



USAID
FROM THE AMERICAN PEOPLE

Climate Change and Conflict in Pastoralist Regions of Ethiopia: Mounting Challenges, Emerging Responses



CMM Discussion Paper No. 4

October 2011

This publication was produced for review by the United States Agency for International Development. It was prepared by Jeffrey Stark, Katsuki Terasawa, and Mersie Ejigu for the Foundation for Environmental Security and Sustainability.

ACKNOWLEDGEMENTS

The FESS field research team would like to acknowledge the valuable contributions of Kinde Wakwaya, Melaku Yirga, and Ermias Yesehak of Mercy Corps, who arranged meetings and interviews and facilitated community consultations during the field study.

CREDITS: This report was written by Jeffrey Stark of the Foundation for Environmental Security (FESS), based on field research in Ethiopia conducted by Jeffrey Stark, Katsuaki Terasawa of the Naval Postgraduate School, and Mersie Ejigu of the Partnership for African Environmental Sustainability in April-May 2011.

Climate Change and Conflict in Pastoralist Regions of Ethiopia: Mounting Challenges, Emerging Responses

CMM Discussion Paper No. 4

DISCLAIMER

Discussion Papers have been commissioned by the Office of Conflict Management and Mitigation to initiate or advance consideration of important issues of conflict prevention or peacebuilding. As such they are not official documents. The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

CONTENTS

| | |
|--|------------|
| ACRONYMS | iii |
| EXECUTIVE SUMMARY | 1 |
| Background..... | 1 |
| The Ethiopian Context..... | 2 |
| Findings from the Field | 3 |
| Concluding Observations..... | 7 |
| INTRODUCTION | 9 |
| METHODOLOGY | 11 |
| Areas Visited and Organizations and Individuals Interviewed..... | 12 |
| THE ETHIOPIAN CONTEXT | 15 |
| Recent History | 15 |
| Growth and Transformation..... | 17 |
| Pastoralism | 17 |
| Climate Change..... | 18 |
| FINDINGS FROM THE FIELD | 21 |
| Pastoralism and Climate Change in Yabelo: <i>“What Will Become of Us?”</i> | 21 |
| Climate Change Resource Conflicts, and Evolving Institutions in Moyale..... | 25 |
| Post Conflict in Wachile and Hudet..... | 29 |
| Climate Change, Livelihood Diversity, Invasive Species, and Conflict Resolution in Northeastren Oromia and Afar | 31 |
| CONCLUSION | 37 |
| RECOMMENDATIONS | 41 |

| | |
|---|-----------|
| RESOURCES | 45 |
| Appendix I: Climate Change and Conflict Assessment Framework (CCAF) | 45 |
| Appendix II: List of Persons and Organizations Consulted | 50 |
| References | 52 |

ACRONYMS

| | |
|----------|--|
| CAF | Conflict Assessment Framework |
| CCCAF | Climate Change and Conflict Assessment Framework |
| CMM | Office of Conflict Management and Mitigation |
| EPRDF | Ethiopian Peoples' Revolutionary Democratic Front |
| ESAF | Environmental Security Assessment Framework |
| FAO | Food and Agriculture Organization |
| FDRE | Federal Democratic Republic of Ethiopia |
| FESS | Foundation for Environmental Security and Sustainability |
| FEWS NET | Famine Early Warning Systems Network |
| FFP | Food for Peace |
| GTP | Growth and Transformation Plan |
| IDP | Internally Displaced Persons |
| IK | Indigenous Knowledge |
| IPCC | Intergovernmental Panel on Climate Change |
| NAPA | National Adaptation Programmes of Action |
| NRM | National Resistance Movement |
| PASDEP | Plan for Accelerated and Sustained Development to End Poverty |
| PLI | Pastoralist Livelihood Initiative |
| PSNP | Productive Safety Net Program |
| UNDP | United Nations Development Programme |
| UNOCHA | United Nations Office for the Coordination of Humanitarian Affairs |
| USAID | United States Agency for International Development |
| USDA | United States Department of Agriculture |
| WFP | World Food Program |

EXECUTIVE SUMMARY

BACKGROUND

In 2007, the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) predicted that rising global temperatures will contribute to an upsurge in severe storms, floods, droughts, glacier melt, and sea level rise. In vulnerable areas of the developing world, extreme weather is expected to intensify pressures on land and water resources, disrupt agricultural production, and threaten food security. But will climate change also lead to conflict?

In the wake of the IPCC report, a number of policy studies concluded that there is a strong likelihood that the natural hazards and environmental stresses associated with climate change will trigger or amplify conflict. Among the projected scenarios were severe resource scarcity, dramatic increases in internal and external migration, disease outbreaks, and a host of destabilizing social and political effects. However, as discussion of these issues moved forward, different methodological approaches began to call into question the plausibility of some of the claims that were being made.

In the context of this debate, the Office of Conflict Management and Mitigation (CMM) of the U.S. Agency for International Development (USAID) asked the Foundation for Environmental Security and Sustainability (FESS) to synthesize the emerging literature and discussion about climate change and conflict linkages and to review the current state of knowledge. FESS found that relatively little field research has been done to look at the interaction between climate change at the national or subnational level and the political, social, economic, and cultural specificities of selected conflict-prone states.

The main purpose of this case study is to help fill the gap in knowledge regarding how climate-related vulnerabilities interact with the dynamics of conflict in specific locations. Toward that end, USAID/CMM asked FESS to conduct case studies on climate change and conflict in selected countries, with a view to producing findings relevant to Agency and Mission interests and programs. The second of these case studies is the present study, focusing on the pastoralist regions of Ethiopia. A prior case study examined climate change and conflict linkages in Uganda (Stark 2011).

This study relies in part on FESS's Environmental Security Assessment Framework (ESAF) methodology, while integrating core components of USAID's Conflict Assessment Framework (CAF). Both the ESAF and CAF emphasize one of the main conclusions of recent conflict analysis: Conflict is always the result of the interactions of multiple political, economic, social, historical, and cultural factors, and these must be taken into account in any analysis. The influence of climate change on conflict can only be understood within this web of relationships.

From April 19, 2011 to May 5, 2011, a three-person FESS research team, with the assistance of one or (at times) two colleagues from Mercy Corps, conducted over 40 interviews and met with more than 150 persons from local community groups, civil society organizations, regional and national governments, and international organizations.

Travel for the field study was divided into two parts. The first portion focused on a number of locations in southern Ethiopia in Borena Zone in Oromia (Yabelo, Moyale, Wachile) and Liben Zone in Somali Region (Moyale, Hudet). The second portion covered areas moving westward from Dire Dawa, including locations in West Hararghe Zone in Oromia (Chiro, Mieso, Mulu) and Zone 3 in Afar (Amibara, Awash), as well as East Shewa Zone in Oromia (Metehara).

Interviewees were asked about their perceptions concerning such issues as: the impact of environmental and climatic change; the coping capacities and resilience of affected groups; the responses of local, regional, and national

governments; the drivers of conflict and their linkages, if any, with climate change; steps needed to address any climate-related challenges with potential conflict linkages; and anticipated conflict trends with potential linkages to climate change over the next ten years.

THE ETHIOPIAN CONTEXT

Drought and famine have been powerful factors in shaping governance in Ethiopia over the past 40 years. Drought and famine in northern Shewa, Welo, and Tigray in 1973-1974 exposed the paralysis and incompetence of Haile Selassie's aging regime, and contributed to its overthrow by the military regime known as the Derg. Amid continuing violence and the failure of the Derg's economic policies, drought and famine once again struck Ethiopia in 1983-1984, compounding the sense of crisis in the country. The Derg government failed to respond and seemed to be in blatant denial of a humanitarian catastrophe. Only a massive international relief effort brought eventual stability to regions experiencing mass starvation.

“...pastoralists in Ethiopia face a number of challenges that threaten the sustainability of their traditional practices...Trends indicative of climate change, such as increasingly recurrent drought, floods, erratic rainfall patterns, and high temperatures are adding significantly to these stresses.”

The highly centralized Derg regime was overthrown in 1991 and eventually replaced by the Ethiopian Peoples' Revolutionary Democratic Front (EPRDF). In order to reduce conflict, a process was put into motion to draft and ratify a new constitution based on federalism, multiculturalism, and self-determination. The constitution also enabled the creation of nine ethnically based regional states.

The past decade has been marked by the EPRDF's concentrated focus on economic development, but the formula of federalism through ethnically based regional states has proved controversial, and disputes over the country's local and national elections have raised increasing concerns about political freedom in Ethiopia. The government rejects these concerns as mistaken or misguided.

Under the Plan for Accelerated and Sustained Development to End Poverty (PASDEP) during the period 2005/06-2009/10, Ethiopia experienced rapid economic growth, approaching or surpassing double-digit annual increases in GDP. Approximately 80 percent of the population is engaged in agriculture, and it remains the key sector for overall economic development.

The second five-year development strategy is the recently initiated Growth and Transformation Plan (GTP) for 2010/11-2014/15. The GTP aspires to help Ethiopia reach the level of a middle-income economy by 2020-2023. The GTP also seeks to promote good governance, affirming that “public participation will be strengthened at all levels” and “the publics' understanding and awareness of constitutional issues will be increased and the custom and tradition of peaceful resolution of disputes improved” (GOE 2010).

In Ethiopia, pastoralists and agropastoralists live in the country's arid and semi-arid rangelands of the south and east, and they compose nearly 13 percent of the population. Mobility is fundamental to pastoralists' strategies for coping with unpredictable rainfall, livestock diseases, and the sustainable use of scarce natural resources.

However, pastoralists in Ethiopia face a number of challenges that threaten the sustainability of their traditional practices. As the country has sought to develop and diversify its economy, land has been allocated by the state for other uses. The combination of diminishing grazing areas and population

growth (both human and animal) has contributed to land degradation, competition for pasture and water, and inter-ethnic and intra-ethnic conflict. According to pastoralist leaders, the loss of traditional lands and the constraints on mobility resulting from administrative boundaries have disrupted and disarticulated social coping mechanisms and made traditional means of dispute resolution more difficult. Trends indicative of climate change, such as increasingly recurrent drought, floods, erratic rainfall patterns, and high temperatures are adding significantly to these stresses.

The GTP's plan for pastoral development gives priority to water development and sets ambitious targets increasing export earnings from live animals and meat exports combined, from US\$125 million in 2009/10 to US\$1 billion in 2014/15. The GTP projects "resettlement of pastoralists on a voluntary basis...in areas convenient to irrigation development" (GOE 2010).

Ethiopia is among those countries most vulnerable to climate risks in Africa. Its high vulnerability derives in large measure from the country's heavy dependence on rainfed, subsistence agriculture. Data show mean annual temperatures increasing by 1.3C between 1960 and 2006. Mean temperatures are predicted by the IPCC to continue to rise in the range of 0.9-1.1C by 2030, 1.6-2.0C by 2050, and 2.5-3.5C by 2080. Average national rainfall has not been decreasing on an annual basis, but the *belg* rains, which fall from March through May, and constitute the main rains for the southern regions of Ethiopia, have seen increasing variability and extremes. As indicated in FEWS NET data, this includes alarming declines in rainfall in recent years. Southern Ethiopia has experienced severe droughts in 2006, 2008, and 2010-2011.

Drought and climate variability are part of the natural cycle in lowland Ethiopia, and pastoralist communities do have an array of traditional coping mechanisms and resiliencies. However, the increased frequency of extreme weather and droughts threatens to overwhelm these economic and social coping mechanisms and resiliencies.

FINDINGS FROM THE FIELD

Pastoralism and Climate Change in Yabelo

Erratic patterns, fluctuating between late or failed rains and heavy, concentrated downpours are increasingly common in Yabelo in Borana Zone in southern Ethiopia, according to a local meteorologist. By the time the rains arrived in April 2011, the resulting shrinkage of pasture and water resources already had pushed local pastoral groups toward crisis, with many people losing all or virtually all of their cattle.

At an SOS Sahel Ethiopia project site outside of Yabelo town, FESS field researchers met with a group of 16 pastoralists (both men and women) to discuss the impact of climate trends over the past decade on their livestock holdings. These households have experienced a severe reduction in their assets, with an average reduction of 80 percent in livestock holdings from their peak holdings over the past ten years.

According to these and other interviewees in Yabelo, the search for water and pasture clearly has become more difficult as extreme weather has reduced their availability, and moving into new areas in search of these resources often provokes conflict. Population growth, tracts of land provided to investors for ranching, and environmental degradation have reduced available land. With the banning of burning in recent years, bush encroachment and the spread of invasive species, notably *Prosopis juliflora*, also has reduced pasture land. Lands that in the past were part of traditional "fallback" areas that might be left fallow are now settled and unusable for pastoralists.

Traditionally, Boran systems of social solidarity and support provided clans with crucial resiliencies in relation to the sharing of natural resources, livestock holdings, essential daily needs, and conflict. Leaders of the community redistributed cattle to those determined to be legitimately in need through no fault of their own. However, these redistributive systems presume that at least some clan members have a surplus that can be shared. Recently, the number of people who can contribute to this system is in decline, while those who seek support are increasing. Some pastoralists have sought to turn to agriculture, but success in dryland agriculture is equally contingent on reliable rainfall.

Facing food insecurity caused by drought, many pastoralists sell their livestock on the market. Increasing numbers of livestock, often in poor condition, drive down prices. Rich pastoralist entrepreneurs are able to take advantage of this situation. Indeed, pastoralist areas can export increasing numbers of livestock while also seeing increasing levels of

destitution. Interviewees expressed mounting concerns about the increasing number of “pastoral dropouts,” who are poorly educated and have few employment prospects.

Pastoralist communities in the area view drought as their major threat, and water as the key challenge. The development of the infrastructure and pipelines for an extensive water network is envisioned by the Oromia National Regional State government, and the government recognizes the potential for competition and conflict among potential water users. One interviewee asked, “For whom will the water network be developed? Pastoralists or investors?” The question of settlements—or “sedentarization”—also is a delicate issue, with some fearing that settlements will be created on an involuntary basis. These concerns raise the possibility of increasing tensions as Borana Zone enters a period of socioeconomic transition that also may include intensifying climate challenges.

Climate Change, Resource Conflicts, and Evolving Institutions in Moyale

Moyale sits uneasily on borderland between Somali Region and Oromia. Separate district administrative offices represent the traditionally antagonistic interests and claims of Somali and Oromo clans. In interviews, government officials in Moyale made clear that they view climate change as an obvious and visible reality whose negative impacts they have been experiencing for more than a decade.

These observations were echoed and elaborated in group meetings with Somali elders and Boran elders. The Somali elders stated that there was no water nearby for animals or humans, the long rains had been reduced to only 15 to 30 days, and temperatures at times become “overwhelming, like a hot iron.” The Boran elders also noted seasonal changes in precipitation and the loss of farming that they formerly practiced. In the current drought, they said “we are not just afraid for our livestock but for our lives—if things continue, we may not survive.” Both Boran and Somali elders conveyed apprehension about the rising number of young pastoralist dropouts who come to Moyale and other towns but find no work to do there.

In a context of highly variable rains and a mobile lifestyle that sometimes brings different clans into competition over scarce resources, clashes between Oromo (Borana) and Somali (Garri) clans typically have involved cycles of cattle-rustling and theft as they seek to restock or exact revenge for raids and killings. Severe drought temporarily reduces conflict as communities struggle to survive, but climate change has worsened the problems of scarcity and intensified competition and conflict.

Both Boran and Somali elders also voiced concerns about what they perceive as some of the negative effects of the creation of the ethnic-based boundaries of Oromia and Somali Regions. For these pastoralists, exclusions such as constraints on mobility to access land based on political claims are a source of strong grievances. The creation of new boreholes or wells in one jurisdiction to the benefit of one clan and the perceived disadvantage of another can easily trigger intense and lethal conflict.

The new development about which there was agreement on all sides was that there was a promising increase in the level of engagement between

“Severe drought temporarily reduces conflict as communities struggle to survive, but climate change has worsened the problems of scarcity and intensified competition and conflict.”

government officials and clan elders with respect to issues of conflict. In recent years, regional and local authorities of the state have had difficulties in dealing with clan violence and chronic thievery and assaults. In response, they have turned to widely respected customary institutions and elders for support. The creation of an “elders committee” (or “peace committee”) has been facilitated by the zonal government and, according to all of the key institutional actors, it has begun to play a major role in dealing with livestock theft and other violations. Boran and Somali elders also are trying to help nip rumors in the bud that fuel conflict. Elders are working to change attitudes among pastoralists and are beginning to sensitize communities with hopes of eroding the tendency for eye-for-an-eye responses. The elders hope for more support to ensure the effectiveness and sustainability of their efforts.

The government has contacted and brought together Somali and Boran elders in relation to conflictive events as they occur, but the elders expressed a desire to meet to discuss underlying issues at regularly scheduled intervals. They noted that financial and logistical support for the organization of such meetings would facilitate the process.

All of the groups interviewed by FESS in Moyale expressed both real concerns about the future of pastoralism and an attitude of openness toward agriculture and other alternative livelihoods. However, there is a very large gap between that openness to change and the capacity to make that change a reality in the near term.

Post-Conflict in Wachile and Hudet

The area around the towns of Wachile and Hudet—the former an Oromo community in Borena Zone in Oromia, the latter a Garri (Somali) community in Liben Zone in the Somali Region—has seen a decade of violence between the Borana and Garri clans.

The field study team met in Wachile with a group of 10 women, who described themselves as “pure pastoralists.” Their situation was dire. They said that they had gone through three years of recurrent drought and their assets and food supplies were nearly exhausted. Their livestock had either perished or were sick and dying. The women—two of whom were widows as a result of past violence—stated that there was no conflict at the moment because of the drought.

The women in the group said they regretted their past encouragement of fighting and had learned from the bitter experience of previous conflicts that the costs of fighting were too high. One woman said, “A war like that can kill your husband and your child.”

As in Moyale, the emergence of a joint peace committee and changes in community attitudes appeared to provide a window of opportunity for institutional change in support of conflict prevention and mitigation. However, the withdrawal of the Productive Safety Net Program (PSNP) and Mercy Corps, in combination with the return of severe drought, left Wachile becalmed in a “peaceful” humanitarian crisis. Given the respective roles of elders, youth, and women in approving, participating in, and encouraging or discouraging raiding, there appeared to be the potential for improved resource sharing and conflict prevention *if* the government and donors sustained and enhanced the various new forms of dialogue now underway.

The impact of drought also was extremely serious in the Somali community of Hudet. According to a group of elders and government officials, including the deputy woreda administrator, the accumulating toll of recurrent drought (“less rain every year” and “no grass or water last year”) had decimated livestock holdings.

Community officials enumerated possible steps as: 1) converting livestock assets to cash assets; 2) being able to sell livestock to good markets (which they were seeking); 3) identifying buyers; and 4) establishing additional arrangements to sell (or slaughter) weak cattle in return for compensation from NGOs (a destocking package).

However, the deputy administrator said that given increased drought frequency associated with climate change government efforts were now directed toward beginning to find alternatives to pastoralism, with an emphasis on agriculture. Once again, the availability of water was identified as the prerequisite for success. As in Wachile, the discussion group in Hudet noted that successful efforts had been made through roundtables and other means to create a greater emphasis on inter-ethnic dialogue, but interviewees noted that this process is still in its early stages.

Climate Change, Livelihood Diversity, Invasive Species, and Conflict Resolution in Northeastern Oromia and Afar

In Northeastern Oromia and Afar, the FESS field study team found similar—although generally less severe—climate challenges facing both pastoralists and agropastoralists. Ethnic groups included Afar, Hawiya, Issa, and Kereyu clans, several of whom have longstanding conflictive relations with each other, most notably the Afar and Issa.

In Chiro, the head of the local CARE office reported that there was very little conflict in the area. In part, this appeared to be the result of a more hospitable landscape allowing for agriculture, with its contributions to livelihood diversification and food security, and in part it appeared to be the result of a coordinated series of constructive government and donor interventions. Under the PSNP, a wide array of activities, including tree planting, agricultural diversification (drought resistant seeds), water harvesting, area enclosures, drip-kit irrigation, village savings schemes, land reclamation, and improved market information have begun to make a difference.

In Mieso, in West Hararghe Zone in Oromia, the study team met with the Mieso Woreda administrator and several members of his cabinet. As in the south, the group said that there has been a decrease in March-to-May rains over the past decade. In contrast to the south, the administrator emphasized deforestation as a major problem. Many people have taken to cutting trees for sale to supplement their livelihoods. Under the PSNP, new initiatives, including microenterprise, an improved post-harvest seed system, and a cereal bank have bolstered community resilience, in addition to existing economic coping mechanisms such as day labor in the towns and petty trading.

Despite these positive developments, Mieso officials said that there was increasing competition and conflict with Issa pastoralists from nearby Mulu. During the dry season, Mulu pastoralists moved onto lands in Mieso to use fresh pastures and water resources. Yet, even that conflict has been mitigated by what the local officials saw as examples of successful dispute resolution. Intruding pastoralists agreed to reduce their encroachments and, in return, are now allowed to use the livestock market in Mieso. The Mieso officials said that one of the keys to this success was the inclusion of women and youth in the dialogue.

A more expansive view of conflict affecting the wider area was provided in an interview with the Head of the West Hararghe Zone Conflict Prevention and Resolution Department. In West Hararghe, the scarcity of pasture and water resulting from recurrent drought has been causing unprecedented resource competition, driving theft, looting, and raiding involving Issa, Afar, Oromo, and Hawiya clans. Recently, federal, regional, and zonal government officials frustrated with the difficulty in containing this proliferating conflict have begun to engage with clan leaders to explore the use of customary laws to restore inter-clan peace in those instances where formal state institutions fall short. The security official said that a draft accord to reduce conflict, including understandings about water use, was being put forward by clan leaders for feedback in their respective communities.

In a focus group discussion in Mulu with elders from both the Issa and Hawiya clans, there were strong concerns expressed about climate change and its impact on local communities. Both the Hawiya and Issa elders agreed about the shifts in the climate in recent years. The Hawiya believe that with decreasing rainfall the water table has fallen, and the lowlands have become hotter. The Issa elders observed that rainfall has changed in both quantity and distribution, occurring only in small pockets that have not reached traditional grazing areas. Several of the elders said they had lost all their livestock except for two or three camels.

Here, as elsewhere, it was stated by interviewees that a “peace-building” committee has been formed for dialogue with government and among the communities. The head of the local woreda administration stated that livelihood diversification through the promotion of agropastoralism was one main pathway forward to alleviate tensions. This would represent a significant change for the Issa, in particular, but the Issa elders said they were open to this possibility.

Moving from Shinile to Zone 3 in Afar, climate-conflict linkages there follow a more circuitous route to resource scarcity through the harmful effects of a devastating invasive species, *Prosopis juliflora*. *Prosopis* is highly adaptive with a high tolerance for drought and marginal soils. Under conditions of severe drought such as those experienced in recent years, *Prosopis* competes with and displaces indigenous trees.

The Afar Region is made up of mostly very hot and arid lowlands that are chronically drought-prone. For hundreds of years, the Afar pastoralists have been in conflict over pasture and water with the Issa. With some land already lost to irrigated farming, the *Prosopis* invasion has drastically impacted the availability of pasture in Afar. Meanwhile, the Issa

have continued to push into Afar, closer and closer to the waters of the Awash River. Complicating matters even further, there are serious boundary disputes between the Issa and Afar. The confluence of these stresses—repeated climate shocks, massive *Prosopis* invasion, the loss of pasture to irrigated farmland on state-supported commercial enterprises, the disputed border, and the forays of the Issa onto Afar lands—has raised tensions and the potential for escalating conflict very high.

Only the recent emergence of peace (or “salaam”) committees and the efforts of NGOs to combat the *Prosopis* invasion stand out as notable forms of social and institutional resilience to conflict in the face of these mounting problems and antagonisms.

CONCLUDING OBSERVATIONS

Pastoralists in Ethiopia are coming under increasing pressure from the confluence of powerful forces. Population growth, increasing numbers of livestock produced for export, deforestation, environmental degradation, bush encroachment, and invasive species will increase pressure and competition over a shared and shrinking resource base. In some areas, administrative boundaries, at times contested or not clearly demarcated, will constrain the movements of pastoralists in search of water and pasture, or may even be used to exclude one pastoralist group to the advantage of another.

Climate trends experienced in pastoralist areas over the last decade indicate that climate change may be bringing a “new normal” that adds unprecedented challenges for pastoralist communities. The two most important features of climate change impacts as they appear to be unfolding are: 1) increased frequency of severe droughts and 2) the chronic failure (late arrival, early cessation, or non-appearance) of the long rains in the period from March through May.

These transformed climate trends are likely to entail severe weather events whose increased frequency and intensity may well overwhelm political and social institutions, especially as they inevitably intertwine with other demographic, environmental, and developmental problems.

Resource scarcity puts into motion the many adaptive strategies that pastoralists have developed over many generations. The most important adaptive strategy remains the mobility of pastoralists. However, the combination of more people with more animals competing for the use of ever-shrinking pastures and water sources does produce conflict. When administrative boundaries are used to try to regulate these movements, resulting in actual or perceived differential benefits for different clans, strong and potentially explosive grievances are very likely to arise.

Severe drought now seems to be occurring persistently. In many instances, especially in southern Ethiopia, with no time to recover from year to year, household assets are collapsing. Throughout southern Ethiopia, pastoralists themselves expressed doubts about the viability and future of the pastoralist livelihood.

One consequence of this new pattern already may be an increase in the number of pastoral dropouts who have few or no alternative economic activities to pursue in the near term. This raises the possibility of a growing

“The two most important features of climate change impacts as they appear to be unfolding are: 1) increased frequency of severe droughts and 2) the chronic failure (late arrival, early cessation, or non-appearance) of the long rains in the period from March through May.”

and potentially aggrieved population that might gravitate toward urban areas and contribute to climate-related conflict of a quite different sort than the resource competition scenario that is normally envisioned. It also suggests that the need for alternative livelihoods is more urgent than has been recognized to date.

All other things being equal, mobile pastoralism is perhaps the most efficient land use system for Ethiopia's extensive dry rangelands. However, with intensifying climate change, and an approach toward pastoralism in the GTP that over the medium term appears to privilege transition toward settlements rather than continuity in support of traditional mobility, it is clear that all things are not equal. Instead, pastoralism is likely to come under increasing climatic and developmental pressures.

Prior work under the Pastoralist Livelihood Initiative (PLI) and work proposed for PLI Phase II both recognize the climatic, economic, and political constraints mentioned here. However, current trends suggest that the need to address the impacts of these constraints and their effects on the growing problems of pastoralist dropouts and inadequate alternative livelihoods is even more urgent than has been realized to date. There is a danger of programming falling behind the real curve of the pastoralist transition that is underway.

Thus, pastoralist communities, government at all levels (federal, regional, zonal, woreda), and the donor community need to address the question of the impact of climate change on pastoralism and the potential for conflict at two levels: 1) aggravated resource scarcity and resource competition as a result of climate change; and 2) even more fundamental threats to pastoralism as a viable livelihood and the development of livelihood alternatives for increasing numbers of pastoral dropouts.

The most encouraging finding of the FESS field study is the striking emergence of "peace committees" of various stripes in nearly all of the locations visited. A window of opportunity has opened in which government authorities, frustrated by the persistence of conflict in pastoralist areas, have engaged with and solicited the assistance of elders, community leaders, and customary institutions in dispute resolution and conflict mitigation.

These nascent dialogues need additional support and offer the opportunity for the development of new forms of institutional cooperation between governments at all levels and customary institutions put in the service of the peaceful sharing of natural resources valued by pastoralist communities. Instead of engaging on conflicts and disputes after they arise, donors have the opportunity to support the Government of Ethiopia and pastoralist communities in addressing the underlying challenges of climate change, climate adaptation, and natural resource management.

Thus, donor support for government-community engagement on the theme of climate change and the peaceful sharing of natural resources could both advance progress on resolving resource conflicts and build important new institutional relationships of significant value in their own right.

Recommendations based on the findings of the study can be found on page 41.

INTRODUCTION

In 2007, the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) predicted that rising global temperatures will contribute to an upsurge in severe storms, floods, droughts, glacier melt, and sea level rise. In vulnerable areas of the developing world, extreme weather is expected to intensify pressures on land and water resources, disrupt agricultural production, and threaten food security.¹

In the wake of the IPCC report, a number of policy studies concluded that there is a strong likelihood that the natural hazards and environmental stresses associated with climate change will trigger or amplify conflict, especially in vulnerable or unstable areas of the developing world (CNA Corporation 2007, Campbell et al. 2007, Smith and Vivekananda 2007, Fingar 2008, UN 2009).² Among the projected scenarios were severe resource scarcity, dramatic increases in internal and external migration, disease outbreaks, and a host of destabilizing social and political effects (Campbell and Weitz 2008). The CNA Corporation envisioned a confluence of factors that might overwhelm weak or flawed systems of governance and public institutions, setting the stage for “internal conflicts, extremism, and movement toward increased authoritarianism

and radical ideologies” (CNA Corporation 2007).

As discussion of these issues moved forward, disagreements among divergent methodological approaches began to call into question the plausibility of some of the claims that were being made. A study published by the National Academy of Sciences combined climate model projections with historical linkages between civil war and temperatures in sub-Saharan Africa to project “a roughly 54% increase in armed conflict incidence by 2030” (Burke et al. 2009). However, making use of “a host of different model specifications and alternative measures of drought, heat, and civil war,” Halvard Buhaug of the Peace Research Institute Oslo (PRIO) rejected this assertion and found that “African civil wars can be explained by generic structural and contextual conditions” related to “political exclusion, poor economic performance, and changes in the international system” (Buhaug 2010). Similarly, in a broad review of the dynamics of “climate conflict,” Jeffrey Mazo argued that, “Just as no specific weather event can be definitively attributed to climate change because of normal variation within a complex system, specific social or political developments cannot be attributed to climate or other environmental factors” (Mazo 2010).

In the context of this debate, the Office of Conflict Management and Mitigation (CMM) of the U.S. Agency for International Development (USAID) asked the Foundation for Environmental Security and Sustainability (FESS) to synthesize the emerging literature and discussion about climate change and conflict linkages and to review the current state of knowledge. FESS found that upon closer examination, “the analysis and discussion of the climate-conflict relationship to date is very largely conceptual, schematic, and deductive,” and noted the potential for “costly initiatives” in response that “run ahead of firm evidence that they are meeting their stated goals” (Stark et al. 2009).

The main purpose of this case study is to help fill the gap in knowledge regarding how climate-related vulnerabilities interact with the dynamics of conflict in specific locations. Toward that end, USAID/CMM asked FESS to conduct case studies on climate change and conflict in selected countries, with a view to producing findings relevant to Agency and Mission interests and programs. The first of these was the case of Uganda, focusing on the so-called Cattle Corridor and the area of Karamoja. That study reaffirmed the importance of both historical context and social and institutional responses in understanding the origins and

Figure 1: Regions and Zones of Ethiopia



SOURCE: UN 2009

potential trajectory of climate-related conflict in those two geographic regions (Stark 2011).³

The second case is the present study, which focuses on the relationship between climate change and conflict among pastoralists and agropastoralists in three regional states of Ethiopia: Oromia, Somali, and Afar. As indicated in red in Figure 1, selected areas included Borena Zone in Oromia, Liben and Shinile Zones in Somali Region, and Zone 3 in Afar. All of these zones have arid to semi-arid climates historically subject to cycles of drought. Pastoralism, with its reliance on seasonal mobility as the fundamental coping mechanism, evolved as the system of production best equipped to meet the challenges of scarcity, variability, and extreme weather characteristic of these drylands. Oromo, Somali, and Afar pastoralists constitute 87 percent of the approximately 10 million pastoralists found in Ethiopia nationwide (PFE,

IIRR, and DF 2010). All of these areas also have experienced to varying degrees recent episodes of violent conflict among these and other ethnic groups competing for access to water and pasture. Thus, the setting for the study brings together four factors often associated with the potential for conflict: recurrent resource scarcity; precarious livelihoods; ethnic or identity group competition; and the movement of people across neighboring lands. In this context, the central questions addressed by the field research were whether and how climate change may be contributing to or amplifying the potential for conflict—and if it is, what steps might be taken to prevent and mitigate these effects? The study also sought to identify relevant social and institutional coping capacities and resiliencies that might be harnessed or strengthened to reduce vulnerability to climate and conflict risks.

METHODOLOGY

“The existence of grievances related to the impacts of climate change does not mean they will necessarily result in conflict. The quality of governance and the resilience of political, economic, and social institutions all mediate the relationship between environmental change and conflict in important ways.”

To help guide the methodological approach to these climate change and conflict case studies, FESS developed a seven-phase framework—the Climate Change and Conflict Assessment Framework (CCCAF). The framework provides a process for considering a wide variety of background data that supply context for analysis of the climate-conflict nexus. It relies in part on FESS’s Environmental Security Assessment Framework (ESAF) methodology, while integrating core components of USAID’s Conflict Assessment Framework (CAF). Both the ESAF and CAF emphasize one of the main conclusions of recent conflict analysis: Conflict is always the result of the interactions of multiple political, economic, social, historical, and cultural factors, and these must be taken into account in any analysis. The influence of climate change on conflict can only be understood within this web of relationships.

The existence of grievances related to the impacts of climate change does not mean they will necessarily result in conflict. The quality of governance and the resilience of political, economic, and social institutions all mediate the relationship between environmental change and conflict in important ways. Even discontented populations whose grievances find inadequate or aggravating institutional responses will be unable to engage in violent conflict if they lack the requisite resources for organization

and mobilization. Shocks or fast-moving and unanticipated events also may open windows of vulnerability or opportunity that animate or inhibit conflict.

The purpose of the CCCAF is to serve as a tool for analysis and to raise relevant, case-specific questions about these variables. However, it is not a formal template for the structure of the report itself.

Each phase of the CCCAF (attached as Appendix I) provides new information that may be relevant to earlier phases. Thus, while presented sequentially below, the phases of the CCCAF provide a continual feedback mechanism for revisiting and revising preliminary information and findings.

The first phase of the CCCAF reviews conflict-prone areas of the selected country that have experienced extreme climate variability (e.g., droughts, floods, and unseasonal temperature fluctuations). Patterns of conflict within these areas with potential linkages to climate effects are then identified. In Ethiopia, these criteria resulted in a focus on the pastoralist areas of Oromia, Somali, and Afar Regional States.

Phase two seeks to ground the study in the specific context of the country or region under study. Understanding how climate change may be contributing to conflict in any specific country or region first requires knowledge about the relevant

national context and already existing areas of contention and conflict. All societies not only are marked by such cleavages but also possess a range of coping mechanisms or resiliencies that can be used to reduce the likelihood of conflict. Formal and informal political, economic, and social institutions respond to threats in ways that are more or less successful in resolving or mitigating complaints and real or perceived injustices. The degree of a country's or society's resilience is pivotal in determining the pathways toward or away from violence.

Governance, in particular, is often of decisive importance. Where citizens perceive political and social institutions to be legitimate, representative, accountable, and responsive, the potential for violent conflict is reduced significantly. However, even where governance is weak or corrupt and grievances and resentment are at high levels, large-scale conflict still may not occur if angry individuals or groups lack the means to marshal effective collective action and engage in organized violence.

Phase three links environmental and socioeconomic factors to ask how climate change may be posing threats to essential resources, livelihoods, food security, and cultural values in the areas under study. For example, in poor rural areas of developing countries, extreme weather and increased pressures on land, water, forests, and rangelands can undermine agricultural productivity, provoking food crises threatening livelihoods and placing populations at risk. Phase three focuses more specifically on the capacity and effectiveness of formal and informal mechanisms for environmental governance and natural resource management. Is natural resource management, whether that of the state or traditional authorities,

reducing or contributing to the potential for conflict?

The fourth phase of the CCCAF looks more closely at the responses of affected communities and individuals to climate variability, extreme weather events, and their consequences. It asks how social, human, physical, financial, and natural capital and assets are used to build resilience or coping strategies for communities and social groups. It also seeks out second-order (or unintended) consequences of coping strategies and their impact on traditional forms of social organization and community or group relations with state authorities.

Phase five identifies the relevant stakeholders from government, civil society, and affected communities and solicits their perceptions and experiences of the impacts of climate trends and natural hazards. It investigates whether and how these impacts intertwine with citizen grievances, stakeholder interests, mobilizing factors, and the potential for conflict. Stakeholders are asked to describe their own response capacities and those of other stakeholders and to give their perceptions of the political, social, and institutional responses to climate-related challenges. Phase five also is devoted to gathering the available empirical data about climate variability and climate change in the areas under study.

In phase six, based on the synthesis of all of the data and field research, scenarios are developed to illuminate potential futures. These scenarios are not predictions but ways of envisioning plausible future outcomes and their accompanying levels of potential conflict. The scenarios include consideration of windows of vulnerability and opportunity (or triggering events).

The CCCAF concludes in phase seven by bringing together the contextual impacts of environmental and climate change, relevant core grievances and drivers of conflict, relevant patterns of resilience and mitigating factors, windows of vulnerability or opportunity, and projected future climate vulnerabilities in order to determine the links between climate change and potential conflict as well as those between climate change and adaptive resilience. Phase seven identifies lessons learned, good practices, programmatic gaps, and target areas and opportunities to improve the provision and coordination of interventions that can address climate change and climate-related conflicts. It focuses on ways that USAID's development assistance could make a positive contribution toward filling current programmatic gaps. Recommendations suggest approaches and responses that provide viable options for USAID and other development organizations.

AREAS VISITED AND ORGANIZATIONS AND INDIVIDUALS INTERVIEWED

From April 19, 2011 to May 5, 2011, the three-person FESS research team, with the assistance of one or (at times) two colleagues from Mercy Corps, conducted over 40 interviews and met with more than 150 persons from local community groups, civil society organizations, regional and national governments, and international organizations (a list is appended in Appendix II).⁴ Colleagues from Mercy Corps and representatives from local organizations assisted with translations in group discussions.

After initial interviews in Addis Ababa and Dire Dawa, travel for the field study was divided into two parts. The first portion focused on a number of



Figure 2: Route Traveled and Principal Communities Visited During the Study

SOUTHERN LEG: ADDIS (A) TO YABELLO (B), MOYALE (C), WACHILE/HUDET (D)
EASTERN LEG: ADDIS (A) TO DIRE DAWA (E), CHIRO (F) MIESO (G), MULU (H), AWASH/AMIBARA (I), METEHARA (J)

locations in southern Ethiopia in Borena Zone in Oromia (Yabelo, Moyale, Wachile) and Liben Zone in Somali Region (Moyale, Hudet). The second portion covered areas moving westward from Dire Dawa, including locations in West Hararghe Zone in Oromia (Chiro, Mieso, Mulu) and Zone 3 in Afar (Amibara, Awash), as well as East Shewa Zone in Oromia (Metehara). Figure 2 maps out the route of travel and the principal communities visited. All told, the field research covered approximately 4,000 kilometers, with meetings and interviews in the following locales:

- Yabelo Woreda⁵, Borena Zone, Oromia Regional State
 - Moyale (Administrative Offices of both Oromia Regional State and Somali Regional State)
 - Wachile, Arero Woreda, Borena Zone, Oromia Regional State
 - Hudet Woreda, Liben Zone, Somali Regional State
 - Dire Dawa (Chartered City)
 - Chiro Zuria Woreda, West Hararghe Zone, Oromia Regional State
 - Mieso, West Hararghe Zone, Oromia Regional State
 - Mieso-Mulu Woreda, Shinile Zone, Somali Regional State
 - Amibara Woreda, Zone 3, Afar Regional State
 - Awash Fentale Woreda, Zone 3, Afar Regional State
 - Metehara, Fentale Woreda, East Shewa Zone, Oromia Regional State
- Interviews followed a loosely structured format that permitted the natural flow of conversation and discussion of each person's or organization's responsibilities and priorities. Within that format, the following basic questions were addressed, followed by more in-depth discussion:
- a. Has the environment/climate changed in recent years?
 - b. What have been the impacts of environmental/climate change?
 - c. How have local people responded or tried to cope? Who is doing what?
 - d. How have local and national governments responded?
 - e. Are there conflicts in your area?
 - f. If so, what is causing them and how serious are they?
 - g. Has environmental change contributed to potential or actual conflict?
 - h. Is environmental/climate change of greater or lesser importance in relation to conflict? How and why?
 - i. What further responses are necessary to deal with the negative consequences of environmental change?
 - j. Given current environmental trends, what is your vision of the future 10 years from now with/without future interventions (in addition to current coping mechanisms)?

THE ETHIOPIAN CONTEXT

“Drought and famine have been powerful factors in shaping governance in Ethiopia over the past 40 years.”

RECENT HISTORY

Ethiopia has a long history and national identity that is quite distinct from other African countries. Never colonized, Ethiopia was ruled by a variety of monarchies from the Christian kingdom of Axum beginning around 400 CE to the long reign of Emperor Haile Selassie in the twentieth century (1930-1936; 1941-1974). Based in the Ethiopian highlands, the monarchies passed through various periods of conflict and cooperation with lowland Muslim populations to the east and Oromo populations to the south, but rule was increasingly centralized from the late nineteenth century onward. Italian attempts to exert control over Ethiopia were rebuffed at both the battle of Adwa in 1896 and upon the collapse of the fascist occupation of Ethiopia under Mussolini (1936-1941).

Drought and famine have been powerful factors in shaping governance in Ethiopia over the past 40 years. In the wake of the 1973 oil price shocks, drought and famine in northern Shewa, Welo, and Tigray in 1973-1974 exposed the paralysis and incompetence of Haile Selassie's aging regime. Thousands of hungry peasants left the countryside for the towns, hoping for government relief, but none was provided. The government's inaction inflamed important segments of the

population, including student activists, educated urban residents, and, most significantly, the junior officer corps (Marcus 2002). On September 12, 1974, Haile Selassie was deposed by the military.

The military officers who took power created a governing committee, known as the Derg, which soon enacted a series of far-reaching political and economic reforms. This included state ownership of all land, nationalization of financial institutions and private enterprises, and the promotion of collective agriculture. Political repression accelerated in 1977, with the Derg turning against student activists who had provided the ideological underpinnings of the Derg's socialist orientation. In the so-called Red Terror, under the leadership of Mengistu Haile Mariam, tens of thousands of persons considered to be opponents of the regime were killed.

Amid this violence and the failure of the Derg's economic policies, drought and famine once again struck Ethiopia in 1983-1984, compounding the sense of crisis in the country. The Derg government failed to respond and seemed to be in blatant denial of a humanitarian catastrophe, its attention turned instead toward preparations for celebration of the tenth anniversary of the revolution. Only a massive international relief

effort brought eventual stability to regions experiencing mass starvation. In response to these events, Mengistu imposed a massive resettlement and villagization scheme that sought to relocate people from degraded lands in drought areas to more fertile lands in the west and south. This, too, failed and added to the swelling resentment against the regime.

Ethnically based mobilization against the Derg regime appeared in the form of the Eritrean People's Liberation Front (EPLF), the Tigray People's Liberation Front (TPLF), and the Oromo Liberation Front (OLF). The TPLF was especially effective in mobilizing the peasantry and combined with the EPLF to oust Mengistu in May 1991.

Once in power, the TPLF brought together various ethnic groups under its new political umbrella, the Ethiopian Peoples' Revolutionary Democratic Front (EPRDF). In order to reduce conflict over the longer term, a process was put into motion to draft and ratify a new constitution based on federalism, multiculturalism, and self-determination. The constitution also enabled the creation of nine ethnically based regional states (Afar, Amhara, Benishangul-Gumuz, Gambella, Harar, Oromia, Tigray, Somali, and Southern Nations), and two chartered cities (Addis Ababa and Dire Dawa). In August 1995, the constitution went into effect and the Federal Democratic Republic of Ethiopia (FDRE) was proclaimed under the leadership of Prime Minister Meles Zenawi (Pausewang et al. 2002).

In 1998-2000, war broke out between Ethiopia and newly independent Eritrea over disputed borders. Estimates vary widely but thousands of people were killed or displaced during the costly conflict. However, during the 1990s, the new government was able to lay the

foundation for economic stability and growth through liberalization of the statist economy, improved fiscal discipline, control of inflation, and increasing support from multilateral and bilateral donors. The following decade also has been marked by the EPRDF's concentrated focus on economic development, but the formula of federalism through ethnically based regional states has proved controversial, and disputes over the country's local and national elections have raised increasing concerns about political freedom in Ethiopia. The government rejects these concerns as mistaken, placing responsibility for political tensions on its domestic political opponents and misguided (or ill-intended) international critics.

GROWTH AND TRANSFORMATION

As Ethiopia entered the new century, the country was still struggling to overcome years of political turmoil, armed conflict, largely failed policies, and an environmental legacy that included massive deforestation, unsustainable agricultural practices, and severe land degradation. Based on statistics from the year 2000, UNDP's Human Development Index ranked Ethiopia 168 out of 173 nations, with a GDP per capita (PPP) of US\$668, a literacy rate of 39 percent, and a life expectancy of just 44 years (UNDP 2002).

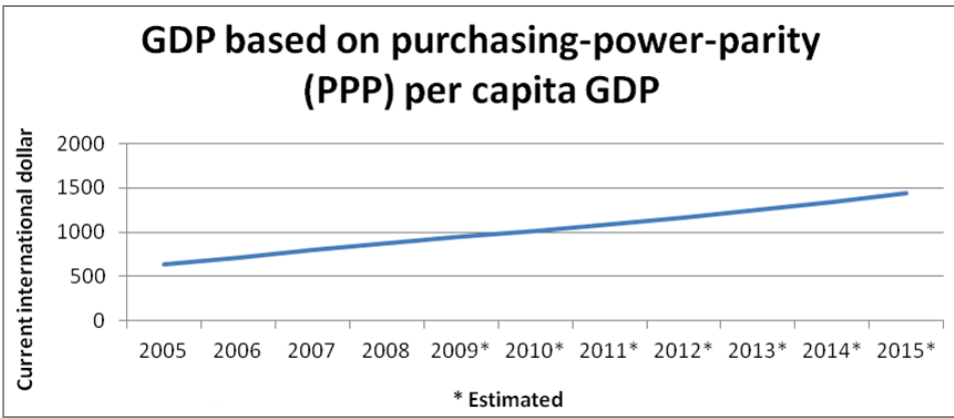
In response to these challenges, the Government of Ethiopia formulated and put into motion two successive five-year national development strategies. The Plan for Accelerated and Sustained Development to End Poverty (PASDEP) covered the five years from 2005/06 to 2009/10 and set out several ambitious goals. As a minimum baseline, the PASDEP sought to put Ethiopia on track to achieve the UN Millennium Development Goals (MDG) by 2015.

From a longer-term perspective, the PASDEP began a process that aimed to lift Ethiopia into the ranks of middle-income countries over the next 20-30 years. The PASDEP's strategy was centered on a number of pillars, including "a massive push to accelerate growth" that encompassed a strong emphasis on market-based agriculture as well as progress on "creating the balance between economic development and population growth" (GOE 2006). As can be seen in Figures 3, 4, and 5 on page 17, based on IMF data that also include projections through 2015, Ethiopia made remarkable progress during the years of the PASDEP's implementation.

Annual GDP per capita (PPP) increased rapidly, averaging 11 percent growth, and rising inflation was brought under control (albeit in the context of the global recession).⁶ Population continued to increase but at a pace clearly below the rate of economic growth. According to UNICEF, Ethiopia's total population grew by 2.9 percent between 2000 and 2009, and in urban areas it grew at a rate of 3.8 percent. A major demographic and developmental challenge is that approximately 46 percent of the population is 14 years of age or younger (CIA 2011). The rate of growth in agriculture (8.4 percent), while impressive, was slower than either industry (10 percent) or services (14.6 percent). Approximately 80 percent of the population is engaged in agriculture, and it remains the key sector for overall economic development. Pastoral production was one of the few areas that failed to meet PASDEP targets, reaching only 72 percent of planned meat production and 96 percent of milk production (GOE 2010).

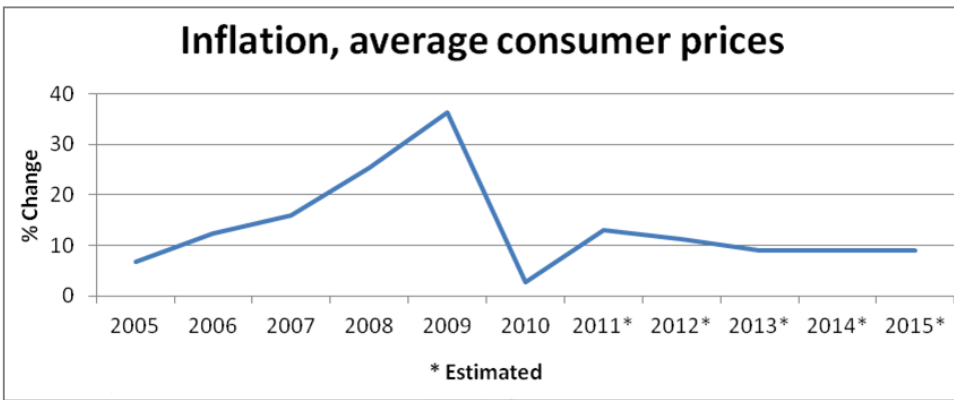
The second five-year development strategy is the recently initiated Growth and Transformation Plan

Figure 3: GDP Based on Purchase Power Parity



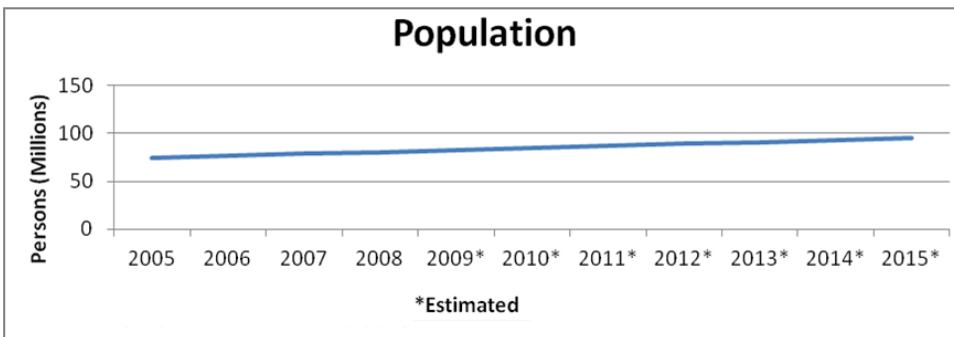
SOURCE: WORLD ECONOMIC OUTLOOK APRIL 2011, INTERNATIONAL MONETARY FUND.

Figure 4: Inflation



SOURCE: WORLD ECONOMIC OUTLOOK APRIL 2011, INTERNATIONAL MONETARY FUND.

Figure 5: Population



SOURCE: WORLD ECONOMIC OUTLOOK DATABASE APRIL 2010, INTERNATIONAL MONETARY FUND.

development and sets ambitious targets increasing export earnings from live animals and meat exports combined, from US\$125 million in 2009/10 to US\$1 billion in 2014/15. Trends in livestock and meat exports are largely attributable to extensive, mobile pastoralist production systems. The GTP also provides for technical assistance in such areas as improved livestock breeds, better mobile veterinary services, enhanced market linkages, and expansion of the agricultural extension system in support of pastoralists. The GTP projects “resettlement of pastoralists on a voluntary basis...in areas convenient to irrigation development” (GOE 2010). All of these efforts are essential and require equitable and conflict-sensitive implementation (especially the resettlement scheme), as a majority of pastoralist groups in Ethiopia are under a variety of pressures that are making their livelihoods increasingly precarious.

PASTORALISM

Pastoralism is a livelihood that evolved as a form of climate adaptation. In Ethiopia, pastoralists and agropastoralists compose nearly 13 percent of the population and traditionally have ranged across up to 60 percent of the land in search of pasture, water, and saltlicks for livestock. Pastoralists hold their household wealth primarily in their livestock (cattle, sheep, goats, and increasingly, camels). Therefore, they seek to keep large herds, if possible, ensuring the well-being of their animals through herd diversification and the splitting of herds. Social resilience in this arid landscape is supported by traditions of mutual assistance in times of need. Although some groups in Ethiopia describe themselves as “pure pastoralists,” most pastoralists also engage in some form of crop cultivation

(GTP) for 2010/11-2014/15. The GTP aspires to help Ethiopia “reach the level of a middle-income economy by 2020-2023,” while securing social justice (GOE 2010). Notably, it asserts that “agriculture will shift to a high growth path” and “serve as a spring board for structural transformation.” The GTP also seeks to promote good governance,

affirming that “public participation will be strengthened at all levels,” and “the public’s understanding and awareness of constitutional issues will be increased and the custom and tradition of peaceful resolution of disputes improved” (GOE 2010).

The GTP’s plan for pastoral development gives priority to water

“The GTP aspires to help Ethiopia ‘reach the level of a middle-income economy by 2020-2023,’ while securing social justice....The GTP also seeks to promote good governance, affirming that ‘public participation will be strengthened at all levels,’ and ‘the public’s understanding and awareness of constitutional issues will be increased and the custom and tradition of peaceful resolution of disputes improved” (GOE 2010).

(agropastoralism), but it is often of very low productivity given limited irrigation and poor soil quality. Mobility is fundamental to pastoralists’ strategies for coping with unpredictable rainfall, livestock diseases, and the sustainable use of scarce natural resources (PFE, IIRR, and DF 2010).

However, pastoralists in Ethiopia face a number of challenges that threaten the sustainability of their traditional practices. As the country has sought to develop and diversify its economy, land has been allocated by the state for other uses such as national parks, commercial farming, mines, and oil exploration. The combination of diminishing grazing areas and population growth (both human and animal) has contributed to land degradation, competition for pasture and water, and inter-ethnic and intra-ethnic conflict. According to pastoralist leaders, the loss of traditional lands and the constraints on mobility resulting from administrative boundaries have disrupted and disarticulated social coping mechanisms and made traditional means of dispute resolution more difficult (PFE, IIRR, and DF 2010).

Trends indicative of climate change, such as increasingly recurrent drought, floods, erratic rainfall patterns, and high temperatures are adding significantly to these stresses. In some regions, invasive species—linked by pastoralists to both restrictions on bush burning and climate change—are severely reducing or eliminating viable grazing areas. If these climate trends continue as projected, the capacity of pastoralists to adapt to their harsh environment and their resilience in the aftermath of severe droughts may be pushed to the limit in some areas of Ethiopia.

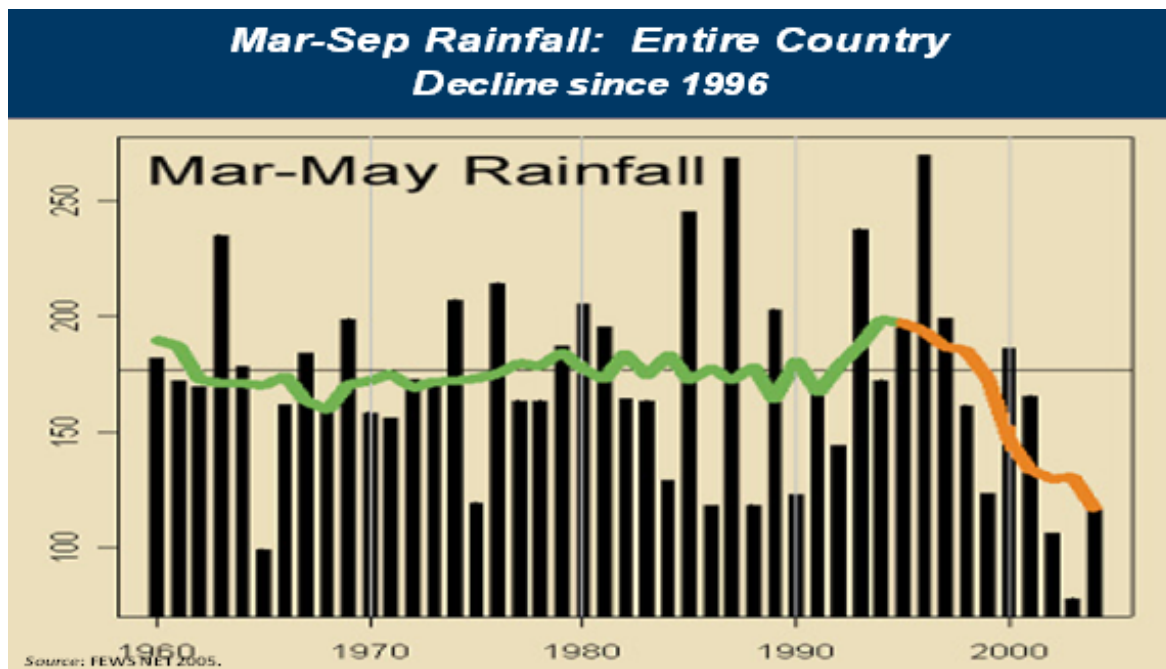
CLIMATE CHANGE

Ethiopia is among those countries most vulnerable to climate risks in Africa.⁷ Its high vulnerability derives in large measure from the country’s heavy dependence on rainfed, subsistence agriculture. According to World Bank data, close to 40 percent of the rural population is below the poverty line. The impact of drought is felt in almost all economic and social sectors, including agriculture, water, agro-industries, energy, transport, and trade. Severe droughts often are followed by severe food insecurity, population dislocation, family separation, and erosion of the sociocultural fabric.

Water stress is felt in many parts of Ethiopia, although it is unevenly spaced across geographical regions and reflects the highly variable national pattern of rainfall distribution. The average mean annual rainfall, estimated at about 750 mm nationally, varies locally from as low as 100 mm in the eastern lowlands, along the border with Somalia and Djibouti, to as high as 2,400 mm in the southwestern highlands. The arid and semi-arid areas in the south and the east that are the focus of this study face significant water stress or scarcity, with a great deal of intra-and-inter year variability. Competition for water resources among different users and for different uses is acute in these water scarce areas.

According to Melese Lemma, Acting Head of Research and Studies at the National Meteorological Agency, data collected from 40 weather stations around the country show that both high and low temperatures have increased in Ethiopia over the past 30 years. Average daily high temperatures have increased 0.1C per decade, while the average daily low temperatures have increased by

Figure 6: Recent Declines in March-May Rainfall in Ethiopia



SOURCE: FEWS NET 2005

0.25C per decade. Mean temperatures are predicted by the IPCC to continue to rise in the range of 0.9-1.1C by 2030, 1.6-2.0C by 2050, and 2.5-3.5C by 2080. Data from a review of available sources by researchers at the University of Oxford and the Tyndall Centre for Climate Change Research reflect somewhat higher increases, with mean annual temperatures increasing by 1.3C between 1960 and 2006; they conclude that “all projections indicate substantial increases in the frequency of days and nights that are considered ‘hot’ in the current climate.”⁸

The movement of the Inter-Tropical Convergence Zone (ITCZ)—the area where trade winds from the northern hemisphere and southern hemisphere meet, causing convective tropical storms—is the main driver of rainfall in Ethiopia. The oscillations of the ITCZ are sensitive to inter-annual variability produced by changes in Indian Ocean sea-surface temperatures, which contribute to Ethiopia’s frequent droughts (McSweeney et al. 2008).

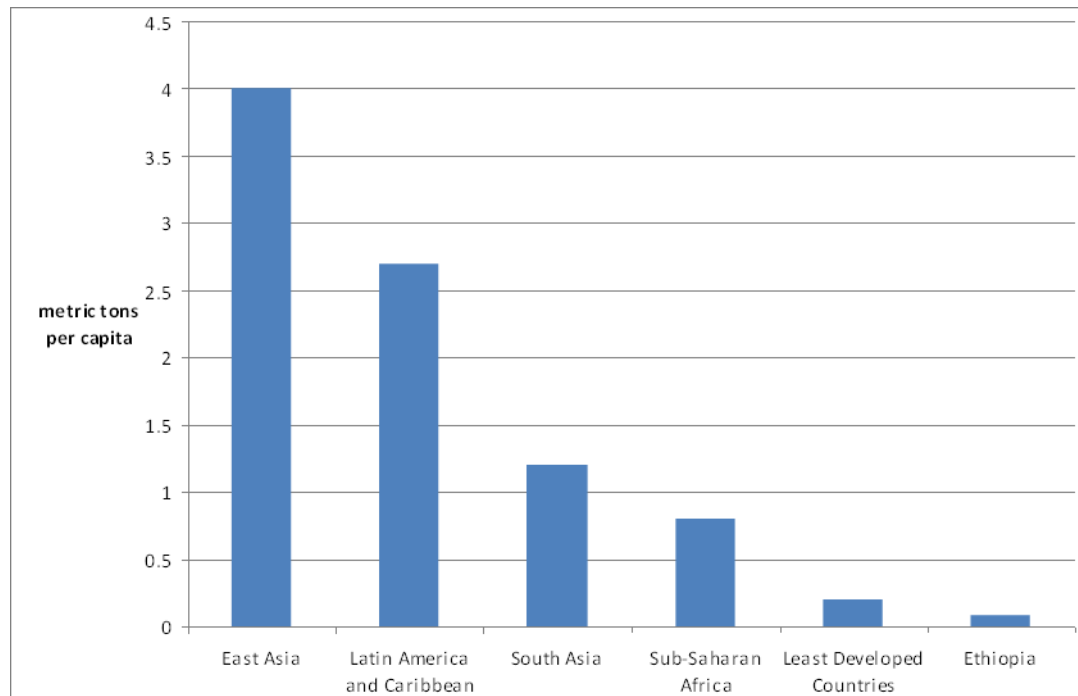
Average national rainfall has not been decreasing on an annual basis, but the *belg* rains, which fall from March through May, and constitute the main rains for the southern regions of Ethiopia, have seen increasing variability and extremes.⁹ As indicated in FEWS NET data for the period from 1996 to 2004 in Figure 6, this includes alarming declines in *belg* rainfall in recent years. In the years since 2004, southern Ethiopia has experienced severe droughts in 2006, 2008, and 2010-2011. Finally, grained data are not easy to obtain. FEWS NET also cites problems with the “absence of rainfall rain gauge data and unreliability of satellite imagery in pastoral areas.”¹⁰

Despite climate projections that generally anticipate a slight increase in annual rainfall throughout Ethiopia in the coming decades (including in Oromia, Afar, and Somali Regional States), the increasingly erratic nature of rainfall is one of the main challenges facing Ethiopia (GOE 2007). As the GTP notes, during the implementation of the PASDEP, the country suffered from “delayed

arrival of rainy seasons, early withdrawal, and poor distribution of rain” (GOE 2010). In addition to high sensitivity and increasing exposure to climate change, Ethiopia’s low levels of technology, including limited irrigation, add to the country’s high vulnerability to climate risk.

At the same time, given that drought and climate variability are part of the natural cycle in lowland Ethiopia, pastoralist communities do have an array of traditional coping mechanisms and resiliencies.¹¹ These include such actions as migration (mobility), diversification of livestock (for example, increasing goats and camels), resource sharing within extended families and clans, destocking (sale of some portion of livestock), and supplementing pastoralism by small-scale agriculture, wage labor, and petty trading (e.g., firewood, charcoal, crafts, incense, and gum). However, the increased frequency of extreme weather and droughts threatens to overwhelm these economic and social coping mechanisms and resiliencies.

Figure 7: CO₂ Emissions, 2007 (in metric tons per capita)



SOURCE: WORLD BANK STATISTICS ONLINE.

The cruel irony for Ethiopia is that its high degree of physical vulnerability to climate change is in inverse proportion to its contribution to global greenhouse gases. As Figure 7 shows, Ethiopia's per capita CO₂ emissions are among the very lowest in the world, dwarfed by even those of other Sub-Saharan and least developed countries.¹² Given this paradox, it is not surprising that Ethiopia has taken a leadership role on the issue of global climate change, with Prime Minister Meles Zenawi serving as the African Union's spokesperson at global climate change talks. Prime Minister Meles has stated that developed countries are "morally obliged to pay partial compensation to poor and vulnerable countries and regions to cover part of the cost of the investments needed to adapt to climate change" (Meles 2009).¹³ The GTP includes the goal of building a "Green Economy," setting out a series of targets for both climate change mitigation and climate adaptation (GOE 2010). Thus,

for Ethiopia, climate change is both an urgent national challenge and a pressing international policy issue.

FINDINGS FROM THE FIELD

“By the time the rains arrived in 2011, the resulting shrinkage of pasture and water resources already had pushed local pastoral groups toward crisis, with many people losing all or virtually all of their cattle.”

PASTORALISM AND CLIMATE CHANGE IN YABELO: “WHAT WILL BECOME OF US?”

According to staff at the Yabelo Pastoral and Dryland Agriculture Research Center, the long rains normally arrive in Yabelo, the capital of Borana Zone, around March 15-20.¹⁴ This year they arrived only one day before the FESS field study team reached Yabelo, on April 24. When the rains did arrive, they were unusually intense. The average annual rainfall in Yabelo has been in the range of approximately 500 mm to 600 mm.¹⁵ In just two days, April 24 and April 26, 136 mm of rain fell in Yabelo.

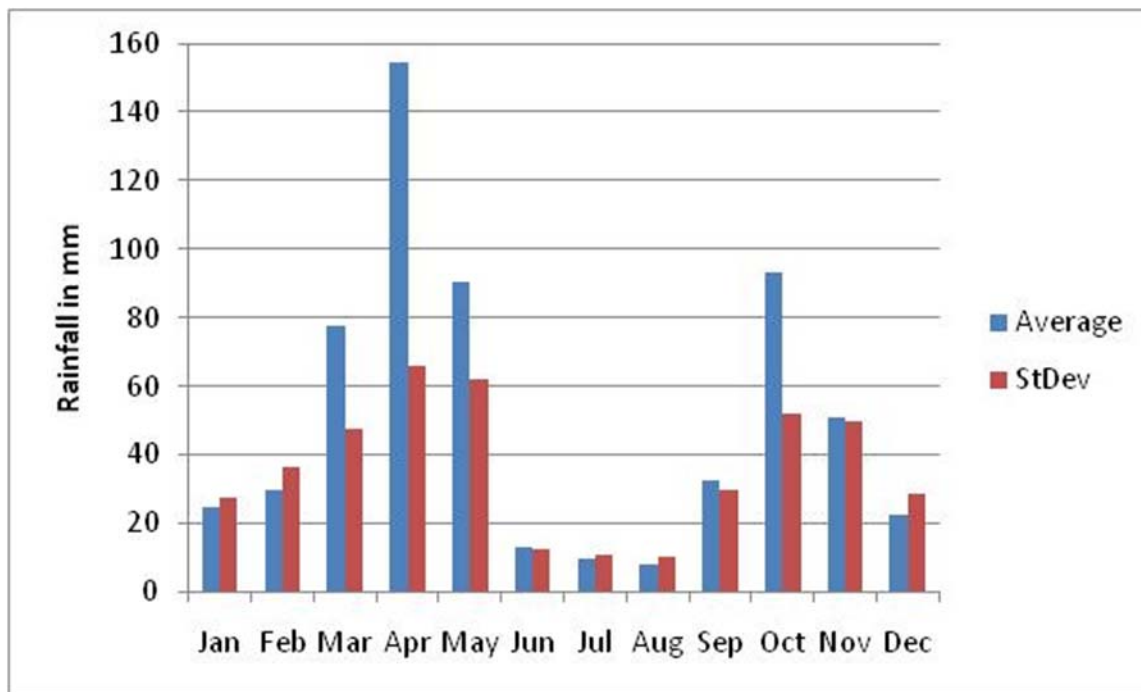
These erratic patterns, fluctuating between late or failed rains and heavy, concentrated downpours are increasingly common in Yabelo, according to a local meteorologist.¹⁶ As can be seen at a glance in Figure 8 on page 22, the delay in the arrival of rains until late April represents a huge loss of expected seasonal rainfall.¹⁷ By the time the rains arrived in 2011, the resulting shrinkage of pasture and water resources already had pushed local pastoral groups toward crisis, with many people losing all or virtually all of their cattle. According to a rapid assessment done in Borana Zone in April 2011 by local officials and NGOs, “dreadful pasture condition was observed in all the visited

areas” (Borana Zone Emergency Coordination Taskforce 2011).

Moreover, the late arrival of heavy rains does not bring the respite that might be intuitively anticipated. According to a local veterinarian, the already weakened cattle are chilled by the steady rains, their body temperatures lowered, and it is not uncommon for them to die. Heavy rains also wash away grass seeds for pastures, and they damage crops.

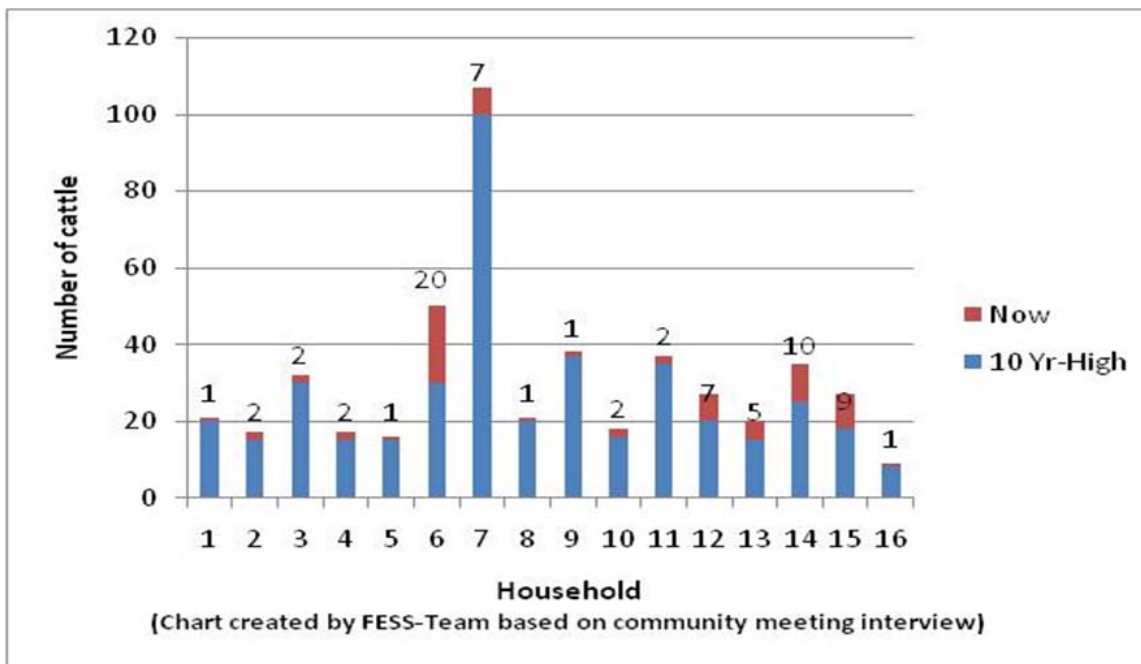
Livestock deaths in and around Yabelo were extremely high in the second quarter of 2011, with CARE staff reporting that as many as 42,000 had died in one week. At an SOS Sahel Ethiopia project site outside of Yabelo town, FESS field researchers met with a group of 16 pastoralists (both men and women) to discuss the impact of climate trends over the past decade on their livestock holdings. As can be seen in Figure 9 on page 22, given that livestock holdings are the fundamental measure of wealth in pastoralist communities, these households have experienced a severe reduction in their assets. Comparing livestock holdings from their 10-year-high as shown in blue, and their current holdings as shown in red, there has been an average reduction of 80 percent in livestock holdings, with 10 of the 16 respondents left with only 1 or 2 livestock.¹⁸

Figure 8: Yabelo Average Rainfall Pattern (1987-2006)



SOURCE: ADAPTED FROM OROMIA NATIONAL REGIONAL GOVERNMENT 2011.

Figure 9: Decimated Livestock by Yabelo Pastoralists: Livestock-Holding-Now vs. 10-Year-High



SOURCE: FESS INTERVIEWS WITH 16 YABELO HOUSEHOLDS, APRIL 24, 2011.

However, drought brings many other problems besides the outright loss of cattle. Surviving livestock are less productive and more susceptible to disease. Both interviewees and local veterinarians believe that as a result of climate change ticks have been

increasing in number. The prevalence of ticks results in a loss of milk production. Highly productive, pure Borana bulls have nearly disappeared, as less productive cattle have proved to be more drought and disease resistant.

The coping mechanisms traditionally used by pastoralists in the area are often inadequate or even counterproductive, especially in conjunction with other external factors. The search for water and pasture clearly has become more difficult as extreme weather has reduced their availability, and moving into new areas in search of these resources often provokes conflict. Locally based NGOs pointed out other complications. Population growth, tracts of land provided to investors for ranching, and environmental degradation have reduced available land. With the banning of burning in recent years, bush encroachment and the spread of invasive species, notably *Prosopis juliflora*, also has reduced pasture land. Lands that in the past were part of traditional “fallback” areas that might be left fallow are now settled and unusable for pastoralists. In the Yabelo area between

1973 and 2003, bushlands increased from 80 km² to 115 km², bushed-grasslands increased from 134 km² to 198 km², croplands increased from 13 km² to 63 km², and grasslands decreased from 173 km² to 24 km² (Coppock 1994 and Mesele 2006 in

PFE, IIRR, and DF 2010). In Arero, to the east of Yabelo, a less pronounced but similar pattern of landscape changes is observable. There, from 1967 to 2002, there was a 36 percent loss in grassy cover, while woody cover (bush) increased by 16 percent, bare land increased by 6 percent, and settlements and cultivated areas increased by 14 percent (Oromia National Regional Government 2011).

One increasingly common coping mechanism in recent years has been herd diversification. Many pastoralists are turning from grazers (cattle and sheep) to browsers that eat bushes (camels and goats). Camels and goats adapt more easily to droughts and changes in pasture. However, making this shift in herd composition presumes the necessary buying power. Camels, which are more expensive, are generally owned by richer households. Herd splitting also is used to increase efficiency. Milk-producing animals are kept close to settlements, while camels and dry cows, as well as sheep and goats, are herded in clusters where fresh pastures can be found (PFE, IIRR, and DF 2010).

Traditionally, Boran systems of social solidarity and support provided clans with crucial resiliencies in relation to the sharing of natural resources, livestock holdings, essential daily needs, and conflict. *Gada* is the age-grade and male-based social institution by which collective decisions are made for the community, with the *Gada* council of elders the principal decision-makers. *Gada* regulates and negotiates the use of communal land and water resources both within Boran groups and in relation to other ethnic groups such as the Guji, Gabra, and Somalis. In the case of shocks such as droughts, safety nets are provided for poorer households. Milk and meat is given to those in need and livestock

may be loaned or given to those without any animals. At *busa gonofa* meetings, leaders of the community redistribute cattle to those determined to be legitimately in need through no fault of their own (Temesgen 2010). However, these redistributive systems presume that at least some clan members have a surplus that can be shared. As recent climate trends have stepped up the pace and severity of droughts, aggregate community household assets have declined. Yacob Aklilu

is equally contingent on reliable rainfall. In essence, the turn toward dryland agriculture, in the absence of irrigation, is an example of “common mode failure,” i.e., the use of a backup system that is subject to the same vulnerability (lack of rainfall) as the primary system.

Facing food insecurity caused by drought, many pastoralists sell their livestock on the market. Increasing numbers of livestock, often in poor condition, drive down prices, and poor pastoralists are essentially price-



ABOVE: Pastoralists from focus group in Yabelo Woreda, Ethiopia, April 2011.

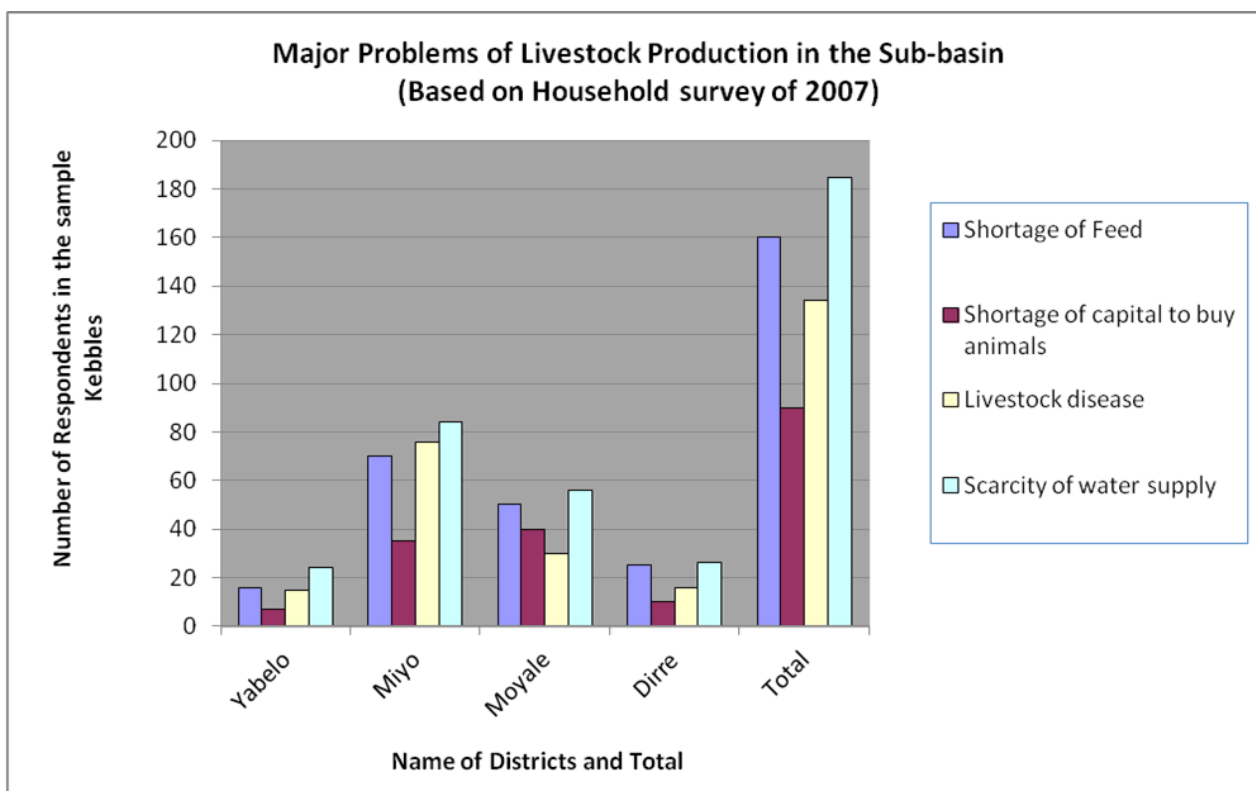
and Andy Catley of the Feinstein International Center at Tufts University (2010) recently found that “the number of people who can contribute to this system is in the decline, while those who seek support are increasing.”

In the wake of recent weather trends and a terrible drought in 2006 (an estimated 54 percent of cattle were lost), some pastoralists turned to agriculture.¹⁹ Yet, according to the Borena Land Use Study, soil quality in many places is rocky and poor, with a high degree of erosion (Oromia National Regional Government 2011). The use of another coping mechanism—gathering firewood and charcoal for sale—only contributes to these problems. More fundamentally, success in agriculture

takers in any event. This is occurring in the context of rising prices for meat exports to Egypt, Saudi Arabia, Yemen, and other countries in the Middle East, and a widening divide between rich pastoralist entrepreneurs or investors and poor or destitute pastoralists. Recent research has found a rich-get-richer dynamic at play in which “pastoralist areas can export increasing numbers of livestock, but are also characterized by increasing levels of destitution,” thereby resulting in “a gradual redistribution of livestock from poor to rich” (Aklilu and Catley 2010).

Indeed, in discussions with NGOs in both Addis Ababa and Yabelo, interviewees expressed mounting concerns about the increasing

Figure 10: Livestock Production in the Borena Sub-basin



SOURCE: OROMIA NATIONAL REGIONAL GOVERNMENT 2010.

number of “pastoral dropouts,” who are poorly educated and have few employment prospects other than as hired labor for wealthier pastoralists or as day laborers. These and other alternative economic activities, such as trading, crafts, salt mining, incense and gum collection, and the harvesting of aloe for soap production are generally better thought of as supplements to precarious pastoralist livelihoods rather than as fully supportive alternative livelihoods. One NGO representative based in Yabelo who works with pastoralist communities on a daily basis stated, “Many people are asking, what will become of us?”

Recent climate trends are making this question increasingly salient and acute, but high levels of human insecurity deriving from climate shocks do not necessarily manifest clear or easily discernible correlations with conflict. One recent study attempting to sort through the available data on the relationship

between droughts and conflict in Oromia found that “one does not find a clear and consistent pattern” (Temesgen 2010). FESS interviewees in Yabelo suggested that during times of severe drought conflict decreased because the requirements of daily survival became the exclusive focus of the community. This seemed to be the case in the Yabelo area in late April 2011. One experienced project implementer stated that after pastoralists struggled through a season of severe drought and normal rains returned, they would probably turn to cattle-raiding for restocking (another traditional resiliency), and a new cycle of violence might begin. In this case, drought and the inability to manage its consequences would still remain as arguably the main factor contributing to conflict—since it created the need for restocking—but it would eventuate in conflict only through a kind of delayed response. However, even here, the initial evidence suggests a complex

relationship. Amsale Temesgen (2010) argues that the evidence shows that “although there seems to be a delayed correlation between conflict and drought years, there are discrepancies in the temporal distribution of conflicts.”

What is not at issue is that pastoralist communities view drought as their major threat, and water as the key challenge. Research conducted by the International Institute for Sustainable Development (IISD), CARE International, and Save the Children UK (SCUK) found that, in Borana, “8 community groups out of 11 ranked drought as the main hazard” affecting livelihoods, and “3 groups ranked drought as the second most important hazard” (Riché et al. 2009). FESS’s interviews with officials, researchers, and community members in Yabelo also found that drought was the most frequently mentioned threat faced by pastoralist communities. Similarly, as seen in Figure 10, the scarcity of water is

viewed by communities in Borana Zone as the major problem in livestock production.

The Oromia National Regional Government recognizes the centrality of water provision in addressing the needs of pastoralists within the larger context of land use planning and integrated rangeland development. Based on criteria of biophysical and socioeconomic suitability, land use planning and the development of pilot project areas are underway. Through a variety of activities and collaboration among all levels of government and traditional *Gada* institutions, the projects will seek to reverse rangeland degradation, control bush encroachment, increase area enclosures, improve veterinary services, develop markets, and enhance the water supply. As part of the latter, the development of the infrastructure and pipelines for an extensive Borana water network is envisioned. In the near term, the strategy aims to support pastoralists in their existing livelihoods, but in the longer term the goal is to transition much of the population into settlements close to water resources. These transformations are to be managed through a system of guidelines, regulations, and standards (Oromia National Regional Government 2011).

The Oromia National Regional Government recognizes that these interventions will create a number of challenges, including some potential for conflict. Conflict could arise from local movement to the newly developed areas, migration from neighbouring regions, frictions between pastoralists and cultivators, and tensions with “existing social structures on common utilization of existing resources and unrestricted mobility during abnormal years” as well as the “impact of drought and climatic changes on available resource

utilization, which [is] traditionally managed by strategies of mobility” (Oromia National Regional Government 2011).

Several interviewees in the Yabelo area expressed skepticism and concern about the government’s plans for regulating land use and the

possibility of increasing tensions as Borana Zone enters a period of socioeconomic transition that may also include intensifying climate challenges. One interviewee summed up the situation by saying that, “the mechanisms are a bit fragmented to hear communities’ input right now—the government needs to discuss this



FESS.

ABOVE: Sick and dying cattle near Moyale, Ethiopia, April 2011.

development of water resources. First, respondents observed that, to date, the inclusion of community leaders and customary institutions has been weak. In one instance, it was asserted that government played too heavy a role in influencing the agenda of the latest *Gumi*, an assembly of great importance held every eight years under the *Gada* institution. Second, there were questions expressed about who would benefit from the Borana water network. As one interviewee put it, “For whom will the water network be developed? Pastoralists or investors?” Third, the question of settlements—or “sedentarization”—is a delicate issue, with some fearing that settlements will be created on an involuntary basis. All of these concerns raise the

issue of engaging with customary institutions.”

CLIMATE CHANGE, RESOURCE CONFLICTS, AND EVOLVING INSTITUTIONS IN MOYALE

Moyale sits uneasily on borderland between Somali Region and Oromia that is seen as customary land by both the Somali Garri clan and the Oromo Borana clan. As a reflection of the overlapping claims of these two traditionally antagonistic groups, district administrative offices represent the interests of each. This hybrid model provides the sometimes problematic backdrop to the challenges of climate change and conflict in the area.

“Both Boran and Somali elders also voiced concerns about what they perceive as some of the negative effects of the creation of the ethnic-based boundaries of Oromia and Somali Regions.”

FESS’s analysis of 70 years of rainfall data for Moyale from the Borena Land Use Study shows a very erratic pattern marked by a large standard deviation and high coefficient of variation from year to year and month to month.²⁰ This historical variation makes it difficult to establish statistically that climate change is taking place in southern Ethiopia. However, government officials and elders in Moyale made clear in interviews that they view it as an obvious and visible reality whose negative impact they have been living.

The deputy administrator for the Somali side in Moyale Woreda observed that the dry season is longer and the rainy season shorter than they were in the past. As he put it, “population, livestock, and temperatures are all increasing.” As a result of this convergence of stresses, he saw trends of growing scarcity of water and pasture, livestock in poor and deteriorating health, and with the onset of the latest drought, pastoralist livelihoods increasingly compromised. In a separate interview, his counterpart, the administrator for the Borana side in Moyale Woreda, emphasized the quickening frequency of drought. He stated that in years past a severe drought might arrive once every ten years, but recently it has been every two years, giving as examples the severe droughts in 2006, 2008, and now in 2010-2011.

These observations were echoed and elaborated in group meetings with Somali elders and Boran elders. The Somali elders stated that there was no water nearby for animals or humans, and the long rains had been reduced to only 15 to 30 days. The long rainy season harvest “used to last us all year” but does no longer, and “we are now food recipients, although we always had grain and animals before.” Temperatures at

times become “overwhelming, like a hot iron.” The Boran elders also noted seasonal changes in precipitation and the loss of farming that they formerly practiced. They noted the “very scary happening” that “clouds do not come in the evening” as in the past. In the current drought, they said “we are not just afraid for our livestock but for our lives—if things continue, we may not survive.”

These climatic changes have impacted the livelihoods of pastoralists and agropastoralists in powerful ways. With the loss of farmlands and the number of cattle shrinking, Somali pastoralists have shifted increasingly to camels and goats. Having first lost crops and now not even able to maintain healthy livestock, Somali elders stated that “we are afraid for our livelihood future.” They estimated that 35 percent of Somalis in the Moyale area had lost all of their livestock as of May 2011. People found themselves traveling 50 to 60 kilometers in search of water, and livestock diseases were on the rise. Both Boran and Somali elders conveyed apprehension about the rising number of young pastoralist dropouts who come to Moyale and other towns but find no work to do there.

On the road some 20 kilometers north of Moyale, the FESS field study team encountered pastoralists from a small nearby community, who were looking for the last of their dead and dying cattle. They agreed to allow the study team to visit their settlement, and a mixed group of men, women, and youths discussed their situation. When asked about their options, their only immediate response was that they would probably gather firewood and charcoal and sell it by the side of the road. They also hoped for emergency food relief, but no one had visited them so far. For the longer term, the different generations

in the community had the same doubts about how—or whether it would be possible—to continue. One older man stated, “I do not want to see my children going through what I have gone through these past years.” In a separate conversation, young men indicated they were thinking about leaving their settlement to seek work elsewhere, but that it would be a matter for the entire community to discuss and decide together.

Interviewees described a somewhat mixed and evolving conflict environment in the Moyale area. All were quick to point out that there was a long history of conflict between the Borana and Garri clans and others. The Gabra, an “Oromo-Somali” clan occupying nearby lands, has traditionally not been involved in lethal conflict with the Garri. These clashes between clans typically have involved cycles of cattle-rustling and theft as they seek to restock, increase their wealth, or exact revenge for raids and killings they have suffered. Although each clan saw the other as an enemy, it was also understood that these conflicts were an integral part of the pastoralists’ way of life. In a context of highly variable rains, the waxing and waning of pasture and water resources, household social status and wealth contingent on livestock holdings, and a mobile lifestyle that sometimes brought different clans into competition over scarce resources, the logic of engaging in conflict was often compelling. In fact, conflict itself was a coping mechanism in a physical environment characterized by unpredictable and extreme weather.

At the same time, most interviewees, from government officials to local residents and clan leaders, stated that in the past, while there were serious episodes of violence, there also were customary institutions and traditional practices that provided mechanisms for dispute resolution and the

settlement of grievances. These resiliencies were generally successful in placing a limit on violence and ensuring that conflict did not veer into catastrophe. Moreover, these customary institutions not only provided ways to constrain and cushion the impact of violence, they also supplied tools for resource sharing and conflict prevention. For example, as the Somali deputy administrator in Moyale noted, a kind of implicit dry pasture “permission” system existed, where one clan would notify another in advance that they would be coming to an area because of hardships they were experiencing in their own lands. This permission—or “shared resilience”—might then be reciprocated in years to come.

In recent years, these institutions and practices have struggled to deal with the impact of a wide variety of stresses. Population increases and landscape changes, including both deforestation and bush encroachment, have increased resource competition. Although household assets have been diminishing recently, the broader underlying trend for some time has been an increase in livestock in tandem with the increasing population, as people try to accumulate livestock as an insurance policy against the risk of drought and other shocks. The growing animal population has put more pressure on the land and, at times, driven down prices, especially when drought has led to large sell-offs of animals on the market.

Both Boran and Somali elders also voiced concerns about what they perceive as some of the negative effects of the creation of the ethnic-based boundaries of Oromia and Somali Regions. There is obviously a conceptual and practical tension between the bounded administrative units of the state and the adaptive

“In the view of other observers, the problem goes deeper than blurred or overlapping administrative boundaries. From this perspective, the ethnic federalism that is designed to ensure self-determination has been used in predominantly pastoralist regions to fuel the race to control key resources.”

mobility that is intrinsic to pastoralism as traditionally practiced. In addition, the border areas are not homogeneous and there is some fluidity in terms of how other clans align themselves with the two predominant Oromo and Somali groups. To complicate matters further, the border was not demarcated clearly and different groups view the same areas as theirs. A federally supervised referendum in 2004 gave approximately 500 *kebeles* (neighborhoods) to Oromia and around 100 to Somali Region, but a number of interviewees in Moyale expressed the view that the referendum had only made matters worse and that some boundary issues remained unresolved. Indeed, the group of Boran elders with whom FESS met argued that Moyale town should be put under one administration rather than treated as Somali and Oromo. They said they had suggested to many officials at all levels of government the model of Dire Dawa (a chartered city) as a possible example to follow to construct one city council. Government officials told them, they said, that they would study the idea.

In the view of other observers, the problem goes deeper than blurred or overlapping administrative boundaries. From this perspective, the ethnic federalism that is designed to ensure self-determination has been used in predominantly pastoralist regions to fuel the race to control key resources. Put another way, the “delineation of land among ethnic groups is construed by pastoralists as an exclusionary right to the relevant pieces of land and all their resources” (Temesgen 2010). For pastoralists, exclusions such as constraints on mobility to access land, based on political claims, can often be the source of strong grievances. Conflict over water resources is another example. Past

experience has shown that the creation of new boreholes or wells in one jurisdiction to the benefit of one clan and the perceived disadvantage of another can easily trigger intense and lethal conflict. For example, in 2009, conflict over a borehole constructed near the disputed border between Oromia and Somali regions inflamed longstanding tensions, escalated rapidly, and led to the killing of several hundred people and the displacement of an estimated 70,000 persons (Blunt 2009).

Meanwhile, social identities appear to be hardening in ways that are contributing to conflict. Boran and Somali elders were brought in for three rounds of meetings to negotiate the re-opening of the high school in Moyale, which had been closed for two months because of fights among students from the Boran, Somali, Gabra, and other clans. The elders were alarmed to find that arguments over land disputes were being converted into ethnic confrontations at the school. Ultimately, the elders were successful in pacifying the situation to a degree sufficient to allow the re-opening of the school, but tensions remained.

The interaction of demographic pressures, environmental degradation, bush encroachment, controversial administrative structures, antagonistic social attitudes, and the effects of intensifying climate change has contributed to both an increase in the number of pastoral dropouts and continuing episodes of conflict whose contours, according to those in Moyale, are somewhat different from those of the past. The consensus of those interviewed in late April 2011 was that overall there was less violent conflict than in the past, although conflict continued to be a serious problem. According to the Somali deputy administrator, many

Somali livestock had been raided by Oromos in the past three months. Somali elders, however, asserted that the drought was suppressing conflict, as “the drought itself keeps you from going to fight.” Both Boran and Somali elders agreed that large-scale clan violence was not taking place, but there were continuing resource-related conflicts and persistent incidences of ambushes and thefts. These incidents always held the potential for sparking a cycle of revenge that could escalate into something larger.

The new development about which there was agreement on all sides was that there was a promising increase in the level of engagement between government officials and clan elders with respect to issues of conflict. In recent years, regional and local authorities of the state have had difficulties in dealing with clan violence and chronic thievery and assaults. In response, they have turned to widely respected customary institutions and elders for support. The creation of an “elders committee” (or “peace committee”) has been facilitated by the zonal government and, according to all of the key institutional actors, it has begun to play a major role in dealing with livestock theft and other violations. The elders committee works with the government to try to get back stolen cattle. The Somali deputy administrator in Moyale stated that, even if that is not successful, the elders committee tries to restore peace. Here, customary institutions can play an important role by applying their traditions of “restorative justice” to secure peace even when the state’s penalties (“retributive justice”) cannot be applied because the culpable party cannot be found or the community refuses to produce him. Traditions such as blood compensation—for example, cattle offered to an

aggrieved community by the offender's community—also can defuse a situation that might otherwise escalate.

Boran and Somali elders also are trying to help nip rumors in the bud that fuel conflict. According to one government official in Moyale, misinformation and rumors are “the major problem” in triggering conflict. More fundamentally, elders are working to change attitudes among pastoralists. Frank exchanges about “why did you kill?” are beginning to sensitize communities with hopes of eroding the tendency for an eye-for-an-eye response. Elders from both sides noted that Mercy Corps played an important role in initially helping to advance constructive, pro-peace dialogue. The Somali deputy administrator emphasized the need to combine the power of strong customary law to facilitate the sharing of resources with an awareness of boundaries as an administrative (but not restrictive) tool. The Boran administrator pointed out that the agenda of inter-governmental collaboration is deepening, as discussions with his Somali counterpart are gradually expanding from conflict issues to a broader development agenda that includes public services, schools, and health.

Generally, elders observed that they hope for more support to ensure the effectiveness and sustainability of their efforts. They said they were pleased with being able to helpfully collaborate with government in dispute resolution and efforts to return stolen livestock, but so far this cooperation has been event-specific and after the fact. The government has contacted and brought together Somali and Boran elders in relation to events as they occur, but the elders expressed a desire to meet to discuss underlying issues at regularly scheduled intervals. They noted that financial and logistical support for the

organization of such meetings would facilitate the process.

The fact that the tapestry of conflict in the Moyale area is woven of many threads does not reduce the centrality or significance of climate change impacts. Amid longstanding and current inter-ethnic competition and antagonisms, demographic change, land degradation, and administrative complexities, there is now an increasingly clear crisis of pastoralism as a livelihood—and climate change in the form of increasingly frequent and severe droughts is perhaps the most powerful contributor to that crisis. According to the administrator for the Borana side in Moyale, if the water scarcity issue could be solved, there would be a major shift toward agro-pastoralism. All of the groups interviewed by FESS expressed both real concerns about the future of pastoralism and an attitude of openness toward agriculture and other alternative livelihoods. However, there is a very large gap between that openness to change and the capacity to make that change a reality in the near term.

POST-CONFLICT IN WACHILE AND HUDET

The area around the towns of Wachile and Hudet—the former an Oromo community in Borena Zone in Oromia, the latter a Garri (Somali) community in Liben Zone in the Somali Region—has seen a decade of violence between the Borana and Garri clans. Fighting has taken place over land, boundaries, wells, and stolen livestock, resulting in the deaths of hundreds of people and the displacement of tens of thousands. In Wachile, a few hours drive north of Moyale, the crisis of pastoralism in southern Ethiopia was, if anything, even more clearly evident than in Yabelo and Moyale.

“The fact that the tapestry of conflict in the Moyale area is woven of many threads does not reduce the centrality or significance of climate change impacts....there is now an increasingly clear crisis of pastoralism as a livelihood—and climate change in the form of increasingly frequent and severe droughts is perhaps the most powerful contributor to that crisis.”

“As in Moyale, the emergence of a joint peace committee and changes in community attitudes appeared to provide an important window of opportunity for institutional change in support of conflict prevention and mitigation.”

The FESS field study team met in Wachile with a group of 10 women, who described themselves as “pure pastoralists.” Their situation was dire. They said that they had gone through three years of recurrent drought and their assets and food supplies were nearly exhausted. Their livestock had either perished or were sick and dying. According to one woman, “people have even died looking for their livestock.” The women said that they have no farming and no access to livestock markets. At times they have travelled long distances to towns to obtain basic commodities, but that has required them to leave their children at home alone. They complained of a lack of government support and said they had only received some water provided by SOS Sahel Ethiopia. As a result of drought conditions, traditional wells were no longer providing water. One group member said they had planned to create a pond but were unable to do so because it was in a contested area.

Until recently, their situation had been somewhat better. After the conclusion of the latest conflict, many of the people were made beneficiaries of the Ethiopian government’s Productive Safety Net Program (PSNP), which provided cash for work. In this case, local people worked clearing bush invasions that were plaguing the area. They also created enclosures where grasses could rejuvenate and provide fodder for grazing. These activities were complemented by government and NGO initiatives to engage women in income-generating activities and efforts to develop water points. However, according to the women in the group, financial support for all of these initiatives had ended and, with the impact of the current drought, they were now destitute.

The women—two of whom were widows as a result of past violence—

stated that there was no conflict at the moment because of the drought. One woman said, “During the drought we do not fight, but when things improve we will fight” over livestock, water, and grazing areas. However, they said that there were significant changes and lessons learned since “the war.” With the help of Mercy Corps, joint peace committees had been formed, organizing elders and youths from both the Borana and Garri sides. In their opinion, “the peace work helped a lot.”

The women also spoke candidly about changes in their own attitudes. One woman observed, “We are the ones who make peace and push men to war.” The women said they had complained about trespassers and then taunted their men when war with the Garri began. We asked them, “Why is it that when the Garri shoot we see blood, but when you shoot we only see water?” Meanwhile, they said, the Garri women said to their men, “If you cannot stop the trespassing of the Borana, we will braid our hair in their style and marry a Borana.” The women in the group said they regretted this and had learned from the bitter experience of the conflict that the costs of fighting were too high. One woman said, “A war like that can kill your husband and your child.”

As in Moyale, the emergence of a joint peace committee and changes in community attitudes appeared to provide an important window of opportunity for institutional change in support of conflict prevention and mitigation. However, the withdrawal of the PSNP and Mercy Corps, in combination with the return of severe drought, left Wachile becalmed in a “peaceful” humanitarian crisis. Whether in the absence of further support the nascent collaboration among Oromo

and Somali elders and youths could be sustained and could provide a bulwark against future conflict appeared to be very much in doubt. With the underlying problems of resource competition unresolved, interviewees with knowledge of the communities expected that raiding for restocking livestock would begin next year if better weather conditions returned. However, given the respective roles of elders, youth, and women in approving, participating in, and encouraging or discouraging raiding, there appeared to be the potential for improved resource sharing and conflict prevention if the government and donors sustained and enhanced the various forms of dialogue now underway.

The impact of drought also was extremely serious in the Somali community of Hudet. According to a group of elders and government officials, including the deputy woreda administrator, the accumulating toll of recurrent drought (“less rain every year” and “no grass or water last year”) had decimated livestock holdings. For the woreda, as of early May, they reported the losses as 4,135 cattle, 3,545 camels, 4,427 goats, and 519 donkeys. The selling price for a camel had dropped precipitously, and there were fears of disease outbreaks. They reported that some residents had lost all of their livestock, some losing as many as 40, and people were experiencing psychological problems, including the potential for suicide. For the first 15 days of March, a truck provided by an NGO made water rationing available, giving a partial and temporary respite from the drought.

The group discussed a number of measures that they believed necessary to increase the resilience of pastoralism to climate change. They enumerated possible steps as: 1) converting livestock assets to cash

assets; 2) being able to sell livestock to good markets (which they were seeking); 3) identifying buyers; and 4) establishing additional arrangements to sell (or slaughter) weak cattle in return for compensation from NGOs (a destocking package).

The problem of converting livestock assets to cash assets is especially noteworthy. Traditionally, wealth is held in the form of livestock, and increasing the number of livestock that one owns is in effect an insurance policy against shocks such as droughts and diseases. However, the increased frequency in droughts resulting from climate change appears to be producing a concomitant increase in livestock die-offs. In effect, the insurance premium of holding larger numbers of livestock is ever more costly—as well as contributing to overgrazing and resource competition. It would be preferable as a matter of both economics and ecology to convert the value of those livestock assets to cash. However, pastoralists are reluctant to make this conversion because of the steady deterioration in the value of the birr, which erodes their savings. This disincentive is producing disproportionately high costs.

In the meantime, the deputy administrator said that given increased drought frequency efforts were now directed toward beginning to find alternatives to pastoralism, with an emphasis on agriculture. The government and its international partners are to provide such necessary inputs as seeds, training, and implements. Once again, however, the availability of water was the prerequisite for success. In addition, he said, women and youth groups already have been organized to generate other new alternatives such as the production of tapestries and other crafts.

As in Wachile, the discussion group in Hudet noted that there were no current conflicts and that successful efforts had been made through roundtables and other means to create a greater emphasis on inter-ethnic dialogue.²¹ This was credited with improving communication and potentially contributing to stability.

Based on interviews and discussions in Yabelo, Moyale, Wachile, and Hudet, the impact of severe drought in pastoralist areas of Ethiopia in the short term is to suppress rather than trigger conflict. The struggle to maintain livestock assets and meet basic needs—or at times even to survive—turns clans inward to manage the immediate needs of the household and identity groups. Yet, the common belief of FESS interviewees is that this only represents a delay in the manifestation of the climate shock-conflict linkage. As groups recover, informed observers anticipate that they will seek to restock their herds and their preferred position vis-à-vis other groups. Livestock theft is likely to continue to be one of the mechanisms used to achieve those ends, as is migration to desirable grazing areas. The exact timing of a return to cattle rustling and resource competition may be difficult to predict, but those responses may mark the onset of a new season of conflict.

CLIMATE CHANGE, LIVELIHOOD DIVERSITY, INVASIVE SPECIES, AND CONFLICT RESOLUTION IN NORTHEASTERN OROMIA AND AFAR

In Northeastern Oromia and Afar, the FESS field study team found similar—although generally less severe—climate challenges facing both pastoralists and agropastoralists.

The team visited a string of diverse ethnic communities along a 600-kilometer corridor extending roughly west-to-east from the city of Dire Dawa. A mix of lowlands combined with more rolling terrain, some areas had fairly dense vegetative cover and reasonably good access to water, while others were more sparsely covered drylands. These conditions dictated whether a given area was predominantly agropastoral or pastoral. Ethnic groups included Afar, Hawiya, Issa, and Kereyu clans, several of whom have longstanding conflictive relations with each other, most notably the Afar and Issa, who are well-armed.

In Chiro, the head of the local CARE office reported that there was very little conflict in the area. In part, this appeared to be the result of a more hospitable landscape allowing for agriculture, with its contributions to livelihood diversification and food security, and in part it appeared to be the result of a coordinated series of constructive government and donor interventions. Although lowland areas around Chiro are pastoralist, the CARE representative noted that crops can be found throughout the area. However, he also reported that because of failed rains the last six months had been food insecure, and building resilience in communities is an ongoing effort.

For the past eight years, the PSNP has made progress in that direction. A wide array of activities, including tree planting, agricultural diversification (drought resistant seeds), water harvesting, area enclosures, drip-kit irrigation, village savings schemes, land reclamation, and improved market information have begun to make a difference. Less than a decade ago, there was little diversification of livelihoods, but now project beneficiaries have received basic training in finance, bookkeeping,

craft production, and other business skills. Every kebele in the area has at least one school. The challenge in Chiro will be to sustain and build upon this progress. In July 2011, funding was to end for many of these interventions.

In Mieso, in West Hararghe Zone in Oromia, the study team met with the Mieso Woreda administrator and several members of his cabinet. In contrast to the very predominantly pastoralist communities visited previously in southern Ethiopia, of the 46 kebeles in Mieso, 8 are categorized as pure pastoralist and 38 are considered to be agropastoralist. The local officials noted that the government has been supporting the shift toward agropastoralism, and several water projects have been implemented. As in the south, the group said that there has been a decrease in March-to-May rains over the past decade.²² Wind directions also have been perceived to change from their normal patterns. In response, there has been a gradual shift toward growing sorghum, a relatively drought-resistant crop. In contrast to the south, the administrator emphasized deforestation as a major problem. Many people have taken to cutting trees for sale to supplement their livelihoods.

The Mieso area has benefited from the Productive Safety Net Program, with over 46,000 households (approximately 30 percent of the population) participating in the program. Local officials estimated that about half of the PSNP activities were related to natural resource management, including some irrigation projects. Although climate challenges have made life more difficult for pastoralists and agropastoralists, new initiatives including microenterprise, an improved post-harvest seed system,

“...Chiro and Mieso offer noteworthy examples of the attempt to use a mix of adaptive strategies to contain conflict and build resiliencies to climate-related shocks. In both areas, these efforts are a work-in-progress.”

and a cereal bank have bolstered community resilience in addition to existing economic coping mechanisms such as day labor in the towns and petty trading. The local government and NGOs also have been successful in getting communities to agree to no longer cut down trees.

Despite these positive developments, Mieso officials said that there was increasing competition and conflict with Issa pastoralists from nearby Mulu. During the dry season, Mulu pastoralists moved onto lands in Mieso to use fresh pastures and water resources. Yet, even that conflict has been mitigated by what the local officials saw as examples of successful dispute resolution. When there was a recurrence of conflict, NGOs joined with government to facilitate dialogue to defuse the situation. Intruding pastoralists agreed to reduce their encroachments and, in return, are now allowed to use the livestock market in Mieso. The Mieso officials said that one of the keys to this success was the inclusion of women and youth in the dialogue.

Thus, through government support via the PSNP, livelihood diversification, water projects, improved natural resource management, market linkages, and governmental and nongovernmental support for dialogue, Chiro and Mieso offer noteworthy examples of the attempt to use a mix of adaptive strategies to contain conflict and build resiliencies to climate-related shocks. In both areas, these efforts are a work-in-progress.

Moving from woreda level to the zonal level, a more expansive view of conflict affecting the wider area was provided in an interview with the Head of the West Hararghe Zone Conflict Prevention and Resolution Department. He said that, in West

Hararghe, the scarcity of pasture and water resulting from recurrent drought was causing unprecedented resource competition, driving theft, looting, and raiding involving Issa, Afar, Oromo, and Hawiya clans. Recently, federal, regional, and zonal government officials frustrated with the difficulty in containing this proliferating conflict began to engage with clan leaders to explore the use of customary laws to restore inter-clan peace in those instances where formal state institutions fell short.

Although he characterized the effort as a work-in-progress, this security official also stressed that it was an original and innovative government initiative that emphasized the active participation of all key stakeholders. All community representatives were expected to attend and were informed that it was a dialogue not training. Participants were then asked to state not what their grievances were but rather, “what have you been doing that has caused conflict and contributed to violence?” The Issas admitted to pushing onto others’ lands and raiding livestock, the Hawiya and Oromos admitted to robbing, and so forth. Other issues such as problems of sexual assault and how to handle blood compensation also were discussed openly. As the discussion has continued from meeting to meeting, everyone has traveled together. According to the security official, when the question was asked, “who is benefiting from conflict?,” everyone agreed that the answer is that “everybody is getting hurt” by the cycle of violence.

Beyond this sort of sensitization and socialization process, the originality of this collaboration among government officials, clan elders and other community leaders lies in the government’s openness to directly using customary laws and institutions

as central components of dispute resolution, resource sharing, and conflict management. The security official said that a draft accord to reduce conflict, including understandings about water use, was being put forward by clan leaders for feedback in their respective communities before being finalized for signing by all the parties.

Crossing from West Hararghe in Oromia to Shinile in Afar, the climate and conflict linkage returned in a more problematic form. In a focus group discussion in Mulu with elders from both the Issa and Hawiya clans, there were strong concerns expressed about climate change and its impact on local communities. In this border area, conflict has increased among the Oromo, Hawiya, and Issa in ways that differ from the past. Both the Hawiya and Issa elders agreed about the shifts in the climate in recent years. The Hawiya, many of whom are cultivators and some of whom have intermarried with Oromos, believe that with decreasing rainfall the water table has fallen, and the lowlands have become hotter. The Issa elders observed that rainfall has changed in both quantity and distribution, occurring only in small pockets that have not reached traditional grazing areas. According to these elders, water no longer spreads out on the land as in the past but rather disappears, and grasses have vanished as well. Several of the elders said they had lost all their livestock except for two or three camels. Resource scarcity is the main concern of both clans as well as the neighboring Oromos.

Traditionally, while the Issa and Oromos perceive each other as enemies, often fighting over grazing areas and wells, the Hawiya and Issa have not clashed. Before the 2004 border referendum, the Issa and



FESS.

ABOVE: *Prosopis juliflora* encroachment along roadways in Afar.

Hawiya lived together, but the results of the referendum split them apart. The Issa pastoralists are renowned among other clans for what is said to be their aggressive behavior. Indeed, in the FESS focus group meeting, one Issa elder stated that “at times of severe drought an Issa has no ears to hear what others may say or eyes to see administrative borders, but he will rush his cattle wherever there is likely to be water or pasture and face the consequences.” As the Issa have extended their search for grazing lands and food over a wider range, they have come down from traditional but overgrazed mountain areas and come into conflict with the Hawiya, whom they now see in alliance with the Oromos against them. According to the Hawiya elders, with all three groups competing over the same lands, the situation has become potentially explosive. Here, as elsewhere, it was stated by interviewees that a “peace-building” committee has been formed for dialogue with government and among the communities. The head of the local woreda administration

stated that livelihood diversification through the promotion of agropastoralism was one main pathway forward to alleviate tensions. This would represent a significant change for the Issa, in particular, but the Issa elders said they were open to this possibility.

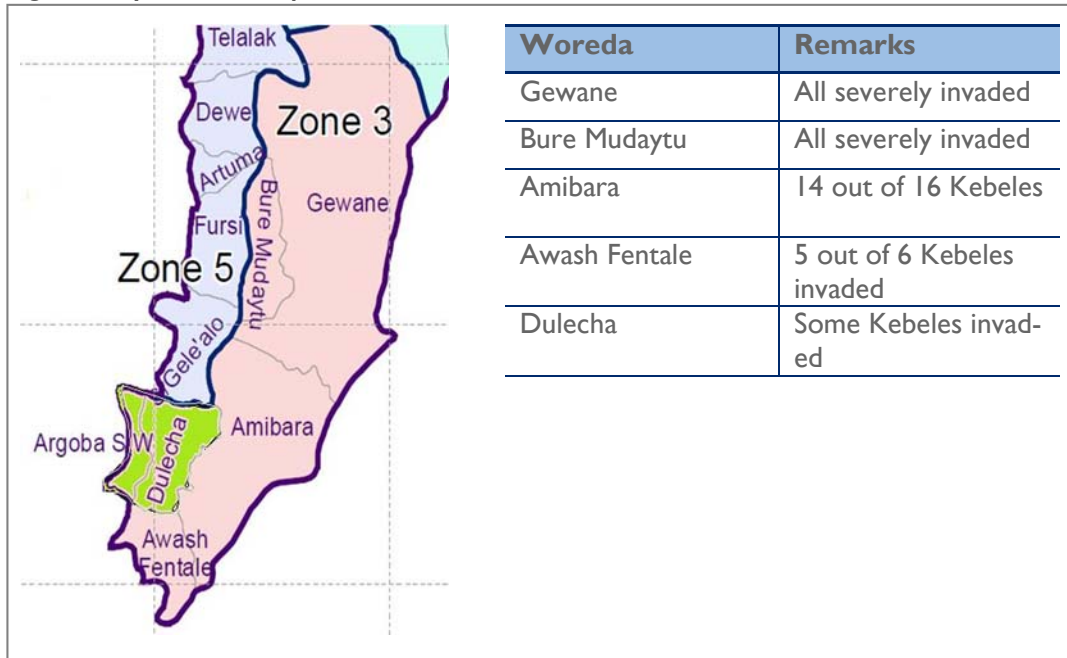
In the Mulu area, it was clear that the perceived impact of climate change was at least twofold. Not only had erratic rainfall increased competition over shrinking resources, but in combination with boundary issues it appeared to contribute to a reconfiguration of the conflict dynamics among the main clans in the area, deepening emerging antagonisms between the Issa and Hawiya. The peace-building committee was formed by government and clan leaders in response to these rising tensions.

Moving from Shinile to Zone 3 in Afar, climate-conflict linkages there follow a more circuitous route to resource scarcity through the harmful effects of a devastating invasive species, *Prosopis juliflora*. *Prosopis* is

more commonly known in the United States as mesquite. Thought to originate in Peru, it is an evergreen tree-shrub with a large crown and open canopy that can grow to a height of five to ten meters. *Prosopis* is highly adaptive with a high tolerance for drought and marginal soils. Under conditions of severe drought such as those experienced in recent years, *Prosopis* competes with and displaces indigenous trees, using available water and absorbing the available soil nutrients.

The Afar Region is made up of mostly very hot and arid lowlands that are chronically drought-prone. For hundreds of years, the Afar pastoralists have been in conflict over pasture and water with the Issa. As seen in Figure 11 on Page 35, *Prosopis* has massively invaded the vast majority of kebeles in Zone 3.²³ According to Farm Africa, an NGO working on pilot projects to address the *Prosopis* dilemma, the Afar “have lost dry season pastures across the Awash River basin.” With some land already lost to irrigated farming, the

Figure 11 Spread of *Prosopis* in Zone 3 Woredas



SOURCE: OROMIA NATIONAL REGIONAL GOVERNMENT 2010.

Prosopis invasion has drastically impacted the availability of pasture in Afar. Meanwhile, the Issa have continued to push into Afar, closer and closer to the waters of the Awash River.

Complicating matters even further, there are serious boundary disputes between the Issa and Afar. According to the Delegated Security Head of Amibara Woreda, despite the efforts of government-sponsored peace committees, the Issa have not cooperated in the return of looted properties and have even built houses across the disputed border. In one instance, according to this official, the construction was such an egregious violation that the federal government razed the structures. The confluence of these stresses—repeated climate shocks, massive *Prosopis* invasion, the loss of pasture to irrigated farmland on state-supported commercial enterprises, the disputed border, and the forays of the Issa onto Afar lands—has raised tensions and the potential for escalating conflict very high. Only the peace (or “salaam”) committees and the efforts of Farm Africa and a few other NGOs stand

out as notable forms of social and institutional resilience to conflict in the face of these mounting problems and antagonisms.

At its project sites, Farm Africa is working with communities on the extremely difficult and labor-intensive task of clearing *Prosopis* from the land and reclaiming the land for other purposes. In one location, land has been turned to irrigated cotton production, and in another pastoralists are using the cleared land

for ranching. Farm Africa also is exploring commercial uses of *Prosopis*, including the crushing of the plants seeds and turning them into livestock feed. However, it is unclear whether this can be cost effective, and more research is badly needed on the full range of options to address the serious threat to pastoral livelihoods that the blight of *Prosopis* poses in Afar.



FESS.

ABOVE: Irrigated cotton farming in Afar on land reclaimed from *Prosopis juliflora*

CONCLUSION

“While pastoralist areas have coped with extreme weather and climate variability for centuries, climate trends experienced in pastoralist areas over the last decade indicate that climate change may be bringing a “new normal” that poses unprecedented challenges for pastoralist communities.”

Pastoralists in Ethiopia are coming under increasing pressure from the confluence of powerful forces. The prevailing pattern of economic development, which is to be extended and accelerated under the Growth and Transformation Plan for 2010/11–2014/15, aims to increase overall national productivity by encouraging large-scale farming and food production, ranching, infrastructure, and other investments to bring land, capital, and technology together to advance economic growth. The net result of these investments will be to continue to shrink the land available for the use of pastoralists.²⁴ Population growth, increasing numbers of livestock produced for export, deforestation, environmental degradation, bush encroachment, and invasive species will increase pressure and competition over a shared and shrinking resource base. In some areas, administrative boundaries, at times contested or not clearly demarcated, will constrain the movements of pastoralists in search of water and pasture, or may even be used to exclude one pastoralist group to the advantage of another.

While pastoralist areas have coped with extreme weather and climate variability for centuries, climate trends experienced in pastoralist areas over the last decade indicate that climate change may be bringing a “new normal” that poses unprecedented challenges for

pastoralist communities. The two most important features of climate change impacts as they appear to be unfolding are: 1) increased frequency of severe droughts; and 2) the chronic failure (late arrival, early cessation, or non-appearance) of the long rains in the period from March through May.

If these climate trends continue as anticipated, climate change will constitute the overarching context and persistent stresses that directly or indirectly worsen nearly all of the problems and challenges mentioned above. Some observers may point out, with justification, that severe droughts are hardly new to Oromia, Afar, and the Somali region. However, this conflates single events and trends in a way that is unhelpful. Climate change brings an intensification of extreme weather events and a transformation of trends whose significance can only be appreciated as a “movie” rather than a series of “snapshots.” Those transformed climate trends are likely to entail severe weather events whose increased frequency and intensity may well overwhelm political and social institutions, especially as they inevitably intertwine with the demographic, environmental, and developmental problems already cited.

The impact of climate change on pastoralist livelihoods and conflict among pastoralists should be viewed

“Climate change is neither the necessary nor sufficient cause of pastoral conflict, but it is a powerful stressor that configures the circumstances that pastoralists face into situations that are ripe with the potential for conflict. In that sense, it is akin to conflict contributors such as poverty and corruption, which consistently impose hardships but contingently result in conflict.”

in the same context. Interviewees in all areas of the FESS field study agreed that: 1) climate change was real and had significantly changed rainfall patterns, temperatures, seasonal patterns related to planting and harvesting, and other aspects of the physical environment such as wind patterns and vegetative cover; and 2) climate change impacts have intensified the scarcity of essential water and pasture.

Resource scarcity puts into motion the many adaptive strategies that pastoralists have developed over many generations, including herd diversification, herd splitting, enclosures, and the equilibrating social stability provided by the *Gada* institutions and other analogous forms of group sharing and solidarity. Where water sources are available to make it feasible, agropastoralism is practiced. The most important adaptive strategy remains the mobility of pastoralists. However, the combination of more people with more animals competing for the use of ever-shrinking pastures and water sources does produce conflict. When administrative boundaries are used to try to regulate these movements, resulting in actual or perceived differential benefits for different clans, strong and potentially explosive grievances are very likely to arise.

Climate change is neither the necessary nor sufficient cause of pastoral conflict, but it is a powerful stressor that configures the circumstances that pastoralists face into situations that are ripe with the potential for conflict. In that sense, it is akin to conflict contributors such as poverty and corruption, which consistently impose hardships but contingently result in conflict.

In Ethiopia, those contingencies (or pathways to conflict) center on resource scarcity, threats to livelihoods and food security, identity-based resource competition,

group perceptions of relative deprivation, and the legitimacy and effectiveness of government and customary institutions at all levels.

However, the FESS field study results suggest that severe drought caused by climate change initially produces effects that—at least for a time—suppress conflict. In all of the interview areas of southern Ethiopia and even some in northeastern Oromia and Afar, pastoralists stated that there was a marked reduction in conflict during the spring drought of 2011. There also was agreement that the usual cycle of recovery would likely include an upswing in cattle rustling for restocking when good weather returned, presumably in the following year.

The further complicating factor associated with climate change is that the return of “normal” rainfall is increasingly uncertain. As many interviewees reported, severe drought now seems to be occurring persistently. In many instances, especially in southern Ethiopia, with no time to recover from year to year, household assets are collapsing. Throughout southern Ethiopia, pastoralists themselves expressed doubts about the viability and future of the pastoralist livelihood.

It is in this context that the latest findings of the Climate Hazard Group, working with FEWS NET, are especially worrisome. According to Dr. Chris Funk, IPCC climate models “say that East Africa will become wetter, yet observations show substantial declines in spring rainfall in recent years.” This appears to be the result of anthropogenic “warming of the Indian Ocean, which is reducing the onshore flow of moisture during the spring rainy season, creating more frequent droughts” (Funk 2011). If this analysis is correct and drought frequency is increasing, it is reasonable to ask what it may

portend for the viability of pastoralism in already vulnerable areas of Ethiopia.

One consequence of this new pattern already may be an increase in the number of pastoral dropouts who have few or no alternative economic activities to pursue in the near term. This raises the possibility of a growing and potentially aggrieved population that might gravitate toward urban areas and contribute to climate-related conflict of a quite different sort than the resource competition scenario that is normally envisioned. It also suggests that the need for alternative livelihoods is more urgent than has been recognized to date.

All other things being equal, it would be easy to find merit in the view recently expressed by one study that “mobile pastoralism generates environmental benefits and is the most efficient land use system for Ethiopia’s extensive dry rangelands” (Little et al. 2010). However, with intensifying climate change, and an approach toward pastoralism in the GTP that over the medium term appears to privilege transition toward settlements rather than continuity in support of traditional mobility, it is clear that all things are *not* equal. Instead, pastoralism is likely to come under increasing climatic and developmental pressures. Indeed, interviews showed that this point of view reflects that of many pastoralists themselves, and this is a perspective that has been gathering force among them for some time. In late 2008, Coppock et al. found in their research that “50 local focus group participants had a uniformly negative view of the future of pastoralism here—remarkable given that the Borana Plateau has long been regarded as an example of sustainable pastoralism.”

The point is not that vigorous support for pastoralist livelihoods

should be abandoned or that support for alternative livelihoods in pastoralist areas has been neglected in earlier programming. Prior work under the Pastoralist Livelihood Initiative (PLI) and work commenced for PLI Phase II has addressed many key issues, including strengthening early warning, veterinary services, human health concerns, timely destocking and restocking, livestock markets, alternative livelihoods in non-livestock products and services, and working with customary institutions to improve natural resource management. However, our view is that current trends suggest that the need to address the impacts of climatic, economic, and political constraints and their effects on the growing problems of pastoralist dropouts and inadequate alternative livelihoods is even more urgent than has been realized to date. There is a danger of programming falling behind the real curve of the pastoralist transition that is underway. Moreover, the combination of government interventions to help investors or selected pastoralist groups on the one hand and the unraveling of less fortunate or favored pastoralist groups on the other could well lead to heightened levels of conflict.

Thus, pastoralist communities, government at all levels (federal, regional, zonal, woreda), and the donor community need to address the question of the impact of climate change on pastoralism and the potential for conflict at two levels: 1) aggravated resource scarcity and resource competition as a result of climate change; and 2) even more fundamental threats to pastoralism as a viable livelihood and the development of livelihood alternatives for increasing numbers of pastoral dropouts. These two baskets of issues will be viewed in distinctive and specific ways by different ethnic

“...pastoralism is likely to come under increasing climatic and developmental pressures. Indeed, interviews showed that this point of view reflects that of many pastoralists themselves, and this is a perspective that has been gathering force among them for some time.”

“There is a danger of programming falling behind the real curve of the pastoralist transition that is underway.”

“The most encouraging finding of the FESS field study is the striking emergence of “peace committees” of various types in nearly all of the locations visited....These nascent dialogues need additional support and offer the opportunity for the development of new forms of institutional cooperation between government at all levels and customary institutions put in the service of the peaceful sharing of natural resources valued by pastoralist communities.”

groups in different parts of the country. Certainly, the second set of issues appear to be more acute in those areas that are “pure pastoralist” and lacking water resources than in those areas that have reliable crops and water resources. What is essential is that pastoralist groups themselves are active participants in the discussions and specific responses to these challenges.

The most encouraging finding of the FESS field study is the striking emergence of “peace committees” of various types in nearly all of the locations visited. A window of opportunity has opened in which government authorities, frustrated by the persistence of conflict in pastoralist areas, have engaged with and solicited the assistance of elders, community leaders, and customary institutions in dispute resolution and conflict mitigation. Field interviews made clear that these interactions have already made progress in beginning to change longstanding attitudes that have contributed to conflict. These nascent dialogues need additional support and offer the opportunity for the development of new forms of institutional cooperation between government at all levels and customary institutions put in the service of the peaceful sharing of natural resources valued by pastoralist communities. Instead of engaging on conflicts and disputes after they arise, donors have the opportunity to support the Government of Ethiopia and pastoralist communities in addressing the underlying challenges of climate change and natural resource management.

Given the current and anticipated impact of climate change on both pastoralist communities and the Government of Ethiopia’s plans for development, it makes abundant sense to use dialogue around the

effects and consequences of climate change as one of the central concerns of the peace committees. Thus, donor support for government-community engagement on the theme of climate change and the peaceful sharing of natural resources could both advance progress on resolving resource conflicts and build important new institutional relationships of significant value in their own right.

RECOMMENDATIONS

Based on the findings of this report, there are six key areas where USAID and other donors can take actions that will help to reduce the potential for conflict linked to climate change in the pastoralist regions of Ethiopia:

1. Support Inter-Governmental Collaboration and Cooperation with “Peace Committees” and Customary Institutions through a Focus on Climate Change and the Peaceful Sharing of Natural Resources among Pastoralist Communities
2. Enhance Water Development in Support of Pastoralist Livelihoods
3. Promote Good Environmental Practices through the Productive Safety Net Programme
4. Counter Invasive Species and Bush Encroachment, with a Focus on *Prosopis juliflora*
5. Prioritize and Accelerate Alternative Livelihoods
6. Prioritize Household Assets/Savings

USAID should consider the following recommendations with very careful attention to conflict sensitivity for each:

1. To Support Inter-Governmental Collaboration and Cooperation with “Peace Committees” and Customary Institutions through a Focus on Climate Change and the Peaceful Sharing of Natural Resources among Pastoralist Communities:

Seize the current window of opportunity and encourage the Government of Ethiopia at all levels (federal, regional, zonal, woreda), as well as between bordering regions, to focus on the current and anticipated effects of climate change and opportunities for the peaceful sharing of natural resources as overarching issues to be addressed in regularly scheduled peace committee consultations and dialogue with customary institutions.

- These efforts should build upon but go beyond the “Do No Harm” elements of the PLI II Initiative to make climate change and natural resource issues areas of concentrated focus and engagement.
- Once established, these forms of collaboration could be used to convene improved input for the delivery of services related to water, human and animal health, education, and other broader development issues.

Provide organizational support and capacity building for elders, women’s

groups, and youth groups participating in peace committees in key geographic locations to enhance their ability to engage constructively on climate change issues and the peaceful sharing of natural resources.

- These locations should include areas in and around Moyale, Wachile, Hudet, Mieso, Mulu, and Amibara.
- Support nongovernmental organizations, such as Mercy Corps, with established track records of successfully working with communities on conflict-sensitive issues to help peace committees engage on climate change challenges in these and other locations in Oromia, Afar, and Somali Regions. Consideration also should be given to re-establishing Mercy Corps’s presence in Negele.

Facilitate a wide variety of climate-related discussions, dialogue, information sharing, and confidence building between the governments and pastoralist communities.

2. To Enhance Water Development in Support of Pastoralist Livelihoods:

Provide technical support, in coordination with the Government of Ethiopia, which goes beyond the improved maintenance of water points and water resource management envisioned in PLI Phase

II, to include the development of new water resources.²⁵ Increasing the availability of water resources is crucial for ensuring the sustainability of pastoralism under conditions of climate change.

3. To Promote and Replicate Good Environmental Practices through the Productive Safety Net Programme (PSNP):

Replicate and build upon the successful examples of natural resource management under the PSNP implemented by CARE in Chiro to promote water harvesting, tree planting, area enclosures, small-scale irrigation, improved seeds, and agricultural diversification in other locales in Oromia, Afar, and Somali Regions.

4. To Counter Invasive Species and Bush Encroachment, with a Focus on *Prosopis juliflora*:

Move beyond the *Prosopis* clearing efforts of PLI II and support research and pilot project activities to curb and, where possible, reverse the harmful effects on natural resources

and the attendant increase in conflict potential caused by *Prosopis juliflora* throughout Afar and parts of Oromia. This should build on work already done by Farm Africa and Save the Children US and include both eradication techniques and the exploration of possible commercial uses of *Prosopis*.

- Encourage more extensive efforts to clear *Prosopis* under the PSNP, with a focus on engaging the labor of pastoral dropouts.
- Explore the possibility of linking commercial uses of *Prosopis* with employment opportunities for pastoral dropouts.

Support the use of prescribed fire for bush-thinning by communities under closely monitored methods and procedures.

5. To Prioritize and Accelerate Alternative Livelihoods

Scale up to the greatest extent possible, and as an increasingly important priority, the development of alternative livelihoods currently underway or envisioned in such areas

as livestock products processing, dryland natural resource commodities (e.g., gums, resins, oils, aloe vera), small-scale agriculture, and microfinance and savings institutions for women.

- In support of these efforts, engage the private sector to seek input and assistance on practical strategies to promote these alternative livelihoods and expand their potential in and around towns and larger urban areas.

6. To Prioritize Household Assets/Savings

Provide technical assistance and encourage the Government of Ethiopia to join in identifying and implementing inflation-proof savings accounts or similar arrangements for pastoralists that allow them to convert livestock assets to cash assets. This would increase national savings, reduce pressures on the environment, provide pastoralists with a more secure form of insurance against shocks, and reduce the potential for conflict.

Endnotes

1. According to the IPCC, “climate change refers to a change in the state of the climate that can be identified...by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer” (IPCC 2007).
2. As the dependent variable and central concern of this study, “conflict” refers in a technical sense to widespread, deadly violence. However, conflict management and mitigation requires attention to the precursors of violent conflict, including the emergence of group grievances, the organization of the material and social capacity for collective action (mobilization), and the impact of triggering events. In that larger context, the term “conflict” is sometimes used in the more common and less technical sense of opposing interests that give rise to social and political tensions and protests.
3. The full report can be found at [http://www.fess-global.org/Publications/ Other/Climate_Change_and_Conflic_%20in_Uganda.pdf](http://www.fess-global.org/Publications/Other/Climate_Change_and_Conflic_%20in_Uganda.pdf).
4. During the field research in southern Ethiopia, the MercyCorps colleague was Dr. Kinde Wakwaya, and during the field research in Shinile and Afra Zone 3, the two MercyCorps colleagues joining the FESS team were Melaku Yirga and Dr. Ermias Yesehak.
5. The term “woreda” refers to district-level governance in Ethiopia.
6. Critics of the Ethiopian government have been highly skeptical of official data on the rate of economic growth and believe the percentages given by the government are too high. The IMF and World Bank use Government of Ethiopia data because the government is said to follow satisfactorily the methodological conventions of those international institutions. Large-scale, comparable private sector or nongovernmental data is not available.
7. Climate vulnerability, as defined by the IPCC, refers to “the degree to which a system is susceptible, or unable to cope with adverse effects of climate change, including climate variability and extremes” (IPCC 2007).
8. See <http://country-profiles.geog.ox.ac.uk/index.html?country=Ethiopia&dI=Reports>.

9. Annual rainfall statistics are too highly aggregated to be particularly useful. The effects of climate change in Ethiopia are captured through more disaggregated data that measure the increasingly erratic nature of seasonal patterns and the increased frequency and intensity of severe weather events. Torrential downpours and extended droughts can go undetected in aggregated annual data.
10. See <http://www.fews.net/ml/en/info/Pages/fmwkfactors.aspx?l=en&gb=et&fmwk=gap>.
11. The terms “coping capacity” or “coping mechanisms” and “resiliencies” are sometimes used in ways that are blurred or overlapping, but they have slightly different meanings. In simple terms, for the purposes of this study, “coping capacity” is the ability to manage, withstand, or endure difficulties or crises, while “resilience” is the ability to “bounce back” and restore economic, social, and political life and institutions to their prior (pre-crisis) levels of functionality.
12. By way of further comparison, U.S. CO₂ emissions for 2007 were 19.3 metric tons per capita; nearly five times that of East Asia.
13. At the UN climate talks held in Cancun, Mexico in December 2010, an agreement was reached in principle to establish a Green Climate Fund intended to raise and disburse US\$100bn a year by 2020 to protect poor nations against climate impacts and assist them with low-carbon development.
14. The spellings “Borana” and “Borena” are both in common usage throughout the documents and other studies that we consulted for this report. We have made no effort to standardize the spelling but have used the spelling used by others in a given context.
15. According to the Yabelo Pastoral and Dryland Agriculture Research Center, rainfall has been on the decline since 2006.
16. This local finding comports with research results reported in a study published by FEWS NET on “Recent Drought Tendencies in Ethiopia and Equatorial-Subtropical Eastern Africa.” (Funk et al. 2005). That study hypothesized that a warming Indian Ocean may decrease the long rains in eastern Africa.
17. The blue bars of the graph represent average monthly rainfall, and the red bars represent the monthly standard deviation.
18. The one respondent with 20 remaining livestock dryly commented, “I would hardly call them alive, however.”
19. The cattle loss estimate was provided by the Borena Zone Pastoral Development Office.
20. The monthly coefficient of variation ranges from 43 percent to 145 percent, with the crucial months of March, April, and May at 82 percent, 59 percent, and 62 percent, respectively.
21. Indeed, Mercy Corps work in support of inter-ethnic dialogue was termed “extraordinary” by group members.
22. In fact, as of the previous day when the study team arrived in Dire Dawa, the rains had still not fallen there, although it was early May.
23. *Prosopis juliflora* is also spreading throughout areas of Oromia, especially Borana, where it makes up a large percentage of that zone’s bush encroachment.
24. This can be viewed as a secular trend, but it also at times can be the result of a more overtly conflictive process. We note that in the July to September 2010 report submitted to USAID by the Pastoralist Livelihoods Initiative Consortium the first “major challenge” recently faced by the consortium was: “High competition between private investors and communities over irrigable land along Awash River. Some of the land that was cleared from *prosopis* by PLI II irrigation groups has been taken away by investors.”
25. We are mindful of the unintended consequences sometimes associated with the development of new water resources (e.g., uncontrolled settlements and overgrazing) but feel that managing these risks is worth undertaking in the present context, in which repeated droughts are decimating household assets.

RESOURCES

APPENDIX I:

Climate Change and Conflict Assessment Framework (CCCAF)

Phase I: Identification of Country Study Areas

Through official documents, secondary literature, and expert interviews, develop a list of subnational regions or communities in conflict-prone areas that have experienced extreme climate variability (e.g., droughts, floods, unseasonal temperature fluctuations).

Where possible, identify instances of conflict within these areas that may have had direct or indirect linkages to climate variability.

Phase II: Profile of the Study Areas

Analyze the linkages among economic, social, and environmental factors through the collection of qualitative baseline and trend data (include quantitative data, when available). Information collection will be guided by the Qualitative Profile, which follows Phase VII below.

Compile background information on the areas' weather and climate patterns and predicted future changes in climate.

Develop a preliminary assessment of potential political, economic, social, cultural, and historical cleavages that may contribute to instability or conflict.

Develop a preliminary assessment of the governance capacity and resiliency mechanisms of existing political, economic, social, and cultural institutions.

Identify the key concerns, grievances, and tensions that may be present. The profile should focus on the local unit of analysis but incorporate national, regional, and international influences.

Phase III: Analysis of Critical Climate Change Concerns

Identify which underlying issues, sectors, and resources potentially influenced by climate change are critical to stability. How are they critical? Who is affected when these are threatened? Who is affected when these are well managed? What have been and what could be the potential consequences?

Assess the impact of governance, with special attention to environmental governance,¹ on the identified issues, sectors, and resources. What mitigating or exacerbating role does it play?

Phase IV: Assess the Impact of Climate-Related Events

Confirm with selected communities the nature and characteristics of a specific climate-related event or specific period of climate variability.

1. Environmental governance is defined as the traditions and institutions by which power, responsibility, and authority over natural resources are exercised.

Investigate the responses applied to the recent climate-related event in the study areas. What range of response options did affected people and communities consider? What responses were applied? Who did affected people and communities reach out to for help? Were resilience-building strategies used? What were the results of those strategies?

What role did social, human, physical, financial, and natural capital assets play in exacerbating the potential for conflict or mitigating conflict/building resilience?

Assess why results were linked to improved resilience versus conflict potential. How did core grievances and social/institutional resilience play a role?

Phase V: Perspectives of the Affected Populations and Communities

Identify stakeholders interested in and affected by the climate-related event(s).

Collect information about the stakeholders' concerns, core grievances, and points of conflict; degree affected by the climate-related event(s); their response capacity; their perceptions of the social and institutional responses to the climate-related event(s); the means and resources for violent conflict; and the social, human, physical, financial, and natural capital assets that mitigated or prevented conflict.

Seek to identify the indicators of resilience versus conflict potential and the indicators of vulnerability to conflict.

Phase VI: Generate Future Scenarios

Develop scenarios based on the potential impact of similar climate-related events on the affected people or communities based on predicted future climate change patterns. What might be windows of vulnerability and opportunity?

Phase VII: Complete Final Report

Identify lessons learned, best practices, programmatic gaps, and target areas and opportunities to improve the provision and coordination of interventions that can address climate change and climate-related conflicts in vulnerable regions or communities.

Provide a comprehensive assessment of the case study areas that explains the impacts of climate variability, core grievances and drivers of conflict, mitigating factors and windows of opportunity, projected future climate vulnerability, and the links between climate change and potential conflict or climate change and adaptive resilience.

Incorporate scenarios that suggest areas of future vulnerability to conflict and recommend potential ways in which international development assistance could make a positive contribution toward filling current programmatic gaps. The primary focus of recommendations will be on approaches and responses that are within USAID's manageable interest. This will include mapping existing Mission and Agency programs and priorities against potential climate-related causes of conflict in order to identify gaps and possible areas of intervention.

A broader set of recommendations for local, national, and international stakeholders in government, civil society, and the private sector will be included in an expanded and publicly available version of the report.

QUALITATIVE PROFILE

[Enviro-Sustainability Profile](#)

Land and Agriculture

What is the size of the land area under study?

Approximately what percentage is employed for agriculture?

What kind and level of inputs are used by farmers, if any (e.g., irrigation, fertilizer, pesticides)?

What is known and what is perceived by the inhabitants about the degree of land degradation?

What is the type of land on which people are farming (hilly, flat, forested) and what techniques are they using?

What is the average size of farming plots?

What is the state of land tenure (practices and ownership) including differences between men and women, and what is the general predicted trend for land ownership rights and plot sizes in the future?

What are some of the challenges with respect to soil conditions (e.g., erosion, salinization, and desertification)?

Is climate change contributing to land degradation? If so, how?

Land and Forests

To what extent is the area forested?

What is the historical and future trend of forested areas in the area under study?

Is there a high or low rate of dependency on fuel wood or biomass?

Is climate change a factor in the condition and sustainability of forested areas?

Water Sources and Availability

Where do the communities receive water from (e.g., well, collection, pipe)?

Are there any sustainability concerns in relation to water withdrawal?

Will current water withdrawal practices be affected by climate change? If so, how?

Water Use

What are the primary uses of water (e.g., agriculture, domestic, industrial, hydropower diversion)?

Which uses withdraw the most water?

Are there any planned projects, changes in population, or other factors that might change the current water usage?

Water Quality

How do communities and health officials perceive the quality of water?

Is it known to be relatively clean or contaminated?

If polluted, what are the sources/causes?

What water-borne diseases are endemic to the area?

How will climate change affect water quality?

Energy

What sources of energy are used and at what levels (e.g., biomass, hydroelectric, fossil fuels, biofuels, solar)?

Where do the energy sources originate from (e.g., local forest or ground cover, public or private electricity agency)?

What sectors consume the most energy (e.g., household, agriculture, industry, transportation)?

Is climate change affecting current or future sources of energy?

Is climate change anticipated to change energy demand in the study area?

Natural Hazards

Are there local or national authorities responsible for monitoring and responding to hazards (e.g., earthquakes, droughts, floods)? What is their response capacity?

What are the most serious natural hazards likely to occur in the area under study?
How frequently do natural hazards occur and what is their average level of intensity?
How prepared are communities to respond to a hazard event?
Is climate change contributing to the frequency or severity of natural hazards?

Econo-Environmental Profile

General Economic Indicators

What is the estimated level of income for the average family in the area under study?
Is the area's income more, less, or similar to the country's GNI or GDP per capita?
Is the region experiencing economic growth, stagnation, or loss?
What is the level of employment/unemployment?
Is the informal sector critical to livelihoods?
What factors are contributing to economic stability or instability?

Sectoral Breakdown

What economic sectors employ people and what is their relative importance to the local economy (e.g., agriculture, mining, manufacturing, construction, trade, public administration)?
To what extent are key economic sectors of the economy susceptible to climate change (positive or negative)?
What economic roles do women play in the economy versus men?
Are certain economic sectors dominated by specific ethnic groups?
Do divisions of labor result in instability or tensions?
Are there economic opportunities for youths?
If not, do they remain without jobs, migrate, etc.?
Does the area produce any important exports for the country?
To what extent are these exports providing stability to the local economy?
How critical is the natural resource base to any export sector?

Socio-Environmental Profile

Livelihoods

What is the estimated total population of the area?
How rural versus urban is the area under study?
Is the population growing, decreasing, or remaining stable?
Are there obvious forces affecting the demographic profile (e.g., migration, health, economic decline, conflict)?
What is the relationship between arable land and historical, current, and future population?
What is the age distribution of the population?
What ethnic or tribal groups live in the area?

Is there a history of grievance among these groups?

Are there internally displaced persons or refugees inhabiting the region?

In what numbers and from where?

What is the prevalence of female-headed households?

Education

What is the literacy rate for the area and to what extent is it functional?

What is the level of primary and secondary enrollment?

What are the differences by gender for literacy and enrollment rates?

How many teachers work in the area under study, serving how many students?

How does the area compare in relation to the country as a whole?

Food Security

Is the area known for chronic or severe undernourishment and periodic food shortages?

How does the area compare to the country as a whole?

What are the primary items of consumption (e.g., cereals, fruits, vegetables, meats, other)?

Has this changed recently?

What food items are grown locally?

Does the area have access to markets where local or regional food products are sold and traded?

Does the community or do individual households have a food reserve?

Is climate change affecting food security?

Health

What health care facilities does the area under study have access to?

How easy is it to reach a doctor or health center?

What are the primary diseases endemic to the area (e.g., malaria, cholera, TB)?

To what extent is HIV/AIDS prevalence a concern, and what is the general level of awareness?

How does access to health care compare with the rest of the country?

Do inhabitants have access to an improved water source?

Are there any sanitation facilities in the area?

Are changes in the climate contributing to new health problems or exacerbating the prevalence of existing diseases?

APPENDIX II

List of Persons and Organizations Consulted

Government of Ethiopia

| | |
|--|---|
| Dr. Shifferaw Teklemariam Minister Ministry of Federal Affairs | Debebe Anico Road and Transport Mieso Woreda |
| Desalegn Mesfin Deputy Director General Ethiopian Environment Protection Authority (EPA) | Sead Abdulloh Food Security Development Mieso Woreda |
| Melese Lemma Acting Head, Research and Studies Department and IPCC Focal Point National Meteorological Agency | Hussien Guyu Jarso Administrator (Borana side) Moyale Woreda Administration |
| Ahmed Yuya Coordinator Program Coordination Unit Oromia Somali Border Development Program | Ahmed Wariyou Sora Deputy Administrator. (Somali side) Moyale Woreda Administration |
| Liben Arero Huka Head Borena Zone Pastoral Development Office | Mohammed Sheik Aliyyi Head, West Hararghe Zone Conflict Prevention and Resolution Department Woreda Administration |
| Edres Abraham Administrator Mieso Woreda | Ahmed Ismail Deputy Administrator Woreda Administration (Mulu, Shinile Zone, SR) |
| Abdulhamid Usman Water, Minerals, and Energy Office Mieso Woreda | Hussein Seid Head, Security and Administration Government Administration (Amibara Woreda, Andido town) |
| Kedil Shafi Pastoralist Development Office Mieso Woreda | Tilahun Bekele Head, Environment Protection and Land Use Government Administration (Matahara, Fantale Woreda, Eastern Shewa Zone Oromia) |
| SinAayohu Nigussie ANOH Mieso Woreda | |

Civil Society Organizations in Ethiopia

| | |
|---|---|
| Tezera Getahun Executive Director Pastoralist Forum Ethiopia | Daniel Jarso Acting Area Manager, Yabelo SOS Sahel-Ethiopia |
| Gebbru Jember Project Manager Climate Change Forum - Ethiopia | Samuel Tuffa, Head Yabelo Pastoral and Dryland Agriculture Research Center |

Donors and Implementers

Brian Gilchrest and Colleagues
United States Agency for International Development
(USAID)

Dr. Kinde Wakwaya
Mercy Corps

Axel Weiser
Director, Livelihoods Unit
Save the Children USA - Ethiopia

Charles Hopkins
CARE USA

Yohannes Jarso
Area Manager, Yabelo
CARE USA

Tawfik Aden
Save The Children UK
Dire Dawa

Dr. Ermias Yisshaq
Mercy Corps
Dire Dawa

Melaku Yirga
Mercy Corps
Dire Dawa

Solomon Tsegaye
Care USA
Chiro, Oromia, W. Hararge Zone

Lemessa Ayana
Care USA
Chiro, Oromia, W. Hararge Zone

Alawis Ahmed
Project Manager
Farm Africa
Awash Arba, Zone 3, Afar Regional State

Academics

Dr. Belay Simane
Associate Professor and Head, Ethiopian Climate
Adaption Negotiation Team
College of Development Studies
Addis Ababa University

Community Consultations

Pastoralist Group Livelihood Cooperative
Dida Yabelo Kebele Association

Gheri and Ghebra Somali Elders Group
Moyale

Borana Elders Group
Moyale

Womens Group Discussion
Wachile Borana

Gheri Somali Elders group
Hudet

Somali Elder Groups from Issa and
Hawiya Clans

Serkamo Peasant Association Community Group
Awash Arba, Zone 3, Afar Regional State

Group Discussion
Amibara Woreda, Andido town

Kereyu Elders Group Discussion
Matahara, Fantale Woreda, Eastern Shewa Zone Oromia

Kereyu Womens Group Discussion
Matahara, Fantale Woreda, Eastern Shewa Zone, Oromia

Somali Elder Groups from Issa and
Hawiya Clans, Mieso-Mulu Woreda, Shinile Zone, Somali
Region

REFERENCES

- Aklilu, Yacob and Andy Catley. 2010. Mind the gap: Commercialization, livelihoods and wealth disparity in pastoralists areas of Ethiopia. Feinstein International Center. <http://foodgovernance.files.wordpress.com/2011/03/mind-the-gap-pastoralists-in-ethiopia.pdf>.
- Blunt, Elizabeth. 2009. Water pipe sparks Ethiopian conflict. BBC News. <http://news.bbc.co.uk/2/hi/africa/7929104.stm>.
- Bogale, Ayalneh and Benedikt Korf. 2007. To share or not to share? (Non-)Violence, scarcity and resource access in Somali Region, Ethiopia. *Journal of Development Studies* 43 (4): 743-765.
- . 2009. Resource entitlement and mobility of pastoralists in the Yerer and Daketa Valleys, Eastern Ethiopia. *Human Ecology* 37: 453-462.
- Borana Zone Emergency Coordination Taskforce. 2011. Rapid drought assessment report in Borana Zone. <http://ochaonline.un.org/OchaLinkClick.aspx?link=ocha&docId=1238609>.
- Brown, Molly E. and Christopher C. Funk. 2008. Food security under climate change. *Science* 319: 580–581. <http://www.sciencemag.org/cgi/content/short/319/5863/580>.
- Buhaug, Halvard. 2010. Climate not to blame for African civil wars. *Proceedings of the National Academy of Sciences of the United States of America* 107 (38): 16477–16482. www.pnas.org/cgi/doi/10.1073/pnas.1005739107.
- Burke, Marshall B., Edward Miguel, Shanker Satyanath, John A. Dykema, and David B. Lobell. 2009. Warming increases the risk of civil war in Africa. *Proceedings of the National Academy of Sciences of the United States of America* 106 (49): 20670–20674. www.pnas.org/cgi/doi/10.1073/pnas.0907998106.
- Campbell, Kurt M., Jay Gullede, J.R. McNeill, John Podesta, Peter Ogden, Leon Fuerth, R. James Woolsey, et al. 2007. The age of consequences: The foreign policy and national security implications of climate change. Center for Strategic and International Security and Center for New American Security. http://www.csis.org/component/option,com_csis_pubs/task,view/id,4154/.
- Campbell, Kurt M. and Richard Weitz. 2008. The clear implications of global climate change. In *Climatic cataclysm: The foreign policy and national security implications of climate change*, ed. Kurt M. Campbell, 213–223. Washington, D.C: Brookings Institution Press.
- CARE Ethiopia. 2011. Resilience enhancement against drought (READ III). Technical proposal.
- CHF International. 2006. Grassroots conflict assessment of the Somali Region, Ethiopia. http://www.chfhq.org/files/3707_file_Somali_Region_Assessment_8.4.06.pdf.
- CNA Corporation. 2007. National security and the threat of climate change. <http://securityandclimate.cna.org/>.
- Coppock, Layne D. 1994. The Borana plateau of Southern Ethiopia: Synthesis of pastoral research, development and change, 1980-91. ILCA Systems Study No 5. ILCA: Addis Ababa.
- Coppock, Layne D., Getachew Gebru, Solomon Desta, Sintayehu Mesele, and Seyoum Tezera. 2008. Are cattle die-offs predictable on the Borana Plateau? Research Brief 08-02-PARIMA, <http://glcrsp.ucdavis.edu/publications/parima/08-02-PARIMA.pdf>.
- Coulter, Lorraine, Seifu Kebede, and Belay Zeleke. 2010. Water economy baseline report: Water and livelihoods in a highland to lowland transect in eastern Ethiopia. Research-inspired Policy and Practice Learning in Ethiopia and the Nile Region. <http://www.rippleethiopia.org/documents/stream/20101001-working-paper-16>.
- Dougherty, Bill and Florence Crick. 2008. Poverty reduction at risk in Ethiopia: An assessment of the impacts of climate change on poverty alleviation activities. The Netherlands Climate Assistance Programme. http://www.nlcap.net/uploads/media/Poverty_Reduction_at_Risk_in_Ethiopia.v1.pdf.
- Fingar, Thomas. 2008. National intelligence assessment on the national security implications of global climate change to 2030. Statement for the record of Dr. Thomas Fingar, Deputy Director of National Intelligence for Analysis and Chairman of the National Intelligence Council, before the Permanent Select Committee on Intelligence and the Select Committee on Energy Independence and Global Warming, House of Representatives. June 25.
- Funk, Chris. 2011. We thought trouble was coming. *Nature* 476 (7). www.nature.com/news/2011/110803/full/476007a.html.
- GebreMichael Yohannes, Mebratu Kifle. 2009. Local innovation in climate-change adaptation by Ethiopian pastoralists. Prolinnova and

- Pastoralist Forum Ethiopia. http://www.prolinnova.net/sites/default/files/documents/thematic_pages/climate_change_pid/2009/Ethiopia%20pastoral%20climate-change%20adaptation%20FINAL%20_2_.pdf.
- German Advisory Council on Global Change (WBGU). 2008. Climate change as a security risk. London: Earthscan.
- Government of Ethiopia (GOE). 2006. Ethiopia: Building on progress. A Plan for Accelerated and Sustained Development to End Poverty (PASDEP). 2005/06 – 2009/10. Volume I: Main Text. http://siteresources.worldbank.org/INTETHIOPIA/Resources/PASDEP_Final_English.pdf.
- . 2007. Climate change national adaptation programme of action (NAPA) of Ethiopia. <http://unfccc.int/resource/docs/napa/eth01.pdf>.
- . 2010. Growth and transformation plan: 2010/11 – 2014/15. Volume I: Main Text.
- Hagmann, Tobias and Alemmaya Mulugeta. 2008. Pastoral conflicts and state-building in the Ethiopian lowlands. *Afrika Spectrum* 43 (1): 19-37.
- Intergovernmental Authority on Development (IGAD) Climate Prediction and Application Centre (ICPAC). 2008. Report of the second conflict early warning experts' meeting. www.icpac.net.
- Intergovernmental Panel on Climate Change (IPCC). 2007. Climate change 2007: Impacts, adaptation and vulnerability. New York: Cambridge University Press. <http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-spm.pdf>.
- Little, Peter D., Roy Behnke, John McPeak, Getachew Gebru. 2010. Retrospective assessment of pastoral policies in Ethiopia, 1991–2008. United Kingdom Department for International Development. http://www.future-agricultures.org/index.php?option=com_docman&task=cat_view&gid=1555&limit=10&order=date&dir=ASC&Itemid=965.
- Marcus, Harold G. 2002. A history of Ethiopia. Berkeley: University of California Press.
- Mazo, Jeffrey. 2010. Climate conflict: How global warming threatens security and what to do about it. London: The International Institute for Strategic Studies.
- McSweeney, C., M. New, and G. Lizano. 2008. Ethiopia. UNDP climate change country profiles. <http://country-profiles.geog.ox.ac.uk/index.html?country=Ethiopia&dI=Reports>.
- Meredith, Martin. 2005. The fate of Africa. From the hopes of freedom to the heart of despair: A history of 50 years of independence. United States: Perseus Books Group.
- Meles, Zenawi. 2009. Climate change will hit Africa hardest. *Guardian*, November 28. <http://www.guardian.co.uk/commentisfree/cif-green/2009/nov/28/africa-climate-change>.
- Mesele, Sintayehu. 2006. Land use dynamics and impact on selected physiochemical properties of soils in Yabelo Woreda of the Borana lowlands, Southern Ethiopia. Master's thesis. Alemaya University, Ethiopia.
- Oromia National Regional Government. 2010. Borena land use study and implementation pilot project, Yabelo.
- Oxfam 2008. Survival of the fittest: Pastoralism and climate change in East Africa. Oxfam Briefing Paper 116. http://publications.oxfam.org.uk/display.asp?k=002P0618&sf1=sort_series&st1=OXFAMBRIEFINGPAPERS&m=324&dc=455.
- . 2010. The rain doesn't come on time anymore: Poverty, vulnerability, and climate variability in Ethiopia. http://www.oxfam.org.uk/resources/policy/climate_change/climate-change-poverty-ethiopia.html.
- Pastoralist Forum Ethiopia, International Institute of Rural Reconstruction, and The Development Fund. 2010. Pastoralism and land: Land tenure, administration and use in pastoral areas of Ethiopia. Kenya: Majestic Printing Works Ltd.
- Pausewang, Siegfried, Kjetil Tronvoll, and Lovise Aalen, eds. 2002. Ethiopia since the Derg: A decade of democratic pretension and performance. London: Zed Books.
- Pavanello, Sara. 2009. Pastoralists' Vulnerability in the Horn of Africa: Exploring political marginalization, donors' policies, and cross-border issues. Overseas Development Institute. <http://www.odi.org.uk/resources/details.asp?id=4576&title=pastoralist-vulnerability-marginalisation-horn-africa>.
- Rettberg, Simone. 2010. Contested narratives of pastoral vulnerability and risk in Ethiopia's Afar region. *Pastoralism* 1 (2): 248–273.

Riché, Béatrice, Excellent Hachileka, Cynthia B. Awuor, and Anne Hammill. 2009. Climate-related vulnerability and adaptive-capacity in Ethiopia's Borana and Somali communities. International Institute for Sustainable Development, The International Union for Conservation of Nature, Save the Children UK, and CARE. http://www.iisd.org/pdf/2010/climate_ethiopia_communities.pdf.

Save the Children USA, Save the Children UK, Mercy Corps, and International Rescue Committee. 2010. Pastoralist Livelihoods Initiative Phase Two report: July to September 2010.

Smith, Dan and Janani Vivekananda. 2007. A climate of conflict: The links between climate change, peace and war. International Alert. http://www.international-alert.org/climate_change/index.php.

———. 2009. Climate change, conflict and fragility: Understanding the linkages, shaping effective responses. International Alert. http://www.international-alert.org/press/Climate_change_conflict_and_fragility_Nov09.pdf.

Stark, Jeffrey. 2011. "Climate Change and Conflict in Uganda: The Cattle Corridor and Karamoja," CMM Discussion Paper No. 1, United States Agency for International Development (USAID).

Stark, Jeffrey, Christine Mataya, and Kelley Lubovich. 2009. "Climate Security, Adaptation, and Conflict," CMM Discussion Paper No. 1, United States Agency for International Development (USAID).

Temesgen, Amsale K. 2010. Climate change to conflict? Lessons from Southern Ethiopia and Northern Kenya. Institute for Labour and Social Research (Fafo). www.fafo.no/pub/rapp/20153/20153.pdf.

United Nations (UN). 2009. Climate change and its possible security implications. Report of the Secretary-General. <http://www.unhcr.org/refworld/pdfid/4ad5e6380.pdf>.

United Nations Development Programme (UNDP). 2002. Human development report: Deepening democracy in a fragmented world. New York: Oxford University Press. <http://hdr.undp.org/en/reports/global/hdr2002/>.

World Bank Group. 2010. The economics of adaptation to climate change. http://siteresources.worldbank.org/EXTCC/Resources/EACC_FinalSynthesisReport0803_2010.pdf.



U.S. Agency for International Development

1300 Pennsylvania Ave, NW

Washington, DC 20523

Tel: (202) 712-0000

Fax: (202) 216-3524

www.usaid.gov