

DROUGHT DOES NOT WORK ALONE

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Drought has settled once again across much of East Africa. Through 2016 and into 2017 extensive dryland areas have received rainfall well below average, associated at least in part with cyclical El Niño and La Niña events. In some places this is extending a phase of recurrent drought that stretches back several years, prompting popular claims that an intensified drought hazard potentially associated with global climate change is already gripping the region. The impacts of lower than anticipated rainfall over prolonged periods reduce river water flows and soil moisture, undermining access to the vital substance that sustains people's health, hygiene, crops and livestock, with ramifying implications for livelihoods and wellbeing. Drought, as a long-duration hazard, has the potential to reach into almost all aspects of life and bring impacts across society, but, like all hazards, its effects do not fall in equal measure across social groups. Commonly, it is the most marginalised (socially, politically and economically) that face the impacts most acutely and have the least capacity to avoid, tolerate or recover from livelihood shocks and stresses.



But the occurrence of drought presents neither a rupture from the norm nor a discrete problem. In dryland environments drought periodically emerges (or is identified) in a context of chronic water security challenges: these are places where managing water scarcity is a continual not exceptional task. Moreover, drought impacts and response can only be understood within the context of much wider stresses and changes. Indeed, in the ASSAR project ([Adaptation at Scale in Semi-Arid Regions](#)), we talk of semi-arid regions as 'crucibles' of environmental and societal change. The key in recognising this is that we need to acknowledge how drought effects are both shaped by, and shape, those dynamics.

Through ASSAR, researchers are studying different aspects of people's vulnerability and adaptation in case study areas within Ethiopia (the Middle Awash Valley in Afar) and Kenya (in and around western Isiolo in northern Kenya). In this article we use examples from the case studies to illustrate the interaction of drought with a set of other dynamics in the lives of pastoralists and agro-pastoralists. In so doing, we raise questions around how the implications of drought should be understood and how such analyses should inform risk management.

Environmental change

In many sites within the case study areas, the predominantly rangeland landscape is undergoing significant change in the composition and cover of vegetation. Though overgrazing has been readily stated as a cause of soil and vegetation degradation, in reality the changes are likely to have multiple causes, including economic, social, ecological and climatic factors. In Ethiopia, the spread of the invasive alien shrub *Prosopis juliflora* has become a dramatic feature of environmental change in the Middle Awash Valley. Characterized by vigorous growth that helps it to outcompete indigenous plant species and to cover huge areas of land in a relatively short period of time, the shrub's spread has made it yet more difficult for livestock to find scarce pasture at times of deficient rainfall. Local interviewees suggest that drought conditions actually enable the plant to compete even more effectively for space with native vegetation.



Other constraints on access to pasture and water resources emerge from changes in human land use, including the expansion of irrigated farming near water courses, major infrastructure developments such as those associated with the Lamu Port-South Sudan-Ethiopia-Transport Corridor Project ([LAPSSET](#)) in Kenya, and the growth of urban settlements. Large areas of land around the Awash River in the Ethiopian case study have been given over to agro-industrial sugar cane cultivation, cutting off access to dry season water sources on which many pastoralist groups historically depended during hard times together with use of the surrounding rangeland.

Economic livelihoods



Both the form and the mix of livelihood activity is changing in the drylands, as increasing market penetration and development of different economic sectors takes place. But this too is difficult to separate from changes relating to water security. In the case study areas, we are witnessing changes to the nature of pastoralism, including shifts in mobility patterns (see below) and shifts in the types of livestock with some herders reducing the number of cattle and replacing them with camels and sheep, in part at least because they are perceived as better able to cope with environmental change and dwindling access to grasses. At the same time, interventions are being introduced to assist commercialisation of livestock products such as measures to better enable pastoralists to destock in the early onset of drought through sale of livestock. In both positive and negative ways, changes such as these have implications in turn for vulnerability to drought risks.

Increases in the farming of crops and commercial harvesting of non-timber forest products such as charcoal production present another key dynamic in and around the rangelands. A shift toward agro-pastoralism is evident in irrigable stretches of the Middle Awash Valley, providing sources of income diversification that can spread economic risk for households. On the other hand crop productivity has been chronically undermined in some areas by increased crop-raiding from wildlife and salinization of soils, intensifying susceptibility to harvest failure during times when the supply of irrigation water ceases. But drought is not the only climatic condition that hits farming. In the dryland fringes of Meru in Kenya, change in rainfall patterns, with the short rains in October increasingly unpredictable, and sometimes unseasonal rains in January, has also led to destruction of crops such as maize. This problem itself has been exacerbated by shifts in crop choices according to interviewees in Gituli who reported a reduction in the diversity of crops now to a mix of only maize, beans and miraa (*Cathua edulis*).

Mobility

Closely connected to the dynamics already noted has been a shift in the seasonal mobility patterns of livestock. We found some indication that drought conditions in Ethiopia has forced herders to take their cattle to new, more distant locations – invoking the greater threat of conflict with other pastoralist groups. Yet, again, the cause of this changing pattern is multiple. Commonly, household-level interviewees in both countries would refer to the constraints on movement and access to water and pasture brought about by changes in land use and management and the associated restrictions on access. In particular, this has affected access to customary dry season grazing sites (including areas agreed between communities to be set aside for livestock access only in times of extreme conditions). The movement of pastoralists in and around the Isiolo case study area has reportedly been restricted by land subdivision and establishment of protected areas. This includes the establishment of conservancies, which are intended to strengthen ecosystem service provision but which may not always do so to the benefit of all relevant communities.

As with many of the dynamics considered so far, the implications of changing mobility patterns and their interaction with drought are not limited simply to household incomes. In the pastoralist community of Gonita Birka in Ethiopia we found evidence of reductions in schooling, as entire families made the long-distance journeys away from their home site during the intensifying drought. In the Kenyan community of Kachuru, on the other hand, we found that the movement of cattle further away than normal directly affected household members who stayed behind in the home village. It denied them access to milk for both consumption and sale, posing a particular threat to children's nutrition and opportunities for income generation for women, both in terms of food and income.



Intra-household dynamics

All of the dynamics above are taking place in tandem with social and cultural changes, noticeable in both countries not just across social groups but also within households. Many communities with long-held traditions and norms seem to be experiencing a change in household structures, inter-generational relations, responsibilities, livelihood roles and aspirations. One of the phenomena that appears to be increasing in prevalence is household reorganisation in response to livelihood shocks, stresses and emerging risks, which is both reflective of and a cause of changes in gender roles and relations. For example, because of livestock losses associated with drought and conflict a household in Kulemawe has reorganised to enable the male household to spend more time buying and selling livestock at markets. As a result, his wife spends more time looking after the remaining herd and is absent from her children for three or four days a week.



Other aspects of income diversification, including both production and trade, interlink climatic and intra-household dynamics. Interviewees in Isiolo-Meru communities referred to recurrent droughts as a spur diversification. With food aid not regarded as a dependable source of survival, many women have tried to set up a range of petty trade and business activities. Meanwhile, men are increasingly finding it hard to fulfil traditional provider roles through livestock activities.

As with many of the dynamics being described, the interaction between these changes and drought can produce mixed effects. For example, strengthening of income sources through productive engagement of women may reduce both personal and household income vulnerability, but the continuation of a customary role for women of fetching water becomes a significant added burden on top of productive activity if drought conditions force them to travel greater distances to locate adequate water sources.

Migration and resettlement

The growth of urban centres such as Isiolo town and Awash Sebat Kilo within the case study areas is a sign of increasing rural-urban migration by former pastoralist households or those seeking to diversify income sources. Migration in the case study areas takes different forms. For some households, the move to the provincial centre is a phase within a staged migration to larger conurbations. But many will remain in the town and retain a physical connection with their original rangeland home. Within Awash Sebat Kilo there are both urbanised neighbourhoods occupied by former pastoralist families and peri-urban settlements organised as traditional Afar villages, such as Emnerbered, in which the community have established a site where they can continue livestock herding yet also access urban employment opportunities and services.



Migration and relocation are therefore complex in their patterns and in the factors that motivate people to move, and are seldom reducible to a single driver of extreme weather or climatic change. Nevertheless, there is evidence from interviews in Kenya that phenomena such as household splitting – through which individual household members operate in a variety of different locations whilst retaining active links with each other – is emerging in part as a translocal mechanism for risk management. Through these translocal mechanisms, we can see that households (and its members) are simultaneously embedded within different places but maintain strong links with each other through transfers of information, knowledge, materials, and experiences for example.



During the course of the recent drought, the team also witnessed the temporary relocation of the pastoralist community of Gonita Birka in Ethiopia for several months to occupy a site next to the Awash River where they could secure water for animals and people. On the other hand, people now occupying the area known as Duduf reported that they had relocated permanently because they were displaced by the establishment of sugar plantations to the north. The expansion of these and smaller-scale irrigated cropfields is associated with one further resettlement dynamic, which is the Ethiopian programme of villagisation. This transition of some pastoralist communities to occupying permanent government-designated sites promotes diversification into cultivation, which as noted above can have a mixed effect on ability to cope with water stress. The lifestyle changes it brings also has implications for mechanisms of knowledge exchange and resource management decision-making.

Knowledge and communication

Traditional pastoral systems for informing communal decisions around resource use and mobility remain widely valued and trusted in both the Kenya and Ethiopian case study sites, but there is evidence that non-traditional sources of information are gradually complementing, supplementing or replacing traditional knowledge.

The balance of interview material suggests that traditional skills in interpreting signs of weather change, including emerging drought, are declining in importance as other sources of information are spreading, via extension services and broadcast media, and increasingly via mobile phone systems. Indeed, a key component of many adaptation interventions in these semi-arid areas is a focus on knowledge provision, and especially generation of improved forecasting, early warning and associated advice to herders and farmers. This presents a long-term dynamic that must be influencing how people make sense of their environment and their agency to manage risk within it.

But information itself is not a resource unless it is useful, appropriate and valued, and if it does not attain these characteristics there is a danger that a replacement source of information will undermine rather than strengthen ability to sustain livelihoods and wellbeing in periods of risk. This problem is widely recognised, and there are efforts by both governmental and non-governmental agencies to strengthen extension services in this regard and, for example, to undertake forums and projects with local groups to translate forecast information into meaningful advice. Nevertheless, concern that the erosion of valuable community-based mechanisms for interpreting and communicating advice may be increasing vulnerability to drought and seasonal water stress has prompted some interventions, notably in the Kenyan case, to work with existing skills in communities and support local systems of communication.



Resource management change

Dynamics in how dryland resources are managed interlink with the changing mechanisms of knowledge production and authority. In both the Ethiopian and Kenyan case study areas, traditional mechanisms for managing resource scarcity are based around communal decisions on mobility and established norms of seasonal access to specific grazing lands and water sources. Decisions on the long-range movements of livestock are typically made by a council of elders, and draw on scouting activities by younger men who report the state of pasture and water in different locations. There is indication from both countries that these traditional mechanisms are under strain, especially during drought when competition for access to resources in areas such as drought reserves is intensified by the convergence of pastoralists from beyond the normal range, in turn heightening instances of conflict such as recent cases in Isiolo and Laikipia, Kenya. However, when analysing ostensibly 'drought-induced' conflicts it is always critical to recognise that wider governance issues including land tenure, rights, security and corruption typically lie behind these confrontations.



Cases of the breakdown of traditional management mechanisms are likely to exacerbate resource scarcity, but their disruption is also likely to be opening political space for other forms of resource governance. In northern Kenya, one of the most prominent dynamics in land tenure is the increasing coverage of land under conservancies, which bring new forms of regulation in access to natural resources. Though externally-driven, one of the rationales for conservancies is to strengthen the resource security of neighbouring communities. However, they are not always designed to accommodate longer-range mobility claims of more distant pastoralist groups, which again raises the threat of increased conflict as reported for Leparua Conservancy in Isiolo. At a broader scale, governance of resource management in both countries is in a phase of changing relations between central and local government, one in which efforts towards decentralisation are bringing planning authority closer to the local scale but which create their own strains and capacity demands for often over-stretched local government officials. For Isiolo, the promise of integrated programmes such as the national Ending Drought Emergencies initiative is likely to depend largely on the ability of the local government to coordinate engagement across multiple sectors between themselves, central government and external development partners. The decentralisation process is thus creating new institutional and political spaces for resource governance, with attendant opportunities and challenges that may enhance or undermine its effectiveness.

CONCLUSION: Putting drought in its context

If we think of meteorological drought as itself part of a climate dynamic (both in terms of background variability and longer-term climate change trends), then we need to view it as one element of change among a range of other critical changes that are taking place in the dryland regions. We do not in any sense seek to deny the awfully tangible impacts that drought can have. When high numbers of livestock deaths and food security emergencies coincide with conditions of drought, this association is of course not 'coincidental': the intense shortage of water availability is a direct driver of the crisis. The point is that it is not the sole driver (and, by implication, the existence of drought does not necessarily create crisis).

The argument that crises are to large extent contingent on how stresses are managed – at various scales – is already well established in thought and practice. What we feel is not so often underlined is the wider interaction of drought with other environmental and societal dynamics that significantly shape the nature and extent of its impacts. These interactions make it difficult to analyse and respond to the implications of drought separately from other changes and challenges: drought is seldom a standalone problem. Further, these dynamics interact similarly with more chronic patterns of water stress. Indeed, though drought may be scientifically delimited, there is typically a continuum between this long-duration, slow-onset hazard and seasonal water stress conditions (something that is often reflected in colloquial use of the term). For many purposes, this brings into question the value of trying to distinguish the effects and interactions of a specific drought 'event' from the normality of water stress and climatic trends (especially a situation of change over time in which the abnormal becomes the normal).

There are limitations, therefore, in the extent to which we can talk about drought events in isolation – from chronic water security issues and from the wider, but associated dynamics taking place in drylands. These dynamics include positive changes in the sense of reducing risk, but also changes that intensify pressures on livelihoods and wellbeing, often ones with deep-seated root causes that are increasing people's vulnerability to water scarcity. This interaction of dynamics presents challenges for chronic and extreme water stress management, in that it makes it more difficult to pinpoint specific instruments for risk reduction. But it should also be seen as an opportunity, in that action to reduce negative pressures in one sector is capable of bringing multiple benefits, including decreasing the underlying vulnerability of people to all forms of water stress. In any case, ignoring the existence of these interactions is unlikely to lead to sustainable intervention.

During this period of drought crises a number of high-level strategic meetings and initiatives have been held or planned in the region and across Africa, including the Windhoek Declaration for Enhancing Resilience to Drought in Africa in August 2016, and the IGAD Experts and Ministerial Meeting on 2017 Drought Response and Recovery held in Nairobi at the end of March 2017. Most have an aim of strengthening drought resilience through promoting approaches that go beyond emergency response to a deeper engagement with the principles of disaster risk reduction. Though such forums typically make reference to the dynamic social and environmental contexts of drought risk and the need to reduce underlying societal factors that elevate risk, to date they seldom focus the discussion on this more challenging, yet fundamental agenda for tackling the problem.



ABOUT ASSAR

ASSAR uses insights from multiple-scale, interdisciplinary work to improve the understanding of the barriers, enablers and limits to effective, sustained and widespread climate change adaptation out to the 2030s. Working in seven countries in Africa and South Asia, ASSAR's regional teams research socio-ecological dynamics relating to livelihood transitions, and the access, use and management of land and water. One of four consortia under the Collaborative Adaptation Research Initiative in Africa and Asia (CARIAS), ASSAR generates new knowledge of climate change hotspots to influence policy and practice and to change the way researchers and practitioners interact.

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