Harshin, Somali region, the rangeland and the pastoral society have seen significant change including almost total resource privatisation of grazing areas and water. In the majority of areas there has been a carving up of the rangeland into individual household plots for grazing and some crop production. This has completely restricted the movement of livestock along traditional migration routes and across grazing areas. It has also prevented visiting pastoralists from entering the area, when in the past they would have used Harshin as an important emergency grazing area (e.g. in times of drought).

The primary causes of this rangeland fragmentation are:
   i) the introduction of birkas without due consideration of their long-term impact on the whole rangeland and pastoral systems, and which have encouraged settlement and the privatisation of water;
   ii) agricultural development;
   iii) rangeland degradation due to increase in enclosures and agriculture meaning more pressures on neighbouring lands, reduction of mobility, and invasion of non-local species;
   iv) new opportunities for renting land to traders – Somali pastoralist society has effectively shifted from a livestock subsistence economy to a livestock export oriented market economy;
   v) a burgeoning market for charcoal;
   vi) a breakdown of customary institutions; and
   vii) development/aid interventions.

Impacts include: (i) ‘improved’ livestock production on a local scale; (ii) reduced livestock holdings and increased wealth differentiation; (iii) diversification of livelihoods away from pastoralism: (iv) a marginalisation of women particularly during land

\[^3\] Though some community members say that livestock production is easier and more efficient now, there have been many costs of this ‘improvement’ including the drop-out of those community members who were not able to access land for enclosures and those that have not had sufficient assets at hand to take advantage of commercial and privatisation developments. In addition some would argue, including the authors, that the current livestock production system is only sustained because of large inputs from government and NGOs including water, and therefore the level of ‘improvement’ is highly debatable.
allocations; (v) the compromise/destruction of rich rangeland and pastoral systems; (vi) a breakdown of communal support systems and increased conflicts between land users; and (vii) ultimately an increased vulnerability to drought.

Communities state that they have not experienced a severe drought for over 12 years, and meteorological records show no significant changes in rainfall patterns. Despite this, water is tankered into the area on a regular basis by NGOs and development agencies at great expense. In addition, relief food is also distributed on a regular basis and local government suggests that 25% of the population benefits from the government’s safety-net programme. Communities that once had access to some of the richest grazing areas in the region, have become highly reliant on outside intervention and support for their development and food/water security.

**Recommendations made**

The following recommendations are made based on the results of the research and the lessons learnt by REGLAP development partners during their response and to interventions in recent droughts.

1. **Halting fragmentation of the rangelands**

   1a) The different causes, processes and impacts of land fragmentation in pastoral areas of Ethiopia need to be fully understood and addressed, including more detailed information related to pastoralists’ ability to overcome drought in areas affected by different trends of rangeland fragmentation. If the ability of local communities to adapt to potential climate change is to be optimised, an important step will be to halt current land fragmentation trends.

   1b) The planned leasing of large tracts of pastoral lands to commercial investors is set to continue. Pastoralists will face crises as a result unless the investments are planned and controlled in a manner that protects the access of pastoralists to the vital key resources that they depend upon for livestock production including adequate dry season grazing sites. This can include facilitating agreements for access between pastoralists and commercial investors, protecting migration routes, and/or developing and enforcing common property tenure systems that protect key resources and land for pastoralists.

   1c) Plans to encourage further sedentarisation in the rangelands and agricultural production should be re-considered in light of the evidence that suggests that in many cases, such processes increase the vulnerability of the targeted ‘beneficiaries.’ REGLAP and its partners can carry out awareness raising, lobbying and advocacy amongst policy and decision-makers of this.

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4 Taking into account the divisions now found amongst pastoralists including those defined by wealth, asset-access, gender etc.
2. ‘Development’ in the rangelands needs to be reconsidered, shared visions agreed upon, and a more strategic approach developed with communities that will ‘do no harm’ to pastoral production systems

2a) There needs to be a re-examination amongst policy-makers, donors, development actors and communities on the perceived long-term future of pastoral areas taking into account current trends of land use change. This should focus in particular on the potentially negative as well as positive impacts of interventions that change access to water and grazing for livestock, and encourage individualisation and privatisation of rangeland resources.

2b) There also needs to be a re-examination of the appropriateness of continually supporting communities in areas such as Harshin with relatively high levels of aid (including food and water relief) over the long-term, and ways to reduce the dependency of communities who were once relatively rich in resources and assets (and comparatively, the many who still are) should be identified.

2c) Recognition of the importance of land and resource access needs to be more prominent in drought risk management and humanitarian responses to drought. The facilitation of access to grazing areas and water sources, and the drawing up of agreements between different land users should be key activities in drought preparation and response.

2d) Proper consultation and involvement of land users in decision-making processes prior to interventions/initiatives and throughout their development is required. Mechanisms for communication and input should be established and institutionalised.

2e) Though improvements have been made, donor, NGO and government planning for drought is still made in an ad hoc and responsive (rather than pro-active) basis: this needs to be re-examined and better planning/response mechanisms developed. Livestock-related assistance in times of drought should be a ‘combined package’ (see Box 5.2) or an integrated approach, which includes provision of resources as well as facilitates longer-term livelihood development, capacity building and structures (such as livestock value chains) that will continue to exist after the crisis is over.

3. Rangeland planning and management needs to be carried out an appropriate scale

3a) Planning of interventions/activities in a larger unit (across small administrative units) where appropriate, needs to be explored and developed including across a ‘rangeland’ or traditional grazing area. Community mapping of traditional grazing areas is an important tool for understanding mobility and access to resources that pastoralists need, and the scale at which such needs require support. The support of communal and collective activities should be promoted over and above individual/household ones.

3b) Implementation including monitoring and evaluation will follow planning of interventions/activities at a larger scale. This is of particular relevance for such problems as
invasion of non-local species and region-wide strategies should be developed across government, NGOs and communities to encourage a coordinated response to such threats.

3c) Cross-border movement requires government support and facilitation. Current institutional frameworks can be improved including the development of cross-border peace committees that manage key shared resources on a collective basis – initiatives such as these can provide important starting points for developing a coherent strategy on cross-border movement. Further lessons can be learnt from examples found in West Africa.5

4. Secure rights to resources and land is fundamental for reducing the vulnerability of pastoralists to drought

4a) An in-depth review of current tenure practices needs to take place to give a fuller understanding of local practices. This should feed into zonal-wide development plans and a stronger securing of access to resources and land for local land users at regional level. Room should be provided for agreements for secondary and tertiary users too, where appropriate. In and around Harshin for example, a starting point would be a more in-depth participatory mapping showing in detail how land is currently being used and accessed, and by whom.

4b) Despite the challenges of working on ‘rights’ issues within the Ethiopian context, it is vital that pastoralists are provided with support in taking steps forward in securing stronger rights to their resources and land. The development of regional policies and legislation currently underway in both Somali and Oromia regions provide opportunities to engage with the respective regional governments on this. Important lessons can be learnt from other countries with large populations of pastoralists as to how best pastoral resources can be protected and their use optimised.6

4c) Current migration routes and spill-overs during drought need to be better understood and then protected for pastoralists through negotiations with other land users. Where necessary NGOs and government can play a more pro-active role in negotiating access and facilitating resource-sharing agreements, in both ‘normal’ times and in times of drought.

4d) It should not be assumed that women gain from land tenure formalisation processes and evidence from Ethiopia and elsewhere show that often they lose out. As a result concerted effort should be made to ensure that formalisation processes do not override/cancel out the benefits that women gain from customary tenure and that they are given appropriate protection in any

5 The need for mobility across borders to sustain productive rangeland systems is also being recognised, including across national borders. In West Africa, the Economic Community of West African States (ECOWAS) has led the way, supporting an institutional framework to facilitate cross-border livestock mobility. The ECOWAS International Transhumance Certificate provides for cross-border movements between its fifteen member states and the facilitation of trans-border agreements. In theory herders can obtain the certificates from their local authorities without great difficulty: the challenge is to make them work. East Africa’s COMESA also has a livestock trade initiative aimed at improving livestock trade in its region. There are plans to introduce a livestock ‘green card’ to ease cross-border movement modeled on the ECOWAS cattle certificate (IIED and SOS Sahel 2010; Binot et al 2009).

6 See for example Flintan 2011(a) and Flintan 2011(b).
changes that are made. It should also be recognised that customary tenure systems may in fact be the most beneficial for women as a member of the collective group (clan) and where this is true, ways should be identified for optimising these benefits, rather than eradicating them.

5. Appropriate institutions for managing and controlling access to the rangelands and their resources, need to be supported

5a) Good governance structures and institutions are vital for effective management of rangeland resources and pastoral production systems. It is important to identify which governance structures are most appropriate for different roles and responsibilities given the changes in social and production systems as well as the availability of resources that has taken place. In some cases customary institutions may still be the most appropriate structure, however in others new structures may be required. A landscape/rangeland approach to development and NRM (as suggested above) offers greater opportunities for all actors to be involved and for a common vision, agreements and partnerships to be negotiated and established. The interlinkages of the rangeland and social aspects of pastoral systems should also be recognised and facilitated. This will help to prevent conflicts in the longer term.

5b) Conflict resolution and peacemaking initiatives need to account for the degree to which conflicts over access to resources have changed in recent years. New actors will need to be involved in peacemaking structures. Customary institutions can still play an important role in conflict resolution if given the authority to do so. Governments and customary institutions need to work closer together to identify their respective roles and responsibilities in relation to conflict prevention and resolution, such as land allocation.

5c) Sustainable peace between pastoralists in southern Ethiopia and northern Kenya requires continual investment and support in order to ensure restoration of mutual cross border interdependence. To this end, strengthening the existing peace initiatives in reference to the long-standing cultural ties is vital.

5d) Drought contingency and response need to recognise the fragility of some of the changing/developing livelihood systems to drought. There should be less emphasis on technical 'hard' interventions and rather more emphasis on supporting communities through periods of change including rebuilding or establishing local social support mechanisms and appropriate institutions.
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1.0 INTRODUCTION

1.1 Project Background

In early 2011 REGLAP (Regional Learning and Advocacy Programme) supported an in-depth literature review of the impacts of land fragmentation in the rangelands, in Ethiopia, Kenya and Uganda (see Flintan 2011). It was highlighted in the report that there was a lack of detailed information on the specifics of land fragmentation in the rangelands, its processes, causes and impacts, and in particular in times of drought. As a result, Save the Children/UK with funding from the ECHO through the PILLAR project, funded case study research in Somali and Oromia regions of Ethiopia as part of the documentation of lessons from implementation of drought management projects in the country. These two areas experience 'drought' on a regular basis, and in the case of the latter, is an area that is feeling the effects of current failures of rains due to the influence of the El Niño weather system.

1.2 Objectives of the study

The objectives of the study are:

- To raise awareness of development actors and the media on the change in land use in pastoral areas and its affect on resilience to drought;
- To highlight the need to ensure the protection of communal grazing areas and in DRR approaches in pastoral areas;
- Provide recommendations for policy advocacy and practice for development actors.

1.3 Study Methodology

Two local consultants who hold a wealth of experience and knowledge on the two case study areas carried out the research, with input from the international consultant who wrote the REGLAP 3-country report: Broken Lands, Broken Lives? Causes, processes and impacts of land fragmentation in the rangelands of Ethiopia, Kenya and Uganda (Flintan 2011).

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7 REGLAP is a consortium of NGOs including Save the Children UK and US, Cordaid, CARE International, Oxfam GB and RECONCILE.
8 PILLAR – Preparedness Improves Livelihood and Resilience
9 Drought means the naturally-occurring phenomenon that exists when precipitation has been significantly below normal recorded levels, causing serious hydrological imbalances that adversely affect land resource production systems (UNCCD Art. 1 in Ahmed et al 2002).  
10 The extensive cooling of the Pacific Ocean and resultant climatic variability across the globe.  
11 Which can be downloaded from: http://www.disasterriskreduction.net/east-central-africa/reglap/
The main research tool used was the facilitation of a community mapping across the research case study area. In Borana, Oromia this was done across the Golbo traditional grazing zone\textsuperscript{12} or ‘dheeda’. In Somali region this was across Harshin District following administrative boundaries but incorporating movement that might be required for resource use across the District boundaries. The mapping was used as a visual starting point for an in depth discussion over several days on how resource availability and access has changed; how land use has changed as a result; and the causes, processes and impacts of these. More information on the use of this tool and why it was felt important that it should be used, are provided in Annex 1.

The study was supplemented by work carried out under previous programmes including PILLAR 1 funded by ECHO/EU and ELSE (Enhanced Livelihoods in Southern Ethiopia) funded by USAID. Supplementary information is also provided by SOS Sahel’s Gender and Pastoralism Project, upon which the consultant previously worked.

Interviews with key informants were also carried out. The discussions and follow-up structured interviews were guided by short checklist questionnaires. In addition, consultation take place with agencies which have operational presence in the areas of study and lessons in other areas implementing drought management initiatives with an emphasis on rangeland fragmentation.

\textsuperscript{12} Golbo dheeda covers parts of Miyo, Dirre and Dillo districts in Borana see Annex 2.
2.0 BACKGROUND: NATIONAL TRENDS

Some parts of Ethiopia have been experiencing heightened fragmentation of the rangelands since the 1970s. In particular the development of government and commercial irrigated schemes in the Awash River Basin to a total of approximately 68,000 hectares in 2011 (with another 90,000 hectares or so in construction) has caused significant ill effects on pastoral systems. Not only have key resources been removed but water sources have been polluted. In Somali region and Borana it has been water/rangeland development schemes that have compromised pastoralism and opened up areas to in-migration of settlers.

‘New’ challenges such as the invasion of Prosopis juliflora and other plants or shrubs have also had a significant impact: in Afar region alone it is possible that over 1 million hectares are now invaded by Prosopis. As access to land has become increasingly competitive, the fencing of remaining areas as private enclosures has grown and land/cropping arrangements have developed – often insecure in nature. The privatisation of rangeland resources has occurred in many parts.

In 2009 the Government of Ethiopia launched plans for agricultural investment areas in several regions of the country to a total of 3.7 million hectares. Land already identified and secured in the government ‘land bank’ (or already allocated to investors) includes 409,678 hectares in the Awash River Basin, 180,625 hectares in South Omo, 444,150 hectares in Gambella and 691,984 hectares in Benishangul-Gumuz. The evidence to date suggests that much of this will be in pastoral areas along rivers, and unless appropriate measures are taken risk, this will risk the restriction of access to (or the complete removal of) key-site grazing areas and water sources.

The experiences of investments already underway suggest that the needs of pastoralists and other rangeland users may not be taken into account within the establishment and development of these schemes unless appropriate measures are taken. Future threats to pastoral livelihoods come from the development of oil and mineral extractions and large water development schemes, including the building of dams and the establishment of linked irrigated-agricultural schemes for commercial investors and sedentarised communities (including ex-pastoralists).

Fortunately, there is a growing awareness of the value of pastoralism as an effective livestock production system and its current and potential contribution to national and regional economies. Pastoralists have been able to increase their voice in decision making processes at all levels and such as marketing facilities have improved. The establishment of land policies and legislation by regional governments are hoped to offer opportunities for addressing many of the insecurities that pastoralists face and the securing of rangeland resources for them. And the importance of planning across a rangeland rather than basing decisions on one or two key resources is being recognised.

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It remains to be seen to what degree government and communities can for example work with commercial investors to ensure that measures are taken to protect pastoral resources as well as take forward agricultural development.

This report summarises the findings of case study research in two areas of Ethiopia – Borana, Oromia and Harshin zone, Somali region. Both of these have been key, highly productive pastoral areas in the past with rich resources and a lively livestock trade well position to cross-border markets. They have also provided important drought and emergency grazing for large numbers of neighbouring populations including from Kenya and Somaliland (respectively).

However increasingly both areas have come under pressure from both internal and external forces that have pushed forward land use change and the shifting of livelihood practices away from pastoralism. This is having a fundamental negative impact on the productivity of the rangeland, as well as socio-economic impacts such as increased wealth differentiation and the breakdown of social support systems and customary institutions. By considering these case studies in depth, ways to increase positive outcomes have been identified for all land users including those who still require an extensive rangeland system for the growth of their pastoral activities.
3.0 BORANA, OROMIA

3.1 Socio-economics and ecology

The Borana rangelands cover about 95,000 km sq with a bimodal erratic pattern of rainfall, with the main rains falling between March and May, and the short rains between September and November. Annual rainfall averages 500 mm, with 59% of rainfall falling during March to May (ganna), and 27% during September to November (hagaya). Droughts are a common phenomenon (Coppock 1994). In the dry season surface water sources dry up and the performance of shallow wells reduces. However the deep tulaa wells in Dirree grazing zone (see below) and shallow wells in other grazing zones provide continuous service, sometimes day and night.

In 2011, parts of Borana were experiencing prolonged drought, together with neighbouring northern Kenya to the South and Somalia to the East. The failure of the hagaya and ganna rains has placed tremendous pressure on resources in the area, which are being shared with large numbers of pastoralists coming up from drought-stricken areas of Kenya.

The Boran have wide ranging and numerous institutions for rangeland management as well as for defining access to resources and their distribution both amongst their own clans, as well as visiting groups. Many of these are of particular importance during times of drought when those who are most vulnerable and/or experience most negative impacts, tend to be well-supported under traditional mechanisms (see for example Amsale Temesgen 2010; Taye 2002; Pavenello and Levine 2011).

3.2 Traditional grazing zones and systems

The Boran use the River Dawa as the natural watershed to classify their territory. All lands located to the east of the River are known as Liban while the expanse of land to the west of Dawa is generally termed as Dirree. The two macro-regions are further divided into seven grazing zones (dheeda) that comprise several madda\textsuperscript{15} and sub-madda units (reera, ardaa, olla). Accordingly, Liban comprises Golba and Gubbaa that are separated by an escarpment while the Dirree macro region consists of 5 dheeda: Wayaama, Goomolee, the tulaa wells cluster (also known as Dirree), Malbee and Golboo. Prior to colonial intervention the majority of these traditional grazing systems would have included parts of both Kenya and Ethiopia, but the delineation of boundaries between the two countries artificially separated them. Customary territorial units are neither mutually exclusive entities nor have clearly defined/rigid boundaries. Indeed, fluid mental borders do overlap and access to the key resources is constantly negotiated in both normal years and during emergencies (Tache 2010).

\textsuperscript{14} The findings in this section are drawn from the report of the case study research by Boku Tache Dida.

\textsuperscript{15} A madda is a traditional unit for accessing resources and in particular water for rangeland users. The madda is established around a permanent water source, usually a deep well. All economic and social life revolves around the wells. The madda is further sub-divided into sub-grazing/resource units called reera, and smaller still, arda which consist of a few encampments or olla.
The Golboo grazing zone\textsuperscript{16} is the most arid section of the Borana rangeland, which is suited for all livestock species (but horses). More than any other grazing zones in the Borana rangeland, Golboo is free from external animal parasites and it is best suited for goats and sheep pastoralism, thus harboring a large shoats population concentrated there from all over the Borana land. Unlike other dheeda, the Ethiopian part of Golboo is not disturbed by farm encroachment due to erratic rainfall.

Golboo borders Kenya and often hosts pastoralists from there during times of drought. Significant land use change (including increase of farming) in parts of northern Kenya including Marsabit and Hurri Hills that were traditionally important seasonal grazing areas for Kenyan pastoralists have meant an increase in numbers looking for grazing in Ethiopia (see Figure 3.1). For a list of PAs included in each dheeda see Annex 2.

\textsuperscript{16} The PAs that form part of the different grazing zones and were included in the research are listed in Annex 2.

Figure 3.1 Map of Golboo dheeda, as drawn by community members

The Dirre grazing zone is one of the most utilised dheeda in the Borana rangeland. Geographically, its central location has increased its stability and use has thus been both intensive and extensive over centuries. Sub humid areas have long history of crop cultivation (e.g. Romso, the Iddilola-Tuqaa midlands). Another important factor is the
concentration of the perennial traditional water wells that render continuous service to the inhabitants and outsiders who negotiate access to the wells and the surrounding grazing lands. In the past, excessive pressure on the rangeland was released and environmental degradation risk diffused through mobility to other zones. Relative intactness of the rangeland (due to less disturbance of the rangeland by land use types that directly compete with traditional pastoralism and efficient management institutions) had supported the extensive land use.

Wayama has experienced a high degree of land use change with settlements being established across the majority of the dheeda. With tributaries of the Daawwaa River running through it, and the building of ponds across much of the area, water is accessible for much of the year excluding the driest times. At these times livestock will be taken across and out of the area to neighbouring PAs. At the time of the study (2009) large parts of the dheeda were not being used due to conflict between groups and here villages have been abandoned. This includes high quality grazing and sources of minerals in Garbi and Mataarba PAs.

3.3 Pastoralism today

Herd mobility has been and for the majority of pastoralists, continues to be the main strategy used to manage risk and use the range resources communally and efficiently. Mobility takes two forms in the pastoral system. The first one is mobility of the satellite herds called Godaannya foora and the other type is called Godaannya warraguddaa. The latter is mobility in a drought year, which commonly will involve movement to permanent water sources such as the nine tulla wells (an area still protected from cultivation) (for more information see Gemtessa et al 2005).

Although some livestock are sold unofficially over the Kenyan border, greater numbers of cattle are exported through official channels, Borana being the greatest source of cattle exported from central Ethiopia (Aklilu and Catley 2010). Border communities also share information, basic services and even food aid.

As can be seen in the map of Golboo dheeda, migrations take place across the dheeda with Boran moving down to the borders and across to northern Kenya in the wet season away from the permanent water sites in the north of the dheeda. Some may move as far as the Hurri Hills, a site which is increasingly being converted to agriculture (Flintan 2011) while the Kenyan pastoralists move deeper into southern Ethiopia as far as Dhanqu Pond and even further into the northern parts of Yabello District. The Ethiopians then move back up during the dry season often followed by Kenyan pastoralists, particularly in times of drought.

Customary institutions have managed, and in many places still do manage, access to resources in a sustainable manner (Homann et al 2005; PFE et al 2011; Pavenello and Levine 2011). However, as the rangelands and pastoral systems become increasingly fragmented and often conflicting institutions are set up by government, their ability to do so is being compromised.
3.4 Causes and processes of rangeland fragmentation

a) Breakdown and disenfranchisement of the pastoral systems

In Golboo, this relates to the weakening of customary NRM institutions due to state marginalisation as government representatives through the kebele structure have taken over the decisional roles of pastoral elders. When the kebele structures were created boundaries were drawn around small administrative units and individual herders and their families were registered to that area. It was in this area that taxes were paid, food aid was received and any other dealings with the state occurred. This encouraged a reduction in mobility (see also Watson 2003). At the same time federalism has prompted a race towards control over lands as kebele, district and regional government push for territorial gains that ‘translate into more administrative power, land, tax revenue and potentially food aid’ (ICG 2009: 24).

The problem is coupled with the peripheral status of Golboo due to its remoteness from the traditional Gada centre (central Dirre and Arero); e.g. there is not a single Gadaa councilor (hayyullichoo) residing in Golboo. Alcoholism and associated behaviour were also identified as important elements affecting customary decision making, contributing to system breakdown.

In Dirree and Wayaama too, the kebele administrative system has been given prominence by the state over traditional grazing systems and customary structures, with development plans being implemented through the former. There is said to be complacency amongst government to address pastoral problems. Some local community members suggested that there is a new culture in the making: the ‘culture of frequent and monotonous meetings’.

b) Conflict

Traditionally, pastoral production in northern Kenya and southern Ethiopia was characterised by a strong system of integration and mutualism at social, ecological and livelihood levels across the international border. The Kenyan plains bordering southern Ethiopia are generally drier than the neighbouring grazing lands in Ethiopia as most places are served by temporary water sources with the exception of the environs of the Hurri Hills, Dukkana, Hadhi and Balessa where shallow wells provide perennial water during the dry season. Therefore, access to pasture in the plains is limited to the wet season where the herds from both sides graze as far as availability of surface water allows. This demands relations of reciprocity and interdependence between the Borana and Gabra who inhabit both sides of the border (see Figure 3.1 above).

The symbiotic relation and interdependence was disrupted by the unfortunate violent conflict that escalated between Boran and Gabra in the 1990s until it was resolved recently. The conflict affected cross border mutualism and each side lost access to key

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17 See also Amsale Temesgen (2010).
resources inside their respective territories for some time. Many border sites were considered to be “no-man’s lands” (for more information see Roba et al 2010; PCI 2009; Kagunyu et al 2007). The Borana side lost access to the best shoats’ territories inside northern Kenya that extended as far as Galaana Bo’l while the Kenyans lost access to dry season perennial waters in southern Ethiopia. On the Ethiopian side, the displaced pastoralists from Kenya lost significant shoat herds due to diseases associated with tick infestation and maladaptation to the new environment.

c) Water schemes

Traditionally perennial water sources, particularly the *tulaa* wells were arranged in a way that the radius between the water points allowed sufficient grazing for the number of livestock supported by the well (Tache 2009a). Water development implemented by NGOs, and government agencies often fail to take into account such traditional practices and pastoralist rationales, and instead build water points in a manner that has threatened if not destroyed parts of the Borana rangeland systems. The grazing radius around these water points have been reduced entirely consuming land use and range management. Part of the reason for this is that pastoralists are rarely consulted on development approaches in advance. Consequently ideas and actions that are supposed to improve pastoral livelihoods are contributing to their long-term vulnerability (Jarso Boru18 in Tache 2009a).

For example the Dida Hara area has been highly affected by the development of water points supported by the World Bank and others in wet season grazing areas, which has encouraged sedentarisation and led to overgrazing, exploitation of local resources and conflict between land users (Eyasu Elias 2009; Southern Rangelands Development Project 1990; Oba 2001). NGOs have also established water points with varying impacts on rangeland management and access, and social systems including encouraging individualisation and privatisation of resources. As a community member from Dubuluk PA describes:

*The good thing this organization did was feeding us when we were hungry, but it has also introduced water selling among the Borana men. In our community water is life and life is priceless. Therefore, every body willingly collaborates in water development and all Borana men were given free. Selling water is safuu (taboo)* (Abraham Firew Ayanu 2002).

d) Large-scale bush encroachment

In Golboo in particular, large-scale bush encroachment19 (including *Commiphora africana*, *Acacia mellifera*, *A. drepanolobium*, *A. brevispica* and *Lannea rivae* species that hinder the growth of grass (Dalle et al., 2006) is taking over the wet season grazing plains besides

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18 Ex-Senior Councillor, Gadaa

19 The invasion into grazing lands of undesirable woody species and unpalatable forbs and the loss of the grass layer. It is believed that *Commiphora Africana* spread rapidly following a perceived ban on the use of fire and due to seed dispersal through camel and goat dung Pastoralists use fire as a tool for range management (Eyasu Elias and Feyera Abdi 2010).
the already encroached dry season pasture areas near the escarpment, affecting rangeland productivity (see Figure 3.1 above). In addition a dangerous potential threat is posed by *Prosopis juliflora*: trees were observed in Dillo and Gorray towns (about 20 trees were counted in Dillo, located in private plots and the District Police HQ compound). Although the Dillo District Pastoral Development Office has taken prompt measure to clear *Prosopis* in Dillo and Gorray towns, the problem lingers as there are more *Prosopis* trees in the neighboring Kenyan town of Dukkanna from which large shoats herds flock to Ethiopia for marketing and access of resources.\(^{20,21}\)

e) **Resource privatisation including expansion of private enclosures, ‘farmlands’, ranches and sedentarisation**

The trend of change in pastoral land use system is shifting towards resource ‘privatisation’, relating to spontaneous expansion of private enclosures and ‘farmlands’. Historically farming in Borana used to be restricted to sub-humid rangelands near towns and cultivators were largely non Borana immigrants. Pastoralists used to buy food crops from these areas in dry seasons. Large scale crop cultivation is recent phenomenon, especially since 1997 – year of El Niño. People who had cultivated in 1997 had a great harvest that year and it encouraged growers to increase the area under cultivation and others to start. Since then it is rare to find a Borana household that is not involved in crop cultivation\(^{22}\). New marketing opportunities have also encouraged enclosures, land ‘owners’ renting grazing to livestock herders taken animals to markets (Tache 2011).

Some new commercial opportunities have also encouraged a more sedentarised living including trading in contraband and in livestock. Livestock is fattened on ranches, which tend to be controlled by more powerful and wealthy members of the community who have been able to invest in securing the land and necessary resources (for example the Dambablla Wachu cooperative group ranch covering 15,000 ha.)(For more details see

\(^{20}\) *Prosopis juliflora* was introduced into Ethiopia in the 1970s as a drought-resistant soil conservation mechanism. Local people were not informed about the invasive nature of the tree and were not advised on management practices to minimise its spread – in Afar region in particular it has taken over large areas of grazing lands (Dubale, 2008; Flintan 2011). The *Prosopis* found in Golboo has been transported across the border from Kenya and is proving equally problematic. Usually livestock transport the pods. The seeds require scarification before germination and the process of moving through an animals gut achieves this. There is evidence that seeds have also been spread through irrigation waters. *Prosopis* is extremely difficult to remove once established, and in Ethiopia tends to grow as impenetrable thickets with long thorns that prevent access to grazing and waterways (along which it prefers to grow).

\(^{21}\) The exact causes of the bush encroachment are not clear without further study, however an important contribution has been the perceived ban on fire as a rangeland management tool. Today, though some pastoral communities are working with local government and NGOs to reintroduce the use of fire, many pastoralists do not want to burn the grass that they have as it is in such short supply now. Moreover it has become practically difficult to effectively use fire for bush control as the bushes/shrubs have outgrown the shrubs and grasses that are necessary for setting fire. Alternative techniques for bush clearing/thinning are not known in the area, thus people continuously rely on laborious manual cutting that has limited impact.

\(^{22}\) Crop production tends to be carried out on a shifting basis as the land tends to only produce two years crops at the most before requiring resting. The user will then move to another piece of land and the old plot is likely to revert back to communal use.
Tache 200a; Tache 2000b). Others are sub-contracted to produce livestock for commercial companies such as ELFORA (Eyasu Elias and Feyera Abdi 2010). The imbalance in power between traders and pastoralists has resulted in the loss of crucial grazing and ritual land to traders (Amsale Temesgen 2010). The rich who have large herd sizes wish to have larger rangeland size to feed the livestock. On the other hand, the poor who in most cases lost their animals due to drought would like to increase their income portfolio by expanding cropland (Amsale Temesgen 2010).

Pastoral leaders including the current Abbaa Gadaa of the Borana Oromo, have raised concerns over the spontaneous expansion of private enclosures in communal grazing areas (such as in Dallona PA, Arero) with the relevant PA Chairman. However nothing has been done about them. Rather, sedentarisation has been pushed by federal and local governments, whereby pastoralists have been confined to their respective PAs, with a PA making exclusive resource use decisions in isolation from others.

**f) Unsystematic settlement patterns**

Unsystematic settlement pattern is another major cause of confusion in the pastoral land use and environmental degradation. Traditionally, pastoralists’ settlement patterns reflected seasonal variation of key pastoral resources and villages systematically established to ensure availability of pasture on livestock watering and non-watering days. Currently, however, villages are concentrated one after the other in the manner that contradicts customary pastoral land use and sustainable resource management practices (Tache 2010).

**g) Population pressure**

With a redrawing of regional boundaries between Somali region and Oromia due to geopolitical and domestic political processes, there has been a loss of land from the latter and ongoing conflict between the Borana and the Somali-Garri. Oromo groups have moved into neighbouring Oromo communities increasing populations there. In Dirre woreda for example the numbers of *allas* (settlements) has increased from 10 to 58 (Gemtessa et al 2005). This and other processes have led to a large population growth rising from 300,000 in the 1980s to over one million in 2007 (according to the 2007 Population Census).

### 3.5 Impacts of rangeland fragmentation

The following impacts were identified with communities:

**a) Rangeland degradation**

Large-scale and multi-faceted resource degradation implies a profound sustainability problem for pastoral livelihoods in the Borana rangeland (Tache 2010). Soil erosion has become a serious problem in areas that are exposed to constant trampling by animals – this destroys the soil structure and aggravates water runoff (Eyasu Elias and Feyera Abdi
Although pasture scarcity is the prime problem in Borana today, its magnitude varies. It has been chronic in areas with long history of sedentarisation (such as resettlement sites) and crop cultivation. However communities fear it is increasing across all dheeda. What the maps displayed confirm this fear. Remarkable in this regard was the lack of wet season grazing zone in the entire dheeda of Dirree due to sedentarising water schemes in the former wet season areas, and the bush encroachment across almost the total area of Golboo. In the past, grazing scarcity was a transient condition in pastoral production systems where rainfall variability drives seasonal variability in resource pattern and condition: today it has become permanent (Tache 2010).

b) Wealth differentiation and poverty for the majority

There is imminent poverty at societal level with the higher possibility of livelihood viability limited only to fewer stock rich families who are more diversified in terms of herd composition, animal species reared and income sources in general.

In Dire woreda for example, the rich can generate four fold the income of the poor, with the rich averaging around ETB15,590/year and the destitute ETB1,370\textsuperscript{23} per year (though many exchanges still remain un-monetised). The destitute in Dirre woreda receive 10% of their income through social support mechanisms (Gemtessa et al 2005). As the number of poor has increased and livestock wealth has diminished per household, the wealthier clan members are finding it more difficult to accommodate increasing demand for support (Tache 2008). As a result some clan members have refused to carry out the directives of clan leaders and appealed to kebele social courts. The courts reversed the decisions of the clan leaders so contributing to the break down of the mutual support system (ibid).

c) Breakdown (and in some cases a revitalisation) of customary institutions and systems

Natural resources have become increasingly privatised. There is a growing self-interest, which has accelerated the expansion of spontaneous de facto private enclosures in the communal rangeland. Those not interested or willing to abide by customary rules and regulations turn to the government for support and legitimisation of their actions. Customary institutions are increasingly marginalised and their power and authority reduced. Failure of government authorities to recognise the land rights of pastoralists and the fact that granting secondary user rights of access is in customary law a legal obligation, which reinforces, rather than undermines, primary holders’ claims of ownership rights and sovereignty over their territory. “These failures have led

\textsuperscript{23} Rich can earn ETB 15,590 (5-15% of population), medium 12,250 (10-50%), poor 3,300 (15-30%) and destitute 1,370 (10-66%) average across woreda.
government authorities to create exclusive rights which have never existed in customary law, precisely because they are incompatible with the livelihood needs of pastoralism” (Pavenello and Levine 2011: 12).

Children are not told about livestock and natural resources at school and how to manage them. Many youth are becoming increasingly disinterested in working in pastoralism (or agriculture). There are increasing incidences of use of ‘addictive’ substances such as khat, tobacco and alcohol amongst the young and others, despite local leaders trying to curb their use.

In the face of the critical situation, some community leaders are working together to address some of the issues. As a direct result of the participatory research based on the mapping of Dirree and Wayamaa dheeda in 2009, a Directive was made to ban and remove all private enclosures and inappropriate farms, to tackle the settlement issue and restore traditional grazing zones and routes. It was signed by the Abbaa Gadaa, high level customary Elders and Councillors (see the full Directive in Tache 2010).

d) Conflict

Conflict is a major threat to sustainable pastoral production (mainly in Wayaama). A primary cause of this is the lack of clarity over access to resources as customary institutions in some areas have weakened. Conflict is likely to continue escalating between the rival pastoralist groups so long as the root cause of conflict remains unresolved. Suggested solutions include restoration of land use system and related customary institutions through conflict resolution by addressing territorial claims on the basis of historical rights to the rangeland (Tache 2010).

NGOs talk about identifying root causes of poverty, food insecurity and conflict, but while the answers come up time and again as insecurity of access to resources, little has been done about it. Recently a number of NGOs and development agencies have been working to develop a better framework for sharing of resources across the international border. CARE Ethiopia and CARE Kenya for example, have been supporting the strengthening of community-based cross-border committees that have served to oversee the sharing of resources such as water ponds. Earlier in the year for example new water ponds in northern Kenya around Forole were being shared with Boran pastoralists from Magado, who did not need to negotiate access: an agreement had already been made by members of the local cross-border committee (for more information on cross-border committees see Pavenello and Levine 2011). However the national and regional institutional framework for cross-border sharing of resources is by no means established and the federal government of Ethiopia in particular is unsupportive. It remains to be seen therefore what role such committees can play in this unfavourable institutional environment.
e) Risk of rangeland and livelihood collapse and increased vulnerability to drought

The once highly productive rangelands of Borana are under risk of total collapse if current trends of rangeland fragmentation and degradation continue. The livelihoods that depend upon the rangelands are at high risk and urgent action is called for. Participants summarized livelihood implication of the current resource condition as follows, “Given the existing trend in the rangeland, our livelihood is under destitution threat” (Tache 2010). In Dire woreda for example, the majority of inhabitants say that income and food security has reduced in recent years. Further the health and quality of livestock has declined.

In the Golboo grazing system, current drought is affecting resource distribution such as natural water pools and wet season pasture that in the normal years support herds for a significant period of time following the major rainy seasons before the herds are moved to the dry season grazing areas around the escarpment. The affected resource pattern consequently compels pastoralists to intensify land use, leading to resource degradation and stress-induced herd loss. The problem worsens when drought strikes at scale as it affects drought survival likelihoods through mobility to a safe zone. Indeed, large numbers of pastoralists have moved into the area from neighbouring areas where resources have been depleted. This includes from northern Kenya including Kenyan Somali clans from around Wajir and Marsabit. The exact numbers of visitors are not defined, however it is clear that a significant number are being accommodated.24 Elders have reportedly tried to control the influx of these secondary users, but local government has at time overruled their decisions and allowed the visitors access.

Crop production is a risky undertaking in the pastoral area due to high variability in rainfall (Tache and Oba 2010). According to the Dire community members, the probability of good crop harvest is two to three times in eight years whereas livestock may suffer from drought once in eight years. With proper management of the animals, a cow can produce 4-5 calves during this period (Kejela Gemtessa et al 2005). Though the area under cultivation has increased, crop productivity has reduced over the last ten years. For example maize yield declined from 20 qt per ha to 7 qt per ha owing to erratic and inadequate rainfall (ibid). It has been shown that those involved in crop production are relatively poorer than pure pastoralists (Kejela Gemtessa et al 2005).

3.6 Future developments

The southern rangelands of Ethiopia are likely to become even more fragmented in the future as the OWWCE is currently working on the development of an irrigation project in Bale zone. This scheme commenced in 2010 at a cost of 400 million Birr (US$ 23

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24 In 1996, around 10,000 distressed migrants from Kenya together with upwards of 80,000 animals were thought to have crossed into Ethiopia. Later figures suggested that numbers had increased to 72,400 Kenyans and 50,000 Somalis around Moyale and across the southern areas [including Golboo] (UN-EUE 1997).
million), will use the Web River (a tributary of the Wabe River) and will cover 15,000 hectares in Raitu, Dawe Sarar and Dawe Kachan weredas (Merga Yonas 2010) (see Oromia Regional State, undated/2009?). In total 1,024,511 hectares have been identified for agricultural investment in Bale zone (with an additional 232,516 hectares in Wellega) (Equatorial Development Consultancy forthcoming). It is not clear which these investments will be sited, but Bale zone in particular has large numbers of pastoralists who will likely feel the impacts. Though this will directly impact the areas covered by this study, indirect knock-on impacts will be experienced as grazing lands will be lost in these areas, which will increase the pressure on neighbouring ones.

Magado in Golboo dheeda is a pilot area (covering 107,500 hectares) for the regional government’s Guiding Land Use Master Plan. The plan, developed by the OPaDC considers the area has high potential for continued livestock production, once the problems of bush control and rehabilitation (including addressing invasive plants and termites) has been addressed. Plans to assist pastoralists to clear bush (including with machines) are in development. The OPaDC understands the central importance of working with communities and customary institutions. It also seeks to improve the quality of livestock, access to markets and diversification for those who seek it, including the destitute (see OPaDC’s Land Use Implementation Plan, undated/2009?).

However, though the support for livestock production is encouraging, emphasis appears to be placed on the concept of predetermined land carrying capacities for different production systems including grazing, irrigated agriculture and such as forests. The Master Plan identifies four hectares of grazing land as suitable for one head of cattle, and grazing restrictions will be put in place to ensure the carrying capacity of the land is maintained. It has been suggested that once the Master Plan is implemented pastoralists from Kenya will no longer be allowed to access pasture and water in Borana zone (see also Pavenello and Levine 2011).

With mobility reduced pastoralists will become increasingly dependent upon permanent water sources. The government plans to provide these through a 2000 km network of piped water to permanent and semi-permanent settlements. Though to date this water is being provided for ‘domestic’ use, indications of government officials suggest that water will also be provided for livestock so meaning migration/movement will no longer be necessary. Evidence from elsewhere suggests that such changes will also encourage further settlement and agricultural encroachment into the area and thus further fragmentation of the already fragmented rangelands. The impact of this scheme is already being seen in Golbbo dheeda, with the pipeline being laid and water points being established along chains south and east of Magado Town and west of Dillo (see Figure 3.1). As has been seen in the past, this is likely to encourage settlement close to the water points and further encroachment into rangeland pastures.

### 3.7 Conclusions

Pastoralists have been forced to internalise the problems that they face through engagement in land use types that directly compete with pastoralism such as enclosures
and crop cultivation (Tache 2011). Institutionally, in the Borana context, land is the common property resource owned by societal law and has multiple vanguard institutions. Therefore, land-related issues are far from just a one PA or one institution or a one-dheeda matter, which means that resources-centered initiatives that may later lead to redesigning of land use practices, must involve all the key customary institutions and the communities from the very beginning: it also requires sustained engagement (Tache 2010).

This rarely happens in practice and rather, water and rangeland focused initiatives (mitigation programmes) happen in a piece-meal fashion focused within relatively small administrative boundaries and/or on one project or community at a time. Customary institutions and practices continue to be marginalised by government administration and as a result often conflict with them. This has had a negative impact on the health and productivity of the rangeland as a whole and the livelihoods that depend upon them. Local governments at district and zonal level with whom the consultant worked have supported the approach to map resources at the dheeda level and see the opportunities and benefits of planning land and resource use at this scale.

With the constraints on mobility and access to previously available resources, and the absence of viable alternative production systems for the drylands that are driven by highly variable rainfall, crisis seems imminent in many parts of Ethiopia. Farming has been shown to be highly risky, unpredictable, and in most years unviable. This is likely to become even more the case under predicted climate change: though rainfall amount per year may not reduce and in fact in some areas of Borana may increase, its variability and thus its in-predictability is likely to increase. Ranching has been shown to benefit only a few elite and powerful land users to date, and thus is unlikely to provide a solution for the majority. A study comparing the ranches to the traditional pastoral system showed that the latter is equally, if not more productive than introduced models. Further lessons on the challenges of such as ranching can be learnt from Kenya (see Flintan 2011).25

25 In Ethiopia, though communities suggest that rainfall has decreased in some areas (e.g. in Borana and Somali regions) (Riché et al 2009; Amsale Kassahun Temesgen 2010), no significant longer-term decrease in rainfall was detected across the country between 1960 and 2006, and there are insufficient records to identify changing trends in daily rainfall variability and rainfall intensity. Temperature however is said to have increased, by an average 1.3 C between 1960 and 2006 with the increase most rapid between July to September. Predictions for the country state mean annual temperature will continue to rise by 1.1 to 3.1 C by the 2060s and by 1.5 to 5.1 C by the 2090s. Overall annual rainfall is likely to increase, particularly in the southern areas, with some decrease in the north-east. It is also projected that the proportion of rainfall that falls in heavy precipitation events will increase throughout the country (McSweeney et al 2008).

26 A study comparing the productivity of cattle in group ranches with extensive livestock production showed similar results. It showed that average calving rates were lower in the ranches and ranch management had failed to reduce herd mortality resulting from drought. It also showed that breeding cows in the key resource tula well rangelands showed longer reproductive life than those in the ‘less productive’ ‘artificial’ pond-water rangelands. This suggests that traditional pastoral systems in Borana are equally, if not more, productive than introduced models and that maintaining stocking densities below the ‘carrying capacity’ of the land (i.e. as defined in group ranches) has not improved calving rates, herd mortality and/or post-drought recovery (Ayana Agassa 2007).
The resilience of many pastoralists to drought has been reduced through the limitations and barriers to accessing resources, and the land fragmentation that has taken place. Though the resources found in the areas focused on for this study are relatively rich still, the loss of access to resources in other areas including in Borana and over the border in Kenya, means that there are increasingly more visitors to and more pressure on grazing areas such as the Golboo Plains where the Gabra have priority user rights: this is causing ongoing clashes between the groups. The poor in particular are increasingly vulnerable to drought and increasing wealth divides are contributing to this. Though traditional resource distribution mechanisms and social support systems are still strong in the area, they are under increasing pressure due to large numbers of poor and fewer livestock numbers per household amongst the wealthier groups of the community.

Despite the challenges however, the majority of Borana’s inhabitants still base their livelihoods on pastoral activities. And despite their marginalisation customary institutions are still strong – those who took place in this research including members of the jaarsa dheeda (meeting of the elders of the area) still actively take a role in managing resources and decisions over access to them. The OPaDC has recognised the important role of customary institutions and many of the challenges that pastoralists face. They have committed to establishing programmes such as bush clearing and the control of invasive species, which require all actors to work together. As a result there is a fertile ground to reverse some of the trends taking place.

27 See Eyasu Elias 2009 for more discussion on this.
4.0 HARSHIN DISTRICT, SOMALI REGION

Harshin is one of the seven districts of Jigjiga Zone of Somali Regional State, located in the eastern part of the country. In the north the district borders with Somaliland (Baligubadle and Farawayne districts). Regional politics are complex and dynamic, both currently and historically (Catley and Alula Iyasu 2010).

Somali regional state has been dominated by pastoralism as sustainable land use system, dependent on movements across the dry rangeland areas to access grazing, water and markets (see Figure 4.1 for a map of livestock trading routes).

Figure 4.1 Map of livestock trading routes in Somali region (SC-UK/DPPB 2005).

Over the last three to four decades the Somali pastoralist society has experienced a significant change in the economy. Simply put it has been a change from a livestock subsistence society, which lived mainly on milk and meat as staple foods complemented occasionally with a little grain, to a livestock export oriented market economy developing comparatively sophisticated trade links, where the marketing of livestock allowed both cash earnings and – through bartering – the inflow of food- and non-food consumer goods from far away (Ahrens 1998). The livestock import ban by the Middle East due to the risk of Rift Valley Fever, has put a halt to this growth somewhat in recent years.

At the same time other forces both external and internal to Somali pastoral society have encouraged more sedentarised livelihood systems and the privatisation of resources. This is having a fundamental impact on Somali society, as well as livelihood systems and the environment. Such processes can be clearly seen in Harshin where

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28 The findings in this section are based on the report of the case study research by Abdurehman Eid.
there has been a re-ordering of pastoral life, in which pastoralists have to live with diminishing herds confined in an enclosure.

4.1 Socio-politics and ecology

Harshin District has thirteen kebeles (now called ‘development centres’) for which Harshin is the chief administrative town. The climate is generally hot and dry. Average annual rainfall is 300-400mm, falling during two rainy seasons – Gu (April-June) and Deyr (October-December). Birka and seasonal ponds are the main water sources; there are no permanent or seasonal wells.

For decades, nomadic pastoralists have inhabited the area and the rangelands were de facto used as common-pool resources for the local (mostly) Habar Awal clans of the Issaq clan family. The Central Statistics Authority (2007) reports a total human population of 80,215 in Harshin (36,361 females and 43,854 males).29

Harshin sits at the conjunction of two ecological zones of the region. The most western parts of the district (including Jijiga and Shinille zones) receive karan rains which follow the pattern found in the highlands – the gu rain falling from March-late May and the karan rain from mid July to late September. However most parts of the district especially the eastern part receive the gu rain from April-June whereas and the deyr rain from October-November.

![Community Map of Key Resources in Harshin Woreda](image)

Figure 4.2: Community map of key resources in Harshin woreda

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29 This skewed population ratio of less women than men is common in the pastoral areas of Ethiopia. The reasons for this are unclear and deserve detailed investigation.

30 Including the zones Dhagahbur, Oorahay, Wardher, Gode, Afdher, Liban and Fik.
The south-eastern parts of the district mark the beginning of the haud, a grazing “reservoir” of strategic and historic importance for Somali pastoralists that stretches between Aware and Dibile. The district receives an annual average of 330.4 mm of rainfall, starting from April to September (in Hagmann 2003).

Harshin has played an important role in the growth of the livestock export oriented market economy described above. Prior to 1998 livestock traders in Hartisheikh Town estimated that the number of animals exported through the area to Berbera port was 2-3 million in a normal year. However the Saudi ban on meat exports due to the threat of Rift Valley Fever, almost completely halted this trade for several years. This had a devastating impact on local livelihoods (Ahrens 1998; SC-UK and DPPB 2005).

4.2 Traditional grazing zones and systems

These different ecological zones used to form the basis of traditional grazing areas: west and northeast of Harshin Town (starting from the current border of Keribaya district) was known as the ‘karan grazing area’ used during the karan rains – pastoralists would move here from the wet (gu) area (blue arrows). Once the rains stopped here, the pastoralists would follow the rains to the eastern end of current Harshin district and parts of Aware district (red arrows). This area was known as the ‘deyr grazing area’ and pastoralists would stay there with their livestock until late November. During the long dry season (jiilaal) from December-March, they would move to the areas with permanent water sources, mainly found in what is now called Somaliland, whilst others moved to the south to graze around Bullale well which is located in current Dhaqahbur district (black arrows). The pastoralists would return to Harshin during the next gu season and then once begin their cycle of movement. In the past such movement was unhindered and proved to be a highly successful sustainable management system for the rangelands found within the district and beyond (see Figure 4.3).

![Figure 4.3: Map of traditional grazing route used in the past, drawn by communities.](image-url)
The pastoralists were serviced by petty traders who would move with them carrying goods that the pastoralists might need. They also established small tea shops (*makhaavad*) where the pastoralists temporarily settled.

Pastoralists in the area utilised highly heterogeneous landscapes, in terms of pasture and forage types and species of forage quality, availability (quantity) and terrain. Lateral movement is a key strategy utilised by pastoralists to optimise production from the heterogeneous landscape. It was common practice among Somali pastoralists, to designate forage sources as primary grazing sites (those routinely used as communal grazing land during favourable periods and usually located close to the household) or emergency grazing sites including private grazing sites (those specifically reserved as individual enclosures for use during stress periods).

During drought, some pastoralists would divide herds into core and satellite groups. The core herd includes the breeding stock (pregnant and lactating females) and young, old and vulnerable animals. The satellite herd includes the hardy males, non-lactating females, and larger and hardier livestock. The satellite herds were usually trekked to the emergency grazing sites located further from the households than the primary sites. In the rainy season livestock would travel 2 hours to find grazing and 8 days in dry season (each way) (Oxfam GB 2008). In times of drought in Harshin, livestock (camel and strong cattle) moved as far as the Ethiopia-Somaliland border and to Degahabour (though there have been security concerns in the latter).

Pastoralists from neighbouring areas including Awarre District and Somaliland also used Harshin district (or rather the areas of the current district that formed part of the *karan* and *deyr grazing areas*) for wet season grazing. Such reciprocal arrangements formed the basis of a strong Somali society and good relations between clans (see for example Fekadu and Beyene and Korf 2008). Harshin also provided an important source of emergency grazing and water for many other pastoralists in the region. In 1999-2000 for example pastoralists came to Harshin from Dhegahabour, Warder and Gode zones as a drought took hold in those areas. Late rains in Harshin and the influx of visitors produced difficulties for local residents including loss of their own livestock and food shortages. Aid agencies distributed food to the displaced visitors in order to take the pressure off the locals (Moges Tefera 2000).

### 4.3 ‘Pastoralism’ today

Today it is said that ‘pastoralism’ is still the mainstay of the population, with more than 90 percent depending upon it (SC-UK). A study by SC-UK and DPPA (2005) showed the differences in wealth criteria for the 90% ‘pastoral’ and 10% ‘agro-pastoral’ inhabitants. It is interesting to note that land was not considered to be a wealth criteria for ‘pastoralists’ though as will be shown below ‘pastoralists’ today are (and were in 2005) as sedentarised as ‘agro-pastoralists’ on their own parcel of land.\(^\text{31}\) Further, it is

\[^{31}\text{According to the Central Agricultural Census Commission (2004) the livestock population of the}\]
suggested that the middle and better-off agro-pastoralists gain a significant part of their income from crop sales (22% and 30% respectively) (Foley et al 2010) and a common practice today is for them to hold back crop residues for giving their animals when grazing areas have been exhausted. Despite this the regional agricultural bureau suggests that not more than 300 hectares is under cultivation.

The majority of pastoralists today tend to remain relatively static and depend upon their own ‘private’ grazing sources (often enclosed) for livestock grazing. The wealthier pastoralists in the community are able to afford fencing for enclosing these grazing areas, whereas the poor are not. This means that the wealthy are in a much better position to privatise the resources for their own use and prevent others from using them.

However in Harshin, fencing of ‘private’ grazing areas is unusual and almost 85% of areas visited during this research had no fencing. Rather people use certain landmarks as boundary markers for their land. There are no restrictions placed on clan members by leaders in establishing enclosures, though restrictions exist to limit ‘outsiders’ (Kenee undated; Fekadu Beyene 2009). As a result the poor are also able to take part in the privatisation processes. Communities have followed several different processes of enclosing the land in Harshin. In the majority of areas (10 centres/kebeles - around 77% of the area) the land has been haphazardly subdivided by individuals grabbing what they can before others enclose it. This process is called “gudin boob” meaning “axe robbery”.

Clashes and conflicts between land users remain common in these areas. Seeing the negative impacts of such processes, in two centres/kebeles the land was formally divided between the inhabitants. A Committee was set up to oversee this. The community agreed upon criteria for the division: land was allocated to married males and widows who had children. The size of land provided depended upon the size of a man’s family (how many wives he had). In these two kebele there tends to more sharing of resources than in the other kebele that did not follow a formal process for land division (where there tends to be tension and lack of trust between neighbours). However even here there is no consolidation of land, but rather an agreement between one land ‘owner’ and another to allow access to grazing.

Of the thirteen ‘development centres’ that make up Harshin District only one is not affected by rangeland enclosures32 – namely Abokor Ahmed. The Elders in this centre/kebele saw the dangers of such a process of rangeland fragmentation and a community decision was made to ban enclosures and keep the land open and communal.

woreda there are total of 396,537 made up of 224,711 sheep, 115,272 goats, 33,417 camels, 17,159 cattle and 5,978 donkeys.

32 In a study by Oxfam GB in 2008 only 30% of those interviewed in the area said enclosures provided main source of animal feed and 67% said they used open grazing – it would seem that the situation has changed dramatically in the last three years.
In the past, Harshin was known for its rich rain-fed pastures. However, from the late 1980s and early 1990s vegetation cover in the area began to decline tremendously. Elders indicated that out of the six key grass species, which used to grow in the area, only one is left now.

Table 3 Local grass species available and lost<sup>33</sup>

<table>
<thead>
<tr>
<th>No.</th>
<th>Local name</th>
<th>Scientific name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>'Dareemo'</td>
<td>Chrysopogon plumulosus</td>
<td>Available</td>
</tr>
<tr>
<td>2.</td>
<td>'Dixi'</td>
<td>Sporobolus helvolus</td>
<td>Lost</td>
</tr>
<tr>
<td>3.</td>
<td>'Timo-haweenle'</td>
<td>Panicum maximum</td>
<td>Lost</td>
</tr>
<tr>
<td>4.</td>
<td>'Cad-cad'</td>
<td>Sefaria pumila</td>
<td>Lost</td>
</tr>
<tr>
<td>5.</td>
<td>'Caws-gorof'</td>
<td>Heteropogon contortus</td>
<td>Lost</td>
</tr>
<tr>
<td>6.</td>
<td>'Duur'</td>
<td>Andropogon kelleri</td>
<td>Lost</td>
</tr>
</tbody>
</table>

4.4 Causes of land fragmentation

a) Introduction of birkas

Until the 1950s pastoralists relied almost solely on surface water for their livestock grazing in the Harshin area. This meant that grazing in Harshin was limited to the rainy seasons though the use of the two ecological zones and their resources (as described above) providing greater opportunities for prolonged grazing than in other parts of the region. In the mid-1950s the first birkas were built in the area. This meant that the pastoralists did not have to move with the changing rains, but could remain in grazing grounds on a near permanent basis. This quickly developed into a sedentarised way of living as settlements and businesses were established close to the birkas.

<sup>33</sup> As identified during community discussion with elders and scientific names verified by former ecologist of SERP.
Since this time the growth of *birkas*\(^{34}\) in Harshin district has proliferated, driven by demand from local communities keen to have easier access to water\(^{35}\). The government has supported the establishment of public and communal *birkas* in conjunction with the development of health centres and schools (though many have since been abandoned due to mismanagement – Gomes 2006). UNHCR built a number of *birkas* during the 1990s when there was a large influx of refugees from Somalia.\(^{36}\) NGOs have also built *birkas*, often with community input and financial and/or labour contributions. Oxfam GB for example is currently building another four public *birkas* in the area under its DRR project. At the same time wealthy pastoralists have built their own private ones (see Box 4.1). According to the District’s Administration there are now more than 3,000 *birkas* in Harshin of various sizes.

**Box 4.1 The first private *birka* in Harshin**

In the 1970s Mohamed Hashi was a petty trader who earned his living selling goods to the pastoralists as they moved through their grazing areas, following the rains. He then established a permanent tea shop on the road from Hargeisa to Dhagahbur, in what has since grown to become Harshin Town. He also built a small pond/dam, which sustained him during the rainy season and meant he did not have to move with the rains. He also paid drivers to carry jerry cans and small water tanks and fetch water for him from Hargeisa.

People were surprised to see someone able to live permanently in the area including during the dry season. Others saw him as a threat and he had to deal with attacks from armed gangs and his tea shop was looted on several occasions. However Mohamed remained there and two to three years after he arrived he converted his pond into the first *birka* in the area by cementing his pond. The town of Harshin grew around him. Within 30 years there were said to be 30 *birka* built.

\(^{34}\) A *birka* holds around 650m\(^3\) of water. If drought reduces the water level there is the risk of concentration of impurities and the quality of water deteriorates.

\(^{35}\) As has occurred in neighbouring districts – see for example Sugale and Walker 1998.

\(^{36}\) In neighbouring Kebribeyah for example in the 1980s and 90s the development of private *birka* increased bringing water prices down an reduced incentives to maintain communal cisterns and wells, because it was more convenient to buy water at low prices from private *birkas*. However, with the gradual decline of communal water points, private *birka* owners realised their strategic importance in supplying water. They subsequently increased water prices, which prevented many accessing it during the dry seasons (when prices were particularly high). The move of wealthier clan members to construct private cisterns has directly led to the breakdown of collective management of water resources. Wealthier segments of the clan no longer had incentives to contribute to the maintenance of communal water points (cisterns, wells, ponds). Only the poorer less powerful clan members still relied upon them. “This transformation of intra–clan responsibilities and duties toward the pastoralist commons effectively changed the genealogical and social networks and connections of a rights–duties dialectic inherent in customary rules. Cistern owners had gained strong power over a strategic resource in the pastoralist economy which potentially disfavors the poor and vulnerable clan members who depend on buying water from their cisterns (because communal water points have declined). Clan elders have often tried to negotiate with cistern owners in times of acute water scarcity to keep water prices at affordable levels for less wealthy clan members, but their action has not always been successful or only temporarily so” (Fekadu Beyene 2008).
In the case of private *birkas*, the owners use them to generate revenue and thus, are seen as profit-seeking entrepreneurs. Water users have to pay for water. Prices may vary from 5-6 ETB per barrel in the rainy season to 20 ETB per barrel in the dry season. In some places, there are fixed rates for each animal species. Private owners normally allow their relatives to use *birkas* freely or levy a lower price. In communal cisterns, those who contributed labor gain access and user rights. Moreover, revenue generated from water sales to non-members, such as livestock traders crossing the area and neighboring clan members, is shared among group members (Fekadu Beyene and Korf 2008).

In some areas clan leaders have tried to establish rules forbidding the construction of new private *birkas*. *Birka* owners stated they were worried that more *birkas* would further disturb grazing patterns. Cisterns also compete for space because they require a long water inflow channel. Those wishing to build new ones argue that the current *birka* owners are just trying to keep them out of the market.\(^{37}\)

### b) Agricultural development

In general Harshin has not been affected by the Somali regional government’s irrigation and settlement schemes, which has mainly occurred in Gode zone (see Annex 1). However in many parts of the region private farming has occurred in some areas land has been enclosed for this purpose.

According to the Elders in Harshin the end of the 1977 Ethio-Somalia war saw the Derg government encouraging certain returnees\(^{38}\) to start irrigated farming using water from *birkas* built for the purpose. 70 farms were established around Harshin Town and were limited to a 3 km belt around the Town. No farmer was allowed to expand his farm more than the land allotted to him. This regulation aimed to reduce conflicts between the agriculturalists and the pastoralists in the area.

After 1985 people started breaking the rules and expanding their farm size. Farms were established beyond the 3km limit set by the government. Things started changing quickly

\(^{37}\) In 1996, members of the *Habr Yoonis* clan in Gashamo District made agreements not to establish new cisterns as was done in the *Ogaden and Isaaq* controlled territories (Sugule and Walker, 1998). The rapid spread of this rule has put pressure on others to follow suit. In effect, this rule may increase wealth disparities at the expense of more vulnerable clan members, because those who in earlier years established the rule to allow construction of private cisterns now exclude potential newcomers to join ‘the club.’ The bargaining power of poor and vulnerable clan members to influence the elites in rule making is thereby limited. The individualisation and marketisation of water as a commodity rather than as a common good has not only increased wealth disparities, but also power differentials within the clan. It is a case of elite capture (Fekadu Beyene and Korf 2008).

\(^{38}\) And in neighbouring Dagahbour zone, returnees into the area (mainly from Somalia) in the early 1990s lead to subsequent emergence of small-scale irrigated agriculture along the banks of the Jarar valley. This has encouraged agriculture elsewhere in the area. A more recent but private investment involving the development of a large irrigation scheme along the Jarar valley by a local investor further encouraged this (SC-UK and DPPB 2005).
when the Somalia civil war started, and when the area saw an influx of refugees. Many of these had strong experience in farming started grabbing the land in order to grow crops. Clashes occurred between them and the resident pastoralists. These played a role in a large intra-clan conflict in 1992 (Hagmann 2003). Eventually a community meeting was called where the Elders of the area decided that all the farms outside the 3km farming zone should be demolished. Most farms were removed. However in time, these have been replaced by enclosures for grazing and protection of private water points. At the same time clans began breaking up into sub-clan groupings which settled on defined territorial units within the District while before the clans used to intermingle (as did their livestock).

In other parts of Harshin, in particular the west (including the Jijiga plains), communities also started converting parts of the rangeland into farms from the 1980s. Many of these also maintained large herds of cattle, which utilised Harshin’s still open communal pastures. Increasing numbers of livestock were also coming in from other areas and as pressures to find grazing increased, the traditional mobility systems began to break down. Pastoralists in Harshin began to enclose land spontaneously, yet massively in different waves since this time in order to safeguard grazing resources and prevent the land from becoming farmland. And as Hagmann (2003:10) suggests: “This in turn accentuates the competition between the different Issaq sub-clans as the control over land is strongly tied to economic survival and political power.”

b) Rangeland degradation

Rangeland degradation can be seen as both an impact and a cause of rangeland fragmentation. As described above the degradation of Harshin’s once rich pastures have occurred across the District. In 2008 a study revealed that 74% said that forage availability has reduced over time, half saying this is a direct outcome of enclosures (Oxfam GB 2008). In 2011 community members also mentioned ‘climate change’ and an increase of livestock coming into the area.

Another factor mentioned was that there is now increased run off of rain water because of the increase in roads and channels for birkas and farms and this leads to less standing water on the ground. Soil erosion has also increased due to reduced vegetative cover. Non-local species such as Prosopis juliflora and Partenium hysterophorus (congress weed) have increased. Though these species can provide important food during times of drought, their negative impacts and particularly their colonization of grazing areas

39 “While the political dimension of land tenure is nothing new per se, it is of specific historic significance in Somali region as it partly reflects the realities of “ethnic federalism” which ties political representation and thus access to political and financial resources to circumscribed territoriality. In the case of Harshin, the establishment of pastoral settlements claiming status of kebele and thereby access to food aid and political representation is illustrative. Furthermore, land enclosures and disputes are partly accompanied by the eviction of minority (Issaq) sub-clan households that are pushed out of the district by their more powerful brother clans” (Hagmann 2003: 16).
outweighs any benefits they may have. *Partenium* is spread by agriculture and *Prosopis* by livestock (Oxfam GB 2011).

As described above different influences encouraged the privatisation of resources and land use change, as well as increased numbers of livestock (in particular cattle) into the area. Complex clan relations also influenced how people accessed the land, and who was allowed to graze where. As grazing and other resources became under increasing pressure, clans became more protective of the resources they held and for example access to the karan grazing areas controlled by the western clans became limited.

As the situation became more critical community leaders realised that something needed to be done to curb the numbers of cattle coming into the area from neighbouring areas and clans. A decision was made to actively and strategically encourage some households to settle along the borders of clan domains and on known migration routes, establishing farms to prevent cattle migrating through. This has proved effective to some extent, however has further encouraged the enclosing of land and the privatisation of resources as other communities have followed suit.

d) New opportunities for renting land

In the past it was common for those who lost their livestock to drought, disease or other problem, to drop-out of the pastoral system and migrate to urban areas. However as the value of land and competition over it was seen to increase, two further factors have led to further privatisation of remaining resources, and also offered alternative opportunities for these potential ‘drop-outs’.

Firstly, those who maintained relatively large numbers of livestock started looking for additional areas to graze their animals especially during the dry season. This provided an opportunity for those with fewer livestock (or those who have experienced livestock losses in dry periods), to rent out parts of their land that were in surplus (with a contractual agreement between the parties involved). It also opened the door for poorer households with no livestock to enclose a piece of land and rent it out, rather than migrating to urban areas. Secondly as the once open Harshin rangeland became increasingly enclosed, visitors to the area such as traders bringing livestock from Dhagahbur were forced to rent an enclosed area to rest their livestock before continuing on to Somaliland etc. As the land became ever increasingly privatised, the privatisation of any remaining open areas has quickly occurred: a process seen across many pastoral areas in the Horn/East Africa region as Roy Behnke (2008) described for Kenya: “enclosure begat enclosure in a self-reinforcing process.

e) Charcoal production

An estimated 846,720 sacks of charcoal, each 30-35kg, are produced each year in Harshin District alone (Oxfam GB 2011). The increase in charcoal production has been fuelled by push and pulls factors. The push factors relate to the increasing challenges of maintaining a livestock-based livelihood system in the face of changing land use and
recurring droughts. The Saudi Arabia livestock ban imposed in the last decade contributed to this. Additionally, the incessant demand for charcoal in the area, from Jijiga and from over the border in Somaliland/Somalia and further afield (including the demand for use in ‘gaya’ or shisha smoking), has provided the ‘pull’ factors.

Today, most of the forest areas have been enclosed and the trees cut down. It is common for the land to be rented to charcoal producers to cut and produce charcoal, rather than the ‘landowner’ to make it himself. As the forests have been cut the land has been converted to agriculture and settlement. SC-UK and DPPB (2005) observed the development of 10 urbanised settlements in five years in areas that had previously been dense forests and pastoral grazing reserves. In the past charcoal production tended to be exercised by destitute households who had no livestock and owned no other property. It was regarded as a ‘poor man’s job.’ However today, it has become a highly profitable business controlled by traders and business men/women. The youth (aged between 17-30) are more involved in charcoal production than other groups. A significant proportion of the income gained may be spent on quat. Many youth prefer to make charcoal than undertake the relatively harsher livestock chores.

Others see the sale of charcoal as a way to avoid selling livestock and to produce money for investing in herd growth. Traders have driven the growth of the charcoal trade and encouraged pastoralists to sell both dead and live trees to be made into charcoal. Elders have done little to control the process. In early 2003 Ethiopian authorities made attempts to halt the trade cross-border and trucks carrying charcoal were confiscated. But charcoal still got through to Hargeissa and other towns.

For a detailed account of the growth of the trade and its social and environmental impacts see Sa’ad Oumer (2007).

**f) Breakdown of customary institutions**

Traditionally pastoral communities depend upon their own customary institutions for governance based on ‘xeer’ or customary laws. As urbanisation has increased and people have started leading a more sedentary life this traditional social fabric has been disrupted. Some Elders attribute the weakness of the pastoral customary institutions to the introduction and decentralisation of government institutions including the many committees that are now formed at the kebele level for different purposes.

Though some community leaders have tried to take steps to protect communal resources, including the strategy to encourage settlement/farms along clan boundaries (see above), they have failed to curb the privatisation of resources and expansion of enclosures (fenced or unfenced). In many ways such steps may have further encouraged the fragmentation of the rangeland. In addition, many leaders themselves have been involved in the ‘land-grabbing’ processes, which has led to a further lack of confidence in the customary institutions and little reason to abide by customary laws.
However where customary institutions have remained strong they have been able to control and prevent rangeland fragmentation to some extent – the most prominent example being in Abokor Ahmed, which today remains the only part of Harshin that is free of enclosures and where the grazing land remains communal.

**g) Government development interventions**

In general, regional and local government has done little to halt the rangeland fragmentation that has taken place. And in fact development interventions in the area have encouraged such fragmentation through providing incentives for sedentarisation including the development of infrastructure in settlement areas pulling people towards these and the further growth of the settlements. Often government pushes NGOs to support infrastructure establishment such as the building of *birkas* rather than other ‘softer’ (socio-economic) interventions, as part of their development interventions.

In addition local agricultural bureaux have actively encouraged the establishment of enclosures in order to tackle rangeland degradation. Though such enclosures may result in short-term rehabilitation of segments of the rangeland, they are likely in the long-term to contribute to the demise of the total rangeland and ultimately all its pieces.

### 4.5 Impacts of rangeland fragmentation

As suggested above, often causes of rangeland fragmentation such as rangeland degradation may also be impacts and it can be difficult to separate the two. These complexities need to be kept in mind. However there are also some impacts that can be singled out and have clear linkages to the processes of privatisation and enclosure of resources that have taken place.

**i) ‘Improved’ livestock production**

For those who have been able to enclose land and protect sufficient resources for their livestock, the carving up of the rangeland into private parcels has been of benefit. In general, those who took part in this study (the majority being landowners from Harshin District) agreed that they were ‘better off’ than before the land use changes took place. They also suggested that some pastures had improved in quality and in one case a grass that had disappeared (see above) had returned: though there is no positive link between this restoration and livestock productivity.

But in order to benefit from the new production system one important lesson was first learnt. Traditionally livestock are moved not only for grazing but also to avoid disease. When the production system first became more sedentarised the livestock suffered heavily from disease. As one women put it (interviewed in Harshin in 2007):

> Land enclosures are a curse on the community as they stop the animals from moving around. In the past they could feed from all the trees, shrubs and grasses and it was also good for their physical condition as staying in one area for a long time will affect their body condition.
However, offspring born within the new system appear to have a greater resistance to the local diseases so the requirement of movement became less necessary. Since then the livestock producers have seen greater production and quality of livestock. The use of veterinary drugs has reduced overall, but in times of stress such as drought the livestock are weaker and require more drugs. Vaccination campaigns by government and NGOs such as Oxfam have gone some way to fulfilling this need.

The enclosing of land has given greater reason for considering such controls as ‘carrying capacity,’ which has less relevance to a whole rangeland than to a confined area. Many community members commented that they use the concept of ‘carrying capacity’ within their herd management, and as a result see greater incentives for selling livestock in order to maintain the carrying capacity, than they did under the ‘traditional’ system.

ii) Reduced livestock holdings and increased wealth differentiation

Despite the seemingly ‘improved’ livestock production talked about amongst community members there has been an overall decline in asset holdings over time. A study carried out by Oxfam GB (2008) showed that all wealth groups in Harshin and a neighbouring woreda owned less livestock than they did in the past. The ‘destitute’ are said to own nothing and because of the breakdown of customary support systems (see below) have little hope of rebuilding herds. The livestock export ban to the Middle East and resulting low prices, has meant that pastoralists have had to sell more livestock in order to purchase the same quantity of food or non-food items. Those who have less livestock tend to be more reliant on purchased food, yet have fewer animals to sell.

Further wealth divides have been encouraged by the privatisation of water sources (though establishment of private birkas). Water sales are by middle and better off households that own birkas. The middle and better off also spend around 5% of their expenditure on pasture and feed assuring greater access to resources for their livestock. For all groups around 15% of their income is spent on water (Foley et al 2010). Today, better-off households commonly sell water for 10 ETB per jerrycan, and this is bound to increase. Poor households are increasingly unable to afford the current price, let alone an increased one. Stock may have to be sold to purchase water for the remainder. Many become totally reliant on provisions from NGOs and government, such as those provided by Oxfam GB (see Box 4.2).

**Box 4.2 Water provision**

Through the first half of 2011 Oxfam GB was bringing in water with trucks, which was distributed through a voucher system to the ‘most vulnerable’ people. Registration for the vouchers is overseen by community village committees, religious leaders and special group representatives.

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40 The results of household surveys in the Ethiopian Somali region also substantiate this decline with the average number of sheep and goats owned declining in the years preceding the survey (January 2008). During this period the number of goats owned decreased from 30 to 21 Somali region (Oxfam GB 2008).
Moreover, the water quality of the birka is said to be low, both for animals, and human consumption. The herds of the Haud are said to suffer from mineral deficiency leading to a disease called Shimbir of which weakness and apathy are the main symptoms. Blocks of salt have to be added in animal troughs. Human palatability of the water harvested in the birka, is also questioned and rarely assessed. “Algae” proliferation and Bacteriological contamination have been observed, with the presence of the water near direct sources of contamination spreading water washed diseases (conjunctivas, trachoma, scabies, skin infections, louse born typhus) and oral-faecal diseases (diarrhoea, dysentery, cholera, typhoid, hepatitis A, poliomyelitis). Diesel is commonly poured into the birka to curb breeding of mosquitoes (Gomes 2006).

iii) Diversification of livelihoods

There have been new openings for diversifying livelihoods away from livestock production. Though these are influenced by a number of factors including improved marketing opportunities, support from NGOs, infrastructure, communication etc. and the enclosing of the land has allowed some to benefit through such as renting out of land and the selling of charcoal. However, once again this has only benefited those who were in a position to take advantage of the land use changes taking place and it is not clear what has happened to those who were not. It is also not clear to what extent such livelihoods remain sustainable: charcoal production for example will most certainly collapse once all the trees have been removed: a situation likely to result in one or two years if current trends continue.

Women seem more likely to try out new livelihood diversification opportunities. Milk and ghee selling is one such opportunity. Trucks pick up milk and ghee from Hartasheik and Hargeisa on a daily basis. Milk sales are controlled by women and often rather than receiving cash payment for the milk, women place orders (for sugar etc.) with the vehicle driver. He returns with the ordered goods the next day. However, with livestock holdings reducing, milk production will decrease and women will lose this income in future.

Women’s livestock cooperatives have been established with support from Oxfam, who have enabled the women to collectively increase their livestock holdings and thus

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41 All beneficiaries will be registered to identify the size of their household, which will be used as a basis for the number vouchers to be issued by the water vendor per week (to the sum of 10 litres per person per day). Water, Environmental and Sanitation (WES) committees will maintain beneficiary records as well as records on the amount of water received and check these against the vendor’s records. Competitive and community involvement in the selection of water vendors will ensure prices stay at the market rate. Oxfam GB will also contract a money remittance company who will pay upon verification of records by the community, Oxfam GB and HAVYOCO and the water vendor (Oxfam GB 2011).
incomes. The women feel that their status and position in the local community has improved through the process, and allowed them a greater say in both household and community decision making processes. The women have also contributed to a number of community projects and some of the cooperatives entered into contracts with Oxfam to provide sheep and goats for restocking (over 5,500 in 2007/8), building the assets of hundreds of households who lost their livestock through drought. In 2010 over 1,200 shoats and 50 donkeys were supplied for restocking (Oxfam GB Ethiopia 2011).

iv) Marginalisation of women

Indeed women are one group that have not benefited as much from the processes as men, and in fact many have been marginalised and their capacity to access resources upon which they depend, reduced. It has also been shown (a study in Jijiga zone) that as livelihoods shift to greater agricultural production, women are expected to take on many of the agricultural tasks as well as maintain their domestic responsibilities, particularly those that have been termed ‘drudgery’ (Belay Kassa and Etenesh Bekele 1998).

Pastoral societies that are strong tend to protect women as a member of the clan – though they tend to access resources through their male kin, this access is in general protected by the customary institutions. In Harshin, it is the men who have been able to control the land-grabbing, privatisation and enclosure processes. The only area where women have been able to acquire a parcel of land has been where the clan has formally divided the rangeland. But even so here, only widows with children were allocated land and those without children or were unmarried were not included in the distribution.

There are also incidences of men marrying more wives in order to access a greater number of parcels of land: the size of the family influenced the amount of land allocated during the more formal distributions. Once the land had been allocated some of these men then divorced their wives who were left home/land less. As a group of women (interviewed in 2007) described:

We women know nothing when it comes to the issue of natural resources like land. It is the men who are enclosing land and decide how to use resources though this does not mean that we do not have access. We want to protect the environment from ruin as these changes affect us more than the men in many ways. But mostly it is the men who are responsible for the destruction of the environment in this area. These days, we find it difficult to get animal feed and firewood as well as other resources from the forests, which were easily available. It is the men who are selling the trees inside the enclosure for charcoal production and they are not listening to us when we tell them to stop this activity and find other alternative jobs (Source: Sa’ad Oumer 2007).

v) Compromised/destroyed rangeland and pastoral systems

The enclosing of land has effectively destroyed the traditional grazing and mobility system in the Harshin area. Mobility is now significantly reduced if and in many parts of the District, entirely prevented. The majority can no longer access traditional wet-season grazing areas (karan or deyr). As described above these changes have been very
much driven by the pastoralists themselves, influenced by complex 'external' factors and forces. What is clear today is that 'pastoralism' can no longer be practiced in the majority of the area and rather a form of extensive ranching has been established.

Though those who have been able to enclose land and resources state that they are 'better off' than previously (see above), it is clear that many have lost out from the processes. These include women, the less wealthy who have been unable to enclose land, and those pastoralists who would visit the District from other areas in times of need. One Elder from Awbare District said that cattle numbers per household have reduced dramatically in the district, due to limited grazing in the district as well as in neighbouring areas such as Harshin. Many pastoralists are now trying to grow crops there. It was not possible within the limits of this study to fully investigate the impacts on these groups further, and further investigation is warranted.

vi) Breakdown of communal support systems and increased conflicts between land users

Customary institutions have weakened if not completely lost control over access to resources in the area. The privatisation of resources has encouraged individualistic behaviour. Customary access systems that allowed even non-members of a clan to access well water for example, have all but disappeared (Fekadu Beyene and Korf 2008). Government administration conflicts with customary institutions and practices. Villages and sub-clans compete for food relief and assistance from humanitarian organisations, and act as a pressure group in order to get political recognition for their territory. More election points are created to get representation within the district council (Talsan 2009).

Today, those living in the western part of Harshin have a saying: Raacii Qudhac een ragba lahan: Aynu ku roornee roob ma inoo helay – meaning, “the land of Qudhac which has no men: let us run there if the rain has fallen.” In the past this land would have been protected by customary institutions as common property by Harshin pastoralists, however today the pastoralists can no longer access the area as migration routes are blocked by agriculture and private landholdings. This has fuelled tension between the groups and Harshin pastoralists have tried to block any settlement in these border areas.

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42 In Harshin, recent significant losses of livestock such as during the mid-1990s were due to the establishment of private rangeland enclosures and the resulting rangeland degradation and restrictions on mobility (Talsan 2009).

43 A study in four districts of Harshin concluded that the key reason for the breakdown to customary institutions governing access to land and resources has been competition from government institutions and their legitimacy. Elders and clan leaders are employed as government security advisors which has divided them from the communities that they used to ‘represent.’ Local communities no longer trust them and their decisions. The youth turn their back on customary institutions. Yet, government institutions capacity to manage resources has not yet been established and thus a vacuum has been created where neither groups or institutions govern the rangelands (Talsan 2009).
As a result communal support systems have also broken down. Reciprocal arrangements between different pastoralists and agro-pastoralists now have less relevance.\textsuperscript{44} Communities have become more individualized with each landowner protecting his own plot of land and resources from others. Though this has reduced clashes between clans over such as communal grazing land, there has been an increase in conflicts between individuals owning neighbouring plots of land and within family groups.\textsuperscript{45} According to community leaders it is common now to hear of two brothers fighting over land.

Social networks are central to food redistribution across households in all wealth groups with women particularly responsible\textsuperscript{46} (Foley et al 2010). Without these networks poorer members of the community are more vulnerable and in particular in times of crisis. Indeed it has been shown that though overall food availability in Harshin is not a problem, food insecurity is a problem of household access to food. Though traditionally there has been a strong culture of sharing in Somali society, this is becoming less common. As described above the sharing of grazing resources rarely occurs now in those PAs that have divided up the rangelands, and where it does it tends to be on the basis of a formal agreement between neighbours and/or relatives.

viii) Increased vulnerability to drought

Though the community members interviewed in this study are optimistic about the changes that have occurred to their livelihood systems, they are worried that the systems may not be sustainable and in particular in times of drought. Communities said that the last significant drought in the area was experienced around 12 years earlier.

\textsuperscript{44} The relations and linkages between the more pastoral areas (such as Harshin) and more agropastoral areas (towards Jijiga) used to be strong. The agropastoral groups sold their crops to pastoralists and the pastoralists made ‘hadhuudhin’ trips at certain times of the year to the agropastoral markets to buy grain or agropastoralists may take their produce to the pastoral markets. Kin relations stretched across the different livelihood zones, which was important for sharing resources during drought (SC-UK and DPPB 2005). Such linkages today are disappearing as movement has become restricted and most ‘pastoralists’ now grow their own grain.

\textsuperscript{45} This corresponds with the view of Hagmann 2003 who stated that since the beginning of the 1990s violent conflict in the district is intimately linked to changing land use patterns, a phenomena first observed by staff of the now defunct South-East Rangeland Project (SERP) (Hogg 1993; 1997). As he describes: “Cumulative casualty figures for the past five years [to 2003] add up to approximately forty to fifty persons killed in separated incidences. The genesis and escalation of land disputes in Harshin usually follows a similar pattern. Disputes start between individuals and households claiming land ownership for their animals or settlements. If a peaceful conflict settlement fails or if physical violence is applied by the disputants (brawls, shootings, killings), containment of further escalation from the interpersonal level towards full-fledged clan conflict becomes difficult. Physical harm, namely the deliberate killing of one of the disputants represents an important threshold as it automatically implicates the clan lineage(s) of the individuals and households involved in the dispute. Conflicts between individuals thereby immediately escalate into clan conflicts and clan relatives and their weaponry are mobilized and brought to the battlefield in a very short time span” Increasingly such conflicts are being dealt with and resolved through the district (secular) or sharia courts.

\textsuperscript{46} In 2005 food gifts (such as milk, sugar and cereals) to the pastoral poor still were an important means of food redistribution from the better off. The poor received around 75 kg of cereals (rice or wheat), 25 kg of sugar in a normal year, which with milk covered about 1% of their annual household food needs (SC-UK and DPPB 2005).
(though a ‘moderate’ drought was experienced in 2005 and 2002), and they have not seen any prolonged period of dryness since then. As such the new livelihood and land use system has yet to be tested in a time of protracted crisis.

Communities predict that a prolonged drought in the area will have catastrophic impacts on their livestock unless they are fully supported by aid agencies and/or government and their distribution of water and feed. In the past the pastoralists would have migrated to other areas with their livestock to overcome the drought, however today this is impossible – not only are migration routes blocked and grazing areas enclosed, neighbouring communities are not able or willing to host them experiencing their own challenges and the breakdown of past reciprocal supportive social systems. Emergency grazing areas that would have been preserved for an event such as drought no longer exist.

Communities have also seen that though their livestock may be more resistant to local diseases, they have become less resistant to water shortages. In the past camels could go for a month without water however today, camels in enclosures have to drink every 10 days. Livestock have also lost their stamina to travel long distances.

Reliance on birkas means Harshin’s communities are highly vulnerable and totally reliant on the presence of NGO or government support in times of drought for such as expensive water trucking and supplementary feeding. In 2011 poor gu rains resulted in severe shortages of water in birkeds. Water traders would not supply water for sale because of the severity of the situation and the need to travel long distances to reach permanent water sources (bore holes). Currently there are enough NGOs working in the area willing and able to tanker in water at large expense and to provide livestock feed. As such, they are effectively propping up the new livelihood and land use systems.

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**Box 4.3 The costs of propping up the system**

In 2011 it was estimated that 604,000 litres (604 m³) of water was required on a daily basis from outside sources:

- 256,000 litres/day for human consumption (based on 1 jerry cans of 25 litres per household per day)
- 120,000 litres/day for shoat consumption (based on 4 litres per animal per 2 days)
- 156,000 litres/day for cattle consumption (based on 20 litres per animal per 2 days)
- 72,000 litres/day for camel consumption (based on 80 litres per animal per 7 days).

The cost of providing this water for 60 days was estimated at ETB 7,988,400 plus livestock feed requirements totalling ETB 2,100,000.00 (Harshin Woreda 2011).

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47 This corresponds with Devereux’s conclusions that rainfall has not become more erratic in recent years in Somali region (Devereux 2006), and data from Jijiga Meteorological Office which shows no decline in rainfall in Harshin District between 1987 and 2009 with years such as 2007 being significantly wet (see Foley et al 2010).

48 A hazard analysis carried out by Oxfam GB in 2010 showed that in all past severe droughts migration was the primary coping strategy for local communities, in particular those with larger herds of livestock. In 2000 for example, migrations were made to Degahbour, Gode, Jijiga and Fafen. In the 1980s and 70s, migrations were made even further to Somalia and the current Somaliland (Oxfam GB 2010).
However it is unlikely that NGOs will always be present in the future. Though some alternatives may exist such as purchase of water from traders, the poor in particular will be unable to sustain this on a prolonged basis. With predictions of climate change including increased variability of rainfall, it is likely that drought periods will increase.

Agriculture is more vulnerable to drought than livestock as it cannot move. The situation created in Harshin now means that livestock cannot move either so livestock too has become highly vulnerable as access to ‘emergency’ pastures and water have been curtailed by enclosures and other barriers. “Both situations have led to the erosion of the asset base at household level, something that seriously jeopardises the future livelihoods” (SC-UK and DPPB 2005).

The communities of Harshin therefore are highly vulnerable to drought and predicted climate changes in the future including more variable rainfall (see above). The poor in particular are at risk. Increases in the price of food, water and veterinary/medical services during drought time, coupled with a reduction in the price of livestock, act as sources of wealth for the better off pastoralists, but sources of vulnerability for the poor (ibid).

4.6 Conclusions

Harshin’s rich and productive rangelands have clearly become highly fragmented. As described here the reasons for this are complex and intertwined but more than other pastoral areas perhaps, driven by ‘internal’ drivers of change: including a drive for ‘personal’ development and gain. In addition government and NGO interventions have clearly influenced the moves to sedentarisation and further planned interventions are likely to add to this and the further privatisation of resources. The impacts of the fragmentation are also complex with seemingly some benefits for those who have been able to take advantage of land use change processes, but fewer benefits and greater costs for those who have not.

Though restrictions on the number of birkas and other waters points were recommended as early as 1988 (Sugule and Walker 1988), little has been done about them. In addition, many of the interventions that have been supported as part of pastoral ‘development’ have effectively increased the requirement of water as livestock numbers have increased overall and crop production has grown. Though some NGOs realise the need to limit number of private birkas in particular, they are pushed by government to include birka development within their interventions, and in particular those that focus on drought preparation and relief. However, though one of the factors forcing livestock sales in times of drought to ‘detrimental levels’ is water shortage (SC-UK and DPPB 2005) it is unlikely that the building of more birkas will resolve long-term food and livelihood security.

Communities state that they have not experienced a severe drought for over 12 years, and meteorological records show no significant changes in rainfall patterns. Despite this,
water is tankered into the area on a regular basis by NGOs and development agencies at great expense. In addition relief food is also distributed regularly in Harshin with around 3-4 distributions per year with each household receiving 10-15kg of grain per distribution though “there was not attempt to target the relief: it was distributed to all households who were present, regardless of their wealth status” (SC-UK and DPPB 2005). In addition there are said to be 19,568 beneficiaries of the Productive Safety Net Programme in Harshin (Foley et al 2010): about 25% of the population.

It is clear therefore that communities have become highly reliant on outside intervention and support for their development and food/water security.

Community members interviewed in this study said that they are ‘better-off’ than in the past (though clearly there have been losers from the land use and livelihood changes that have taken place). Though this may indeed be the case, and that indeed short-term gains have been realised, one must question the sustainability of the situation where the livelihoods systems that now exist are being propped up by NGO and government interventions/support and are clearly highly vulnerable to extreme drought whenever it should next occur. Indeed, despite the seemingly ‘improved’ livestock production talked about amongst community members there has been an overall decline in livestock holdings over time. With current predictions for climate change across the region including increased variability in rainfall, such vulnerability is likely to be even greater.

The Harshin woreda level drought contingency plan focuses on water trucking, livestock treatments and livestock feeding (Foley et al 2010). All of these are expensive interventions reliant on external support, and keeping the livestock population ‘artificially’ high. Recommendations for improved NRM and rangeland management focus on technical aspects including control of invasive species, grazing management (enclosing and resting degraded grazing land) and water harvesting (diverting to pasture and potentially to crops, improved techniques for pasture, birkas and crop watering) (Foley et al 2010). There is little mention of building on traditional mechanisms of drought response and mitigation or addressing underlying issues such as land use change and its impact on the vulnerability of the poor and asset-less in particular.

Though some might call the enclosing of land in Harshin ‘innovation’ and a rationale response to improving one’s development pathway, Fekadu Beyene (2009) argues that the processes of enclosing land in Harshin suggest concerns for the securing of a piece of land, rather than the securing of a sustained livelihood from it. That is it was more of a desperate scramble to hold onto land (as an asset) even if the very act of doing so threatened its productive nature. This suggests a linkage between the enclosure process and the fact that pastoralists did not have secure rights to land and the lengths that they will go to protect it.

Women are clearly losing out from changes in the land tenure systems – whereas in the past they accessed resources and land through the clan system, the formalisation of private rights in the hands of men, has threatened this. On the other hand, and despite

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49 Based on the total of Harshin being 80,125 (Central Statistics Authority 2007 in Foley et al 2010).
their access to assets, women are more likely to try out new livelihood diversification opportunities, and with appropriate support have been highly successful.

There is a lack of understanding and incorporation of importance of land use change, and access/control over land and resources within such as vulnerability analyses – see for example Foley et al 2010. Secure access to land and resources has a fundamental impact on the vulnerability and security of rangeland users however it continues to be ignored within these studies.
5.0 DISCUSSION, LESSONS LEARNT AND RECOMMENDATIONS

a) Halting fragmentation of the rangelands

The negative impacts of rangeland fragmentation including loss of grazing areas and restrictions on mobility were documented as early as the 1970s (see for example Bondestam 1974; Kloos 1982): removal of Afar lands for large-scale agriculture and restrictions on their mobility had a direct result on their inability to deal with the drought experienced during that period where as many as 200,000 people died and three quarters of all livestock were lost (Behnke and Kerven 2011). Yet still, fragmentation of the rangelands continues.

As these cases studies have shown, fragmentation is due to a number of causes and processes; both endogenous (e.g. social changes) and exogenous (e.g. loss of dry season grazing areas to large-scale investors) to local communities. Land fragmentation has driven forward the privatisation of rangeland resources and the breakdown of communal and collective pastoral systems. Though a minority group of relatively resource and asset-rich pastoralists with greater power in local decision-making processes have been able to benefit from such processes, many pastoralists have lost out, dropped out or become increasingly vulnerable to drought.

A major cause of resource loss has been the conversion of land to agriculture despite the precarious nature of such land use change. Though agriculture may be viable in more fertile areas next to permanent water sources, agriculture in the rest of the rangelands is highly risky (nigh impossible) due to the variable and unpredictable rainfall of these dryland environments. Experience has shown that time and again crops fail and/or poorly perform. In addition when the relatively resource-rich areas such as along rivers are converted to agriculture it restricts if not prevents access by pastoralists to these sites and without this access it becomes impossible to utilise the rest of the rangeland.

A study comparing the economic returns derived from devoting the Awash Valley to pastoralism versus irrigated cotton or sugar cultivation showed that pastoralism is equally comparable or more advantageous than either cotton or sugar cane (Behnke and Kerven 2011). Further, there is no evidence to suggest that agriculture in drylands has increased the stability of agricultural performance or the food security of local populations as a whole (from large-scale agricultural schemes. What it has done is made money available for the government through taxations and other means (ibid).

Box 5.1: Lessons learnt from recent drought interventions

The current drought in Borana has highlighted the risky nature of crop production in the dryland areas with successive plantings failing (SC-UK 2011). In many of the PAs that took part in this study, the rains totally failed or were insufficient. As a result, most crops failed. In Dirre for example at this time 5,140 hectares should be cropped, but only 250 hectares had any chance of producing (Borana Zone Emergency Coordination Taskforce 2011).
Borana provides highly important emergency grazing and water for pastoralists from northern Kenya, large numbers of which have moved across the border over the last year. This was most clearly facilitated in dheeda such as Golboo where there has been less agricultural encroachment and settlement i.e. migration routes remain open and dry season grazing is still available. This shows that mobility is still a highly important coping mechanism for overcoming drought, and can still be facilitated by customary institutions despite the challenges that they face.

It is vital to understand the relationship between land use change and pastoralists’ ability to overcome drought. Despite large figures being quoted for livestock deaths in Borana as a result of the drought, work by Tufts University has shown that there is in fact considerable variation across the zone i.e. in the degree that pastoralists and their livestock are coping with the drought (Dawit Abebe personal communication 2011). It is not clear to what degree such variation correlates with land use change and further research in this area is important.

Recommendations

1a) The different causes, processes and impacts of land fragmentation in pastoral areas of Ethiopia need to be fully understood and addressed, including more detailed information related to pastoralists’ ability to overcome drought in areas affected by different trends of rangeland fragmentation. If the ability of local communities to adapt to potential climate change is to be optimised, an important step will be to halt current land fragmentation trends.

1b) The planned leasing of large tracts of pastoral lands to commercial investors is set to continue. Pastoralists will face crises as a result unless the investments are planned and controlled in a manner that protects the access of pastoralists to the vital key resources that they depend upon for livestock production including adequate dry season grazing sites. This can include facilitating agreements for access between pastoralists and commercial investors, protecting migration routes, and/or developing and enforcing common property tenure systems that protect key resources and land for pastoralists.

1c) Plans to encourage further sedentarisation in the rangelands and agricultural production should be re-considered in light of the evidence that suggests that in many cases, such processes increase the vulnerability of the targeted ‘beneficiaries.’ REGLAP and its partners can carry out awareness raising, lobbying and advocacy of policy and decision-makers.

b) ‘Development’ in the rangelands needs to be reconsidered, shared visions agreed upon, and a more strategic approach developed with communities that will ‘do no harm’ to pastoral production systems

There needs to be greater clarity in what kind of ‘development’ is aimed for in the rangelands and amongst pastoral communities. The government presents mixed messages for how it sees pastoral areas developing. NGOs and UN agencies rarely take time to consider exactly what ‘development’ means to them and whether this fits with the priorities of the communities they work with. Community action planning has proved a useful tool and input to development planning, yet even here, though NGOs

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50 Taking into account the divisions now found amongst pastoralists including those defined by wealth, asset-access, gender etc.
and government may enthusiastically support the development of community action plans (CAPs), such plans often get forgotten or side-lined in the development of proposals that need to fit with donor priorities rather than with community needs. As a result there is still insufficient consultation and involvement of rangeland users in the development of interventions and activities related to the lands and resources upon which they depend. This is particularly true during times of emergency such as drought.

In some parts of Ethiopia there are plans to sedentarise pastoralists, enclose land, provide ‘permanent’ water sources and restrict livestock numbers to the perceived ‘carrying capacity’ of the land. However concepts of carrying capacity and predetermined livestock population levels sit uneasily with ecological understandings of dryland environments and how best they can be utilised to optimise production.

Reliance on piped water is also highly risky and as the evidence from parts of Borana such as Dida Hara shows: the establishment of permanent water points resulted in a total destruction of productive rangeland and social systems, and severe land degradation. In addition water sources are highly saline so unsuitable for irrigation. As this research has shown similar trends are found in Harshin, Somali region where the introduction of *birkas* have played a clear role in the breakdown of what was a highly resource-rich pastoral system. The ranching-style system that has replaced pastoralism is highly dependent on the provision of water from NGOs and government. This has left Harshin pastoralists in a highly vulnerable position with one livelihood system well on its way to being destroyed and seemingly only risky and unsustainable alternatives to take its place.

In a study on cross-border resource sharing and management in southern Ethiopia, Pavenello and Levine (2011:24) suggest “current plans for the settlement of pastoralists need to be re-examined in light of the ability of the proposed new livelihood systems to cope with both climatic shocks and possible weaknesses in the implementation of proposed plans.” This study has come to similar conclusions. Regional plans for development in pastoral areas are a good starting point for such discussions, which should include an assessment of the long-term impacts of continuing trends of change in land use and resource management.

As this report has shown NGOs and other development agents often fail to effectively consider the impacts of the interventions that they support on the greater rangeland and/or pastoral society: rather, they focus on the immediate area or community where their intervention is placed. As a result, some of the interventions have contributed to the long-term negative trends of land use change seen in Borana and Somali regions. Many of the interventions still being supported will lead to further sedentarisation and privatisation of resources and often, negative knock-on impacts for pastoralists. In addition, the propping up of livelihood systems that may be risky and unsustainable in the long-term requires consideration. In Harshin in particular the provision of aid on a

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51 Though the permanency of any piped water can be questioned – pipes can break, pumps may not be appropriately maintained, and/or priorities can change.
regular basis appears to have created a high level of dependency and the development of local livelihoods that are highly vulnerable to drought. This is despite Harshin having been rich in resources, including grazing, in the past. The appropriateness of regular provision of aid and the suggestion that 25% of the population receives assistance from the productive safety-net programme is concerning in this context.

Though improvements have been made by NGOs including contingencies for drought response within their ongoing development support, emergency aid is often still de-linked from longer-term support for livelihoods and food security. While there is increasing recognition in government and aid agencies of the importance of early livelihoods interventions, the system is still overwhelmingly geared towards post-disaster responses largely centred on food aid (Pantuliano and Wekesa 2008). Rarely are such activities as facilitating agreements to enable access to grazing and water or to ensure mobility. This is despite the fact that movement remains the most common community response to drought in most areas (ibid) and in Kenya was shown to be the most effective drought response mechanism in 2009 (ILRI 2010).

**Box 5.2: Lessons learnt from recent drought Interventions**

A study of livestock related assistance in recent years concluded that such assistance is best provided as a ‘combined package’ comprising feed, water and veterinary support. Pastoralists are usually best positioned to decide what their livestock need and how best to maintain a core herd during drought. Therefore it makes sense to enable them to make the decisions on livestock health and production. “Cash derived from de-stocking assists them to act on these decisions and buy the livestock support they need from the private sector. Such an arrangement is likely to be far more efficient than either government or NGO provision of feed, water or veterinary inputs.” Some traders are even happy to buy thin animals because of the large profit resulting from the sale of these animals after fattening. Improvement of commercial linkages and markets and the development of Ethiopia’s livestock export trade have a direct impact on relief programming making it easier to facilitate commercial de-stocking activities (Catley et al 2007).

NGOs are often pushed by government to support expensive infrastructural development including water points such as *birkas* or the provision of inputs such as food aid and water through trucking (see Foley et al 2010), rather than interventions that would better serve long-term development of pastoral production including addressing underlying causes of land use change and increases in pastoral vulnerabilities. This is true in particular in times of drought (Pantuliano and Wekesa 2008).

Disaster risk reduction, preparedness and response programmes are more effective when communities are supported to organise themselves and develop and implement their drought risk management community action plan (CAP); collect, analyse and use early warning information to build their preparedness plans linked to district/regional contingency plans and use all of these to manage disaster (Abay Bekele, Oxfam GB, personal communication September 2011).

Often NGOs are pursuing both relief and development objectives, which may often conflict (i.e. the differences between short and long term focus). There may be an inability to restrict the scope of operation to the limits of their own institutional competence and preparedness. Operational and financial procedures may hinder the support of livelihood-based interventions in times of drought (Catley et al 2007). Oxfam has found that having an integrated programme allows flexibility in the approach and minimised management constraints as the operation did not change hands at the onset of drought (Pantuliano and Wekesa 2008).
Recommendations

2a) There needs to be a re-examination amongst policy-makers, donors, development actors and communities on the perceived long-term future of pastoral areas taking into account current trends of land use change. This should focus in particular on the potentially negative as well as positive impacts of interventions that change access to water and grazing for livestock, and encourage individualisation and privatisation of rangeland resources.

2b) There also needs to be a re-examination of the appropriateness of continually supporting communities in areas such as Harshin with relatively high levels of aid (including food and water relief) over the long-term and ways to reduce the dependency of communities who were once relatively rich in resources and assets (and comparatively, the many who still are) should be identified.

2c) Recognition of the importance of land and resource access needs to be more prominent in drought risk management and humanitarian responses to drought. The facilitation of access to grazing areas and water sources, and the drawing up of agreements between different land users should be key activities in drought preparation and response.

2d) Proper consultation and involvement of land users in decision-making processes prior to interventions/initiatives and throughout their development is required. Mechanisms for communication and input should be established and institutionalised.

2e) Though improvements have been made, donor, NGO and government planning for drought is still made in an ad hoc and responsive (rather than pro-active) basis: this needs to be re-examined and better planning/response mechanisms developed. Livestock-related assistance in times of drought should be a ‘combined package’ (see Box 5.2) or an integrated approach, which includes provision of resources as well as facilitates longer-term livelihood development, capacity building and structures (such as livestock value chains) that will continue to exist after the crisis is over.

c) Rangeland planning and management needs to be carried out on an appropriate scale

Development actors usually plan and implement interventions on a project-by-project and site-by-site basis. This is due to a number of reasons including limitations of funds for planning purposes, donor demands, priorities in government to manage development within small administrative units, competition between such units to access resources including aid, and a lack of understanding of the dangers of doing so. Some of these dangers have been highlighted in this report and not least in relation to the negative impacts it has on rangeland planning and pastoral systems that need to be supported and managed at a larger scale.

As planning tools, the participatory resource maps reaffirmed the indispensability of
understanding community’s systems of territorial organisation and land use for sustainable rangeland management and appropriate pastoral development planning across traditional grazing areas. As such mapping provides an important starting point for considering how best sustainable rangeland development can be supported in the future. Feeding such planning tools into development that is managed at a scale that crosses small administrative units and their boundaries is fundamental if pastoral livestock production is to be appropriately supported.

Sometimes pastoral traditional grazing areas will cross international boundaries that have been put in place with little concern for dividing such areas and the communities that depend upon them. Despite constraints put in place by governments keen to control movement for security and other reasons, pastoralists still commonly move across boundaries and in particular in times of drought (as exemplified in both Oromia and Somali regions under the current drought). Customary institutions that may have controlled and facilitated such movement may no longer be capable of doing so (discussed further below), and there may be the need for developing adapted/new structures to facilitate such movement.

Planning and implementing interventions/activities at a larger scale, such as across a rangeland (as defined by the pastoralists concerned) has a number of advantages: opportunities for greater cooperation between NGOs and government partners; less risk of duplication or conflicting development interventions; saving of resources – economies of scale; promotion of collective action amongst communities; reduction of competition for resources amongst NGOs, government and communities; and a healthier, more productive rangeland that can support greater numbers of livestock and pastoralists. It also provides greater opportunities for tackling region-wide (or even country-wide) problems such as the invasion of non-local species such as *Prosopis juliflora* or bush encroachment.

**Box 5.3 Lessons learnt from recent drought interventions**

Some of the negative impacts of planning interventions/activities across small administrative units has been highlighted in this report, for example the proliferation of *birkas* and water points that have been established without due concern for their impact on the greater rangeland, natural resource management and pastoral systems. Pastoral systems rely on a relatively large territorial unit or landscape that includes a variety of resources in different states. Driven by lack of and variable rainfall, rangelands offer many challenges. Pastoralism is an effective land use system that can overcome these challenges if access to key grazing and water sites is available, as and when needed, and proper management of these resources is allowed and provided for.

Donor and NGO structures and strategies have encouraged a site-by-site approach to rangeland management. CARE Ethiopia have seen the results of this as they develop contingent fenced communal enclosures as drought reserves in Borana – each reserve is supported by a different donor and sign-posted accordingly. CARE would like to see donors facilitating arrangements/agreements that allow more cooperation and joint-working between donor-funded programmes, and as in the case of drought reserve enclosures the possibility of working with communities to establish one large enclosure supported by several donors/programmes, rather than several small ones. They believe that this will improve rangeland management and ultimately livestock production (Charles Hopkins, personal communication 2011).
Interventions to deal with bush encroachment such as bush clearing tend to occur in a piece-meal fashion and as a result have little positive impact. Such problems need to be tackled on a rangeland/region-wide scale if there is to be any lasting effect with the commitment of both local governments and communities. Public work programmes including the productive safety-net programme (PSNP) are one way of supporting mass mobilisation of communities to tackle the problem (Axel Weiser, personal communication 2011).

Inter-community community-based drought risk management (CBDRM) committee and customary institution meetings both within districts and across the border provide the platform to exchange experiences and enhance common understanding regarding major resources, its management and sharing of benefits and perhaps most important of all how to use this information to prepare for future droughts (Abay Bekele personal communication 2011).

Cross-border peace committees established with NGO and local government support proved to play an important role in facilitating movement and access to resources across the borders of Ethiopia and Kenya during the recent drought (Pavenello and Levine 2011).

Recommendations

3a) Planning of interventions/activities across a larger unit (across small administrative units) where appropriate needs to be explored and developed including across a ‘rangeland’ or traditional grazing area. Community mapping of traditional grazing areas is an important tool for understanding mobility and access to resources that pastoralists need, and the scale at which such needs require support. The support of communal and collective activities should be promoted over and above individual/household ones.

3b) Implementation including monitoring and evaluation will follow planning of interventions/activities at a larger scale. This is of particular relevance for such problems as invasion of non-local species and region-wide strategies should be developed across government, NGOs and communities to encourage a coordinated response.

3c) Cross-border movement requires government support and facilitation. Pavenello and Levine (2011) provide the current institutional framework for cross-border movement at national and regional levels. They also suggest how this could be improved including the development of cross-border peace committees that manage key shared resources on a collective basis – initiatives such as these can provide important starting points for developing a coherent strategy on cross-border movement. Further lessons can be learnt from examples found in West Africa.52

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52 The need for mobility across borders to sustain productive rangeland systems is also being recognised, including across national borders. In West Africa, the Economic Community of West African States (ECOWAS) has led the way, supporting an institutional framework to facilitate cross-border livestock mobility. The ECOWAS International Transhumance Certificate provides for cross-border movements between its fifteen member states and the facilitation of trans-border agreements. In theory herders can obtain the certificates from their local authorities without great difficulty: the challenge is to make them work. East Africa’s COMESA also has a livestock trade initiative aimed at improving livestock trade in its region. There are plans to introduce a livestock ‘green card’ to ease cross-border movement modelled on the ECOWAS cattle certificate (IIED and SOS Sahel 2010; Binot et al 2009).
d) Secure rights to resources and land is fundamental for reducing the vulnerability of pastoralists to drought

Securing of access to resources is vital for pastoralists under current trends of land appropriation, alienation and loss. This is likely to become more important as pressures on surrounding areas increase, and or climate change shifts ecological zones. Different ways that this can be addressed are a matter of debate and some of these are discussed in detail in Flintan (2011b). Mechanisms and processes that have potential include ‘participatory and negotiated territorial development’ (FAO 2002; Hatcher 2009); ‘participatory rangeland management’ (Flintan and Cullis 2010); ‘community-based pasture or rangeland management’ (Alden Wily 2008); ‘communal domains’ (Alden Wily 2005a); ‘community land areas’ (Alden wily 2005b); and ‘community conservation areas’ (Borrini-Feyerbrand et al 2004).

Granting secondary user rights of access is in customary law a legal obligation, and reinforces, rather than undermines, primary holders’ claims of ownership rights and sovereignty over their territory (Pavenello and Levine 2011). Yet, within formal land tenure systems such secondary use is rarely accounted for. This undermines customary social and production systems and increases the vulnerability of both the primary and secondary users. There is indecision and disagreement as to who should be protecting which rights to land and resources for which groups – this needs to be clarified and formalised. It may not be necessary however to detail customary rules and regulations for access, but rather give formal support to customary institutions to manage access and use of resources accordingly and within the provisions of legislation.

It has been shown that in formalisation processes such as in Harshin, women have not received the same securities of access as men have. This has left them reliant on male relatives and therefore vulnerable. Where land has been divided through customary agreements and sharing of resources, women have gained protection through their membership of the clan.

There is a lack of understanding and incorporation of the importance of land use change, and access/control over land and resources within such as vulnerability analyses. Secure access to land and resources has a fundamental impact on the vulnerability and security of rangeland users however it continues to be ignored within many of these studies.

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Box 4.1 Lessons learnt from recent drought interventions

Lessons drawn from several assessments looking at drought interventions and responses in recent years come to the same conclusion: communities agree that the most effective response to a critical drought is movement (ILRI 2011; Pantuliano and Wekesa 2008).

During an assessment of the 2005/6 drought, pastoralists suggested that NGOs working with traditional institutions could do more to free up access to grazing and water sources including across international borders (Pantuliano and Wekesa 2008).
**Recommendations**

4a) An in-depth review of current tenure practices needs to take place to give a fuller understanding of local practices. This should feed into zonal-wide development plans and a stronger securing of access to resources and land for local land users at regional level. Room should be provided for agreements for secondary and tertiary users too, where appropriate. In Harshin for example, a starting point would be a more in depth participatory mapping showing in detail how land is currently being used and accessed, and by whom.

4b) Despite the challenges of working on ‘rights’ issues within the Ethiopian context, it is vital that pastoralists are provided with support in taking steps forward in securing stronger rights to their resources and land. The development of regional policies and legislation currently underway in both Somali and Oromia regions provide opportunities to engage with the regional governments on this. Important lessons can be learnt from other countries with large populations of pastoralists as to how best pastoral resources can be protected and their use optimised. See for example Flintan 2011(a) and Flintan 2011(b).

4c) Current migration routes and spill-overs during drought need to be better understood and then protected for pastoralists through negotiations with other land users. Where necessary NGOs and government can play a more pro-active role in negotiating access and facilitating resource-sharing agreements, in both ‘normal’ times and in times of drought.

4d) It should not be assumed that women gain from land tenure formalisation processes and evidence from Ethiopia and elsewhere show that often they lose out. As a result concerted effort should be made to ensure that formalisation processes do not override/cancel out the benefits that women gain from customary tenure and that they are given appropriate protection in any changes that are made. It should also be recognised that customary tenure systems may in fact be the most beneficial for women as a member of the collective group (clan) and where this is true, ways should be identified for optimising these benefits, rather than eradicating them.

e) **Appropriate institutions for managing and controlling access to the rangelands and their resources, need to be supported**

The strength of local institutions in Harshin and Borana varied. In the former their involvement in natural resource management and accessing resources had all but disappeared, though there still seemed to be some social support systems in place. In Borana, although the authority of customary institutions is being threatened, they remain relatively strong and still play a critical role in rangeland/pastoral decision-making. It would seem that in Harshin the breakdown of customary institutions has increased the vulnerability of local communities who now act on individual/household decision making rather than communal. Though this may work during ‘normal’ times it is likely that in times of severe drought the lack of customary institutions to negotiate access to emergency grazing and water sources for example, will result in an inability to cope/overcome the drought and increased conflict between land users.
There has been an increase in the need for crisis mobility and harvesting of rangeland resources for sale in many pastoral areas of Ethiopia. This has also put customary systems of resource management as well as systems of mutual support under pressure, further threatening the adaptive capacity of the community as a whole (Eriksen and Main 2011). Some interventions supported by both NGOs and government have encouraged individualisation and privatisation processes, which have effectively destroyed collective and mutually supporting resource-sharing amongst communities. This has reduced the strength of pastoral production systems and ultimately their effectiveness.

Formal land administration and land use planning processes are central to long-term development and indirectly to conflict prevention. However they often conflict with customary institutions. In order to resolve conflicts, courts attempt to establish land ownership and (in-)validate claims by the parties based upon investigations of the district authorities. Although the Ethiopian Constitution and (land) legislation does not provide for private property, but only for rights of use, the court in Harshin for example, attributes “full” land ownership based upon “proofs” of seniority of resource use (Hagmann 2003: 12). This opens the door to inequitable and unfair land allocations (including the marginalisation of women as suggested above).

Conflict has been shown to contribute to land fragmentation both within communities and between a community or clan and others. As competition over resources grows conflicts are also likely to increase unless ways and means to prevent them are identified. The nature of conflicts has also changed as a result of land fragmentation. Today in Harshin for example, there are less instances of inter-clan conflicts and more intra-clan conflicts as neighbours argues over access to resources and boundaries. Differences between government and customary systems of land allocation and resolving conflicts over land and resources cause confusion and poor governance.

Box 5.1 Lessons learnt from recent drought interventions
Community-based institutions such as *hagbad* (saving and credit) and remittance, *gus* (pooled labour system), and *zeka* (social safety net mechanisms) (found in Somali region) still play a key role in reducing the impact of drought on poor households. Strengthening these institutions and channelling resources through them enhances the self-reliance of the community, while also improving targeting (Oxfam GB 2011). Encouraging the responsibility of such institutions within resource management is an important way of ensuring that such social systems remain effective. The success of peace committees along the border of Ethiopia and Kenya has shown that new groups can be established that can effectively negotiate and facilitate access to resources for different groups of pastoralists (Pavenello and Levine 2011).

**Recommendations:**

5a) **Good governance structures and institutions are vital for effective management of rangeland resources and pastoral production systems.** It is important to identify which governance structures are most appropriate for different roles and responsibilities given the changes in social and production systems as well as the availability of resources that has taken place. In some cases customary institutions may still be the most appropriate structure, however in others new structures may be required. A landscape/rangeland approach to development and NRM (as suggested above) offers greater opportunities for all actors to be involved and for a
common vision, agreements and partnerships to be negotiated and established. The interlinkages of the rangeland and social aspects of pastoral systems should also be recognised and facilitated. This will help to prevent conflicts in the longer term.

5b) Conflict resolution and peacemaking initiatives need to account for the degree to which conflicts over access to resources have changed in recent years. New actors will need to be involved in peacemaking structures. Customary institutions can still play an important role in conflict resolution if given the authority to do so. Governments and customary institutions need to work closer together to identify their respective roles and responsibilities in relation to conflict prevention and resolution, such as land allocation.

5c) Sustainable peace between pastoralists in southern Ethiopia and northern Kenya requires continual investment and support in order to ensure restoration of mutual cross border interdependence. To this end, strengthening the existing peace initiatives in reference to the long-standing cultural ties is vital.

5d) Drought contingency and response need to recognise the fragility of some of the changing/developing livelihood systems to drought. There should be less emphasis on technical ‘hard’ interventions and rather more emphasis on supporting communities through periods of change including rebuilding or establishing local social support mechanisms and appropriate institutions.
REFERENCES


Hussein, Karim, James Sumberg, and David Seddon. 1999. Increasing Violent Conflict between


ANNEXES

Annex 1

In support of MOFA’s draft pastoral policy, the Somali region has developed a number of schemes that seek to provide alternatives to the pastoral way of life and encourage pastoralists to settle. In 2006 around 700 households from pastoral areas were settled in West Gode area. Each household was given one hectare of land, which could be irrigated through gravity irrigation and a house with three rooms. However the scheme failed due to a number of reasons including: canal breakage, which took at least a year to be mended; and the lack of organised infrastructure. Some settlers who were able to produce crops sold them in order to buy livestock and returned to a more pastoral way of life.

The second phase of the resettlement took place in 2009, with another 2000 households resettled, but phased similar problems as well as a lack of markets for produce cultivated. Nevertheless a third phase called ‘mass sedentarisation’ is underway (launched in 2010), which aims to settle around 135,350 households (818,105 persons) (Somali Regional State 2010). According to the regional performance report of 2011, 87,000 households are already resettled in West Gode area. This is almost 20 percent of the regional population.

The impact of the second phase of the sedentarisation programme on the Regions’ pastoralists has not yet been studied, as the majority of it took place very recently. But it is known that the land provided for the resettlement/irrigation schemes are key dry season grazing sites for pastoralists, and as a result of the schemes these have been removed from the local pastoral systems. A key activity of the programme is said to be “clearly convincing [the ‘host community’] that the land in the banks of the river belongs to the government not the clan or the sub clan that they are a member of” – so that the host community will “welcome the new settlers” (Somali Regional State 2010: 7). Unsurprisingly there have been informal reports of clashes between pastoralists and settlers as a result of the settlement and e.g. over water access points.

Most of the settlement programme is focusing on riverine areas along the lower part of the Wabi Shebele and Genale Dawa. The programme will mainly focus on Gode, Afder and Liban zones. An exception is Dambel district of Shinille zone where according to the regional report around 150 households has been resettled through ground water irrigation in an area called Biyo-Bahay.
Annex 2

**PAs covered by participatory exercise in Golboo, Dirre and Wayama traditional grazing areas (‘dheeda’)***

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<th>‘Dheeda’</th>
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<tr>
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<td>Tuqa</td>
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<tr>
<td>Arero</td>
<td>Arero</td>
<td>Part of Oroto, part of Renii, part of Qaquallo</td>
</tr>
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</table>
Annex 3 Mapping as a tool for research and community empowerment

The study used a tried and tested participatory approach which provided communities with the opportunity to consider themselves the changes of land use in their areas, and discuss the current and future impacts of them (including in relation to their ability to cope with and/or their vulnerability to drought and possible impacts of climate change).

This included producing a landscape level map for the rangeland area(s) that they use, which showed current land use practices and changes in mobility patterns that have resulted. This approach gave the community more input and ownership over the research/study and at the very least provided them with some tools for taking forward and/or trying to find solutions for the problems that were highlighted. It also provided a very powerful visual tool (i.e. the map) that can be used for future advocacy work etc. as thought appropriate.

With regard to the scale of resource mapping in rangeland areas, the focus on small units, PA for example, fails to consider ecological characteristics, basic resource tenure, dynamic issues of relations and negotiations over access, key pastoral strategies such as mobility, etc. Therefore, resource mapping should occur at a more appropriate territorial unit (such as dheeda in the Borana context) if it is going to be a planning tool for meaningful and relevant pastoral development (Tache 2010).

Herders’ perception of their environment is holistic in that they adopt a territorial approach and assess range conditions across scalar, spatial and seasonal divides. They maintain a comprehensive mental map of their environment; this detailed emic knowledge is regularly updated through the tradition of information network (contacts and oral exchanges on daily encounters). Therefore, participatory resource mapping is just a facilitatory exercise that taps into pastoralists’ rich indigenous ecological knowledge and converts their mental map into a visualized planning tool. Any technically-manipulated and externally imposed maps will disregard pastoralists’ knowledge and experience, hence disempowering to them and carries little relevance (Tache 2010).

This approach had been used within a resource mapping initiative that the consultant was involved in under the ELMT/ELSE programme in Borana.

Because REGLAP (through Oxfam-Nairobi) have already supported an Ethiopian-wide literature review on land fragmentation and its impacts, this study focused on gaining as much specific detail on the local situation as possible, to avoid any repetition and make the most of the opportunity of collecting case study data. This lack of specific data is a gap highlighted in the REGLAP report and therefore emphasis is put in filling this gap through this consultancy opportunity.

The steps used include:

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53 Much of this section is taken from Boku Tache Dida (2009/2010).
1. A literature review of reports, secondary data from government offices etc. on land use change specific to the case study area(s) and its impacts on vulnerability and adaptability of pastoralists to drought and potential climate change.

2. A review of reports on DRR initiatives in the area and their impacts on vulnerability and adaptability of pastoralists to drought and potential climate change, including in relation to land use change and resource protection/security.

3. Interviews/discussions with project staff and local community representatives on the appropriate level/institutions to be included in a mapping of resources and mobility showing resource use and movement of local community in case study area, taking into account both primary and secondary use/users of the rangeland area.

4. Short structured checklist questionnaire/interviews concerning changes in access and use of resources and land, and its impacts.

5. Organisation of a meeting for all appropriate stakeholders (including representatives from local community(s) and local government) to produce a rangeland/landscape level mapping showing use of land/resources and mobility patterns (past and current). This was followed by a discussion by the participants on the changes seen, the reasons for them, and the current and future implications of them and any anticipated future changes. Specific emphasis was placed on highlighting what is the impact of these changes on the communities’ ability to respond to drought and other climate-related crises. The impacts on different sets of community groups were also explored/discussed e.g. differing impacts on women and men; aged and youth/children.

6. Follow-up interviews with some key informants to verify data, and explore some key issues in more depth.

7. Analysis of the information/data gathered and a concise case study focused report produced with recommendations for future action.
## Annex 4 People contacted through the research

In Addis Ababa (including through a results dissemination and discussion workshop)

<table>
<thead>
<tr>
<th>Name</th>
<th>Position and Organisation</th>
</tr>
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<tbody>
<tr>
<td>Teriessa Jaletta</td>
<td>Programme Manager, PILLAR Plus, Save the Children/UK</td>
</tr>
<tr>
<td>Abay Bekele</td>
<td>Head, Pastoral Programme, Oxfam GB</td>
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<tr>
<td>Axel Weiser</td>
<td>Head, Livelihoods Unit, Save the Children/US</td>
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<tr>
<td>Charles Hopkins</td>
<td>Pastoral Program Coordinator, CARE Ethiopia</td>
</tr>
<tr>
<td>Aliyu Mustafa</td>
<td>Natural Resource Advisor, Pastoral Program Unit, CARE Ethiopia</td>
</tr>
<tr>
<td>Tezera Getahun</td>
<td>Pastoralist Forum Ethiopia</td>
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<tr>
<td>Honey Hussen</td>
<td>Pastoralist Forum Ethiopia</td>
</tr>
<tr>
<td>Dawit Abebe</td>
<td>Tufts University</td>
</tr>
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## Harshin Case Study

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<tr>
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<th>Remark</th>
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<tbody>
<tr>
<td>Mohamed Aw-Hussen</td>
<td>Harshin</td>
<td>Elder</td>
</tr>
<tr>
<td>Mohamed Aden Yusuf</td>
<td>Harshin</td>
<td>Elder (District Advisor)</td>
</tr>
<tr>
<td>Nasir Nuh Dubad</td>
<td>Lanqayrt</td>
<td></td>
</tr>
<tr>
<td>Nur Muhumed Abiis</td>
<td>Darbiga</td>
<td>Member of the committee that distributed land in Darbiga</td>
</tr>
<tr>
<td>Abdi Mawlid Olhaye</td>
<td>Harshin</td>
<td>Elder (District Advisor)</td>
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<td>Ismail Ahmed Gelle</td>
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<td>Abdi Gahayd Isman</td>
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<td>Abdiqadar Mohamed</td>
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<td>Mohamed Muse</td>
<td>Abokor Ahmed</td>
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<td>Nasir Yusuf Omer</td>
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<td>Muhiyadin Hassen Ahmed</td>
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<td>Kayse Sh. Muhumed</td>
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<tr>
<td>Maryam Aw-Muhumed (F)</td>
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<td>Kahdija Omer (F)</td>
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<td>Abdi Ismail</td>
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<td>Nasra Ahmed (F)</td>
<td>Women’s Affairs Office</td>
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</tr>
<tr>
<td>Name</td>
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<tr>
<td>Hussein Galgalo</td>
<td>Dillo</td>
<td>Dillo Pastoral Development Office Head and Deputy District Administrator</td>
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<tr>
<td>Waqo Qancora</td>
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<td>Dhiba Halake</td>
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<tr>
<td>Liban Arero</td>
<td>Yaballo</td>
<td>Zonal Pastoral Development Office Head</td>
</tr>
<tr>
<td>Dallacha Dhenge</td>
<td>Dillo</td>
<td>District Peace &amp; Security Office Head</td>
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<td>Dima Anna</td>
<td>Dillo</td>
<td>Member of District Cabinet</td>
</tr>
<tr>
<td>Dabbaso Guyyo</td>
<td>Cirratte</td>
<td>Pastoralist/vice PA chairman</td>
</tr>
<tr>
<td>Katelo Bombi</td>
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<tr>
<td>Luka Haile</td>
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<tr>
<td>Galgalo Liban? (Gaarro)</td>
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