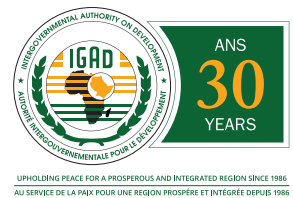


RESILIENCE FOCUS 3



**Drylands Learning and
Capacity Building Initiative
for Improved Policy and
Practice in the Horn of Africa**



A biannual IGAD publication. This edition has been produced in collaboration with DLCI.

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By Dr John P. Kabayo, Co-ordinator, IDDRSI Platform

The aim of IGAD's Drought Resilience and Sustainability Initiative (IDDRSI) is to address the effects of drought and related shocks in a sustainable and holistic manner, and end the devastating impacts of severe and recurrent droughts in the IGAD region. Through its *Resilience Focus* magazine, IGAD provides a platform for practitioners and development partners involved in the promotion and implementation of IDDRSI to share their experiences, discuss their plans, and identify opportunities for more effective engagement to achieve IDDRSI objectives.

This third edition of the *Resilience Focus* magazine has been produced in collaboration with the Drylands Learning and Capacity Building Initiative (DLCI), an independent regional resource and facilitation organisation based in Kenya. The articles in the magazine have been selected to highlight some of the ways in which the seven priority intervention areas (PIAs) of the IDDRSI strategy are being addressed in the IGAD region. The priority intervention areas are:

- Ensuring equitable access and sustainable use of natural resources while improving environmental management;
- Enhancing market access, facilitating trade and availing financial services;
- Providing equitable access to livelihood support and basic social services;
- Improving disaster risk management capabilities and preparedness for effective and timely response;
- Enhancing the generation and use of research, knowledge, technology and innovations in the IGAD region;
- Promoting conflict prevention, resolution and peace building; and
- Strengthening partnerships, coordination mechanisms and institutional arrangements for more organised, collaborative and synergistic action.

Several articles are featured in the section on **Environment and Natural Resources Management**. An article by authors from Ethiopia and Somaliland shows the innovative approaches that are being used to control the spread of *Prosopis Juliflora* (a vicious, highly prolific, invasive weed that has proved difficult

to eradicate), through use of its seeds as animal feed. An article on mapping indicators of land degradation by an author from the World Agroforestry Centre shows how it is possible to identify hotspot areas in rangeland systems, and to use such indicators to monitor ecosystem health in dryland ecosystems and inform intervention plans. The article explaining participatory land use planning illustrates the opportunity that this provides for local land users to play a central role in the decision-making processes that concern the land and resources upon which they depend.

Providing **Market Access, Trade and Financial Services** is a particularly challenging priority area within IDDRSI; and an article on Sharia Compliance in micro-finance for pastoral and agro-pastoral communities by Mercy Corps illustrates the potential benefits of offering these targeted micro-finance products. There is evidence of the emerging engagement of the private sector to support veterinary service delivery in many parts of northern Kenya, as reported by the article from SIDAI Africa Ltd. In a research article from IIED, new evidence that reaffirms the value of pastoral systems, commonly overlooked or underestimated, is presented, showing that various pastoral products contribute significant revenues to public authorities, and support basic services in rural towns.

Access to **Livelihoods Support and Basic Social Services** is a priority for the IGAD region: Education in particular is of poor quality, with low uptake and with outcomes well below national averages. Effective education is important for resilience, and the joint DLCI and National Council on Nomadic Education in Kenya (NACONEK) article calls for improved and integrated approaches to promote resilience through education. Livelihood support always needs to be appropriate, as the article on irrigation illustrates: Increasingly being promoted for crop agriculture, irrigation schemes still frequently ignore the lessons from past failures.

The diversity of approaches for undertaking **Pastoral Disaster Risk Management, Preparedness and Effective Response** are illustrated by an article from Kenya's National Drought Management Authority (NDMA): Pilot contingency financing is being

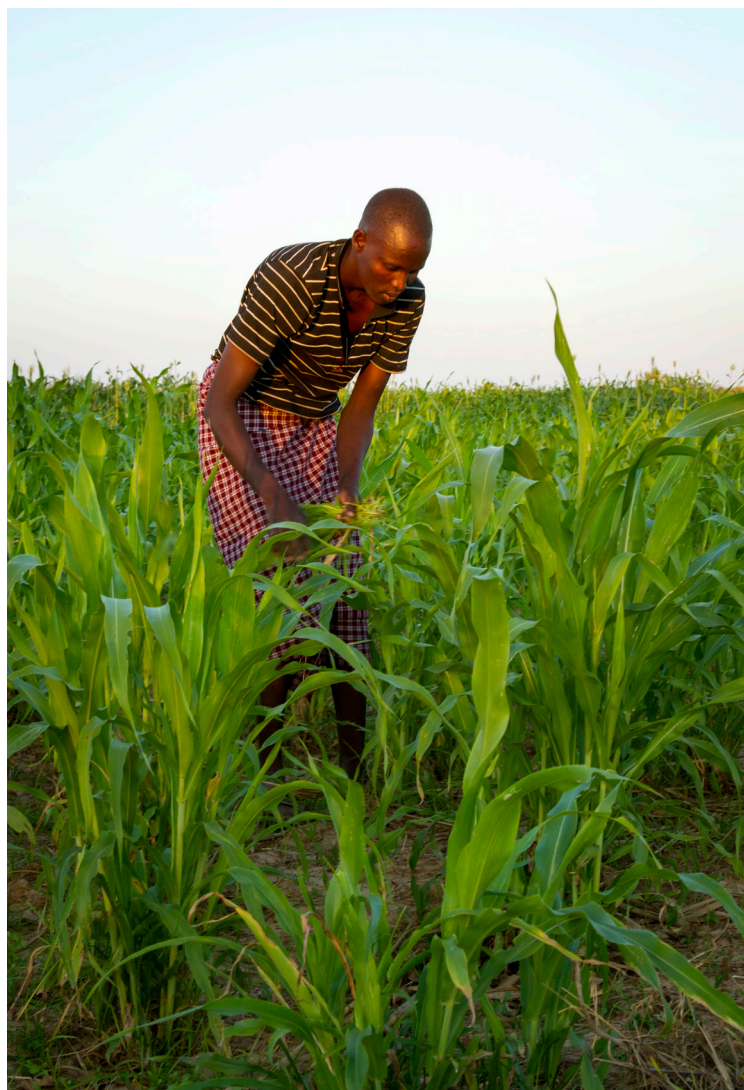
used to inform the establishment of a National Drought Contingency Fund (NDCF). Mercy Corps then explores some of the challenges in the use of USAID's Crisis Modifiers—quick injections of emergency finance to reduce the impact of quick onset shocks in resilience building interventions—and proposes how crisis modifiers can be designed and activated more appropriately.

For the fifth priority area - **Research, Knowledge Management and Technology Transfer** – an article by Alex Tasker encourages development groups to work with local communities to co-create innovations that support resilience. Strategies include fully recognising the worldviews of the communities, and engaging with the process of innovation as much as the outcome. In their article, Development Initiatives report on humanitarian evidence systems in East Africa, and the need for more focus on quality and credibility. An article from Egerton University looks at the expanding interest in hydroponic technology, explaining some of the principles and also looking at future challenges of growing fodder hydroponically in the drylands.

Conflict Prevention, Resolution and Peace Building is a fundamental priority area, with the three articles on this subject illustrating the need for persistent and committed work at multiple levels. Kenya's Pastoralist Parliamentary Group (PPG) has a high level strategic plan for addressing the protracted insecurity that is impacting progress and resilience in Kenya's pastoralist areas. A local NGO in Kenya, 'Action for Change' is encouraging communities in the conflict triangle towards self-help and development. Whilst the Losolia Rehabilitation Development Association (LRDA) has been helping to address South Sudan – Kenya cross border insecurity within the Toposa-Turkana Nadapal-Loki Corridor.

The final IDDRSI priority area, **Coordination, Institutional Strengthening and Partnerships**, is illustrated with an article from Kenya's EDE Secretariat, whose dynamic coordination framework, and provision of training to EDE partners, will allow interventions to be monitored more effectively and evidence-based decisions to be made. And in Uganda the Land Alliance's

very practical approach of creating Communal Land Associations in Karamoja shows this crucial step towards institutional strengthening at district level, although legal registration is still outstanding. The final article introduces the forthcoming Sharefair on Gender and Resilience being jointly implemented by IGAD.



Weeding in an irrigated maize field, Kabulokor, Turkana district, NW Kenya. Credit: Kelley Lynch/DLCI

Innovative Approaches to Prosopis Utilisation in the Horn of Africa¹

By John Livingstone, PENHA and Beruk Yemane, Ethio-Feed Plc.²

Prosopis Juliflora is an invasive tree species found across the Horn of Africa. Eradication programmes have not been effective to date, but innovative approaches now aim to control *Prosopis*, and utilise it positively and commercially, in ways that strengthen livelihoods. The use of its nutritive (seed bearing) pods in animal feeds holds promise, and could help limit propagation however needs to be promoted within an integrated management strategy for *prosopis*. This overview looks at experience with this in Ethiopia and Somaliland, and the implications across the region.

The spread of *Prosopis* across rangelands and around water sources has undermined pastoral and agro-pastoral livelihoods across the Horn; displacing favoured grasses and shrubs on rangeland, and reducing water supply for humans and animals. Controlling its spread is difficult and expensive. Eradication is almost impossible as it is hardy and deep-rooted; and as *Prosopis* spores can lay dormant for a decade, cleared land must be diligently monitored. In Sudan, the policy on *Prosopis* aims at eradication with harsh penalties for failing to prevent re-growth. Expensive chemical and mechanical methods deployed on a large scale have met with some success, notably at the Zeidab irrigated agriculture scheme. Where agricultural production is highly profitable it makes economic sense for farmers to uproot *Prosopis* (hiring labourers to do so) and to use other control methods. Overall though, control, rather than eradication, is a more realistic approach.

In Ethiopia, Kenya, Somaliland and Sudan, development agencies are beginning to promote the positive use of *Prosopis* as animal feed, as an energy source and as an input for a variety of commercial products. Processing of the seed-bearing *Prosopis* pods helps to control the plant's spread. One *Prosopis* plant may produce 90 kilograms of pods, and crushing 1 metric tonne of pods destroys over 2 million seeds. *Prosopis* utilisation can help to boost drought resilience: controlling its spread increases the availability of water and pasture; and by providing a new dry-season animal feed and a new source of income, the ability of communities to withstand drought is increased.

1. The Commercial Use of Prosopis as an Animal Feed

The sugary pods of the *Prosopis* plant are highly nutritious, as are its leaves. *Prosopis* can be utilised as an animal feed, however it should be used primarily as a feed supplement.³ As part of a carefully formulated feed mix it can boost protein and nutrient content, but when the *Prosopis* content in an animal's diet exceeds a certain level it can have a negative effect on their teeth due to the high sugar levels. Its use therefore needs to be carefully managed with livestock owners trained in its proper utilisation as feed.

The productivity enhancing effects of *Prosopis*, i.e. increased milk and meat production, have been observed by pastoralists whose animals browse *Prosopis* pods; as well as in tests conducted in Kenya and Ethiopia under similar conditions. *Prosopis* feed could help peri-urban camel milk producers in Ethiopia and Somaliland to produce more milk, and maintain production during dry seasons, but market assessments will be needed to determine the level of demand for *Prosopis* feed.

In Ethiopia, Farm Africa has pioneered a model based on helping farmer groups to set up profitable commercial operations. Groups buy pods collected by local people, creating a new income source. They use hammer-mills to process the pods and then sell the feed at local markets. Assessments have shown a positive internal rate of return. Where there is no local electricity supply, or it is unaffordable, the use of locally made hand choppers is an alternative to the more expensive, generator-powered, hammer-mills.

PENHA (the Pastoral & Environmental Network in the Horn of Africa) has just completed a two-year programme, supported by IFAD, providing training for local cooperatives and the provision of equipment. PENHA-Somaliland's project aimed to build on work carried out by PENHA in Sudan, in collaboration with Kassala University. It involved:

- Workshops for local groups to raise awareness and understanding of *Prosopis*;
- Training in making animal feed mixes that use *Prosopis* pods;
- The provision of equipment and hand-choppers for crushing *Prosopis* pods (based on a design used in Sudan).

FAO-Somalia, drawing on Kenyan expertise and experience, is also implementing a pilot project—providing training and hammer-mills for three local cooperatives so that they can commercialise animal feed mixes that make use of *Prosopis*.

Ethio-Feed Plc

A group of Ethiopian entrepreneurs have also established a private company, Ethio-Feed, with the aim of producing a range of high-quality animal feeds to serve Ethiopia's expanding livestock industry. In Adama, Ethio-Feed has a 2,500 m² campus, comprising production facilities and a warehouse. Ethio-Feed aims to develop and produce innovative feeds that make use of locally available inputs, including agro-industrial by-products, and meet the nutritional needs of the different animals and breeds reared by Ethiopian livestock keepers and commercial operators. Inputs used include the protein-rich pods of *Prosopis*. On the basis of existing data on animal nutritional needs, samples of different feed mixes were developed and tested at Debre Zeit's National Veterinary Laboratory to determine the best feeds for Ethio-Feed's product range. Ethio-Feed provides a useful model of a commercial enterprise that is producing marketable products that also address development goals; and that draws on the expertise of (local) research institutions, and the experience of NGOs, at the same time as engaging with farmers and pastoralists in an iterative process of training and consultation.

¹ This article was written following a regional conference 'Exploring Prosopis Management and Policy Options in the Greater Horn of Africa', PENHA, IFAD, UCL, February 2015.

² John Livingstone is the Regional Policy Officer for the Pastoral & Environmental Network in the Horn of Africa (PENHA), www.penhanetwork.org and Beruk Yemane is a co-founder of Ethio-Feed Plc, a private company that produces livestock feed.

³ Dr. Zeremariam Fre, T. M. Abedelnoor; N. H. Talib, A. A. Mabrouk, M. A. Mohamed, M. I. El-Mahi H.H.Abu-Eisa, and Bokrezion.H, "The use of alternative animal feeds to enhance food security and environmental protection in the Sudan (The case for *Prosopis Juliflora*)", PENHA-Animal Production Research Centre, Ministry of Science and Technology (MOST), Sudan 2009.

2. The Use of Prosopis Wood in Charcoal Production

In Somaliland, Candlelight (a local NGO), has promoted the utilisation of Prosopis as a fuelwood and for charcoal production since 2002, by providing training for community groups. PENHA-Somaliland has also supported local cooperatives to produce and market Prosopis as charcoal. The high demand for charcoal offers, perhaps, one of the best prospects for using Prosopis to develop a profitable enterprise, with the potential of serving regional markets. The quality of charcoal produced must be improved, however. High-quality charcoal briquettes could serve the Gulf and the Djiboutian market, where demand for briquettes is strong and consumers are highly dependent on charcoal produced in Somalia.

Challenges

The broader challenges of Prosopis utilisation include:

- Lack of Prosopis fodder value chain interventions—including the need to explore animal feed development with customers, with tailored products for livestock traders, milk producers and livestock keepers.
- Lack of capacity for Prosopis utilisation—machinery, equipment, skills and knowledge.
- Lack of awareness or understanding of plant characteristics.

The specific challenges for local cooperatives include:

- The difficulty of consistently sourcing complementary feed inputs.
- Getting the feed composition consistently right.
- A lack of capacity for storage and marketing.
- Hammer-mills getting ‘gummed up’ by sticky Prosopis pods if they are not properly dried before processing—this requires use of a (costly) heat source.

For larger commercial operations the challenges include:

- Seasonality of supply—The major challenge facing Ethio-Feed is the difficulty of maintaining a consistent supply of Prosopis pods on a sufficient scale for commercial production. In some (more distant) parts of Afar region, pods are available for most of the year, but transport and logistics are impediments here. Greater regional trade could ease supply constraints, but there are other significant barriers to this.
- Barriers to international trade also inhibit the supply of equipment and machinery.

A more basic challenge is the free/low-cost availability of raw Prosopis pods for migrating pastoralists. Pastoralists

are increasingly using Prosopis to maintain their herds through harsh dry seasons, but this use of raw pods expands and exacerbates its invasive spread and reduces their willingness to pay for processed feed.

Recommendations

In order to promote sustainable use of Prosopis there is a need to address the principal market failures that undermine the possibilities for exploiting its commercial opportunities – the lack of technical knowledge, and barriers to the flow of information, goods and services. To address this, regional and national actors should:

- Promote regional collaboration on Prosopis utilisation, involving research institutions, civil society organisations and the private sector.
- Link companies that produce animal feeds and improved-quality charcoal briquettes to new finance and markets, both regionally and internationally.
- Build collaborative and participatory agricultural learning networks that involve international organisations, local research institutions, local cooperatives and herders’ associations, as well as the private sector.
- Expand the provision of hammer-mills and modern kilns for farmer/pastoralist groups that wish to undertake commercial exploitation of Prosopis, making the equipment widely available, affordable and accessible to local cooperatives and entrepreneurs. (Chainsaws, mechanical choppers and protective clothing are also important in collecting pods and wood.)
- Ease import restrictions or promote the manufacture of equipment within the region, perhaps through joint ventures with international companies.
- Involve organised women’s groups in new programmes, given that women in some pastoral areas have been collecting and selling (raw) pods as animal feed.
- Conduct studies on the effect of Prosopis pod consumption by camels on the volume and quality of camel milk production, with pilot projects aimed at boosting supply from peri-urban producers.

Conclusions

While some governments in the region are starting to emphasise eradication rather than sustainable utilisation, it is clear that eradication is extremely challenging in the short to medium term. Whatever approach is emphasised, it should be part of a comprehensive Prosopis management plan that takes account of the realities and opportunities that exist, balancing removal and control with safe utilisation. Given the voracious and destructive nature of the plant, any sustainable use plan should create awareness and help to mitigate against any further spread of the plant. There is a long way to go in tackling the plant and lessons learnt and impacts should be widely shared.⁴

Further Reading:

Proceedings of a Regional Conference: “Exploring Prosopis Management and Policy Options In the Greater Horn of Africa”, PENHA, IFAD, UCL, February 2015.
Somali Agriculture Technical Group (SATG), “The Invasion of Prosopis Juliflora in

Somalia and Piloting of Positive Utilization”, 2007

Libah, Abdirizak Bashir, “The Management & Utilization of Prosopis”, paper presented at PENHA’s “Policy & Practice” Workshop, Hargeisa, September 2014.

Flintan, Fiona, “ELMT Good Practice Bibliography: Prosopis Control And/Or Utilisation”, ELMT/ELSE, October 2009.

Mwangi, Esther and Brent Swallow, “Invasion of *Prosopis juliflora* and local livelihoods: Case Study from the Lake Baringo area of Kenya”, World Agroforestry Centre, ICRAF, Kenya, 2005



Making Prosopis charcoal in Bheerato village.
Photo credit: PENHA

Mapping Land Degradation in the IGAD Region

By Tor-Gunnar Vågen, ICRAF¹

By assessing and mapping a range of indicators of land degradation, soil and rangeland health in drylands, at both local and regional scales, it is possible to produce consistent estimates at multiple spatial scales. The maps can identify hotspot areas in rangeland systems, provide rigorous baselines for land degradation indicators, target interventions more effectively, and monitor change (e.g. recovery of land) over time.

A framework for measuring rangeland health

Scientifically sound methods and approaches are needed to measure and monitor ecosystem health in dryland ecosystems, including rigorous baselines of land degradation status. Such approaches are also necessary to increase our understanding of the main processes of land degradation in drylands: the factors that are driving these processes and particularly the spatial extent of land degradation. Rigorous baselines are important to monitor changes over time, including the effects of interventions to prevent land degradation or restore already degraded areas. Much of the drylands in the IGAD region are rangelands, and assessments and management of rangeland health are therefore of critical importance for food security in the region, particularly to target restoration efforts in degraded rangelands and ensure their sustainable use.

Rangeland health can be defined in a number of ways, but generally refers to the degree to which the integrity of the soil, vegetation, water and air as well as the ecological processes of the rangeland ecosystem are balanced and sustained.² Assessing rangeland health is a complex endeavour, and several indicators have been proposed, including: soil erosion patterns and soil loss, bare ground, vegetation dynamics;³ presence/absence of invasive plants;⁴ and soil organic carbon,⁵ to mention a few. Attempts have been made to assess land degradation in rangelands using simple changes in vegetation cover represented by the Normalized Difference Vegetation Index (NDVI).⁶ However, the NDVI is often a poor indicator of land degradation, particularly in rangeland systems, as it is insensitive to senescent vegetation such as dry grasses, which is an important component of these systems. The complexity of land degradation in rangelands makes it necessary to consider multiple indicators and their interactions across these landscapes.

The Land Degradation Surveillance Framework (LDSF)⁷ combines systematic probability-based field sampling with the use of rapid low-cost infrared spectroscopy of

soils⁸ and remote sensing⁹ to map important indicators of land degradation. Such indicators include soil erosion, woody and herbaceous cover density, diversity and trends, infiltration capacity, and soil organic carbon (SOC). These indicators are assessed and mapped at different spatial scales: from local assessments at the plot level, to farm scale and landscape-level assessments. The methodology also addresses rangeland health through indicators of the composition and diversity of grasses, including the ratio of annuals to perennials for example.

In this article indicators of land degradation and rangeland health are assessed based on the LDSF, mapping a selection of these indicators both at regional and at local scales within the IGAD region. The article illustrates the potential utility of science-based approaches in operationalising assessments and monitoring of land degradation and rangeland health.

Regional mapping of rangeland health**1. Soil erosion and compaction**

The prevalence of erosion and root-depth restrictions (i.e. compaction) are key indicators of land degradation status and ecosystem health in drylands. Many semi-arid and arid ecosystems tend to display hydrological behaviour characterised by infiltration excess (Hortonian) overland flow, and hence have an inherently high risk of soil erosion by water. When grazing pressure is high, and herbaceous cover densities fall below critical thresholds, infiltration capacity is reduced and the risk of soil erosion increases. Hence these ecosystems tend to be susceptible to land degradation through soil erosion. Soil erosion also influences a range of other indicators of rangeland health, including soil health through the removal of topsoil, and vegetation cover and diversity through the loss of vital seed stocks. Areas that are strongly eroded will therefore often not respond to available rainfall and are generally more difficult (and costly) to restore once degraded. Compaction through, for example, intensive grazing and trampling by animals also tends to increase erosion, as well as inhibit the growth of plants.

The prevalence of soil erosion and root-depth restrictions for the IGAD region was mapped using field observations and measurements from LDSF sites in the region to train predictive models for these land degradation indicators based on remote sensing imagery (Figure 1). More details about the models used can be found in Vågen et al. (2015)¹⁰, but as can be seen in Figure 1, the regions most affected by erosion generally tend to be in the semi-arid drylands of the region. In Kenya, an important hotspot area for soil erosion and compaction, and hence high land degradation risk in general, is the middle and lower Tana basin, as well as large parts of Turkana County. Extremely high erosion can be seen in Somaliland and Puntland, where environmental problems have been reported to be high,

1 Senior Scientist, World Agroforestry Centre, Nairobi, Kenya

2 Pyke, D., Herrick, J., Shaver, P., Pellant, M., 2002. Rangeland health attributes and indicators for qualitative assessment. *Journal of Range Management*, 55, 584–597.

3 Briske, D., Fuhlendorf, S., Smeins, F., 2005. State-and-transition models, thresholds, and rangeland health: a synthesis of ecological concepts and perspectives. *Rangeland Ecology & Management* 58, 1–10.

4 DiTomaso, J.M., 2000. Invasive weeds in rangelands: Species, impacts, and management. *Weed Science*, 48, 255–265.

5 Vågen, T.-G., Davey, F., Shepherd, K.D., 2012. Land health surveillance: Mapping soil carbon in Kenyan rangelands, in: Nair, P.K.R., Garrity, D. (Eds.), *Agroforestry - The Future of Global Land Use*. Springer, pp. 455–462.

6 Budde, M., Tappan, G., Rowland, J., Lewis, J., Tieszen, L., 2004. Assessing land cover performance in Senegal, West Africa using 1-km integrated NDVI and local variance analysis. *J. Arid Environ.* 59, 481–498.

7 Vågen, T.-G., Winowiecki, L.A., Tamene Desta, L., Tondoh, J.E., 2013. The Land Degradation Surveillance Framework (LDSF) - Field Guide. World Agroforestry Centre, Nairobi, Kenya. <http://landscapeportal.org/documents/705>

8 Terhoeven-Urselmans, T., Vagen, T.-G., Spaargaren, O., Shepherd, K.D., 2010. Prediction of Soil Fertility Properties from a Globally Distributed Soil Mid-Infrared Spectral Library. *Soil Sci. Soc. Am. J.* 74, 1–8. doi:10.2136/sssaj2009.0218

9 Vågen, T.-G., Winowiecki, L.A., Abegaz, A., Hadgu, K.M., 2013. Landsat-based approaches for mapping of land degradation prevalence and soil functional properties in Ethiopia. *Remote Sens. Environ.* 134, 266–275.

10 Vågen, T.-G., Winowiecki, L.A., Tondoh, J.E., Desta, L.T., Gumbrecht, T., 2015. Mapping of soil properties and land degradation risk in Africa using MODIS reflectance. *Geoderma* 263, 216–225.

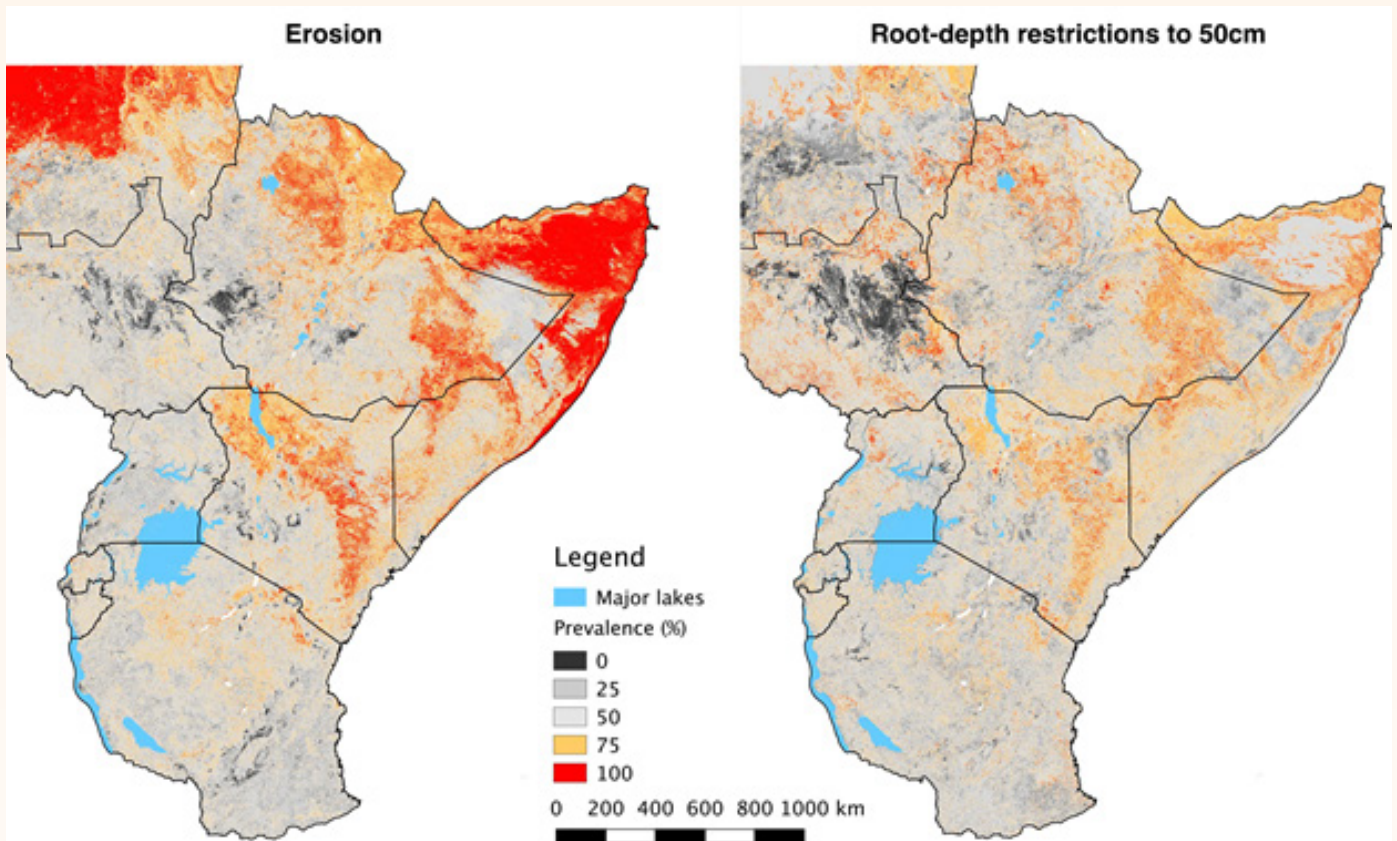


Figure 1: Predictions of erosion and root-depth restrictions across the HoA based on the Moderate Resolution Imaging Spectroradiometer (MODIS) satellite image platform (Vågen, Winowiecki, et al. 2015b)



Figure 2: Severe soil erosion in Afar region of Ethiopia. Photo credit: Tor Vagen

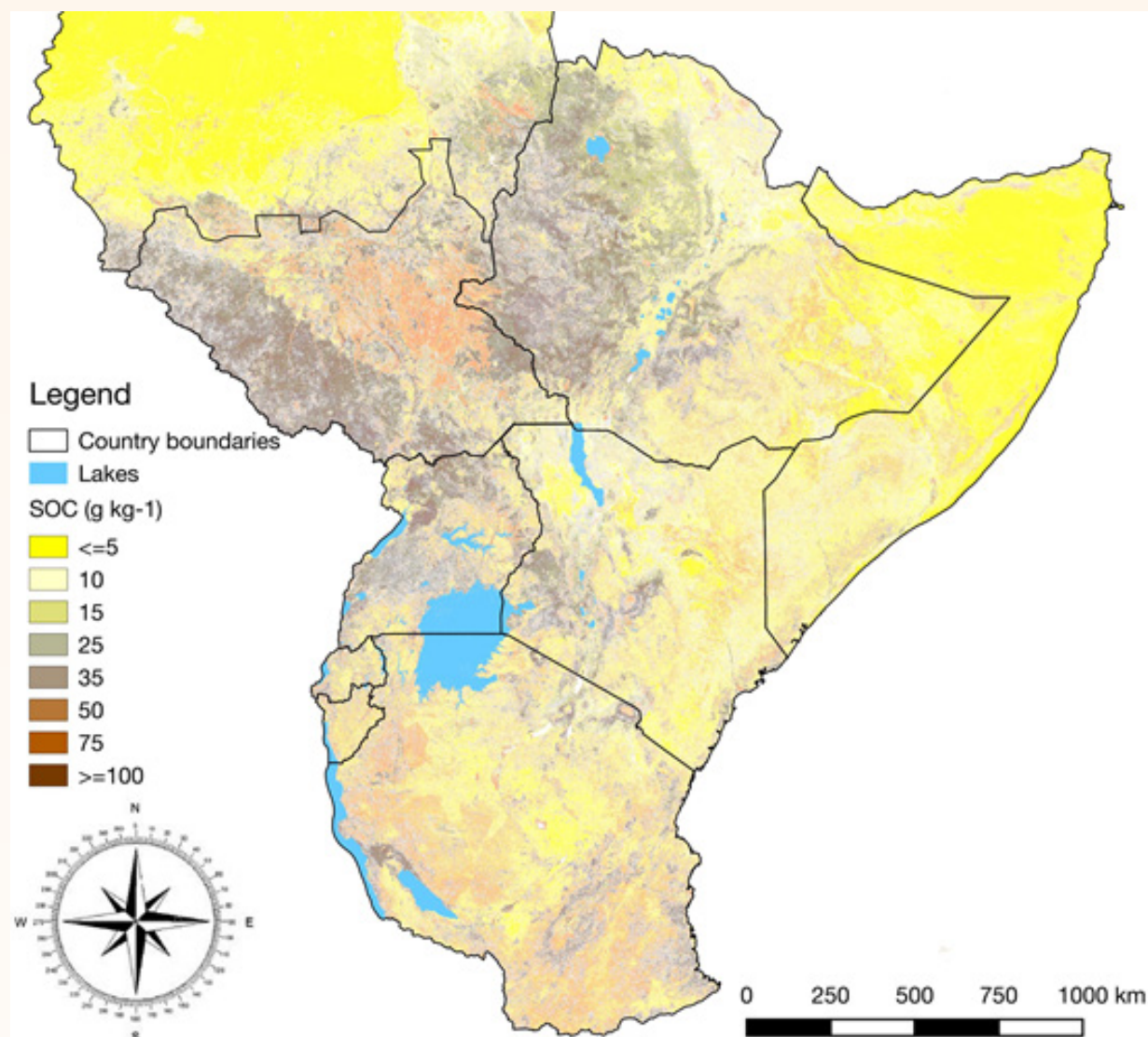


Figure 3: Map showing topsoil (0-20 cm) organic carbon (SOC) predictions for the HoA

including uncontrollable gullies and erosion by for example the Puntland Non-State Actors' Association (PUNSAA).

The severity of the problem in these environments is due to a combination of vulnerability of the soils in the ecosystems to degradation, even with moderate disturbance, and widespread deforestation for charcoal production, timber and other uses. These factors, in combination with widespread overgrazing, are essentially over-stretching the capacity of the rangelands in this region, leading to a virtual collapse in rangeland health. Erosion hotspots in Ethiopia, such as in the Lake Tana basin in the north and central parts of the country, are generally the results of long-term cultivation, often of very marginal areas. As shown in Figure 2, some of the pastoral areas in the Afar region, for example, are severely degraded due to soil erosion.

2. Soil health

Maintenance of soil resources or soil health is critical for rangeland health. Recent advances in the mapping of soil health, and in particular soil organic carbon (SOC), have made spatially explicit assessments of important soil constraints in rangelands possible (Figure 3).¹¹ Soil

organic carbon is predicted (mapped) using a library of soil samples systematically collected from about 130 LDSF sites, with a total of over 20,000 soil samples used for model development¹². The overall accuracy of the models used is good, with MODIS satellite image data explaining about 80% of the variation in SOC in the topsoil (0-20 cm depth). This level of accuracy means that these predictions can be used to assess the spatial variations in SOC in the IGAD region, including determination of critical thresholds for SOC. Given the low costs of these assessments, soil health in rangelands can be reliably assessed at the landscape scale.

As shown in Figure 3, semi-arid parts of the region generally have lower SOC than more humid or semi-humid areas. This is to be expected, of course, given the higher level of rainfall and potential biomass production in wetter areas. Areas with critically low SOC also often coincide with areas that are strongly eroded, such as in Turkana and parts of the Tana basin in Kenya, Somaliland and Puntland and parts of northern Ethiopia, for example. In some parts of the region, SOC contents are relatively high due to inherent soil properties, such as in Vertisols ("black cotton soil"). This is particularly evident in parts of southeastern Sudan.

11. Also see Vågen, Davey, and Shepherd 2012; Vågen et al. 2013; Vågen, Winowiecki, et al. 2015b, Vågen et al., 2015.

Fine resolution mapping of rangeland health in Kenyan drylands

In order to effectively target interventions for restoration of degraded drylands, fine resolution maps that have a spatial resolution equal to or higher than 30 m are needed. The Northern Rangeland Trust (NRT) has implemented LDSF sites in some of their conservancies, allowing for the use of RapidEye satellite imagery with a spatial resolution of 5 m to map erosion prevalence, soil organic carbon and herbaceous cover density. Current model accuracy is satisfactory for mapping hot-spot areas. One potential application of such high-resolution maps is for targeting interventions to control erosion, for example. Interventions may include mobile cattle enclosures (*bomas*), vegetative strips such as grass strips, or physical structures for soil conservation in severely degraded areas.

In the case of Kalama (Figure 4), some of the areas most severely affected by erosion are also strongly affected by bush encroachment by invasive species such as *Acacia reficiens*, which tend to further exacerbate the erosion problem as they produce allelopathic substances that inhibit the growth of herbaceous plants, and in particular grasses in the under-storey. Interventions in areas with bush encroachment include clearing (eradication) of the invasive species, followed by replanting of native trees/shrubs and grasses. An important use of the predictions, shown in Figure 4, is in monitoring of erosion patterns

over time in order to assess the effectiveness of various measures to reduce the prevalence of erosion.

Conclusions

The drylands of the IGAD region are prone to land degradation through processes such as soil erosion and loss of soil organic carbon due to a combination of factors, including environments that are sensitive to degradation even with moderate levels of disturbance, low rainfall and overuse from for example intensive grazing. The extent and severity of land degradation in this region is of concern, particularly where degradation through for example soil erosion is becoming irreversible, or where the costs of rehabilitation make this a difficult proposition from a practical point of view.

As shown in this article, it is currently possible to assess and map a range of indicators of land degradation, soil and rangeland health in drylands at both local and regional scales. These assessments provide consistent estimates at multiple spatial scales, and the maps developed can be applied both to identify hotspot areas in rangeland systems, to provide rigorous baselines for land degradation indicators, to target interventions more effectively, and to monitor change (e.g. recovery) over time. Also, by looking biophysical conditions and constraints, the risk of land degradation can be assessed and preventative measures can be put in place in areas that are prone to land degradation.

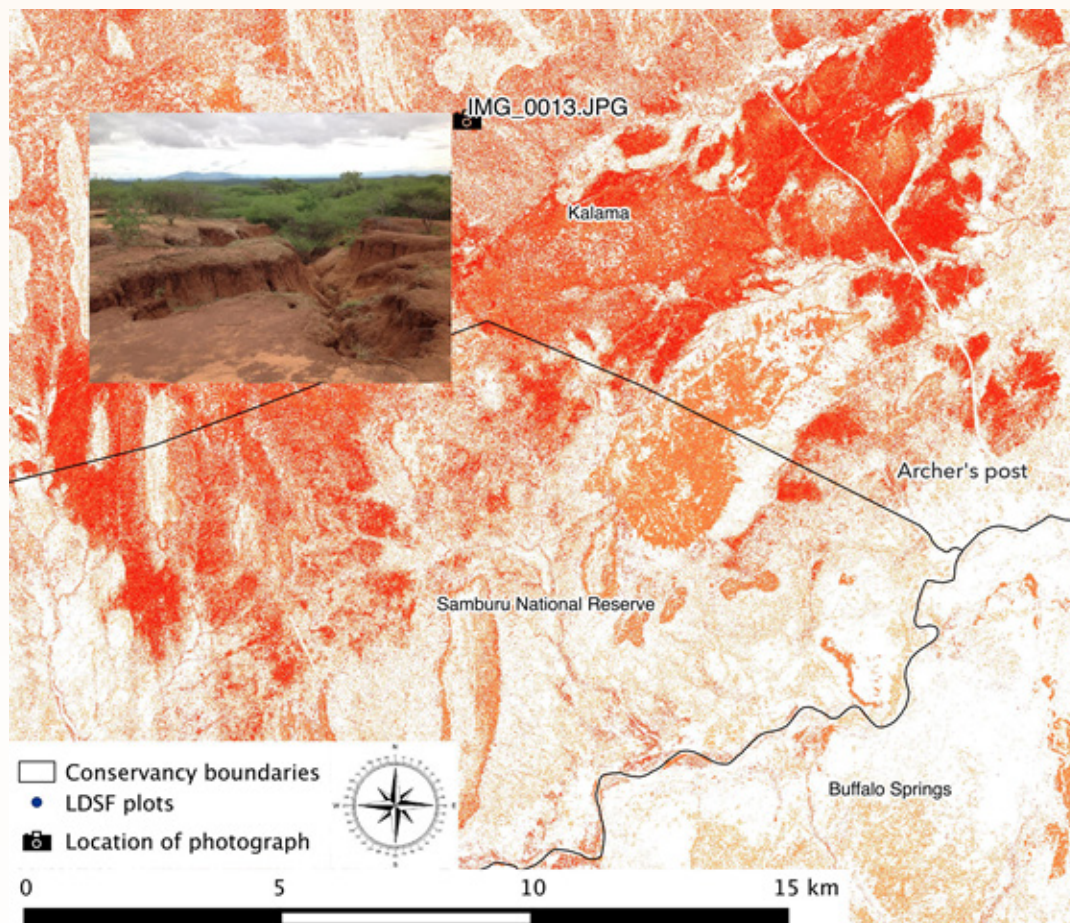


Figure 4: Map of erosion hotspots in Samburu, Kenya, at 5 m resolution.

Participatory Land Use Planning for building resilience of ASAL¹ communities in Kenya

By Vanessa Tilstone, DLICI² and Fiona Flintan, ILC Rangelands Initiative³

Participatory land use planning provides an opportunity for local land users to play a central role in decision-making processes concerning the land and resources upon which they depend. It can bring stakeholders at different levels together in order to develop a common vision, and to agree on a way forward including how land use conflicts can be resolved.

The governments of the HoA and other stakeholders face increasing challenges in resolving conflicts between different land uses, and in ensuring sustainable solutions to the problems of escalating land pressure and land degradation. These challenges are clearly demonstrated in the arid and semi-arid lands (ASALs) of Kenya, where sustainable development continues to be constrained by the lack of a coherent vision and a disconnect between political and technical planning processes.

In the current policy processes that provide the framework to guide planning, the unique needs, characteristics and potential of the ASALs are not being considered; for example, the draft irrigation and agriculture sector development policies promote standard approaches that are based on those designed for more temperate crop production areas. More appropriate ASAL-focused strategies and policies, such as the ASAL Policy⁴ and the Vision 2030 Annex for the Development of Northern Kenya and other Arid Lands, are not being fully implemented—despite the fact that they recognise the comparative advantage of ASALs for livestock, dryland products and tourism, and the need for different approaches appropriate to their unique ecological and socio-economic characteristics.

How planning is currently being undertaken in Kenya

In Kenya the main planning instruments are – at national level – the Vision 2030 and its medium term investment plans, and at county level – the county integrated development plans (CIDPs). These are essentially economic and political declarations of intent, and lack accurate information on current land and resource use, as well as land use potential and community preferences: issues which participatory land use planning has the potential to incorporate and contribute to. Other technical planning processes, such as water development plans, catchment plans, and special area plans (for resources of national significance including

minerals), are under development, but are not currently linked or sequenced with broader spatial planning.

Land use planning is way behind other planning processes in Kenya due to a lack of prioritisation by central government. The National Land Commission (NLC), which is responsible for monitoring and oversight

of land use planning throughout the country, has limited funds and is poorly linked to other planning departments both at national and county level. Discussions have been underway for several years now on developing a national land use plan in order to provide guidance for other land use planning processes, but as yet no significant progress has been made.

Through devolution in Kenya there are opportunities for more locally appropriate and integrated planning, but this has yet to fully be realised at county level. There is a focus on sectoral planning for isolated administrative units with limited consideration of inter-county linkages, particularly in terms of shared natural resources and their use by mobile populations. The potential for inter-county trade and sharing of resources, and the need to focus on the comparative advantages of different areas of production across counties has been compromised by the tightly streamed approach.

County spatial plans were expected to commence by July 2015 but very few county-wide planning processes have yet to take place, due to cost and capacity, and very little land use planning guidance has been provided to counties so far; with that which has been developed lacking a participatory focus.

The NLC is expected to play a leading role in guiding, overseeing and facilitating cross/joint county land use and resource sharing, and is currently developing national guidelines to this effect. Support provided by NLC in implementation however is likely to be limited by resource-scarcity unless central government allocates significantly more funding to this. Without these spatial plans in place counties will continue to face challenges in: prioritising interventions; efficiency in allocating resources through more integrated approaches; and reconciling conflicts between different land uses.

Planning challenges in the ASALs

There are a number of challenges to carrying out land use planning in the ASALs. Around 60% of land in the ASALs is regarded as community land, of which 40-50% is in NE Kenya. Land use planning in these areas can be complex as land tends to be used communally and seasonally by multiple actors for multiple uses. This land was previously defined as Trust Land, held by the county governments 'in trust' for the land users – i.e. communities. Under the draft Community Land Bill this land is due to be re-designated, and formally registered and protected as Community Land. Until the Bill has been passed, communities and other actors are reluctant to move forward with planning and management of land and resources in the ASALs—a crucial factor that results in them now being left open to unregulated exploitation.

Other challenges include land users living far from administrative centres with poor infrastructure and communication, and linkages between community planning processes and those of the government being weak or non-existent. Community planning processes that do exist also rarely match administrative schedules in either time or space.⁵

1 ASALs are the Arid and Semi Arid Lands of Kenya, otherwise known as the drylands.

2 This article was drawn from a brief 'The need for participatory land use planning in building resilience of ASAL communities in Kenya' by DLICI and ILC.

3 ILC Rangelands Initiative is a global programme of the ILC (International Land Coalition). ILC is a global membership organisation working on pro-poor land policy development and implementation. The Rangelands Initiative is coordinated and technically supported by RECONCLE and ILRI, as ILC members. The Rangelands Initiative supports initiatives, processes and activities that help government and other actors make rangelands more secure for rangeland users. Contact: Ken Otieno kenotieno@reconcile-ea.org

4 Government of Kenya (2012) Sessional paper no 8 on the National Policy for the Sustainable Development of Northern Kenya and other Arid Lands.

5 This issue is being addressed in an initiative in Tanzania. See: <http://pubs.iied.org/10075IIED.html?k=Community%20and%20Government%20planning%20together%20for%20climate%20resilient%20growth>

And county governments lack the skills and resources to gather the technical data and engage with communities in a meaningful manner to understand and prioritise land uses. Livelihoods in the ASALs are highly flexible in order to be able to react and adapt to inevitable droughts, floods and other hazards,⁶ but this is rarely factored into planning. There are also other complications including historical ethnic tensions, rapid rates of settlement due to centralised delivery of food aid, and local politics – including constituency building. This all leads to conflicts over land use, the fragmentation and loss of key resources such as rangelands, and the overall marginalisation of ASAL communities from decision-making processes.⁷

There are some attempts by development partners, including Nature Kenya, FAO and ILRI, to link community land use planning processes with those of government. However these activities are often scattered and inconsistent. A more coordinated and strategic approach is required that is linked to, and/or is undertaken through, government structures—thus strengthening processes and capacities. These attempts could be helpful in sharing and informing good practice, but they will need to be evaluated, documented and shared between agencies and government bodies to feed into development and serve as evidence-based guidance.

The opportunities of participatory land use planning

Participatory land use planning provides an opportunity for otherwise marginalised groups—such as women, youth, pastoralists, fishers and hunter-gatherers—to take part in lower level planning. A participatory approach is also important for a number of other reasons:

- Community ‘ownership’ can lead to strong commitments to invest in and implement land use plans.
- Community development needs to be demand-driven by community members themselves.
- Community participation helps to resolve conflicts, as through the planning process different stakeholders can agree to how land will be used and managed.
- Land pressure increasingly needs more intensive management if it is not to degrade or be over-exploited. Participatory planning increases the incentives for community land users to invest in this management.

Participatory land use planning (PLUP) provides information and direction to the relevant community of users and decision-makers, enabling them to: optimise the productivity of the land and resources; develop infrastructure and services; protect the environment and biodiversity; and establish appropriate governance and administration systems. Land can be zoned to reflect priority use; although if this is done, it is necessary to ensure linkages between zones are recognised.

6 Krätli, S. (2015) Valuing variability: New Perspectives on climate resilient drylands development. IIED. Edited by de Jode, H. <http://pubs.iied.org/10128IIED.html>
7 Flintan, F. (2011) Broken Lands, Broken Lives: Causes, processes and impacts of fragmentation in the rangelands of Ethiopia, Kenya and Uganda. Nairobi: REGLAP. <http://www.dlci-hoa.org/documents/briefs/>



Community mapping. Photo credit: Kelley Lynch/DLCI



Herders and tractor silhouettes in Turkana. Photo credit: Kelley Lynch/DLCI

PLUP focuses on incorporating the knowledge of those that use and depend on the land, integrating it with scientific knowledge and knowledge derived from other sources. Ultimately PLUP contributes to better land and resource management, better governance, improved local livelihoods and food security, resilience to drought, and more successful local and national development. A PLUP process guides localised land use and management planning processes, but also feeds into the higher levels of land use planning—including at county, regional and national levels.

To be effective PLUP needs to be guided by the following principles:

- 1) Efficiency - available land resources are used in such a way that they produce maximum social and economic benefits.
- 2) Equitability - provides benefits to all socio-economic categories of land users, including women and youth.
- 3) Sustainability - does not result in degradation of the resource base and is viable within the socio-economic context.

The stages in a PLUP process include stakeholder mapping, community mapping of rangeland management, land capability assessments (including adaptation to drylands), analysis of problems/solutions, land use planning at higher levels, and resource sharing agreements between different rangeland management units and their users. As well as providing a map of the area showing zoning of different land uses by majority/priority land use types, a participatory land use plan will include: important background socio-economic and ecological data; key challenges in the area and potential solutions; an

implementation strategy with roles and responsibilities for administering it; and a monitoring and evaluation framework for plan implementation.

How land use planning can build the resilience of ASAL communities

1. Land use planning needs processes to occur at different levels – national, regional, county and local – with strong horizontal and vertical linkages developed between them.

The process of developing a national land use plan should be pursued to provide an appropriate overarching framework. County planning needs to be implemented and supported. Community level land use planning could then support the development and improvement of higher-level land use plans. At the same time there needs to be horizontal integration, particularly where inter-county resources are shared between counties and/or where people need to move across county boundaries to access resources and services, such as markets.

There also needs to be increased coordination between the different planning departments of government. Given the current disconnect between planning units of government, an inter-ministerial commission for land use planning should be set up to coordinate data and assessments, and ensure that land use planning informs medium term development plans and other strategic documents.

2. Participatory land use planning should be a key component of a multi-level planning framework by the systematic inclusion of local level planning into high-level decision making processes.

PLUP provides space for local land users themselves to contribute to decisions about what their land is used for and what investments can be accommodated. This will require: proper and accurate assessment and information provision on how land and resources are currently being used; the potential of land, water and other natural resources; and discussions on how best they can be utilised and managed in the future. Mapping, protecting and servicing livestock routes can be an important contribution to such plans.

Once communities have articulated their visions and plans for land use—having been impartially informed of the potential and alternative uses—other levels of governments can then present their land use preferences in order that negotiations and agreements can ensue. The appropriate unit for PLUP will need to be carefully considered and agreed upon: the county may be too big for an effective participatory approach and therefore government may need to look to a smaller unit, such as the sub-county.

3. Where government demands land use changes on community land, compensation should be provided to land users for this, on mutually acceptable terms.

Incentives to encourage land users to invest in different land uses, including those that provide environmental services, should be supported by appropriate investments e.g. payments for wildlife conservation; payment for environmental protection, access or use rights; or easements. There also need to be clear processes for resolving existing conflicts over tenure and ownership, and agreement reached among all in the community on the preferred land use allocation strategies.

Community land should be appropriately valued, including socio-cultural values, indirect and secondary values, and including an accommodation of multiple uses. In the event of land appropriation and/or land use change, a compensation schedule should be agreed upon by all interested parties and implemented accordingly. Compensation should be provided for loss of grasslands, as with croplands: both are production inputs which if appropriated should be compensated for.

4. Development partners can play a role in supporting PLUP at local level.

Local PLUPs will need to be integrated with and support government planning processes, rather than running in parallel or conflicting with them. NGOs are often well placed to take on the cost and risks of piloting new approaches. A particular area of concern is that land use planning can be time-consuming and thus costly, with processes proposed often way above the funding currently available to pay for them.

The government should perhaps reconsider the process and requirements of these spatial plans so that they can be made more affordable. Encouraging the feeding-up of information from lower levels, collected as part of more local participatory land use planning processes, would be one potential way of reducing costs.

5. Without tenure security, land use plans are limited.

The linkages between land use planning and land tenure security have been highlighted above. Implementation of land use plans (including investments in land) is unlikely if security cannot be assured. Without clear jurisdictions, responsibilities and authorities, community land remains at risk from land grabbing, appropriation and exploitation.

In order to avoid this there is an urgent need for the finalisation and approval of the Community Land Bill, and its enactment and implementation. As community land use plans are likely to be a pre-requisite to registering communal land, these should be developed in the meantime.

Conclusion

The devolution process in Kenya not only provides an opportunity for nested planning processes at different levels but also makes it a necessity. As many planning processes in Kenya are largely political statements of intent, the establishment of good (i.e. integrated, comprehensive and participatory) land use planning and their implementation is critical for better development processes.

Planning needs to ensure that both technical and socio-economic considerations are included within the planning processes; and that current and future scenarios are planned for with the support of the land users for whom the plans are supposed to serve. The value of participatory planning as a clear input to higher levels of planning processes needs to be fully recognised and incorporated, rather than the different levels being detached as they are presently.

Experience in facilitating the implementation of Sharia Compliant Micro-Finance Institutions (SCMFIs)

By Jessica Omukuti and Tate Munro, Mercy Corps Regional Resilience Hub, East and Southern Africa

The role of micro-finance for rural communities, especially for pastoralist and agro-pastoralist development and resilience, has become increasingly important across the Horn of Africa. Different forms of finance have been piloted and rolled out in various locations across the region, including index-linked insurance and micro-finance. Sharia Compliant micro-finance became significant when actors realised that pastoral and agro-pastoral communities, many of whom were Muslims, would greatly benefit from micro-finance products that were in compliance with Sharia law. Mercy Corps' Sharia compliant Micro-Insurance programme in Somali regional state of Ethiopia, implemented since 2013 under the Promoting Market Improvement through Market Expansion (PRIME), has produced a number of valuable lessons that can be used to inform future micro-insurance activities. This article highlights the experiences and lessons learnt.

The experience

At the time of PRIME's inception, Ethiopia had one of the largest micro-finance markets in Africa, mainly using interest-based financial products. This meant that financial services were inaccessible in many Muslim areas of the country, including Somali regional state. The state is predominantly pastoralist, however some households are transitioning out of pastoralism and therefore engaged in small business activities, but lack a large capital base or access to credit to grow their businesses. The absence of SCMFIs was a stumbling block for Muslim communities who were required to abide by Sharia law. Earlier attempts to establish SCMFIs had been hampered by: excessive central government procedures in establishing such institutions; limited resources; absence of existing policies and procedures to provide support for such processes; and low capacity within the regional government and local population to manage these institutions.

Mercy Corps' intention was to build resilience in the Somali region, and sought to increase levels of market engagement by providing households with access to micro-finance; thereby increasing their buying power, increasing their capital base and ultimately contributing to household resilience. An assessment was carried out to determine the demand for and feasibility of establishing a Sharia

compliant MFI. Results of this assessment showed that up to 70% of households in the region did not have access to financial services and products, with their credit only acquired through family, friends and other informal networks. Credit was mostly used to cover subsistence needs and there was a low culture of saving. As anticipated, although mainstream banking services were available, they were inaccessible due to the absence of Sharia compliant products. Potential customers also lacked assets that could provide security for loans and had low levels of income.

Mercy Corps used the findings from the assessment to support the establishment of the Somali Micro-Finance Share Company, the largest sharia compliant MFI institution in the Somali region, which became licenced by the Central Bank of Ethiopia in January of 2011. Mercy Corps strengthened the capacity of financial institutions to provide Sharia-compliant services, increased public awareness of the availability of Sharia-compliant products, and trained consumers in financial literacy. Activities supported by Mercy Corps targeted both formal and informal institutions. The Central Bank of Ethiopia also provided support by creating friendly procedures and regulations for the start-up and operation of SCMFIs. The MFI became operational in 9 months, and in a few more months, it was financially sustainable, meaning that it had enough customers to operate on its own without requiring external support.

The Somali Micro-Finance Share Company targets: economically active but poor women and men in both

Box 1: Services offered by Somali Micro-Finance Share Company

Loan Products

1. Murabaha Sale (cost plus mark-up sale contract)

This is the most widely offered Sharia-compliant contract. It is offered when the client requests for a specific commodity to be purchased and the financier (MFI) directly procures and re-sells to the client (at the original cost plus a fixed mark-up for the service provided).

2. Ijarah (leasing contract)

This is used for financing equipment, such as small machinery. Duration of the lease and related payments are determined in advance to avoid any speculation.

3. Mudaraba (profit sharing according to a predetermined ratio)

In cases when the joint venture results in a loss, the financier loses the contributed capital and the business loses time and effort.

Savings products

1. Al-Wadiah

This is a contract (*Akad*) between the owners of goods and the custodian of the goods. The role of the custodian (from the financier perspective, the MFI) is to protect the goods from damage or loss. This ensures safety of assets.

2. Al-Qardi Hassan

The product provides saving without interest where the MFI is the borrower and provides security services for the money to the depositors.

3. Mudaraba Savings

The clients invest their deposit in business ventures owned by the MFI and share in their profits/losses.

rural and urban areas; pastoralist and agro-pastoralists; micro/medium sized enterprises and income generating ventures; livestock traders; and value chain producer groups across the region and nationally. This large range of target groups enables the company to maintain the minimum credit base essential for financial sustainability, as well as ensuring that no group is left out. The impact has been large and spread over the whole region. During a single campaign with Oromiya International Bank, for example, 283 individuals and cooperatives opened accounts, thus mobilising 4.4 million ETB (220,000) in savings and future loans. However, the following lessons can be learned:



Counting money to buy camels. Photo Credit: Kelly Lynch/DLCI

Shortcomings and limitations

The project implementation process, just like many others, was not smooth. The project experienced challenges in relation to:

- The existence of a weak savings culture in the region limiting the ability of financial institutions to offer loans to individuals/groups. Financial institutions need to have a strong client base to enable them to pool together funds that can be offered to customers as credit.
- The bureaucratic procedures involved in the registration and operationalising of an MFI discouraged the setting up of these institutions. Mercy Corps facilitated the revision of these procedures to ensure that they better promoted the operation of institutions in this region.
- Financial service providers perceived involvement in Islamic finance to be very risky. This could be attributed to the perceived low customer base, and the unfriendly registration and operationalisation procedures. To counter this, Mercy Corps, through its initial assessment, showed that the Somali region had a huge untapped market of households, individuals and savings groups who were willing to use micro-finance products—provided they were sharia compliant.
- Capacities within the institutions and the public to manage these products were lacking, with Central Bank regulations requiring that banks be managed by professionals only. The project then trained locals so that they could attain the standards required by the Central Bank of Ethiopia for the management of the institutions.

Some of the specific shortcomings of the SCMFIs include:

- Clients can only obtain credit in kind from the MFIs, meaning that if a person needs to buy a tractor for example, he cannot be given cash, but instead the micro-finance institution will procure and deliver the tractor to him, and he will pay the finance institution back in cash. This offers little flexibility for those who need credit in form of cash.
- No interest is accrued on savings under the Sharia law, thus limiting the size of returns that clients can obtain as compared to when they bank with non-Sharia compliant MFIs.

Recommendations and conclusions

Private sector engagement in the establishment of micro-finance institutions is critical for both sustainability and spreading of risks.

Thorough research through assessments provides critical evidence that can help actors to assess risk and make informed decisions on whether to venture into such types of micro-finance service provision.

Sharia Compliant micro-finance, although an important element in pastoralist and agro-pastoralist development, is still under-developed in most of the drylands of the Horn of Africa. Lessons learned from existing programmes needs to be shared more widely so that future programmes can draw on these when designing and implementing this approach in their programme areas. However, even though the product may be the same, the Horn of Africa is highly heterogeneous and micro-finance products must be supported by assessments and research on the specific needs of the intended users.

Securing financially sustainable livestock services in Northern Kenya with private sector support

By Dr Diba Wako and Dr Christie Peacock, Sidai Africa Ltd¹

Pastoralists rely on livestock for their livelihoods and yet struggle to access the services they need to keep their livestock healthy and productive. The lack of effective vaccination and clinical services, as well as basic livestock inputs, are making resilience for pastoralists more difficult than it needs to be. Emerging private sector engagement, for example that provided by companies such as Sidai Africa Ltd, is now supporting veterinary service delivery in parts of northern Kenya, although expansion is needed and government support for better regulation and support for other aspects of livestock health and production is still urgently required.

Key problems facing the livestock health sector in Northern Kenya

In the pastoral areas of northern Kenya livestock services are particularly hard to come by: the few government veterinary centres in the region are located in County headquarters, an approach that fails to meet the needs of mobile pastoralists.² The veterinary professionals, when they are present, prefer to work for development agencies.³ The demand for livestock health services for people in remote areas is now being met largely by traders, often with little knowledge of animal health, and is resulting in the misuse of veterinary drugs and the supply of counterfeit products. Pastoralists are forced to purchase sub-standard drugs from unqualified drug hawkers selling at the local markets. The counterfeit veterinary drugs enter northern Kenya through its international borders, competing unfairly with the genuine products and posing a health risk to animals and humans alike.

In order to bridge the gap in service provision for livestock, aid agencies in Kenya often target the pastoralist population with emergency interventions that are usually short-lived and dependent on donor funding. Although well intentioned, these short-term activities can lead to: technically inappropriate interventions; the dumping of free products in the markets; diversion of funds and products; as well as the reinforcing of a dependency syndrome. Subsidies and *ad hoc* relief programmes, largely driven by donor funding and practised by NGOs and county governments, are preventing the emergence of a market for quality livestock inputs in northern Kenya; and have created a government service geared towards donor-funded delivery of services that could be better performed by other actors.

The donor distribution of free products, in particular, undermines a small but emerging private sector of veterinary professionals who are trying to offer livestock products and services. During periods of drought, such as the well-publicised 2011 drought, donor-funded humanitarian interventions include free drug and vaccine

distribution. These interventions, while well meaning, distort the private sector market and do nothing to build long-term service delivery solutions. There is evidence that they not only put small enterprises out of business but also inhibit new start-ups.⁴ Informal discussions with veterinary professionals suggest that about half of the vets in Northern Kenya would start their own business if these distortions were removed. The interventions also reinforce a general belief that pastoralists cannot afford, or are not willing, to pay for veterinary services, which in turn discourages professionals from investing in animal health businesses. Studies have shown that it is in fact lack of access to veterinary services, rather than affordability, that is the main challenge in veterinary service delivery in the region.⁵ This is borne out by Sidai Africa's own experience in the region. The large-scale donor funded vaccination of animals also often results in undesirable effects on the health of livestock if it is not properly conducted. Indeed, vaccination of weak/malnourished livestock during droughts can result in livestock death and pastoralists' loss of confidence in vaccination and other veterinary services.

Innovations in animal health service delivery

Sidai Africa Ltd is a social enterprise that aims to address some of the problems facing livestock health services in northern Kenya. It offers quality-assured inputs and training services through a network of branded retail outlets known as Livestock Service Centres, owned by technically qualified livestock professionals. Sidai has both its own outlets and works with its business partners under franchise agreements, ensuring a consistent quality of products and services are provided to customers throughout the network. 'Sidai' is a Maasai word for good and the company aims to live up to its name.

Started in 2011, Sidai now has a national network of over 130 branded franchised Livestock Service Centres across Kenya with the aim of delivering quality products and services to livestock keepers through a sustainable business model. In northern Kenya, there are 25 such centres providing animal health services in remote areas of the region. Each Sidai franchise is owned and staffed by qualified veterinarians and livestock professionals. The company places strong emphasis on preventative healthcare, particularly vaccination, and improved livestock management. Its approach combines selling genuine products, giving expert advice and offering value-added services to help farmers and pastoralists raise healthy and productive livestock. It offers vaccinations, disease surveillance and reporting, field diagnostics, treatment and clinical services.

Sidai contracts animal health professionals as franchisees, equips them with business management and technical skills, brands their business and gives them marketing support. The company then gives them access to quality products at competitive prices through company-run stores. Each franchisee enjoys an exclusive territory in order to ensure profitability and sustainability of the

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2 Bayissa, B. and Bereda, A. (2009): Assessment of veterinary service delivery, Livestock disease reporting, surveillance Systems and prevention and control measures Across Ethiopia/Kenya border, Enhanced Livelihoods in Southern Ethiopia (ELSE) Project.

3 For example, there are approximately 20 qualified veterinarians from the north of Kenya but none are practising veterinary medicine there. Most are employed by donors or NGOs on short term, but highly paid, contracts focusing on short-term interventions e.g. vaccination to control disease outbreaks.

4 Wellspring (2014) Time for Change: The impact of recent livestock emergency interventions on the future of sustainable service delivery in Northern Kenya. USAID, Nairobi.

5 Heffernan and Misturelli, (2002) The Delivery of Veterinary Services to the Poor: Preliminary findings from Kenya.

business. Regional technical supervisors (veterinarians) provide regular supervision to ensure franchisees provide quality livestock services to the pastoralists.

Sidai Africa has built a strong network of cold chain facilities that have brought vaccination services closer to the people. Prior to the entry of the company into the region, vaccinations were only provided during emergency periods by the government and aid agencies to contain disease outbreaks, although government emphasis is now shifting to trade-sensitive diseases and zoonotics. Therefore, the service fell short of the preventive role for which vaccines were made. Moreover, these vaccinations only covered a narrow range of livestock species and few diseases such as Peste des Petits Ruminants (PPR), Foot and Mouth Disease (FMD), lumpy skin disease and pox in ruminants. From Sidai service centres, livestock owners are now receiving vaccination services for a wide range of diseases covering all domestic animals in the region including poultry, dogs and cats, when needed.



Sidai livestock service center in Isiolo (company-run store). Photo credit: Sidai Africa Ltd.

Sidai is also supporting the increasing demand for poultry meat in northern Kenya, as a result of growing urban populations driven by the recent devolved system of governance. A substantial number of individuals now keep poultry in peri-urban areas to meet this growing demand, but these farmers previously had to travel long distances to source 'day old chicks' (DOC), usually transporting them by public means (buses and lorries). They often incurred mortality losses as a result of poor transport conditions and limited access to vaccination services. Sidai Africa has responded by supplying DOC to various counties in the region. The company also provides vaccination services, poultry feeds and training in poultry management.

Northern Kenya is a vast region with a poor road network, making delivery of livestock products a challenge. In response to this, Sidai has opened a number of regional hubs in each county—Garissa, Wajir, Marsabit, Isiolo and Turkana—which act as distribution points for the franchisees in the region. It is also looking into opening more satellite hubs in order to bring the distribution points even closer to the franchisees and the community at large.

Working with the government, donors, NGOs and other development agencies

Sidai is currently working with the government and development agencies to strengthen existing animal health service providers across Kenya by procuring and distributing veterinary drugs and vaccines, fodder and feed supplements, as well as providing training on animal health to pastoralists, data on disease incidence, mortality and morbidity rates, movement of livestock and people, assessment of the drought situation and community needs. It can also serve as a transaction point through which targeted support to communities can be transferred through vouchers or card systems and provide monitoring, evaluation and ex post follow-up of project interventions.

Donor-funded subsidies and the influx of counterfeit veterinary drugs into the region that compete with Sidai franchisees remain a major challenge however. To allow Sidai to function more effectively there is a need to strengthen the regulation of the livestock input sector. Regulations and enforcement are currently very weak and allow unqualified people to sell Prescription Only Medicines (POM) and other pharmaceutical products, many of which are counterfeit or under-strength. County governments also need to play a bigger role in raising awareness of the problems of counterfeit and sub-standard products as well as the misuse of even good quality products by poorly trained pastoralists. In order to build a reliable and sustainable private animal health service delivery, County governments should incorporate private animal health networks in the service delivery. For instance, County tenders for livestock products should consider procuring products from the local providers who are running small-scale animal health businesses rather than sourcing them from elsewhere and flooding the market with free drugs. Aid agencies could also tap into the network of animal health businesses.

Strategic deworming and routine vaccination of animals should be provided through a network of private animal health professionals rather than mass deworming and vaccination of weak animals during droughts and other emergencies. There is a need to train pastoralists on the proper use of veterinary drugs including deworming regimes and the importance of making the right diagnosis before treatment. This will help in reducing misuse of veterinary drugs, which is currently rampant in the pastoral areas of Kenya.

Conclusion

Sidai believes that it is possible to deliver financially viable quality livestock services to pastoralists in Northern Kenya. The qualified livestock professionals, eager to offer services, need the assurance that they will be supported and not undermined by governments, donors and NGOs, and that illegal drug use is controlled.

Pastoralism pays: new evidence from the Horn of Africa¹

By Caroline King-Okumu, IIED; Oliver Vivian Wasonga, UoN and Eshetu Yimer, Tufts²

As competition for land and water resources intensifies, there is a growing need to re-evaluate the comparative social and environmental advantages of extensive pastoral production systems. Nine studies of hard-to-reach pastoral areas in Ethiopia and Kenya reaffirm that the true value of pastoral systems is largely overlooked. Camel milk, goat meat, draught power and other goods and services provide subsistence products and household income; they also create employment, income opportunities and access to credit along their 'value chains'. Pastoral products contribute significant revenues to public authorities and support the provision of basic services in rural towns; with support, this productivity could grow.

A series of influential studies on the economics of pastoralism in the mid-2000s pointed to insufficient and poorly targeted investments by national governments, caused by limited understanding of the sector's value.³ Yet demand for high quality meat and milk already outstrips supply in urban areas situated near pastoral systems, and it is likely to grow.⁴ At the same intensive livestock production systems are increasingly posing health and environmental problems.⁵ While some producers and consumers are intuitively recognising the comparative advantages of the pastoral production model,⁶ national development policies will continue seeking to 'modernise' and replace these systems until a clearer evidence-based evaluation is provided to convince them that a different approach is needed.

The African Union's policy framework on pastoralism recognises the economic potential of the sector and the need for further research.⁷ However, a recent study

suggests that institutionalised data collection systems in Ethiopia and Kenya still do not capture the full value of pastoralism,⁸ meaning benefits and development potential remain obscure, and so are frequently obstructed. There are few in-depth studies — or indeed opportunities for first-hand observation — that might help city-based decision-makers understand the dynamism, ecological soundness and innovative potential of pastoral systems.

To help fill these knowledge gaps, IIED and its partners supported nine students from universities in Kenya and Ethiopia to conduct original field studies in pastoral regions of both countries in 2015 (Figure 1). In Ethiopia, with support from Tufts University, IIED worked with the universities of Mekelle, Haramaya and Hawassa. In Kenya, IIED worked directly with the department of Land Resource Management and Agricultural Technology at the University of Nairobi. The studies (which are published in full elsewhere)⁹ sought evidence of the value of pastoralism that statisticians generally overlook. This briefing summarises their findings and discusses what more needs to be done to address the emerging challenges posed by growing demand for high quality meat and milk products; increasing recognition of the health and environmental implications of intensive livestock production; and the gradual realisation of the comparative advantages of the pastoral production model among discerning producers and consumers.

Field studies: location and approach

Four field study locations were selected in Kenya, four in Ethiopia, while a fifth was located on the border between the two countries (Figure 1). In Ethiopia, the sites were distributed across six districts ('woredas') in three regional states: Afar, Somali and Oromia. In Afar, one study focused on the market chain for live goats in zone

1 This article has been reproduced from an IIED Briefing issued in October 2015, with kind permission of IIED (www.iied.org). The original publication was developed by IIED through partnership with the University of Nairobi and the Feinstein International Center with financial support from CORAID.

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3 Odhiambo, M (2006). Review of the literature on pastoral economics and marketing: Kenya, Tanzania, Uganda and the Sudan – Report prepared for the World Initiative for Sustainable Pastoralism. Nairobi, IUCN ESARO, Reconcile; Davies, J (2007). Total Economic Valuation of Kenyan Pastoralism. Nairobi, World Initiative for Sustainable Pastoralism (WISP); Hesse, C and Macgregor, J (2006). Pastoralism: drylands' invisible asset? London, IIED; SoS Sahel (2006). Pastoralism in Ethiopia: its total economic values and development challenges. Addis Ababa, WISP/GEF/IUCN - SOS Sahel.

4 Steinfeld, H, Mooney, H, Schneider, F and Neville, L (eds) (2010). Livestock in a changing landscape - Volume 1: Drivers, consequences and responses, Washington, Covelo, London, Island Press

5 Mooney, H (2010). Part II: Livestock in a changing landscape - Volume 1: Drivers, consequences and responses. In: Steinfeld, H, Mooney, H, Schneider, F and Neville, L (eds) Livestock in a changing landscape - Volume 1: Drivers, consequences and responses. Washington, Covelo, London, Island Press

6 Mcgahey, D, Davies, J, Hagelberg, N and Quedraogo, R (2014). Pastoralism and the Green Economy – a natural nexus? IUCN and UNEP.

7 AU (2010). Policy Framework for Pastoralism in Africa: securing, protecting and improving the lives, livelihoods and rights of pastoralist communities. Addis Ababa, Department of Rural Economy and Agriculture, African Union

8 Krätli, S (2014). If Not Counted Does Not Count? A programmatic reflection on methodology options and gaps in Total Economic Valuation studies of pastoral systems. Issue Paper. London, IIED

9 Gebremariam Gebrezgabher Gebremedhin and Yemiru Tesfaye (2015). Market chain analysis of live goats: Asaita District, Afar Regional State, Ethiopia. <http://pubs.iied.org/10120IIED.html>

Selamawit Teklu Araya (2015). Impact of camel transportation on pastoralist livelihoods in Ethiopia: Findings from Berahle woreda, Afar Regional State. <http://pubs.iied.org/10127IIED.html>

Sisay Kebede, Getachew Animut and Lemma Zemedu (2015). The contribution of camel milk to pastoralist livelihoods in Ethiopia: An economic assessment in Somali Regional State. <http://pubs.iied.org/10122IIED.html>

Galma Wako (2015) Economic value of camel milk in pastoralist communities in Ethiopia: Findings from Yabello district, Borana zone. <http://pubs.iied.org/10119IIED.html>

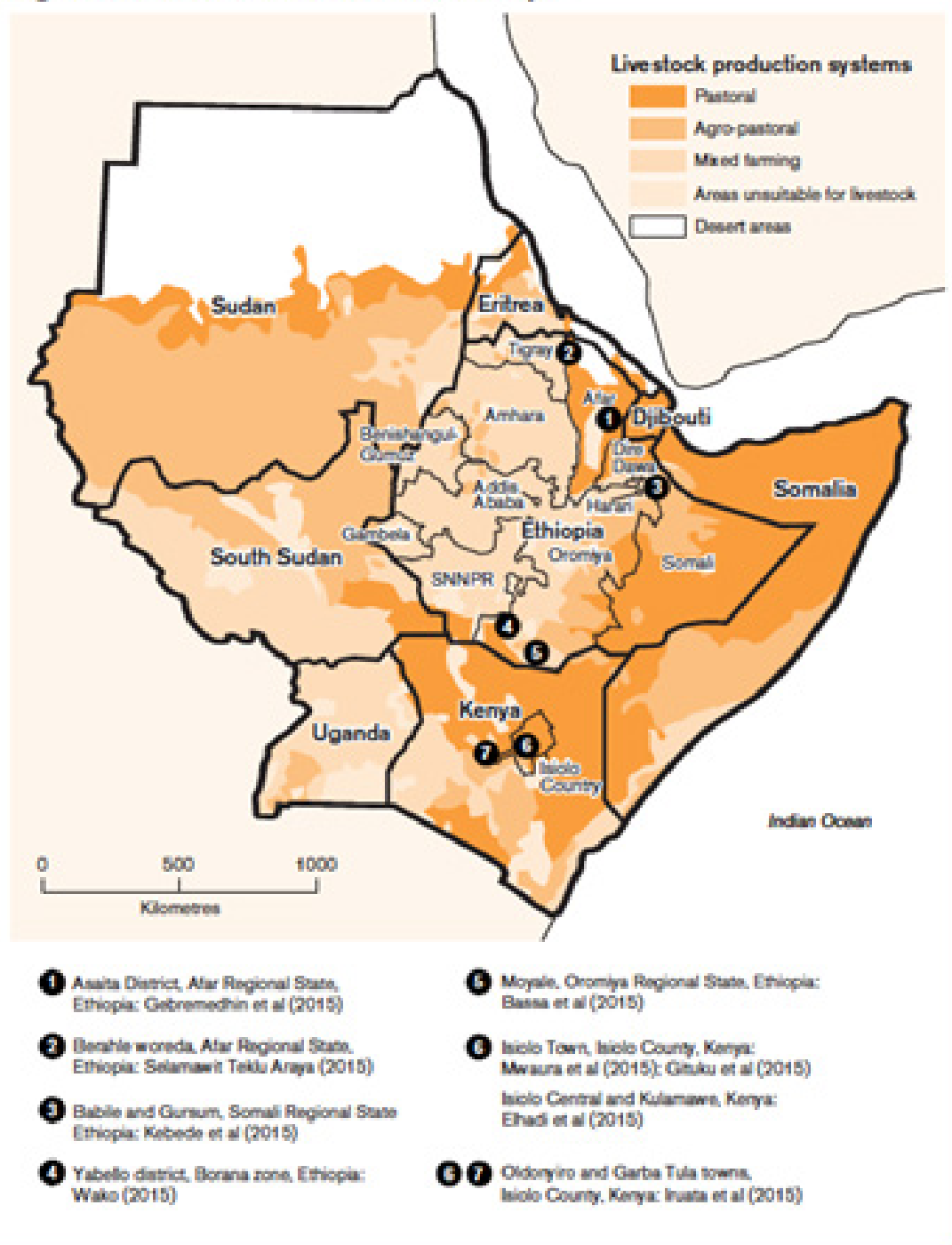
Zekarias Bassa and Teshale Woldeamanuel (2015). Value chain analysis of the cattle trade in Moyale, southern Ethiopia: An economic assessment in Oromiya Regional State. <http://pubs.iied.org/10121IIED.html>

Margaret Waithera Mwaura, Oliver Vivian Wasonga, Yazan A M Elhadi and Robinson Kinuthia Ngugi (2015). Economic contribution of the camel milk trade in Isiolo Town, Kenya. <http://pubs.iied.org/10123IIED.html>

Benard Chira Gituku, Oliver Vivian Wasonga and Robinson Kinuthia Ngugi (2015) Economic contribution of the pastoral meat trade in Isiolo Town, Kenya. <http://pubs.iied.org/10124IIED.html>

Yazan A M Elhadi and Oliver Vivian Wasonga (2015). Economic and nutritional contribution of camel milk in Northern Kenya: A field study in Isiolo County. <http://pubs.iied.org/10125IIED.html>

Marcelino Napao Iruata, Oliver Vivian Wasonga and Robinson Kinuthia Ngugi (2015). Economic contribution of the pastoral meat trade in Isiolo County, Kenya: Findings from Oldonyiro and Garbatulla Towns. <http://pubs.iied.org/10126IIED.html>

Figure 1. Locations of each student study¹⁹

1, another on the use of camels for transporting salt in zone 2. In Somali, a single study investigated camel milk production in two *woredas* of Fafan zone. In Oromia, two studies focused on Borana zone: one investigated camel milk production; the other traced the trade routes for cattle from Moyale.

The Kenyan field studies took place within Isiolo County, long established as a major livestock marketing hub for the region.¹⁰ Livestock are trekked to markets in Isiolo from both surrounding counties and neighbouring countries. Two of the studies focused on livestock meat and camel milk marketing in the county capital, Isiolo Town. A third study explored goat meat markets in two smaller towns (Oldonyiro and Garba Tula), and a fourth traced camel milk production from peri-urban and rural production clusters in Isiolo Central and Kulamawe. The studies took a 'total economic value' (TEV) approach.

They focused on the 'use values' of pastoral production for the local and national economies, including direct benefits (eg from consumption and sale), indirect benefits (such as support for veterinary services or financial institutions) and induced benefits (goods and services and purchased with income earned through pastoralism).¹¹ These values are not routinely recorded by the public authorities.

The students used surveys and interviewed key people along the value chains to explore who benefits most from the pastoral production systems, who controls the marketing channels and price-setting, who takes the most risks, and what options pastoral households have to improve their access to and control over markets and prices. Interviewees were also asked how to improve development policies for pastoral producers, for state revenue generation, and for economic and social development overall.

Many of the studies focused on quantifying the income generated by producing and trading pastoral products, and how heavily households depend on this. Some detailed a particular part of a pastoral value chain, while others examined the entire length of one or several chains from the producers to a range of consumers.

New evidence, emerging themes

Looking across the studies, four key findings related to the economic value of pastoralism emerged:

Contributions to livelihoods are multi dimensional.

The studied households differed in the ways that they used the livestock products for food security, income, income substitution for reduced expenditures, insurance

for disaster, capital for investment in other sectors, insurance, social heritage and others. One of the studies assessed the financial services provided through camel ownership in the Afar region and found multi-dimensional contributions:¹² camel ownership offered both a form of investment for the owners, and a means to provide credit to renters until they could afford their own camels. The different uses were often determined by the economic status of the households, or the gender of individuals involved. For example, in the camel-milk producing areas that were studied in both Ethiopia and Kenya, while the producers were male, the traders were female and had very few other livelihood options.

Numbers dependent on pastoral livelihoods revealed. The studies revealed a more accurate than usual picture of the numbers of people who rely on pastoralism for their living, including those employed through the livestock production and service systems and the associated trade and transportation activities. The camel milk trade through Isiolo Town was estimated to generate a gross monthly turnover of up to 10.58 million Kenyan shillings (KSh), supporting 1,046 people, including traders and labourers as well as their spouses, children and relatives.¹³ Meanwhile, in the production areas of Isiolo Central and Kulamawe, 10,532 people were benefiting directly and indirectly from camel milk production.¹⁴ In the rural towns of Isiolo County, well over half of the population was supported either directly or indirectly by the local trade in goats.¹⁵

Contribution to public revenues are significant.

Contributions to local and national economies through taxes and other fees paid to public institutions were revealed to be significant. For example, in Isiolo County, the livestock and meat trade generates more than 17 million KSh per year for the local authorities through medical certificates, business permits and other fees and licences from meat shops, butcheries and offal dealers.¹⁶ However, the revenues collected by the local and national governments are often a small fraction of the potential contributions from pastoral livestock production, due to the informal nature of the trade in many of the pastoral products, or the unregulated channels through which they must pass. One study found that more than half of the cattle produced in Ethiopia's Moyale district passed through informal channels across the border with Kenya, bypassing formal channels where they would contribute taxes to the Ethiopian economy.¹⁷

Pastoralism contributes to trade and economic activity.

The pastoral production systems and associated trades were found to be providing a steady stream of income

10 Herlocker, D J, Shaaban, S B and Wilkes, S (1993). Range Management Handbook of Kenya, Nairobi, Republic of Kenya, Ministry of Agriculture, Livestock Development and Marketing

11 Mayen, C and Mcnamara, K T (2007). The Economic Impact of the Indiana Livestock Industries. Concentrated Animal Feeding Operations ID 354. Indiana, Purdue University

12 Selamawit Teklu Araya (2015). *ibid*

13 Margaret Waithera Mwaura et al (2015). *ibid*

14 Yazan A M Elhadi and Oliver Vivian Wasonga (2015). *ibid*

15 Marcelino Napao Iruata et al (2015). *ibid*

16 Marcelino Napao Iruata et al (2015). *ibid*

17 Zekarias Bassa and Teshale Woldeamanuel (2015). *ibid*

to support both public and private provision of essential public services, including transportation, water and energy supplies. They also established trade channels that support the flow of other essential goods.¹⁸ The studies observed not only the current total economic value and contributions of pastoral production systems but also their future potential. Urban areas showed increasing demand for pastoral products, and exports to other regions — particularly the Middle East — were also growing. The studies highlighted opportunities for increased support to connect pastoralist producers to these markets, and to enable them to overcome constraints and risks that reduce productivity. These range from security problems to lack of roads and infrastructure for marketing, as well as information constraints that force pastoralists to rely on ‘middlemen’ when doing business.

Case for further research

As global livestock production systems increasingly intensify and face competition for resources from other sectors, there is a need to reevaluate the advantages of the remaining extensive production systems in pastoral areas. In regions outside Kenya and Ethiopia, extensive systems have been replaced by intensive alternatives and allowed to decline. Recognition of the comparative benefits and performance of pastoral systems, both from a socioeconomic and environmental perspective, can provide a powerful justification for conserving an increasing the viability of extensive systems.

The budget of the Agriculture and Livestock Sector in Isiolo County for the year 2013/2014 was 13,081,000 KSh.¹⁹ This is less than half the value of camel milk consumed by households in just the two rural production clusters that were researched in Study 6 (estimated at 35,305,200 KSh). None of this value is captured in conventional agricultural production statistics. When compared to the full value of the camel milk produced across the county as a whole, plus all of the other products generated from the pastoral production systems, the public investment represents a tiny fraction of the return.

A wider, evidence-based review of the value of the pastoral production systems is clearly needed to make the case for more intelligent investment. This will require not only filling data ‘blind spots’, but also training a new generation of decision makers so they can: reach the remote areas where action is needed; direct the necessary data collection and analysis; and effectively read the signs that these will uncover. National governments should

give greater attention and support to the integration of local statistical capacities in the pastoral livestock and associated environment sectors with national and international economic development planning.

The nine studies discussed here generated new evidence of the value of pastoral production, and revealed issues requiring further investigation. One such area concerns the value of the ecological benefits generated by pastoral production systems. In water catchments that are characterised by climatic variability, periodic droughts and complex processes affecting vegetation responses to climate and other stresses, these benefits are essential for a healthy ecosystem.

Many such catchments are undergoing technological transitions, in which water conservation may be achieved through trade-offs with increased use of energy, for example through the introduction of diesel or solar-powered systems for pumping, treatment and more precise control of volumes and timing of water discharge. The balance of energy sources, and potential social and environmental implications of these trade-offs remain poorly understood in both extensive and intensive livestock production systems.

In conclusion, the total economic value of pastoralism remains a complex and elusive question, but the evidence amassed through these nine studies reaffirms that it has been widely underestimated. The studies have provided quantitative evidence of some of the key missing statistics that must inform decision makers as they design policies and programmes for the pastoral sector.

¹⁸ GOK 2013. County budgets 2013–2014. Nairobi, Kenya: Commission on Revenue Allocation, Government of Kenya.

¹⁹ Figure based on: Food and Agriculture Organization of the United Nations, (2010) Cecchi et al, ‘Geographic distribution and environmental characterization of livestock production systems in Eastern Africa’, Ecosystems & Environment Volume 135, Issues 1-2, 1 January 2010, 98–110. Original available at www.fao.org/80/geo/network?uuiid=4227fd03-dce7-4cd9-b38f-23ceaff379f Reproduced with permission.

The need for an integrated approach to education to allow resilience in the drylands of the Horn of Africa

By Jarso Mokku, DLCI and Elyas Abdi, NACONEK¹

Formal education in the Kenya's ASALs is often of poor quality, with low uptake and outcomes well below national averages. Effective education is important for resilience, and there are now calls for more improved and integrated approaches. Remote communities need to be reached, a more relevant curriculum needs to be provided, existing education strategies need to be linked up to facilitate transition and employment opportunities, and new approaches—such as distance learning—need to be explored.

The importance of considering resilience in education

The status of education in Kenya's ASALs is extremely poor: primary enrolment rates are as low as 40% in many Counties, compared to a national average of 95%; between 2005 and 2010 the gender parity index has worsened, with female literacy rates under 10% in some Counties; teacher pupil ratios, completion rates and performance are well below other areas of the country. A large number of the youth who have been able to go through the formal education system are also now disconnected from their traditional livelihoods and do not have the skills to find employment. This disaffected cohort is vulnerable to crime and extremist influence.

The Government of Kenya (GoK) has made repeated commitments to provide education for all; including in the new Constitution and the adoption of the Sustainable Development Goals (SDGs) which propose that 'No education target is considered met, unless for all'. A great deal of effort has been put into designing delivery mechanisms to reach ASAL children by interested organisations, but the majority have not been implemented—particularly distance learning and non-formal provision—or are under-resourced and supervised, for example mobile schools, feeder schools, low cost boarding schools and adult literacy classes. Donors seem largely uninterested with only 1% of donor investment in the arid and semi-arid lands (ASALs) being targeted at education².

Reviews by DLCI³ and others in Kenya have shown that the poor quality of education in the ASALs is largely due to inappropriate provision and a curriculum that neither prepares children for further education, formal employment, nor for the livelihoods and skills they need to be resilient in the ASALs. In his journal article 'Taking the Camel Through the Eye of a Needle':

*Enhancing Pastoralist Resilience Through Education Policy in Kenya*⁴ Ahmed Idris explains why pastoralist communities frequently have an ambivalent relationship with education. On the one hand, sending children to school is a strategy or adaptation to facilitate an alternative livelihood for families and communities, but on the other hand, education presents a danger to pastoral livelihoods by antagonising social institutions and altering social learning. When children go to school, household tasks have to be redistributed making the household more vulnerable. It also means children cannot learn practical skills of pastoralist management or crucial resilience skills—such as details about their extended families, how to build ties through effective negotiations, skills on interpreting weather phenomena, animal health and hydrology.⁵ The social ties, and shared but differentiated roles and networking, are all essential components of resilience in pastoralist livelihoods.⁶ An extensive study by Krätli (2001) also established that although education for pastoralists was largely implemented as an exit strategy, it is also used as a safety net and a way to strengthen the pastoralist enterprise. Many of the elders interviewed appreciated that education could bring success to their communities, especially in light of the changing environment. To find a balance many pastoralists have opted to send some children to school, while retaining others at home.

In its 2010 *Policy Framework for Nomadic Education in Kenya*⁷ the GoK has considered education strategies that would benefit both children and their parents. The policy considers the use of an academic calendar that would be flexible and factor in climatic conditions and patterns of pastoralist livelihoods, and the utilisation of non-formal systems that can increase uptake and reach. The research by Ahmed Idris highlighted this policy as an opportunity for pastoralists to manage their own learning instead of learning managing them—i.e. by integrating education into traditional institutions and social systems to enhance adaptive capacities of communities. The policy also provides for the development of a curriculum that would be useful to pastoralist lifestyles, recognising the value of traditional knowledge and the need for techniques to integrate them into the formal curriculum.

Principles for an integrated education framework

DLCI's review 'Framework for Improved Education in Arid and Semi-Arid Lands of Kenya' (Wesonga, D. 2015) builds on the extensive discussions on ASAL education provision

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2 FAO donor mapping in the ASALs 2013.

3 Wesonga, D. 'Framework for Improved Education in Arid and Semi-Arid Lands of Kenya' (2015)

4 Resilience: Interdisciplinary Perspectives on Science and Humanitarianism, Volume 2, March 2011

5 Krätli, S. Educating nomadic herders out of poverty? Culture education, and pastoral livelihood in Turkana and Karamoja. London: IDS, 2001.

6 See also: <http://www.dlci-hoa.org/download/the-school-of-life-education-in-a-pastoralist-community/>

7 Government of Kenya. *Policy Framework for Nomadic Education in Kenya*. Nairobi: Government Printers, 2010. Updated 2015.

and argues that, in addition to the need for serious improvement and resourcing of appropriate delivery mechanisms for the drylands, more attention is needed to integrate approaches to education.

An integrated education system is one that promotes linkages between formal, informal, non-formal, religious and secular, and other forms of community-based education, and enables continuity of education during migration and hazards. An integrated education system can enable opportunities for complementarity between different types of education provision. Such a system can also enhance the sharing of resources (infrastructure, human and learning) in order to promote cost effectiveness and facilitate better transition. In developing a framework for integrated education, DLCI outlined a number of principles that it recommends be considered for improving education in the ASALs:

Principle 1: Build on existing resources and what is already working, or that has the potential to work in a particular context.

ASAL areas differ considerably from the rest of Kenya in terms of their livelihoods, their environmental context, their culture, infrastructure, and their human resource base—even within their County boundaries. Education provision needs to respond to these contexts. For example in some areas, private provision and non-formal Islamic education e.g. *duksis* are what are currently being accessed; whilst in other areas mobile schools and shepherd schools (*ichekuti*) are attracting children.

ASAL areas generally lack fully qualified teachers, but there are numerous educated youth that are currently

unemployed or under-employed who could be mobilised and trained to provide basic literacy or non-formal education. These young people, if motivated, could become fully-fledged teachers using fast track approaches and distance learning, and receive other forms of continuous professional development.

An integrated education strategy should ensure that the education provided is relevant; both in terms of the formal curricula but also for vocational and professional training that can address current and future livelihood options and human capital needs. Provision should plan creatively with the realities of the ASALs in mind, particularly in terms of seasonality, and regular drought and conflict, so that learning is not constantly interrupted.

Principle 2: Use innovations to address the problems of distance and poor quality that are constraining education

There are a large number of studies on the status of education in the ASALs that identify the constraints and challenges in the ASALs.⁸ They include the lack of resources, inadequate numbers of and poor training of teachers, limited monitoring and supervision, and mistrust and disillusionment with education provision by communities. Each of these issues requires specific interventions to address them, and the standard responses currently being used need to be interrogated given their lack of progress in recent years.

⁸ See 'Save the Children International - Kenya Country Programme (2014). A Literature Review: Debates, Initiatives/Services, Challenges and Opportunities for Pastoralist Education?' and 'UNICEF ESARO (2015) A Study of Education and Resilience in Kenya's Arid Lands, Pastoral Communication Initiative.'



School children in class Turkana. Photo credit: Kelly Lynch/DLCI

Innovative thinking and practice is now needed for education in the ASALs, learning from experiences elsewhere but adapting them to the specific contexts. For example, improvements in technologies and experiences of distance learning provide huge opportunities to increase the reach and quality of education in remote areas, as well as improving monitoring and supervision. Distance education is being used by other sectors in Kenya e.g. financial, higher education and refugee camps. Methods of monitoring service provision using mobile phones and GIS technologies are widespread, for example water point monitoring; and Smart Cards being used for cash transfers and service provision in remote areas. But these innovations are yet to be adapted to enhance ASAL education.

Principle 3: Advocate for a considerable increase in resources and improved efficiency to deliver quality education

Given the poor state of education in the ASALs, a major overhaul is needed to reach all children and adults. A massive increase in resources will be needed to support quality education provision and reforms. Resources have to be found that really can provide 'education for all', or alternative cheaper mechanisms for delivery need to be adopted. Joint financing from County governments and the private sector should be promoted.

Some resources might also be recouped from current inefficiencies, i.e. non-productive and underutilised staff and facilities, or reallocating inappropriate or non-priority provision e.g. the current policy of computer tablets for all primary school children. The sharing of resources—buildings, teachers, materials and supervision—could also ensure savings. Using primary school buildings and teachers to provide other forms of education when they are not being used; sharing or adapting local language teaching learning materials between non-formal and formal provision; and adapting and drawing on NGO provision e.g. vocational training curricula, could be considered.

Given the overall lack of qualified teachers, and reluctance of teachers from other areas to be posted to the ASALs, particularly in remote or insecure areas, other mechanisms for teacher training could be considered, e.g. the provision of intensive courses, on-going skill development, financial incentives, teachers with lower skill levels working under the supervision of qualified teachers.

Principle 4: Involve communities and promote accountability

Community engagement in the planning of education provision will not only enhance ownership, relevance and sustainability of the approach, but will also enhance accountability and efficiency in education delivery.

Accountability mechanisms should be built into all education interventions to increase efficiency and responsiveness. Where social accountability mechanisms already exist e.g. the Transparency International initiated mechanisms⁹ in Turkana, Wajir and West Pokot, the Ministry of Education should actively engage with them. In other areas, new accountability mechanisms should be developed, with clear feedback mechanisms and the strong and prompt follow up of issues. Accountability requires education managers to be bold and proactive, including a review of the job descriptions of County and Sub-county directors of education in conjunction with the Teachers Service Commission (TSC), to reflect the real needs of pastoral areas.

Principle 5: Prioritise education efforts

There are many activities that need to be carried out in the ASALs, however those that will have the most impact most quickly must be prioritised. Quality basic education and literacy for all, and ensuring that education enhances livelihood options through vocational and other training and job placements are clear priorities; although consultation with communities on priorities and what will work in their communities is fundamental.

Principle 6: Advocate for the devolution of functions that County governments have the potential to deliver

In Kenya, County governments are prioritising education, however they are limited in the ways they can improve provision because of national level control and limits on devolution: the Constitution allows only for devolution of facilitative roles. The national government should focus on providing quality assurance and support, especially for formal education, but allow Counties themselves to take on other functions e.g. adult literacy, school infrastructure development, non-formal education and vocational training. The national government should oversee examinations, curricula and teacher quality, and support capacity building in Counties; but reaching out of school children and education campaigns requires responsiveness in particular contexts and communities—approaches that should be overseen by County governments. At the very least, County governments should define the mechanisms for provision that are the most appropriate. Teacher management, resourcing, monitoring, and advocating for flexibility in the curriculum and school calendar, should all involve the Counties more.

Conclusions

The standard models of education delivery are currently failing across the ASALs of Kenya and more widely in the drylands of the Horn of Africa. The situation requires a radical rethink in terms of overall education provision; the specific responsibilities of different levels

⁹ Giving voice to enhance accountability in Kenya's ASALs, Article in DLCI's Resilience in the drylands journal – edition 5 <http://www.fao.org/disasterriskreduction/east-central-africa/documents/detail/en/c/4314/>



Karamajong girls reading. Photo credit: Oxfam GB

of government; and the huge effort that is needed by national and county level government, NGOs and donors alike. The recent establishment of the National Council for Nomadic Education in Kenya (NACONEK) is a welcome development, but it is currently neither empowered nor resourced to make an impact without an increase in its authority and major increase in resources and the close support of national government and others.

There is a need for a concerted effort to share regional learning and success in reaching remote communities

including collaboration on addressing the educational needs of communities that span borders or share languages. In the context of the ASALs, flexibility, innovation and new technologies need to be applied creatively to ensure an education system that is of equal quality; but that is also relevant, culturally appropriate, strengthens existing and alternative livelihoods, and facilitates effective progression to the formal education system and employment.

Learning from experience: Irrigated crop agriculture in the drylands of the Horn of Africa

By Sean Avery, independent consultant¹

The Horn of Africa (HoA) needs to use its limited water sources more wisely. Irrigation is increasingly being promoted for crop agriculture in an attempt to meet national and local food security challenges, but schemes frequently ignore the lessons from past failures. DLCI has produced some Good Practice Principles to provide some general guidance for policy makers and development agents proposing to establish irrigation schemes for crop agriculture in the HoA, the key elements are shared here.

The drylands of the HoA are typically water-stressed areas - characterised by low and variable rainfall, high ambient temperatures and evaporation rates, and surface water resources that are highly seasonal and flashy. Substantial groundwater resources lie beneath the drylands, although they are often of poor quality and vary considerably in depth. These resources are in some cases finite, for example, ancient water sources that are not being replenished. Some dryland areas benefit from perennial rivers passing through them from moister highlands, but these rivers are also being increasingly diminished through poorly regulated upstream abstractions, often linked to large-scale irrigation schemes.² They also subject to increasing flood risk due to the rainfall response changes that are a consequence of land pressure and catchment degradation.

The increasing flood magnitudes will increasingly challenge riverbank based irrigation systems.

Over large areas of the HoA, groundwater is the only source of water for the predominantly pastoral communities. Access to water is now a basic human right³ but one that has been largely neglected by governments in the HoA. Humanitarian relief agencies, NGOs and church organisations, have focused on developing supplementary water sources in the form of engineered boreholes, small dams and water pans—many of which are being managed in unsustainable ways. Irrigation is now being increasingly promoted in these drylands in an attempt to meet national and local food security challenges through crop agriculture. It is important that these interventions recognise the problem of increasing water deficit and the lessons from failed irrigation investments in the past. As the citizens of dryland areas are often the most vulnerable and food insecure in the region, investments should not undermine their existing pastoral livelihoods by taking away critical land and water resources.

In the drylands of the HoA governments continue to give precedence to investments in crop agriculture as the main solution to food security—agriculture that will depend on irrigation⁴—even though the full potential of livestock production to national economies remains underexploited. This prioritisation ignores all-

¹ This article has been reproduced from the DLCI Technical Brief written by Sean Avery, DLCI consultant and Vanessa Tilstone DLCI, which was based on a series of studies on water and irrigation carried out by REGLAP and DLCI since 2012.

² See Lower Omo case study, Avery (2013).

³ On 28 July 2010, through Resolution 64/292, the United Nations General Assembly explicitly recognized the human right to water and sanitation and acknowledged that clean drinking water and sanitation are essential to the realisation of all human rights.

⁴ Benkhe, R. & Kerven, C. (2013). Counting the costs: replacing pastoralism with irrigated agriculture in the Awash Valley, north-eastern Ethiopia. <http://pubs.iied.org/10035IIED.html>



Abandoned irrigation channel in Turkana. Photo credit: Sean Avery

important water resource availability issues, as well as the extensive exploitation costs and the available evidence of the environmental impact of irrigation. A lack of documentation for sharing the lessons from failed irrigation in the arid and semi-arid lands (ASALs) is severely limiting the ability of stakeholders to learn from their mistakes, and for evidence-based advocacy.

The continued expansion of irrigation schemes in the HoA needs to be based on comprehensive assessments of water and land availability; as well as independent environmental and social impact assessments, cost-benefit analysis, and comparisons with other potential investments that properly take into account the value of existing ecosystem service provision. Lessons from the past should be incorporated into planning, particularly issues such as poor consultation and ownership by local people; poor design and quality of infrastructure; lack of local capacity to construct, manage and maintain water and irrigation schemes; as well as poor marketing potential resulting from insecurity and inadequate transport infrastructure.

Some of the key lessons learnt from irrigation for crop agriculture are:

1. *Externally engineered water supply and irrigation interventions are too often poorly conceived and poorly constructed*, and are prone to early breakdown, leading to disillusionment and conflict within the beneficiary communities. A contributing factor is a lack of community training on management and maintenance, a process that requires persistence and regular follow-up. Water supply and irrigation interventions are often the result of donor programmes that encourage rapid infrastructure development but insufficient community participation. Donor-funded water supply interventions also often require communities to collect user fees, a requirement that conflicts with traditional expectations that water resources are free.
2. *Returns on investment in irrigation in the drylands are often limited*, and less than the same investment that would be achieved in other livelihoods, especially livestock production. This is particularly true when the loss of biodiversity, the carbon release from clearing rangelands for crop agriculture, and the full impacts on water resources are considered. Food security considerations need to include the productive potential of dryland areas for these different forms of agriculture, and take account of the opportunities for trade with high crop potential areas.

3. *The irrigation potential of the drylands of the HoA is limited by the scarcity and quality of its water*. Detailed hydro-meteorological data is often inadequate or inaccessible for proper planning, making over-estimates likely. There is also often insufficient attention paid to water quality and soil types in their suitability for crop agriculture.

4. *Most irrigation schemes found in the ASALs of Kenya are subsistence-level farms that are dependent on, and motivated by, outside financial assistance*. A recent FAO study concluded that irrigation projects in Turkana County in Kenya require subsidies of about 90%.⁵ Irrigation scheme developments in the drylands also often lead to an influx of outsiders with adverse social impacts.

5. *Irrigation development planners invariably select the most productive areas of land*.

These are inevitably adjacent to valuable water sources, and often occupy dry season grazing areas valued by pastoral populations, thereby undermining their strategies to manage drought and sometimes causing conflict.

6. *Irrigation schemes are usually planned without an adequate understanding of the current marketing potential in the drylands*, which is often constrained by poor roads and other infrastructure, under-developed market chains including unequal power relations, and informal taxes in movement of goods and insecurity.

Good Practice Principles from DLCI

DLCI's purpose is to promote evidence-based policy and practice amongst dryland stakeholders. Based on existing studies and recent reviews by DLCI/REGLAP, FAO and others, DLCI developed some good practice principles on irrigated crop agriculture in the drylands of the Horn of Africa in an attempt to address the urgent need for more comprehensive evidence-based guidance. See: <http://www.dlci-hoa.org/documents/good-practice-guidance/dlci-good-practice-documents/>

The DLCI good practice principles summarise some of the key issues to be considered when designing water and irrigation schemes in dryland areas of the HoA from the available evidence so far. They are not aimed at providing specific guidance, but are intended to raise awareness of potential challenges and provoking further sharing of research, impact assessments or other learning documents that are urgently required to inform and improve irrigation expansion in the drylands.

Kenya's Drought Contingency Financing

By Izzy Birch, Janet Okoth, Issack Abdille Mohamed, Ahmed M. Farah, Amos Nyakeyo and Eng. Jirma Hussein, NDMA¹

Between September 2014 and March 2015 Kenya's National Drought Management Authority (NDMA) provided KShs. 336 million (approximately US\$ 3.5 million) of contingency financing to 16 counties seriously affected by drought. The funds were part of a KShs. 570 million grant from the European Union pilot contingency financing to inform the establishment of a National Drought Contingency Fund (NDCF). This article discusses the experience of using these funds, their impact, and the future direction of NDCF.

Drought contingency finance

The challenge of securing timely finance for early response has long been recognised as one of the main reasons for the delay between the warnings of a drought and action on the ground. A National Drought Contingency Fund (NDCF) has been a policy objective in Kenya for many years. It is provided for within the ASAL Policy,² and proposed in the NDMA Bill recently passed³ by Parliament.⁴

The plan to establish the NDCF reflects a wider policy shift in Kenya towards risk management rather than crisis management. This shift is informed by evidence that suggests when action is taken early enough it can protect lives and livelihoods, and will avoid the high costs of emergency response. However, early action needs money, which at present can generally only be found by re-allocating funds already earmarked for other activities. Few government ministries or agencies have contingencies in their budgets, and the process of budgetary re-allocation is not only time-consuming but is also counter-productive as it takes resources from the long-term development that should enhance resilience to drought. The NDCF is therefore an innovative way of ensuring that finance for early drought response is always available when needed.

An important principle is that drought contingency finance (DCF) should be applied in a developmental way.⁵ Livelihood analysis is used to identify the impact of drought on producers and the actions that will best reinforce their capacity to cope. For example, DCF can facilitate pastoralists' access to dry-season grazing by targeting rural services along migratory corridors or in areas where livestock have converged.

Two related processes guide the allocation of drought contingency finance:

- 1. Contingency planning:** County drought contingency plans, led by County governments with development partners, are approved in advance of a drought and describe, sector by sector, what should be done during each phase (in Kenya these phases are 'normal', 'alert', 'alarm', 'emergency' or 'recovery'). Once the alert or alarm phase is reached, the plan is quickly reviewed and a more focused response plan developed which addresses the particular features of that drought. It is these response plans that are financed with DCF.
- 2. Early warning:** the drought phase is set by the early warning system. This monitors biophysical indicators (to assess the severity of drought) and socio-economic indicators (to assess its impact), using a combination of remote-sensed data, household interviews and direct observation. The impact of a drought is a consequence not just of its severity but also of the capacity of a particular community or county to absorb and manage the shock. Each month every indicator is compared with the long-term average in order to judge whether it lies within seasonal norms, whilst agreed thresholds determine the transition between drought phases.

The use of the early warning system thus ensures that drought contingency finance is allocated on the basis of an objective assessment of need; with the contingency planning system guiding what is financed. The process of fund application, approval, disbursement and reporting is also automated, thereby strengthening accountability and transparency. In the following section the application of the DCF is illustrated with reference to three counties: Baringo, Embu and Wajir. These are part of the 23 counties where the National Drought Management Authority has been piloting the DCF with financial support from the European Union. Lessons from the pilot will be used to effectively roll out implementation of the proposed multi-donor National Drought Contingency Fund (NDCF), which the Kenya Government is in the process of establishing.

County experiences

1. Baringo: working with partners and managing the media

"By February 2014 there was increasingly sensational media coverage of 'emergencies' in Baringo and of elderly people reportedly dying of starvation. The capacity of the new County Government to manage this growing attention was being tested. We advised them that the early warning system indicated an alert phase, though deteriorating fast because of rising temperatures, but was nevertheless normal for the time of year. Any adverse effects were due less to drought than to structural challenges in areas such as water harvesting, livestock

¹ Izzy Birch, Technical Adviser, Janet Okoth, Embu County Drought Response Officer, Issack Abdille Mohamed, Wajir County Drought Response Officer, and Ahmed M. Farah, Wajir County Drought Coordinator, Amos Nyakeyo, Baringo County Drought Response Officer, and Eng. Jirma Hussein, Baringo County Drought Coordinator, NDMA

² Sessional Paper No. 8 of 2012 on the National Policy for the Sustainable Development of Northern Kenya and other Arid Lands.

³ Conditional on some minor amendments.

⁴ The NDMA Bill calls it the National Drought Response Fund.

⁵ 'DCF' refers to drought contingency finance generically, while 'NDCF' refers to the specific institution.



Water being provided to schools in Baringo.
Photo credit: NDMA

marketing, and natural resource management. We also advised that interventions that supported animal health, livestock mobility and commercial livestock off-take would be more appropriate than conventional food and water trucking which the media were advocating.

Our advice was accepted by the County Government, and from March onwards we continued to monitor the situation closely, producing a fortnightly brief for stakeholders. By May 2014 the situation in three sub-counties (Baringo North and South and East Pokot) had reached late alarm, so we mobilised a group of partners from across the sectors to review the drought contingency plan and develop a common response plan. The County Steering Group endorsed the plan and funds to implement it were mobilised from various partners, including ACTED, UNICEF, Kenya Red Cross Society, Action Aid, and the Geothermal Development Company. Their contributions complemented the KShs 18.44 million approved from the NDMA's DCF, which was then more than matched by KShs 19 million from the County Government. In many of the projects, across six sectors, we made special efforts to develop communication materials and engage with the media, in order to increase their understanding and coverage of DCF activities. In April 2015 we invited representatives from all the sectors involved in implementing DCF projects to join an evaluation. With partners from agriculture and WASH we visited five sites where we asked community members their views on the choice of intervention, its targeting and timing, and its contribution to development. In general their response was very positive, although not all the changes observed can necessarily be attributed fully to DCF."

2. Embu: reinforcing county service delivery

"Drought is a common feature in the lower parts of Embu

County (Mbeere North and South sub-counties). By August 2014 conditions had triggered activation of the drought contingency plan. The County Steering Group approved a response plan, and DCF provided support to three sectors: water, health and livestock. In the water sector, the county government repaired 12 strategic boreholes using Kshs. 644,800 (approximately US\$ 7,250). Distances to water reduced from 5-15km to 1-3km, while water usage increased from 5-6 litres to 20 litres per person per day. In the health sector, four integrated medical outreach exercises were organised by the County Health Services Department targeting those living far from health facilities. These identified malnourished children needing referral

and offered various preventive health services. During these exercises 413 children under five were dewormed, 192 received micro-nutrients, and 84 received food supplements, while 16 children above one year were immunised and 51 adults received family planning services. The county government also vaccinated 2,878 cattle against Foot and Mouth, 2,876 cattle against Lumpy Skin Disease, de-wormed the same number of cattle and 21,924 shoats, and provided multi-vitamins for 702 cattle and mineral supplements for 1,175. Livestock morbidity fell from 10% prior to the intervention to 2% after it."

3. Wajir: keeping boreholes running...

"Wajir County has 152 boreholes which support large numbers of people and livestock. As drought stress increases, breakdowns become more frequent. This can quickly cause livestock deaths as the next borehole may be as much as 50-60km away. It also increases pressure at neighbouring boreholes and reduces consumption (given long waiting times). The County Government constituted three rapid response teams to respond to these breakdowns and DCF was used to complement their efforts. Subsequent monitoring in November 2014 established that all boreholes were repaired within six hours or less. This impact was enhanced by the complementary provision of standby gen-sets and fast-moving spare parts, as well as fuel subsidies for 22 high-yielding boreholes – although solar systems would be a more cost-effective option in future."

4. ...and students in school

"Most of Wajir's population depend on proceeds from the sale of livestock and livestock products to meet their needs, including payment of school fees. During a drought many secondary students have to drop out because of financial constraints. The 'food for fees' intervention had two related aims: to prevent students leaving school and



Community health workers in Embu weighing children during health outreach. Photo credit: NDMA

avoid distress sales of livestock, both of which would have increased pastoralists' vulnerability. The education sector Technical Working Group (part of the County Steering Group) discussed the idea and how to implement it. They agreed how to select the schools and beneficiary students—using criteria such as the severity and effect of drought on the school community, the balances owing and the families' ability to pay, and the students' gender, as well as the amount that each would receive. Each one of 40 schools identified ten students, and these 400 students received rice and beans to offset their outstanding fees.

All the coordination structures in the county, i.e. the CSG and the various technical working groups, have shown that they can facilitate proper targeting and response but they need strengthening. Our main constraint was delays in procurement. Unless this is addressed we will continue to provide a late response that may not save pastoralists' main assets, their livestock."

Initial learning

The preceding section has given a snapshot of the experience of using DCF over the past year.

- The investment was multi-sectoral, since any sector has the potential to enhance resilience in some way (such as the food for fees in Wajir), while impacts in one sector reinforce others (see Figure 2).
- The County Governments were fully involved, both at a strategic level (in approving the timing and nature of response) and operationally (through the county departments): Moreover, the early warning system provides information for their own decision-making within the county. While the NDMA's role is to facilitate and strengthen the counties' capacity to respond, care needs to be taken that contingency funds do not substitute for on-going investment in service delivery; basic services should be provided for within county and sector budgets.
- Non-governmental organisations also made important contributions, both financially and through their programming. There is scope to expand this by

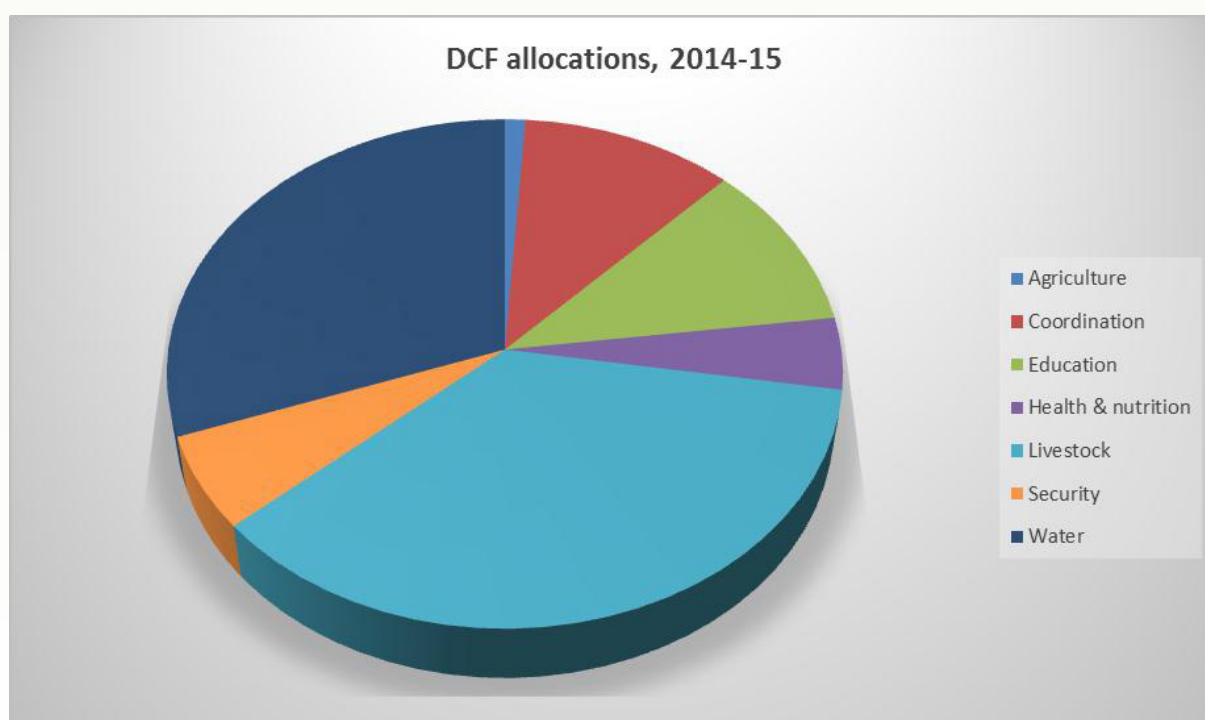


Figure 2: DCF allocations

ensuring that the county contingency and response plans are owned by all actors and provide a shared framework for response.

- The case of Baringo revealed the gap that exists between the media's coverage of drought and the more nuanced situation on the ground. Failure to address the structural causes of poverty has left communities vulnerable to comparatively modest shocks. It is for this reason that Kenya's Ending Drought Emergencies strategy embeds drought cycle management (using DCF) within a broader and long-term strategy to strengthen resilience. Further work is also needed to deepen public understanding of drought management.
- One practical challenge was slow procurement in government. The objective of establishing a set-aside fund for early response will be undermined if this is not addressed. The NDMA is already discussing the issue with relevant parts of government.
- While counties organised joint monitoring missions, evaluation is a more complex process that asks deeper questions about the relevance of interventions and their impact on people's lives. Further attention is being given to this for future interventions.

Conclusions and way forward

Once established, the NDCF can provide an accountable and evidence-based mechanism for the rapid distribution of finance from multiple donors to agencies serving populations in need. As it establishes itself and evolves, the following issues will be on the agenda:

1. **Preparedness:** the conditions governing DCF allow its use for two complementary purposes – early response and preparedness (i.e. building the capacities to manage drought episodes better). While the early response aspect has been developed and tested, the use of DCF for preparedness is still in design.
2. **Synergy:** there is tremendous potential for DCF's impact to be maximised through links with other interventions. For example:
 - a. The NDCF can be a channel for multiple sources of finance. Payouts from the African Risk Capacity (the African Union's pooled drought risk insurance mechanism) are already linked to it, although these would be triggered later in the drought cycle.
 - b. Programmes such as insurance or cash transfers increase the purchasing power of affected populations to access services supported using DCF. For example, DCF was disbursed in Wajir in March 2015 and the Hunger Safety Net Programme's shock-responsive transfers were made a month later, both using the same triggers.
 - c. There may be significant synergies between

the preparedness component of DCF and adaptation to climate change.

- d. Long-term interventions by the sectors, such as livestock vaccination and health outreach, will complement activities financed using DCF and over time reduce pressure on the Fund. Similarly, DCF can support sectoral goals: ring vaccination in Baringo against Foot and Mouth Disease, using DCF, allowed the quarantine of livestock markets to be lifted.

3. **Inter-county links:** droughts are not contained within administrative boundaries. The potential impact of inter-county contingency planning and response is high. Early steps are being taken in this direction, such as the inter-county agreement for the livestock sector signed by the Governors of Laikipia, Samburu and Baringo in September 2014 as part of a campaign financed using DCF.



Figure 1: Location of Wajir

Crisis Modifiers: Design and Activation Considerations based on experiences spanning 3 Droughts and 5 Responses in Ethiopia: 2006, 2011 and 2015

By Tate Munro and Jessica Omukuti, Mercy Corps
Regional Resilience Hub, East and Southern Africa

Crisis Modifiers are not a panacea for responding to all crises, and in fact for agencies that have been in the position to employ Crisis Modifiers in their various forms, there are a number of key challenges and lessons learnt. These challenges are discussed in this article, along with recommendations for addressing them.

Increasingly, humanitarian programs funded and implemented in risk prone areas, like the Horn of Africa, have shifted to focusing on addressing underlying, longer-term root causes of chronic vulnerability. Many of these programs carry the banner of ‘building resilience,’ and as such the traditionally expected resources, scope and staff, and logistical capacity for the direct delivery of life and livelihood saving services during emergencies, are not pre-positioned in the same way within these transformative programs. However, the reality is that these programs that promote development with resilience remain at risk from certain slow or quick onset shocks and stresses.

To reduce the impact of quick onset shocks, programs are being equipped with crisis modifiers. USAID defines ‘**Crisis Modifiers**’ (CMs) as “quick injections of emergency funding...that allow partners to respond rapidly to address humanitarian needs, reducing livelihood and other development losses¹... thereby protecting development investments from the potentially damaging effects of the disaster².” Administratively, a CM is essentially a budget line within recovery and development projects that provides resources enabling an implementing agency to respond to an anticipated but unexpected humanitarian emergency while protecting developmental gains and activities within the same projects. USAID has been pioneering the use of CMs, especially in Ethiopia, permitting partners to respond quickly and address humanitarian needs generated by the shock², when predetermined thresholds have been met, and still dependent on approval from USAID’s internal review process.

Challenges with Crisis Modifiers

1. Intended scope of Crisis Modifiers (discreet events) vs. standalone emergency mechanisms (robust, catastrophic events)

Crises take many forms and scales. CMs, within the context of USAID, are small (max US\$500,000 per event, \$1million per year) set aside instruments. This makes



Pastoralist looking for market to sell her livestock in Dembel, Somali Region, Ethiopia. Photo credit: Tate Munro.

CMs useful for discreet crisis events or discreet responses within large events. As recently conferred by Issa Bitang, USAID/OFDA’s Senior Regional Program Officer during his opening remarks at the USAID Regional Resilience Meeting in Nairobi³ CMs are not intended to replace robust, emergency response programs that go through donors’ design, vetting and management processes.

Recommendation: USAID should continue to clarify the difference between CMs and stand-alone emergency mechanisms.

2. Risks and expectations associated with CMs

The confusion surrounding the breadth of emergencies CMs are able to respond to, along with the relative newness of CMs in the humanitarian development space, has led to unanticipated risks and expectations associated with CMs. The clear mandate that CMs are meant to protect development investments from the potentially damaging effects of a disaster means that humanitarian development agencies cannot just see an emergency and respond using the CM. The disaster event has to clearly threaten a program’s ‘development investments.’ This is understandably confusing for local

¹ “Resilience at USAID” https://scms.usaid.gov/sites/default/files/documents/1867/06_30_2015%20-%20Resilience%20Fact%20Sheet.pdf

² USAID, 2013. Investing in People: Humanitarian assistance. <http://www.usaid.gov/sites/default/files/documents/1866/OFDA%20Fact%20Sheet%207-1-13.pdf>

government and stakeholders. Obviously, this leads to numerous, valid questions. For example: how is it that a donor has pre-positioned emergency funding but created additional prerequisites to activating it? Is it fair that a CM be stopped once the part of a crisis threatening specific development investments is no longer present (e.g. rains finally arrive negating the initial justification for CM action)? The expectations created by both the confusion and dissatisfaction with the clear scale and scope boundaries of CMs create substantial risks to humanitarian development agencies challenged to manage those expectations.

Recommendation: Donors make clear to stakeholders the significant added value of, but also limitations to, CMs.

3. Trigger indicators and thresholds for CM activation

Simply having a CM prepositioned in a program mechanism is not authorization to utilize those funds, in most instances. These set aside funds are activated only when a set of predetermined emergency indicators have been triggered, or thresholds met and verified. Part of the challenge is that not all thresholds or indicators are equally accurate and accepted across the types and scales of varied disaster events. Thresholds are also context specific, and verification can be difficult technically or made challenging for political reasons. And since the effectiveness of a CM is completely dependent on the timely activation of CM funds, these contingencies and a lack of accepted triggers results in frequent, substantial challenges to timely activation and use of CMs.

Recommendation: Sets of accurate, accepted and verifiable trigger indicators and thresholds for the range of contexts and disasters should be established.

What is the best design for the CM instrument?

Since the 2006 drought in Ethiopia, USAID has experimented with three designs for CMs:

- 1) **Funded and pre-authorized CM budget line** with full budget line flexibility;
- 2) **Obligated but not funded/authorized CM budget line** requiring additional proposal and donor approval for activation;
- 3) **No CM budget line but related project scope** requiring only donor approval (no additional proposal) to use project funds to respond to emergency.

Currently, USAID had settled on design option #2, whereby implementing partners have to develop an additional proposal and get the donor to approve both the emergency response actions proposed and the rationale for those actions, based on their acceptance that thresholds have been met and proposed actions will protect development investments.

Is this the best design option? We present here case studies illustrating the use of these three differently designed CM instruments to further the discussion on designing the most effective CM instrument.

Table 1: CM instruments in comparison

Instrument Type	CM Budget Line	Funded & Approved	Full Budget Flexibility	Additional Donor Approval Required	Additional CM Proposal Required	Triggers Incorporated	Timely & Effective Response
#1: Funded, authorized CM budget line	Yes	Yes	Yes	No	No	Yes	Yes
#2: Obligated CM but not funded/authorized	Yes	No	Yes	Yes	Yes	Yes	Depends
#3: Project Scope but no CM budget line	No	No	Unknown	Yes	No	Yes	Depends



Recently sold goat being examined and then marked by the local government veterinary officer. Photo credit: Tate Munro.

Case Study 1: No CM budget line but related project scope (Instrument #3)

During the early stages of a drought in Ethiopia's south-eastern Oromia region in 2006, the USAID funded *Pastoralist Livelihoods Initiative (PLI)* project, a consortium led by Save the Children, requested donor approval to use some of its livestock project funds to respond to the forthcoming drought by employing a market-based humanitarian response action called 'commercial destocking.' Exact details of the interaction between the lead implementing NGO and USAID are unclear, however it appears key USAID staff trusted the requisite competencies of the lead NGO and consortium members in this area, and approved this request. With this approval and their experience in the required technical skills, a substantial commercial destocking initiative was implemented with considerable impact. Tufts University's ex-poste impact evaluation of PLI's commercial destocking activity showed a 37:1 return on investment (ROI) when compared to communities who received no or late traditional humanitarian responses.⁴

Case Study 2: Funded and authorized CM budget line (Instrument #1)

During the early stages of the 2010-11 Horn of Africa droughts, the USAID funded *Revitalizing Agricultural/Pastoral Incomes and New Markets (RAIN)* project, a consortium led by Mercy Corps, used its donor-stipulated full budget line flexibility capacity to move the required amount of money into its CM budget line in order to develop and rollout a substantial commercial destocking initiative. A year later an impact assessment of that activity measured sustained/stable well-being, and in many instances showed improved well-being of households who benefited from the commercial destocking action in comparison to both the baseline and to non-benefitted (control) households a year later.

Programming the CM was very challenging. The government regulatory environment towards NGOs, and confusing and contradicting signals coming from various early warning systems (EWS), made it very complicated to work with local government and the private sector to co-develop and receive government approval for the actual commercial destocking humanitarian action.

However, the comprehensive flexibility of the CM instrument, including the ability to move considerable budget into and out of the CM budget line instantly and fluidly, made it possible to navigate these uncertainties and political difficulties.

In addition, on multiple occasions during the RAIN project's 5-year lifespan, the project was able to respond to more isolated, and at times sudden on-set, humanitarian crisis (e.g. isolated flooding, fires, concentrated droughts, etc.) in project communities, preserving and not compromising developmental gains and initiatives in those communities. The sudden onset crises required assistance within days. The project was able to provide assistance as soon as the emergency could be confirmed, needs assessed and response options identified that were within project scope. Sometimes, responses came as quickly as two days. USAID was praised for such quick, flexible and effective assistance.

Case Study 3: Obligated but not funded/authorized CM budget line (Instrument #2)

During the early stages of drought in eastern Ethiopia in 2014, the USAID funded *Pastoralist Areas Resilience Improvement through Market Expansion (PRIME)* project, a consortium led by Mercy Corps, wanted to implement a combination of feed and fodder, as well as commercial destocking, humanitarian actions in line with LEGS early response best practices. However, a number of challenges made it almost impossible to effectively use USAID/PRIME's CM instrument. Firstly, at times contradictory trigger indicator data made it difficult for the PRIME team to conclude if the CM proposal could in fact be evidenced to the level of certainty required by USAID at the necessary early stages of the slow onset crises. Secondly, having CM funds obligated (meaning appearing in PRIME's budget but not funded/authorized) meant that local government expected the project to respond to any and all perceived emergencies. These pressures led to confusing and politicized trigger data that was difficult to crosscheck, and resulted in highly strained relations with local government. Thirdly, when the CM funds were requested, considerable confusion within USAID itself over the terms of the Memorandum of Understanding (MOU) between the Office of Foreign Disaster Assistance (OFDA) and the USAID Ethiopia Mission led to weeks of delays, and ultimately to PRIME being forced to break apart and re-write its CM application into three smaller parts. These 'moving goalposts' substantially hampered the process of designing, re-designing and

4 Catley, A (ed.), Impact Assessments of Livelihoods-based Drought Interventions in Moyale and Dire Dawa, PLI report produced by the Feinstein International Center in partnership with CARE, SCUS and USAID/Ethiopia (Medford, MA: Feinstein International Center, 2007).



Pastoralist receiving payment for a goat she was able to sell thanks to a livestock trader receiving an emergency subsidy incentivizing him travel far distances to the drought stricken community of Dembel, Somali Region, Ethiopia. Photo credit: Tate Munro.

ultimately delivering early humanitarian interventions. Lastly, given how politically treacherous and technically complicated the CM application process is, “turning it off” without repercussions – in the event the severity of the emergency was in fact less than anticipated – added another substantial difficulty to using the CM under this design. Given the distortionary effects any humanitarian action has on a local context, if the action is not warranted it should be avoided to prevent the humanitarian actions themselves from eroding developmental gains.

Case Study 4: Obligated but not funded/authorized CM budget line (Instrument #2 - again)

Due to failed rains in Ethiopia in 2015 (early El Nino, May-June 2015), the *PRIME* project again wanted to implement a combination of feed and fodder, as well as commercial destocking humanitarian assistance, in line with LEGS early response best practices. In this instance, some of the lessons from the 2014 experience were applied and timely delivery of emergency feed and fodder resulted in protection of core breeding livestock and increases in livestock milk production. While some argue that this response action still came late or was not to the scale requested, many within USAID and Mercy Corps see this is a positive example of the CM being triggered and utilized.

Case Study 5: Obligated but not funded/authorized CM budget line (Instrument #2 - again)

Due to the 2015 El Nino event, the *PRIME* project has again been tasked with activating its CM for the second crises (fourth response action) in 2015. Increasingly national and global alarm at the Ethiopia food security crisis has placed tremendous pressure on both USAID and the Mercy Corps led consortium to respond. However, this time challenges have re-emerged. First, the 2015 CM budget line already has already been exhausted due to the July-August response. Even though *PRIME* is a \$52m project, only \$1m/year

is authorized for the CM. In addition, the scale of this crisis is beyond the scope of *PRIME*'s CM. This event is neither discreet nor is the scale and scope of the required response. The event is massive and the response requires emergency human food and health care provision (beyond the program scope of *PRIME*), at a scale reaching into the many millions of dollars. This has not stopped the Mercy Corps led consortium from responding. They have re-allocated almost \$2million in development funds from their annual development work plan – channelling them into drought stricken areas to conduct commercial destocking and emergency feed programming. No one has yet challenged this use of development funds for humanitarian response. However, in this instance both USAID and Mercy Corps have agreed that should the need continue to grow, and remain present come December 2015, a standalone emergency USAID mechanism will be considered.

Recommendation: *Use these and other concrete examples to further the discussion on designing the most effective CM instrument.*

Conclusion

The Crisis Modifier concept, along with ‘No Regrets Spending’, is being increasingly accepted and adopted by a range of donors and humanitarian development agencies. However, it takes considerable time to build the types, breadth and depth of resilience required to lessen the need for discreet, rapid responses to crisis in order that development investments and gains are not lost during crises. Therefore, it is imperative that CMs are designed and activated in the most appropriate and impactful ways possible.



Drought stricken pastoralist displaced living in a temporary settlement near Rudugi Kabele, Somali Region, Ethiopia. Photo credit: Tate Munro.

Doing it together: co-creating innovation for resilience with local people

By Alex Tasker, University of Sussex¹

In this article development agents are encouraged to work with local communities to co-create innovations that support resilience. Strategies for identifying local innovations are proposed; including fully recognising the worldviews of the communities that they work with, and engaging with the process of innovation as much as the outcome.

Innovation for resilience – business as usual...

Innovating to promote resilience is big business. Collaborations such as the Global Resilience Partnership (GRP) bring together major donors including the U.S. Agency for International Development (USAID), the Swedish International Development Cooperation Agency (SIDA) and the Rockefeller Foundation to offer large grants for '*bold, innovative and scalable*' ideas that are '*locally driven, high-impact solutions that build resilience*'.² Whilst these awards nominally place community engagement at their centre, academic and project literature suggests that a 'pipeline model' of planned research activities leading technology-focused interventions remains at the heart of dryland development innovation.³ The persistence of this techno-centric focus may be down to deep-rooted narratives that cast local innovation as somehow 'less innovative',⁴ whilst simultaneously overlooking many of the negative socio-ecological and sustainability impacts of technology transfer.⁵

... or identifying 'other' innovations

The emergence of counter-narratives to challenge this dominant technology-transfer focus is increasingly being seen across disciplines and regions; from medical equipment being adapted by local practitioners for use in remote areas⁶ to dryland farmers and herders collaborating to find alternative ways to improve yields outside of biotechnology and commercialisation⁷ For millennia dryland communities have innovated in response to emerging threats and opportunities; the resulting endogenous innovations are often bold, locally driven and of high impact. These forms of innovation are often a far cry from the 'Rockefeller model' described above, but

have the potential to offer a great deal to development programmers. This article sets out the case for greater engagement between innovators at a local level, calling for indigenous and non-indigenous development actors to consider how they may collaborate to co-create solutions to stubborn problems. Whilst challenging, these co-created innovations can reflect multiple aspects of development best practice; genuine improvements in participation, advocacy, risk-management and efficiency can all be proposed as outcomes of the co-creation process. The following sections discuss a number of barriers to this co-creation detailed in academic and development literature, and suggests a methodology through which development actors could begin to engage with local innovators.

Barriers to collaborative innovation

There is an assumption that innovations should service needs identified by the development community, but in reality a large number of endogenous innovations are '*informal, illegal or not in line with development prescriptions*'.⁸ If development actors shift their gaze from seeking pre-formed answers towards engaging with innovative potential, some of these seemingly less-desirable innovations begin to demonstrate valuable features, for example regional *miraa* distribution networks⁹ can be seen as simultaneously black-market illegality and evidence of well-connected conduits across challenging terrain.

The current drive for technological innovation is reinforced by a clear 'problem-solution' narrative, but the reality of local innovation is much more complex. In many cases the innovations themselves are not the product of local ingenuity alone, arising instead in response to external inputs. Evidence of these 'hybrid-style' innovations can be found across the globe with community-level adaptations and modifications of external inputs a feature of almost every culture. Indian *Jugaad* innovations demonstrate repurposing of vehicle components and housing materials in response to local need;¹⁰ Chinese *Shanzhai* innovation is a well-established form of counterfeiting and adaptation of telecoms equipment.¹¹ Building on cases like these it is possible to suggest that the future of innovation for dryland development may be found in the dynamic, hybrid combination of external and

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² <http://www.rockefellerfoundation.org/blog/announcing-global-resilience-challenge/>

³ Biggs, S., *Building on the positive: an actor innovation systems approach to finding and promoting pro poor natural resources institutional and technical innovations*. International Journal of Agricultural Resources, Governance and Ecology, 2007. 6(2): p. 144-164.

⁴ Scott, J.C., *Seeing like a state: How certain schemes to improve the human condition have failed*. 1998, New Haven, CT: Yale University Press. p. 285

⁵ Robinson, L.W. and F. Berkes, *Multi-level participation for building adaptive capacity: Formal agency-community interactions in northern Kenya*. Global Environmental Change, 2011. 21(4): p. 1185-1194.

⁶ Anner, J., *Emerging economies drive frugal innovation*. Bull World Health Organ, 2013. 91: p. 6-7.

⁷ Leach, M., et al., *Transforming innovation for sustainability*. Ecology and Society, 2012. 17(2): p. 11.

⁸ Catley, A., J. Lind, and I. Scoones, *Pastoralism and Development in Africa: Dynamic Change at the Margins*, ed. A. Catley, J. Lind, and I. Scoones. 2012: Routledge. P.1

⁹ Carrier, N.C., *Kenyan khat: The social life of a stimulant*. Vol. 15. 2007: Brill.

¹⁰ Singh, R., V. Gupta, and A. Mondal, *Jugaad--From 'Making Do' and 'Quick Fix' to an Innovative, Sustainable and Low-Cost Survival Strategy at the Bottom of the Pyramid*. International Journal of Rural Management, 2012. 8(1-2): p. 87-105. Birtchnell, T., *Jugaadas systemic risk and disruptive innovation in India*. Contemporary South Asia, 2011. 19(4): p. 357-372.

¹¹ Goxe, F., *Innovation with 'Chinese' characteristics? Reflecting on the implications of an ethnic-based paradigm of management and innovation*. Prometheus, 2012. 30(2): p. 155-168.

grassroots innovations.¹² Drawing on established theories and ideas surrounding the dynamic and flexible nature of knowledge, some authors suggest models of innovation in which development groups and local collaborators engage in the co-creation of innovations.¹³ This model, proposed in the 1990s, goes beyond employing ‘solutions’ created by local or remote groups and instead combines notions of participation, advocacy and sustainability in the creation of resilience innovation.



Pastoralist families continue to innovate and adapt as local resource supply changes. Here, wire fencing replaces a traditional boma wall and motorised vehicles are substituted for traditional camel-powered methods of relocating dwellings. Photo credit: Alex Tasker.

Innovation ‘back to basics’

So how can development organisations engage with this form of dynamic, co-creative innovation? There is no simple answer, but there are ways in which development groups might equip and position themselves in order to improve their chances of effective engagement. Engagement can take many forms; local, regional and national organisations, research centres, academic establishments, government departments and interest groups can all provide rich relationships with development groups through which to create new ideas and innovations. This article however deals with one of the more challenging sources of collaboration – local communities themselves. Whilst many of the suggestions below hold true for any knowledge-partnership, this article examines collaboration at the local level. In order to engage with this process, organisations must first consider a number of challenges: they must focus on clarifying what is meant by innovation, locate local innovation beyond the project remit, engage with innovation and the innovators, be able to learn as an organisation and modify structures to enable feeding-back into the organisational understanding of innovation.

1. Framing innovation

Firstly it is necessary to clarify what is understood by ‘innovation’. Whilst seemingly obvious, this requires an organisation to be explicit about their definition of innovation; openness about existing assumptions allows exploration of new pathways of engagement. Recent dryland case studies highlight some of the difficulties in operationalising these ideas:

- *Innovation for whom?* Index-Based Livestock Insurance (IBLI) featured in Daud and Mbiyu’s article in the last DLCI journal¹⁴ is suggested as an “innovative approach... aimed at cushioning livestock owners from drought”. Globally, insurance cannot claim to be a novel concept, however few would argue that the IBLI system was not innovative to livestock owners of Northern Kenya. It is clear that innovation need not necessarily be ‘new to world’ (in the language
- of innovation studies) but can be ‘new to user or community’.
- *Innovation or invention?* Often used synonymously, it is worthwhile unpacking just what is meant when these terms are encountered. In many cases invention is considered to be the act of creation, whereas innovation may variously be the application of an invention or the process by which ideas are adapted and evolved.

Box 1: Challenges of locating local innovation

“As a field extensionist working with the Ministry of Agriculture, I started to look for farmers with interesting innovations. This was not easy at first, even though I know the area where I work quite well. Not everybody understands what “innovation” means, so I had to start by asking for someone who is doing “something new”. Some farmers referred to something they had tried once, and which was not visible anymore. And many farmers found it difficult to differentiate what they had tried and done on their own from what somebody had told them. But the process got easier over time and, after a couple of months, I had collected about 50 cases.”

“Farmers generally do not keep records, while it may be essential to consider input quantities, concentrations, or the energy or effort required for each innovation. And effective innovations dealing with a particular process, such as controlling a pest, are easily lost once the problem has been dealt with successfully. Farmers have very little time to spend talking with an outsider about what they do.”

Ruth Tagoe, from Wettinsha et. al 2008 p. 14

¹² Ely, A., et al., *Innovation politics post-Rio+20: hybrid pathways to sustainability?* Environment and Planning C: Government and Policy, 2013. 31: p. 1063 – 1081.

¹³ Scoones, I. and J. Thompson, *Beyond farmer first. Rural people’s knowledge, agricultural research and extension practice.* London, 1994.

¹⁴ Daud, A. and P. Mbiyu, *Index Based Livestock Insurance: The next steps and why government support is needed.* Resilience in the drylands of the Horn of Africa, DLCI, 2014(5): p. 21 - 23.

- *Incremental or radical?* When viewed as a process, innovation (or the outcomes of innovation) may be considered to have a rate—commonly termed as ‘incremental’ (slower) or ‘radical’ (faster). Some of the most notable innovations in dryland development have been leaps forward into uncharted ground such as the social and economic ‘sea-change’ resulting from increased mobile phone access.¹⁵ But a large proportion of innovations at grassroots level are incremental: changes and adaptations that arise from small experimental steps, albeit having profound impacts on resilience.
- *Focus and direction?* Community-level innovations may arise in response to problems unseen by development actors, or create answers that run counter to development goals. Rather than dismissing these innovations out-of-hand, organisations can instead start to ask questions: Where do innovators draw their knowledge from? How did they experiment? How do they distribute? Understanding these issues may help shape more ‘programme friendly’ innovations.
- *Power and value?* The history of drylands development is littered with failed attempts to impose external ideas and technologies. The process of co-creating innovations is dependent upon willingness from development agents to engage openly and fairly with the worldviews of the communities in which they work. Knowledge exchange is an intimate¹⁶ and relational act¹⁷ that requires time and trust, features that can run contrary to the timelines and evaluation criteria employed by donors and government.



Innovating need not be grand; repurposing USAID oil tins for a chicken coop. Photo credit: Alex Tasker.

2. Locating innovation and innovators

Once an organisation has clarified how it understands innovation, it can begin to take steps to locate it. This requires an opening up of ears, eyes and minds starting from within the organisation. Once field staff are trained in appropriate methodologies, activities for detecting innovation can begin. There are numerous approaches that may be taken; the section below provides a good overview of four methods adapted from the 2005 workshop ‘Promoting Farmer Innovation and Experimentation in Ethiopia’ (PROFIEET)¹⁸:

- *Observation:* One approach to uncovering innovations is a ‘learning walk’. These walks deliberately open a dialogue away from prescribed project aims to discuss new ways of doing things and can be completed at a variety of stages throughout the intervention.
- *Key informant guidance:* Consulting with local key informants as to who the ‘experts’ in the community are can often provide a starting point from which to identify households who are doing things differently.
- *‘Snowball’ interviews:* Local innovators draw on a range of knowledge sources in generating innovations; these may be explored by tracing networks of contacts in a step-wise fashion revealing sources and flows of new knowledge.
- *Innovation histories:* Innovations that have become important to local families can be examined to understand who is developing them and why.

These techniques describe ways of uncovering local innovators and innovations, but can overlook a second source of local innovativeness — partner field staff, local collaborators and contacts — who are often perfectly placed to understand the wider impacts of development interventions on local livelihoods. In many cases these field-level personnel themselves may well be innovating in order to achieve programme goals. These forms of

¹⁵ Shrum, W., et al., *Mobile phones and core network growth in Kenya: Strengthening weak ties*. Social Science Research, 2011. 40(2): p. 614-625.

¹⁶ Reid, W.V., et al., *Bridging Scales and Knowledge Systems: Linking Global Science and Local Knowledge in Assessments*. 2006, Washington DC: Millennium Ecosystem Assessment and Island Press.

¹⁷ Briggs, J., *The use of indigenous knowledge in development: problems and challenges*. Progress in Development Studies, 2005. 5(2): p. 99-114.

¹⁸ PROFIEET, *PROFIEET Tigray PID Workshop, 2–5 April 2005, Axum. Mekelle*. 2005.

innovation are key to understanding how and where development groups can engage with creation of new innovation, and are all too often overlooked.

3. Engaging with innovation/facilitating Innovation

Central to co-created innovation is the understanding that development actors need to engage with the *process* of innovation, not simply the *outcome*. In moving beyond the search for pre-formed 'solutions' (endo- or exogenous) development organisations may create instead a more enabling environment for co-created innovation; there are however a number of challenges. There may be no pre-identifiable outcome at the project planning stage, which poses difficulties for monitoring and evaluation. The approach requires a high degree of individual and organisational self-awareness, time, and a commitment to organisational learning – a challenge for any project team, let alone one working in remote areas with limited resources.

Box 2:

Example of Innovation Evaluation Categories

- Originality
- Usefulness
- Adaptability
- Problem solved
- Replicability
- Acceptability
- Technical viability
- Economic viability
- Gender responsiveness
- Research potential
- Affordability

(Wettinsha *et. al* 2008 p.12-13)

There are a number of tools available to organisations wishing to follow this path; one such approach is the Participatory Innovation Development (PID) framework developed and employed by the PROLINNOVA (PRomoting Local INNOVAtion) network.¹⁹ PID differs from a number of rural development innovation frameworks by bringing together multiple actors involved in innovation for the primary purpose of development, rather than research. The capacities generated from PID may compliment more formal agricultural research and development through enabling context-specific and sustainability innovations at a local level. The PID approach follows the process of identification above but then moves to evaluate the innovations found on a range of criteria (examples of criteria are given in Figure 2).

4. Closing the loop: Learning and evolving

One of the aims of co-created innovation is to promote further innovative activity between actors. It is therefore imperative to maximise learning and impact from the process. Methods for achieving this can include:

1. *Celebrating innovators*: In order to promote openness and collaboration it is necessary to break down traditional ideas of power and role in

development. One of the key ways in which this can be done is to celebrate innovators as partners in the process. Excellent examples of this include poster campaigns promoting local innovations in tick control in Uganda, and newspaper articles on wasp traps in Nepal.²⁰

2. *Sharing innovations*: The broadcasting of local innovators and innovations can have a valuable role in increasing the reach of an innovation, but also in promoting experimentation and innovation in similar communities. A number of media approaches have been trialled including cataloguing, posters, magazines, radio and other forums. These outlets have achieved varied success, but in all cases great care should be taken to consider issues of ownership and intellectual property.
3. *Recognising limitations*: Co-created innovation is a process, and as such requires reflection and appraisal. For example one of the most commonly encountered obstructions in local innovation programming is gaining access to female-led innovation. Women often do not consider themselves innovators, or may have their innovations hijacked by men. In many cases it is worthwhile investing specific time and effort to engage with those sections of the community with the quietest voices.

Conclusion

By engaging with innovation processes, development actors can start to move away from being harvesters of innovations, moving instead towards an active role in the creation of new ideas and knowledge. In reality, innovation has been occurring in dryland communities for as long as those communities have existed; the interventions of development actors may be considered as yet another threat or opportunity. What is novel is for development groups to recognise their impact in shaping innovation trajectories and to engage positively with this process. This is not to suggest that the process of knowledge co-creation is straightforward; development groups face internal and external pressures from all sides to provide services at a time where resources are increasingly stretched. It may seem that dedicating additional time and human resources to building the necessary trust and contacts is a major challenge, but in all likelihood the intimate relationships required already exist to varying degrees between field staff and local partners. The big leap comes when the rest of the organisation recognises and supports these valuable networks and begins to open up the possibility of shaping the future of innovative resilience programming together.

20 Wettasinha, C., M. Wongschowski, and A. Waters-Bayer, *Recognising local innovation: experiences of PROLINNOVA partners. A publication in the series on Promoting Local Innovation*. 2008, IIRR/Leusden: PROLINNOVA International Secretariat.

19 <http://www.prolinnova.net/>

The production and uptake of humanitarian research¹

By Sophie Nampewa, Karen Rono and Jason Braganza,
Development Initiatives Africa Hub²

In 2015 the United Kingdom's Department for International Development (DFID) commissioned Development Initiatives (DI) Africa Hub to undertake a study on humanitarian evidence systems in Kenya, Uganda and the East African region, to analyse the production and uptake of humanitarian research and evaluations. This article highlights its key findings.

Evidence has an increasingly active role to play in efforts to improve responses to humanitarian crises at a regional and country level. However, very little is known about the in-country or regional research and evidence landscape in which the humanitarian programmes operate. For example, who are the commissioners and producers of research and evidence in the humanitarian sector? How does research and evidence enter policy and practitioner decision-making spaces and forums? Who are the brokers and facilitators of research and evidence in the humanitarian sector? How do

humanitarian policy-makers and practitioners interpret

¹ DI incorporated quantitative and qualitative research methods, such as key informant interviews, literature sampling and financial analysis. 69 respondents took part in the key informant interview, 69 in the online survey and 33 readily available publications were literature reviewed. In addition to this, 6 focus group discussions were held. These span from the global, to regional and national areas of operation creating a balance and spread of ideas collected.

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and use research and evidence in decision-making?

Overall, Research and Evaluation (R&E) appears to have performed a limited strategic function within the humanitarian landscape in the East Africa region. The R&E system operates largely independently of host governments and local actors, at all levels, and tends to be driven by donors. In 2013, East African countries were among the top 20 recipients of humanitarian assistance, receiving a total of US\$ 1.97billion international humanitarian assistance, and South Sudan taking the biggest share.³ However, there are signs that this is changing, and responsibilities for delivering long term humanitarian response, based on R&E, may be shifting towards regional, national governments and local actors.⁴

The use of evidence in the East African region has also been affected by the limited extent to which national and local policy makers and practitioners engage with R&E outputs, their ability to act on the findings, and the limited linkages between research, policy and practice in communities. This is further affected by the lack of a common and shared research agenda for humanitarian R&E in the region, combined with little shared analysis of data and evidence collected over the long term on

³ Development Initiatives, 2015, Global Humanitarian Assistance Report, 2015, see http://www.baag.org.uk/sites/www.baag.org.uk/files/resources/attachments/GHA-Report-2015_Online.pdf

⁴ The IDDRISI framework was agreed by IGAD members in 2011. The UN Office for the Coordination of Humanitarian Affairs streamlined its presence into a regional office to coordinate humanitarian affairs and withdrew country offices from Uganda in 2010 and from Kenya in 2012.

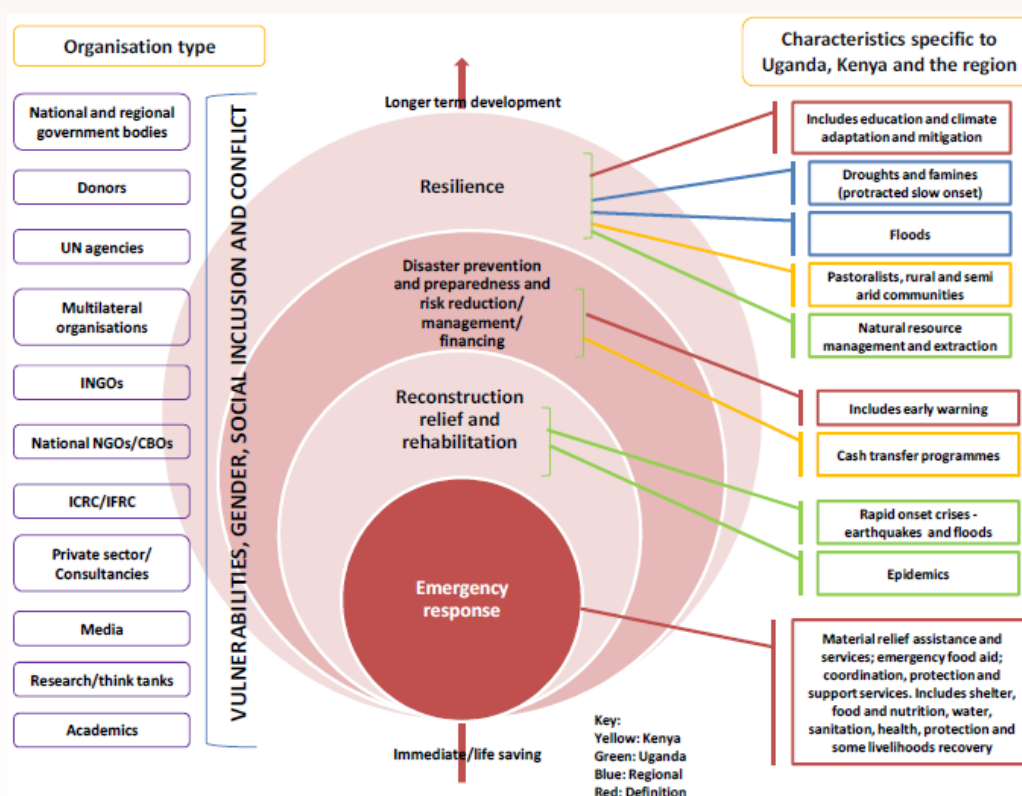


Figure 1: Scope of humanitarian action Source: Development Initiatives, 2015

cyclical causes and responses to repeated humanitarian crises – see Figure 1. This then limits the potential for a strategic and future focused body of R&E work. Based on these findings, DI has made recommendations on the linkages that could be adopted and the interventions that could strengthen national and regional research capacity on both the user and producer side.

The challenges to the production and uptake of humanitarian research in East Africa

1. The **governance and coordination of R&E** in the humanitarian sector in East Africa is almost non-existent, with multiple *ad hoc*, small, short-term initiatives performed by multiple actors (see Figure 2). These do not seem to contribute to a widely recognised body of learning or innovation that is owned or led within the region. Innovations such as the satellite-supported livestock insurance and cash transfers developed in this region 5 years ago came from donors, research institutions and business. This has contributed to the limited ownership of this research, especially by government institutions, limiting the coordination and sustainability of R&E in this area. The limited coordination in some cases also leads to duplication and questionable value added.

activities in turn perpetuate continued humanitarian action or research activities. Despite all the evidence produced, much of the output from humanitarian actors is not publicly available, even across the Horn of Africa, for example the crisis in South Sudan⁵.

3. Alongside this are **a few longer-term R&E activities**, usually funded by centrally held donor budgets specifically for research, amounting to US\$62million for all research activities in Kenya and Uganda in 2013. Relatively few political economy, longitudinal/retrospective analyses of crises and patterns of humanitarian response, or cost-effectiveness studies are produced. Where they exist, United States and European research producers, based outside the region, tend to dominate the longer-term humanitarian work streams. They generally produce better quality R&E outputs, but in isolation from the humanitarian implementing community.

4. Application of ethical or technical protocols/research standards is limited, with no clear **common standards** for research and evaluations in this area⁶, with limited reliable and quality longitudinal data sets, and no common indicators for resilience. This prevents comparisons across R&E outputs and aggregation of findings, limits enquiry and thus limits learning to improve humanitarian action.



Figure 2: Some of the producers and consumers of humanitarian evidence in East Africa

Source: Development Initiatives, 2015

2. **R&E in the humanitarian sector is driven** by the need for evidence for outcomes and impact of specific interventions. This is usually within a relatively short time frame, and as a requirement by head offices of donor governments, the UN and International Non-Governmental Organisations (INGOs) in order to justify funding provided and in some instances to secure further funding. These internal monitoring and evaluation

5. **Poor quality of humanitarian R&E in the region**⁷, with only about one eighth of all studies on East Africa peer reviewed (according to R4D, the online portal with latest

⁵ http://www.igad.int/index.php?option=com_content&view=article&id=1151:igad-and-partners-mobilize-funds-for-south-sudan-crisis&catid=1:latest-news&Itemid=150

⁶ The most common standards are in the scientific area where most of the humanitarian research done doesn't fall.

information about research funded by DFID), compared to one quarter of all East Asian studies. Much is self-published, based on small samples and short time frames, and with limited methodological diversity or rigour. The choice of methodology is only explained in half of the studies sampled, and limitations are pointed out in one third. Less than half of sampled studies included some kind of social inclusion, vulnerability or gender analysis, and found no highly critical evaluations.

6. There is **very limited involvement of local actors in R&E activities** beyond enumeration functions, which is a source of considerable frustration for NGOs and local researchers. Poor performing local research institutions, including universities, and weak analytical skills among researchers were seen by donors and research institutions as key barriers to joint R&E activities. Whilst local actors acknowledged the need to build analytical skills, they valued acquired practical experience over training programmes, or qualifications, as a way of improving their skills. They also wanted research syntheses and systematic reviews of research tools and standards.

7. **More is written than read in the region.** The majority of respondents (51% online, 68% of Key Informant Interviews (KIIs)) based in East Africa described themselves as both producing and consuming evidence; host government respondents tended to describe themselves as mainly consumers. There is a lot of humanitarian R&E done but most of it within their organisations or commissioned by donors, most likely centred on situation updates and evidence of effectiveness. This research does not speak to the information or data needs of a number of humanitarian actors. For example two thirds of respondents consequently wanted data and data-gathering tools, and examples of successful programme approaches and impact, while one third expressed varied, deeper and broader interests in understanding the root causes of humanitarian crises, and in issues such as conflict, corruption, climate change and urbanisation. This has led to the limited use of the research undertaken.

8. **Lack of time, information being too scattered,** and lack of summaries were the main reasons for not reading R&E studies. The second biggest reason was lack of trust in the quality and credibility of the research. Barriers to research uptake exist at two levels: around the ability of decision makers to both value and understand research outputs (and the consequent responsibility imposed on producers to better target and package their outputs); and the limited engagement and trust between humanitarian researchers and government policy makers to date.

9. Aside from GIS and satellite data gathering/mapping, and a few mobile text response mechanisms, the study found remarkably **little evidence on the use of digital data in communications** driving change in humanitarian response.⁸

Opportunities and recommendations to strengthen production and uptake of quality humanitarian R&E

1. Improve coordination and build host government ownership of humanitarian R&E

- Support the establishment of an online R&E coordination hub and clearing house at country level within existing coordination mechanisms in government (e.g. the Ending Drought Emergencies Secretariat within the National Drought Management Authority in Kenya); underpinned by an online R&E search engine and mapping facility (such as data.hdx.rwllabs.org). Donors could introduce incentives to encourage checking with the clearinghouse before planning R&E activities and to ensure that research is published there. This would avoid duplication of research in the sector and support government investment in upgrading and making use of longitudinal data sets.
- Conduct outreach with local media on coverage of humanitarian programmes, encouraging local journalists to draw on and include humanitarian stories and evidence as regular features in the media news.
- Commission political economy studies by East African institutions on how research is conducted, and the impacts of research processes and outputs on both citizen/beneficiary empowerment and the accountability of national actors; plus cost effectiveness reviews for host government interest.

2. Improve the quality of research

- Encourage a process whereby government and non-government actors professionalise the management of R&E by developing a basic, voluntary protocol for the conduct and management of humanitarian R&E. This should draw on ethical social science research principles⁹ and include requirements to co-fund, involve local researchers, have privacy and data protection for beneficiaries, and review systems for the end-users to respond to findings post-publication. For better coordination and tracking of the R&E this should be driven by the government.
- Suggest that the Inter Agency Working Group (IAWG) and experienced humanitarian actors develop a basic R&E methodological protocol or checklist to improve the quality of R&E, with a roll out plan with implementing agencies.
- Encourage ownership and participation—with academics, donors and governments agreeing and using

7 Raised by three quarters of the respondents that took part in the study (and 61% of regional respondents).

8 The 2025 communicator: The future of digital communications and humanitarian response Dr. Sharath Srinivasan www.politicsinspires.org.

9 Drawing on the Economic and Social Research Council (ESRC) framework for research ethics 2006 for example

an initial basic set of common indicators for assessing outcomes in resilience, which can be revised after a period of time.

- In addition, government should set up a clearinghouse with clear requirements for all evaluations; including those that it is critical are published at the national and/or regional level to increase uptake and use of evaluation reports and action by decision makers.

3. *Incentivise local content in research activities*

- An incentive and accreditation scheme should be established by the respective governments/ local institutions, to encourage registration of local researchers and their accreditation. This will allow them to get early career experience and recognition. Key actors such as government, UN and IAWG member agencies should be encouraged to support it.

- Build a requirement into all R&E tenders that stipulates providers should include local researchers during the design and analysis stages of the work, and allow sufficient funding within tenders for local partner organisation capacity building and skills development.

4. *Improve research uptake and strengthen R&E culture and understanding at local level*

- Encourage a consensus-building exercise on common barriers to research uptake, building on findings of this study and others.¹⁰ Support this with the application of tools to evaluate willingness and capacity to access, understand, and use research evidence, amongst a variety of humanitarian actors—including government.

- Establish commissioning and financing procedures that require evidence of links between producer and end user demand in R&E plans, and complement this with training on communication strategies for research aimed at better targeting of end users and complementary social media strategies.

- Incentivise the use of crowd-sourcing mechanisms to collect local opinions on what research is needed. - Share findings with media, government and the local tech entrepreneur communities in Nairobi and Kampala, and identify local funders to support areas of research that meet clearly identified needs. This should spread across both urban and rural areas.

- Support more online discussion forums and live learning at short, hospitable after-work forums (with live streaming), where practitioners from different organisations can share experience and learn about useful programming tools and success stories—with live radio coverage of these events.

- Establish information exchange and research presentations between humanitarian actors (such as the

IAWG) and climate change scientists, medical-veterinary epidemiologists and tech entrepreneurs to enrich the quality and relevance of humanitarian R&E.

Conclusions

Going forward, there is a need for a locally owned, strategically coherent research agenda that focuses on longer term systematic change in resilience and links risk and vulnerability to issues such as energy, water, transport infrastructure, digital communications, climate change adaptation and human security.¹¹ Standards and protocols for producing humanitarian evidence need to be put in place preferably by the respective governments, together with a clearing house for the research produced for research coordination and lower duplication, using different networks and communications available and creating new partnerships for longer term and joint research in this area.

Putting emphasis on the importance of research and evaluations in the humanitarian area is vital, focusing on the quality, and credibility. Collaboration between the evaluators and users is needed, with clear channels of collaboration to increase both use and effectiveness of this research. The role of champions and importance of leadership in undertaking research should also be emphasized, working together with the locals to increase participation and ownership of this research.

¹⁰ For example the SECURE programme, which is working on evidence-based health policy; DRUSSA, which is looking at higher education policy; and experts in the region such as Professor Nelson Ssengankambo in Uganda.

¹¹ Regional Integration Strategy Paper 2011–2015, African Development Bank September 2011; and *persobs* Ben Ramalingam ODI, KII 11 March 2015.

Hydroponic Fodder Technology – the potential and the challenges

By Prof A. K. Kahi and Ms Sophie Miyumo, Egerton University

Hydroponic technology is generating significant interest in Kenya due to its potential to grow highly nutritious livestock fodder within a very short time frame. The system requires significant and costly inputs and the financial viability, in dryland areas is likely to be limited to supplementary feed in peri-urban, where water and electricity are easily available and the high tech and sensitive systems can be adequately controlled. More research and cost benefit analysis should be done before investments are made in pilot projects including cost benefit comparisons with increasing the health or preventing the degradation of the natural rangelands. This article explains some of the principles and challenges of growing fodder hydroponically from pilots so far in non-dryland areas.

The basics of hydroponic fodder

Hydroponic technology works on the principle of providing cereal grains with the necessary moisture and nutrients to enable germination and plant growth in absence of a solid growing medium. The grains germinate

and sprout to produce 6'' to 8'' of vegetative green shoot, with interwoven roots, within 6 to 7 days. The fodder sprout mat is highly nutritious and livestock eat the entire mat, roots and green growth - ensuring no wastage of feed. The science behind the technology involves a range of chemical and structural changes that take place within the cereal grain through the activation of enzymes, leading to hydrolysis of protein, carbohydrates and lipids into their simpler components.¹ The process increases the concentrations of amino acids, soluble sugars and fatty acids within the grain and resulting shoot.²

Using hydroponics, 600kg of maize fodder can be produced in an area of 50m² within a six-day period - the same amount that would be produced over 1ha of land for a period of 2 to 3 months depending on the season under conventional fodder systems.³ The technology used is independent of climatic conditions and hence offers the potential of year-round fodder supply for livestock. To produce 1kg of fodder in 6 days, about 1.5 litres of

1 Dung, D. D., Godwin, I. R., & Nolan, J. V. (2010(a)). Nutrient content and in sacco degradation of hydroponic barley sprouts grown using nutrient solution or tap water. *Journal of Animal and Veterinary Advances*, 9 (18), 2432-2436.

2 Chavan, J., & Kadam, S. S. (1989). Nutritional improvement of cereals by sprouting. *Critical Reviews in Food Science and Nutrition*, 28 (5), 401-437.

3 Naik, P. K., Dhuri, R. B., & Singh, N. P. (2011). *Technology for production and feeding of hydroponics green fodder*. Goa: ICAR Research



Hydroponic fodder production. Credit: Peter Chege - <http://www.hydroponicskenya.com>

water is needed if recycled (3 litres if the water is not recycled). By contrast, using soil to produce 1kg of fresh fodder will require about 30 litres.⁴ There is zero leaching of nutrients in the growth and production of the fodder, making nutrient use significantly more efficient.⁵ The yield and quality of the fodder is influenced by a number of factors including:

- Grain quality, variety and treatments;
- Growing environment – temperature, humidity and incidence of mould;
- Management of the system – water quality and pH, soaking time, nutrient supply, depth and density of grain in trays, and growth duration.⁶

A range of cereals can be utilised for fodder production, including barley, oats, sorghum, wheat and maize (suitable for all type of livestock). Cereals are grown in preference to grasses due to their high protein content, and barley is often the grain of choice due to the following reasons:

- Rich in vitamins and minerals, enzymes and growth factors;
- Its 80% to 85% digestibility;
- High in crude protein content (compared to the above mentioned grains);
- High in moisture content which helps to prevent occurrence of colic in calves (between 1-6 months) and mature cattle;
- Has the ability to grow to a height of 4'' by the 4th day of production reaching a maximum of 8'' on the 6th day with 25% increase in yield.

The challenges with hydroponic systems

1. The need for stable conditions: Hydroponic fodder production requires that environmental conditions be maintained at certain levels to ensure optimum productivity:

- Temperature should be maintained within the range of 20°C to 24°C to ensure a warm microclimate for effective germination process.
- Humidity should be maintained at 90% within the hydroponic unit.
- Ventilation is important to ensure free circulation of air by either installing a fan, air conditioner or consider having openings like windows covered with insect-net to protect from dust and pests.
- Lighting is essential for the last three days of grains within the hydroponic unit purposely for photosynthesis. It may be natural or artificial depending on the type of hydroponic system, however, this will influence fodder yield given the difference in light duration between the two sources. Sunlight should not be excessive since it burns sprouts on the upper trays.

2. High tech=high cost, or low cost options: The hydroponic unit can be high-tech or lower-cost depending on the resource availability. Generally, hydroponic units consist of two areas: a growing area where fodder is grown, and a pump area where grain is prepared and water tank and pumps are located—with the growing area covering a larger portion.⁷ The high-tech automated hydroponic system has a control unit that regulates irrigation, temperature and light automatically through sensors. The modified lower cost hydroponic system is mostly built using local materials, such timber/bamboo, to put up the structure and shelves; opaque and translucent roofing to manage light conditions; insect/shade-nets for ventilation purposes; a concrete floor to help control temperature conditions, a knapsack sprayer for manual irrigation; and plastic food classified trays for use as trays for sowing grains. The size of the structure is dependent on an individual's fodder production objective and can be used by small-scale producers.

3. Fodder production requires disease free grains: Grains selected must be without overgrowths, free of plaques and diseases, and must not previously have been exposed to insecticides or fungicides. Rinsing with water pours off the chaff, but this must be followed by disinfection with a chlorine solution (25ml of sodium hypochlorite to 100 litres of water) for 1-2 hours. After rinsing several times, the grains are then soaked in clean water at temperatures of between 20°C and 25°C for 24 hours to promote water uptake and allow pre-germination to take place.

4. Irrigation required every four hours: The grains are sown on trays at a seed rate of 6-8 kg/m², spread evenly to ensure the depth does not exceed 3cm and to provide enough spacing for each grain to sprout hence. The trays are transferred to the hydroponic unit and germination of seeds begins at this point. Irrigation is required from day one at intervals of 4 hours in every 24 hours, with each irrigation period lasting for 30 seconds (automated watering system) or 1 minute (manual watering system). This regime serves as a guide for those using manual irrigation system to ensure the sprouts receive adequate water and humid conditions within the unit to maintain high humidity conditions.

5. The major challenge - mould within hydroponic units: A mouldy sprout is the most challenging factor in hydroponic fodder production. The moulds mostly come about due to the warm and moist environment created within the hydroponic unit providing suitable conditions for fungi to flourish. Contributing factors include poor hygiene conditions of the hydroponic unit and trays, and poor quality seeds. There is still a need to understand how mould gradually develops in order to strategize on control measures, especially for commercial fodder production.

⁴ Naik, P. K., Swain, B. K., & Singh, N. P. (2015). Production and utilization of hydroponics fodder. *Indian Journal of Animal Nutrition*, 32 (1), 1-9.

⁵ New Zealand Merino Company (2011). *Hydroponic fodder production: An analysis of the practical and commercial opportunity*.

⁶ Sneath, R., & McIntosh, F. (2003). *Review of hydroponic fodder production for beef cattle*. North Sydney; Australia: Meat and Livestock Australia Limited.

⁷ Carruthers, S. (2003). *Green Feed - Livestock Fodder Shed*. Retrieved from <http://owll.massey.ac.nz/referencing/apa-interactive.php>.

Mould can be controlled through proper hygiene within the unit: by ensuring that the unit and the trays are cleaned following each harvest of the sprouts, prior to sowing of new seeds, with chlorine based cleaning solutions for disinfection purposes. Pre-treatment of seed (disinfection) using a sterilising agent such as diluted chlorine solution is also important. In addition, ensure proper ventilation is needed to allow free flow of air to reduce moisture in the air.

Feeding hydroponic fodder to livestock – a supplement not a replacement

Most reports on hydroponics technology indicate that the sprouts improve production performance, especially milk production in cattle, and growth in beef cattle and pigs. However, from the scientific research conflicting results have been reported. Tudor *et al*⁸ suggest that the performance improvements observed are as a result of the fodder supplement providing limited nutrients or improving feed use efficiency. A report by the New

Zealand Merino Company⁹ suggests that for an accurate assessment to be made on the potential value of hydroponic fodder to animal response, research should be conducted on a specific species basis under the conditions that the fodder is utilised; and this should be compared with a control experiment of the alternative feeding regime in that system. Hydroponic fodder should also only be used as a protein supplement, in addition to roughages and concentrates in livestock diets, and not as a replacement.

A description of how hydroponic fodder should be incorporated into diets of dairy cattle and poultry is given below, but research on the effect of fodder on the performance on these different classes of livestock is still underway.

Cattle: Since hydroponics is highly succulent, it provides 65% of the total amount of feed required by the cow per day, while 35% is obtained from hay, silage, concentrates and mineral licks. Based on the CP content of hydroponic barley, which ranges from 16-24%⁹, eight (8) kg of the fodder is used to replace 2.5kg of concentrate mixture, while 3kg is used to replace 1kg of Lucerne grass. Using this information, the table below provides a sample of how hydroponic barley would be incorporated in the feed regime of a dairy cow.

Table 1: Comparative feeding of a dairy cow of 300-350 kgs, producing an average of 25 litres per day for 300 days. The animals are provided with feeds equivalent to 3% of their body weights/day on dry matter basis; 12kgs dry matter/day supplied by 34kg of feed

Hydroponic Fodder feeding			Conventional Feeding		
Ration	Unit	Per cow per day	Ration	Unit	Per cow per day
Rhodes Hay	Kg	2	Rhodes Hay	Kg	2
Silage	Kg	11	Silage	Kg	20
Concentrate	Kg	5	Concentrate	Kg	10
Hydroponic fodder	Kg	16	Lucerne	Kg	2
Mineral supplements	Kg	0.02	Mineral supplements	Kg	0.02

⁸ Tudor, G., Darcy, T., Smith, P., & Shallcross, F. (2003). *The intake and liveweight change of droughtmaster steers fed hydroponically grown, young sprouted barley fodder (Autograss)*. Western Australia: Department of Agriculture ..

⁹ The New Zealand Merino Company (2011) *ibid*

Poultry: Generally, for different classes of poultry, hydroponic fodder and concentrates in the ratio of 4:1 is given.¹⁰ In a case of 100 birds in lay, 8kg of hydroponic fodder will be required in addition to 2kg of concentrates. Using the information, the table below shows how hydroponic fodder would be incorporated into poultry diets.

Table 2: Comparative feeding of 100 birds (layers) from day 0 to 52 week

Hydroponic feeding (HF)		Conventional feeding	
Feed	Bags (50kg)	Feed	Bags (50kg)
Chick mash (0-7wks)	5bags	Chick mash (0-7 wks)	5
Growers mash + HF (8-19wks)	4bags + 806kg	Growers mash (8-19 wks)	20
Layers mash + HF (20-52wks)	11bags + 2150kg	Layers mash (20-52wks)	54

Conclusion

The challenges of using hydroponic fodder production represent a major stumbling block for its widespread uptake in the ASALs, where the prerequisites of stable environmental conditions, electricity, water supply and the capacity to manage the high tech aspects of the process are difficult to find. Although an increasing amount of research is being done on hydroponic fodder, in Kenya and elsewhere, further substantial research will be necessary to test its applicability for arid areas, particularly around cost benefit analysis. Although it is of great interest in ASAL areas as a source of supplementary feed, it requires a great deal more scientific testing as to its potential and the risks involved in ASALs under low-cost systems. Many organisations are already promoting the concept for the ASALs, but little scientific evaluation has been done. Further piloting and experience testing is urgently needed.

¹⁰ Peer D. J., & Leeson, S. (1985). Feeding value of hydroponically sprouted barley for poultry and pigs. *Animal Feed Science and Technology*, 13 (3), 183-190

Building sustainable structures to overcome the deep-rooted conflicts in the pastoralist areas of Kenya

By the Pastoralist Parliamentary Group (PPG), Kenya

Kenya's Pastoralist Parliamentary Group (PPG) is prioritising the need to address the persistent and protracted insecurity that is impacting progress and resilience in Kenya's pastoralist areas. This article is based on content from the PPG's Strategic Plan of 2014-17¹ and its November 2015 Reflection Report 'An Alternative Approach to Ending Conflicts in Pastoral Areas of Kenya' produced by the PPG's Executive Committee.

Kenya's Pastoralist Parliamentary Group's focus on security

The prospects for pastoralists changed with the adoption of the Constitution of Kenya in 2010. The Constitution formally recognises pastoralists as marginalised communities and puts in place measures to address this, including the Equalisation Fund and other obligations for affirmative action (Article 56). The Bill of Rights elaborates the rights and freedoms to which pastoralists are entitled, in common with all other citizens. And by introducing devolved governance, the Constitution expands the space for regions historically marginalised within the nation to shape their own future in ways their people think best.

While these changes in the policy and legislative agenda have created new opportunities for pastoralists, their provisions are very far from being realised. Moreover, the mind-sets of those in charge of national development have not fundamentally changed. For example, the ineffectual response of the security forces to the persistent and pressing challenge of insecurity in pastoralist areas demonstrates yet again that there are issues of great injustices that need to be addressed as soon as possible. The challenge is how to translate constitutional and policy reforms into tangible benefits for pastoralists, and to challenge the negative attitudes and double standards which continue to impede progress.

Kenya's Pastoralist Parliamentary Group (PPG) was formed in 1998 with the purpose of mainstreaming pastoralists' agenda within the national political process. Membership is open to all pastoralist MPs and Senators, regardless of ethnicity or party affiliations. During its first meeting under the 11th Parliament, held in Mombasa on 7-8 June 2013, the PPG approved various measures to reorganise itself in light of the changing nature of governance in Kenya. New officials, a permanent Secretariat, a number of sub-committees and a close partnership with the political leadership in pastoralist counties were all aimed

at strengthening the PPG's capacity to take forward its priorities.

At the Mombasa meeting in June 2013 a strategic plan was developed to guide the PPG's work until the end of the 11th Parliament. The PPG's first strategic objective is to eliminate inter-communal conflict in pastoralist areas. Specific activities include:

- Ensure the effective deployment of the security forces in pastoralist areas and advocate a new paradigm for the security and justice systems.
- Develop and/or enforce punitive legislation against the perpetrators of conflict and cattle rustling.
- Review the legislation that regulates the acquisition and possession of small arms and light weapons.
- Develop a common strategy to address insecurity and conflict and a Code of Conduct and self-regulatory mechanism.
- Develop a livelihoods and development advocacy strategy to enhance security, with a particular focus on pastoralist youth.

In March 2015 the PPG organised a meeting with governors and speakers to launch the Pastoral Leadership Forum (PLF), which would work with the PPG to lobby on pro-pastoral policies at both national and county level. The PLF was duly elected and linked to the PPG to enhance its objectives given the new dispensation. The PLF Executive Committee consists of 14 members including 6 MPs, 3 Senators, 2 Speakers of County Assemblies and 3 Governors, and meet annually at a Pastoral Leadership Summit.

An Alternative Approach to Ending Conflicts in Pastoral Areas of Kenya

On January 7th 2015 a PPG forum was convened by the leaders from North Rift and Upper Eastern together with the Cabinet Secretary of the 'Ministry of Interior and Coordination of National Government'. The forum was held at Boma Hotel, Nairobi. During the meeting the leaders reiterated that peace and security is a prerequisite for socio economic development of the people of Kenya, and in order to promote public safety and security in the affected regions there was a need for both individual and collective responsibility. The Executive Committee for the PPG has subsequently produced a reflection report that identifies their critical observations on why insecurity is not being resolved in the pastoralist regions, and provides a number of new recommendations on how to address those challenges. The key elements of the report are highlighted below:

¹ The PPG strategic plan 2013-17 is available at <http://www.dlci-hoa.org/?p=4244>

Sustainable structures needed for engaging with deep-rooted conflicts

Like in many African States, conflict resolution has become more complex in recent times—many conflicts take the form of internal factional and civil strife, though often with very serious repercussions. The pastoralist region of Kenya has been the arena of inter-clan conflicts of an often-protracted nature since the 1990s. This region comprises the counties located in the Northern, North Eastern and upper eastern Kenya. Since 1998 there have been more than ten notable community peace agreements that have been facilitated towards the reduction of conflicts in the region. The region has continuously experienced a relapse of inter clan clashes, both intra and inter county in nature, despite the numerous efforts which have been made by both the state and other actors. This scenario calls for the various stakeholders to focus on the importance of building sustainable structures, which will determine the role of domestic political actors to tackle the deep-rooted conflicts and respond to new and emerging conflict dynamics.

Factors perpetuating the conflicts

The nature of the conflicts in the region are characterised by a number of features that partially explain the high levels of inter clan tension and violence. Firstly, geographical factors explain the low mobility and inaccessibility leading to insecurity and underdevelopment. The second factor is the clan rivalry, cultural identity and fight for supremacy; as manifested in competition based on clan alignments for access to resources, political power, employment opportunities and education in the region. The third factor is connected to the availability and the proliferation of small arms and light weapons. This situation has been brought about by the proximity of the region to the volatile borders of Sudan, Somalia and Ethiopia. Fourthly, various political opportunities and structures have facilitated large social mobilisation in the society. Politicians have played a key role in inciting people against each other for their selfish political interests and even catalysing disputes over administrative and political boundaries, thus exacerbating clan animosity.

Challenges to peace

Peace building has had a low success rate despite the numerous efforts undertaken by states and non-state actors in dealing with conflict issues in the pastoralist cluster. Even where the root causes of the conflicts were identified and analysed, and remedial actions taken their low success rate appears to due to:

- Vastness of the areas compounded by harsh terrain.
- Resourcing/budgeting issues.
- Low police-public ratio.
- High levels of illiteracy.
- Poor infrastructure and communication networks.
- Poorly policed porous borders.
- Proliferation of small arms and light weapons.
- Political interference/inconsistent layers of power.
- Lack of commitment to the resolutions and declarations.
- Poverty.

The PPG committee's critical observations

1. The challenge of insecurity dynamics in the region

The lack of firm guarantees for their security has meant some ethnic groups have undertaken measures to ensure their own protection including through community armament. The situation exacerbates fear and mistrust among local clans who opt to use force during retaliatory incidents. The proliferation of small arms and light weapons in the region greatly challenges the implementation of community declarations due to fear of being attacked. The disarmament exercises in the region have been selective in nature and have not been targeting all the communities.

2. The conflicting roles between national and county governments

A relational conflict exists between the two levels of government, which is an obstacle to the realisation of peace in the region. There is a need for both levels of government to establish a common position for effective engagement and a coordinated response in dealing with

Table 1: Changing types of conflict in pastoralist areas

Conventional	Contemporary
<ul style="list-style-type: none"> ▪ Traditional livestock rustling ▪ Revenge/ retaliatory attacks ▪ Competition over scarce resources (pasture and water) 	<ul style="list-style-type: none"> • Elite competition for political leadership • Commercialisation of livestock rustling • Disputes over boundaries (intra and inter county) • Employment and contract disparities • Conflicts over extractive resources

emerging conflict related challenges. Also emphasised is the critical importance of sharing responsibility through mutual cooperation, consultation, coordination and collaboration.

3. The role of political factors

The trends and dynamics of inter-communal conflicts illustrate their protracted nature. Among the factors contributing to this scenario is the role of political factors in determining the onset, duration and intensity of the conflicts. Structural conflict issues in the region continue to be influenced by politics (with the political means observed for influencing the conflict in the region being mobilisation and incitement through hate). The success of political entrepreneurs in mobilising clans/ethnic groups into violent conflict is largely dependent on the strength/weakness of the existing state institutions. The implementation of community peace declarations continues to be significantly challenged by political agendas where they do not fit into leaders' political objectives and ideology.

4. The question of boundaries

The creation of the new political and administrative boundaries has been a major cause of the disputes. The formation of new districts, divisions, locations and sub-locations has profound implications on the livelihood patterns of grazing movements between the communities. In addition, overlaps between communities and administrative and electoral boundaries have aggravated antagonisms. The administrative systems have been characterised by insufficient capacity thus raising further tensions between the communities, with the new boundaries perceived by many as being the exclusive homelands of specific ethnic groups.

5. Resource factors

The resource question has continuously shaped inter communal conflicts in the region, although the conflicts are not largely about *scarce* resources but are now about defining the *access* to resources. Political leadership is perceived as a guarantee to the access of developmental funds, prompting the desire by local leaders to form tribal political alliances. Also connected is the culture of impunity propagated by the politicians who use double standards in resolving conflict issues in the region. Conventional resource-based conflicts connected to pastoral mobility also continuously affect community relations in the region.

6. Infrastructure and development challenges

For the realisation of sustainable peace and security in the counties, development issues must be addressed. This will promote effective governance and ensure that human needs are adequately met in order to improve human-economic development. Through peace, divided community relations can be restored. Such projects could entail livestock restocking, agro-pastoralist projects, and micro-credit facilities that enable groups to engage in income generating activities in specialised entrepreneurial areas, amongst other options. This will greatly raise the benefits of maintaining peace by providing employment for the youth.

7. Radicalisation and terror attacks

There is concern over the increased radicalisation of youth in the region, who are vulnerable to false ideological entitlements due to their age and poor economic status. There is a need for empowering and strengthening the welfare of the most vulnerable especially the youth, through education and employment schemes.



Community meeting in Turkana.
Photo credit Kelly Lynch/DLCI



Guns in trees (S. Omo) Photo credit Kelly Lynch/DLCI

8. Proliferation of Small Arms and Light Weapons (SALWs)

The proliferation of small arms and light weapons is a serious challenge for the implementation of community peace declarations in the region. Porous borders act as transit points for arms due to the proximity of the two regional conflict zones: the Horn of Africa and the eastern region, including northern Uganda. In addition, the high demand for arms among the pastoralist counties was attributed to inadequate security. The small arms proliferation is facilitated by the culture of violence in which the use of guns or other small arms is almost legitimised in the region.

9. Inadequate resources

Lack of resources for the implementation of community recommendations on peace directly affects the sustainability of the various settlements. The implementation of recommendations also takes longer and necessitates a wider scope of activities and institutions than tends to be anticipated, with insufficient resources allocated to initiatives. The resources available therefore largely determine the success or failure of a community declaration.

The PPG executive committee's recommendations

On past declarations: There is a need to understand the concepts relating to norms of pastoral peace, moral consensus, information and customary law, by all parties, in the process of implementing community declarations. This shall be accomplished by:

- Promoting trust and eliminating suspicion among the communities in conflict by exploiting existing opportunities for peace. Emphasis should include training the community on non-violence techniques or Alternative Dispute Resolutions (ADRs).
- The declarations should set out guidelines and deadlines for the implementation of future measures on a priority basis.
- The processes should include the diversity of actors and interests involved in the previous conflicts.
- The leaders must be committed to these resolutions.
- A code of conduct should be developed for politicians to promote high standards of behaviour and peer pressure where they are not observed.
- Investigating and prosecuting politicians who incite people to violence.

On insecurity dynamics: Efforts must be made to provide basic security and rebuild the social infrastructure. Economic and physical security is the foundation of successful declarations, and those issues must be dealt with effectively before the moral and cultural substance of the conflict can be successfully addressed.

On boundary issues: Resolve political and administrative boundary disputes and work with the communities and other stakeholders to ensure that a proper way of sharing resources is found.

On policy formulation: Promote appropriate legislation and implementation for peace building and conflict management in the region. This will help with the enforcement of the terms agreed upon by the parties to the conflict in the declarations, and also offer an effective guarantee that they will be enforced.

On the issue of police reservists: Reform the Kenya Police Reserve as an auxiliary of the Kenya Police. Redefine the criteria of recruitment and their mandate with a view to re-orienting their roles to include protection of human life, property and borders.

Strengthen Conflict Warning and Early Responses Mechanisms: The communities, through the existing peace structures, must be encouraged to actively participate in early warning. This will help mitigate the outbreak of conflicts. An operational mechanism should assist in mapping and monitoring conflict incidents for appropriate responses.

On underdevelopment: Support long-term development strategies in capacity building, investment in women, education, health, water services, roads, industries, market access for livestock and other services in a manner that is responsive to the delicate and volatile ethnic tensions and rivalries.

Transforming Mandera West communities: one challenge at a time

By Mohammed Sheikh, AFOSC¹

Mandera County in Kenya is synonymous with poverty and conflict, and ranks at the bottom of all national socio-economic indicators. A process of open dialogue, community reflection and repeated follow-up visits has helped encourage the communities in Mandera West to see how they themselves might reverse these trends, and work towards conflict resolution, consensus-building, self-help and development.

Risk profiling

Mandera West Constituency is a cross-border community in NE Kenya, with strong links to Ethiopia and Somalia, and located within a 'conflict-triangle.' It is one of six constituencies within Mandera County, which is run by a Governor and has six elected political representatives (one Member of Parliament and 5 Members of County Assembly). There are also informal leadership structures—such as a council of elders, sheikhs and Imams (religious leaders)—which have significant influence on the community. Given the harsh climate of the area (high temperatures, low rainfall), the main source of livelihood is pastoralism. Mandera is estimated to have a stock of 964,000 animals, with 80% of the households reliant on livestock-based livelihoods.² During periods of drought the price of livestock drops substantially, with market monitoring reports indicating prices decreasing by more than 50%. The area is regularly impacted by seasonal droughts and other related shocks. The community shares the natural resources required for their livelihood (pasture and water) with other communities across the borders, but this is often a source of conflict.

Action for Sustainable Change (AFOSC) is a community based organization based in Wajir and Mandera County, working to empower pastoralist communities at community level on disaster mitigation and prevention. Among the many issues that AFOSC aims to address within its overall strategy are high levels of illiteracy, poverty, poor health services, water shortages, poor sanitation and environmental degradation. As part of its DRR programme, AFOSC carries out community based surveys called 'views from the front line'. The organisation also develops, periodically updates, and widely disseminates risk maps to the general public and at risk communities, in appropriate formats. This easily understandable information on disaster risks and protection options enables people to take action to reduce risks and build up resilience. It is especially useful to citizens in high-risk areas, and the information incorporates relevant

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² Save the Children, Drought Assessment North Eastern Kenya, April 2011. http://www.fao.org/fileadmin/user_upload/drought/docs/SC%20Drought%20Assessment%20Report%20-%20Northern%20Eastern%20Kenya-%2011-24%20April%202011.pdf



Mandera West. Photo credit: AFOSC



indigenous knowledge/culture heritage details tailored to the different target audiences.

A ‘turning community views into action’ participatory action-research project was undertaken among local communities in Mandera West. It aimed at measuring levels of community resilience, identifying potential action and advocacy activities, and improving disaster management at the local level in this high conflict setting. Mandera West Community was selected for the project on the basis of the multiple risks that it faces, with conflict known to play a key role in increasing local vulnerabilities. During the risk profiling exercise, the majority of men identified insecurity as the biggest challenge in their community: When conflicts occur, it is the men who are expected to fight and protect their families, and a number of families have lost members in past conflicts. Illiteracy was also seen as a major contributing factor to the challenges men face as they cannot gain meaningful employment. Women also identified conflict as the major issue as they suffer the brunt of it. Drought and diseases were also of major concern to the women as they are the caretakers of children under 5 years who are particularly vulnerable. Women have to walk long distances to collect water and this impacts negatively on their health and their ability to take good care of their children. Conflict and drought were the two major challenges identified by the youth, with the lack of economic opportunities (unemployment) also seen as a major issue. The risk analysis for the elderly was quite similar to that of the men.

Overcoming risk

The first inhabitants of Duduble village in Mandera West were attracted by the water potential of the area, and started the village by digging simple earth dams by hand to harvest rainwater. More than 30 years later their descendants continue the practice, using simple hand-tools to rehabilitate their water pans. The AFOSC team found that the community have developed a dependency norm whereby ‘others’, in authority, would come with promises to transform the community but most of these promises would never materialise. Despite this, the community had become used to seeing ‘others’ as the ones who would address their concerns and continued to look forward to the next visits of officials with great expectation. The AFOSC team came to the village to challenge this pattern and to identify how the community could address its own problems.

Given the high risks the community faces, but also the need to change the thinking at the community level, the AFOSC team had to ensure that all stakeholders at the village level were involved in the process from the start and recognised the enormity of the challenge. Four meetings were held in the initial phase with the local elders, youth and women’s groups, community members, and the local village administrators. At times these were

held jointly, and at times separately, to better understand their interest, their influences and to gain their trust. The initial meetings were dominated by the groups narrating how they have previously made requests to the central and local authorities for support but without success. A number of reflection meetings and follow-up visits were then held to engage all the stakeholders in the community in the consultation process. The AFOSC team ensured that these local consultations were linked with the other stakeholders at the district and county level. As a result the community saw the value of this approach, with one member stating in a follow-up visit that he was: *‘...impressed by the consistency and insistence of the AFOSC team to include everyone, but also in helping the community to remember the issues raised in the past during the follow-up visits to help us continuously build on our previous successes’*.

Recognising the critical importance for the various stakeholders at the village level to first identify and then prioritise what needed to be addressed, the AFOSC team clearly mapped out who does what at the village level and how their influences could be leveraged for the betterment of the community. Village elders play a key role in community mobilisation especially at times when the community feels threatened by rival clans. Their role is weakened at other times however when the community feel ‘safe’ from attacks. Given the scale of other risks, such as poverty, diseases and drought, the elders’ role in community mobilisation could make a marked difference in how the communities cope. AFOSC identified this as an opportunity, and sensitised the community on both the other risks they are facing, and the enormity of the response that is needed for them to make informed decisions, take charge of their issues, and implement their own-driven responses to address the identified needs.

Prior experiences with ‘others’ had resulted in the community feeling disempowered to ‘challenge’ the status quo. Through information sharing on the roles, powers and limits of each stakeholder, the communities developed a renewed drive to review their current partnership approaches. There is a flurry of external activity during election periods in Mandera West, as the population are moved across electoral wards to elect people who are aligned ‘ethnically’. In Duduble village, for instance, the inhabitants move across the County to register and vote in an electoral ward where someone from their clan is seeking an elective post. At the end of the elections they all return to their villages, most likely run by people they didn’t elect, living their lives until the next elections with the people they separated from during the electoral period, and sharing their common challenges.

Promoting dialogue and seeking joint opportunities in such a community, heavily impacted by conflict, is a challenge indeed. By reminding the community of its

history, i.e. where joint efforts were made to dig the community earth dams, the AFOSC facilitation team highlighted past collective successes in the community that challenged the divisions within it. The village chief highlighted that the individualistic approach to issues had weakened their positions. By approaching leaders as individuals and not as a community, they are less able to hold them accountable. The action for the 'Frontline' approach of AFOSC helped make the community aware of their strengths as a single entity and willing to explore such an approach when dealing with community issues in the future.

One step at a time

Duduble village is a replica of any other village in the larger Mandera County, characterised by a high level of need exacerbated by on-going ethnic conflict, recurrent drought, deeply entrenched poverty, insecurity and diseases. Conflicts have resulted in social issues, such as divorce rates escalating when conflicting ethnic groups and families separate as they take sides. Women repeatedly emphasised the impact of drought and conflict on their lives as they travel long distances in search of water in insecure areas, and as they take on the additional burden of taking care of their households in the absence of men going to the 'war frontlines'. The teachers talked of the trauma and fear among school-going children who lack concentration in classes, impacting on their health and academic performance.

AFOSC's approach has been to introduce a different strategy, whereby communities help themselves first before asking others for support. The number of asks

rapidly reduces as communities prioritise their needs in terms of what they themselves will work on. With drought and conflict the key drivers of the community's vulnerabilities, during one meeting, the Area Chief clearly stated the four priorities of the community as being: '*Water, Water, Water, and Water*'. With their resources limited, and their needs enormous, AFOSC facilitators identified jointly with the community the best way to prioritise their risks and how to address them. Quick wins had to be gained to help the community gain the confidence they needed to continue the process.

The targeted villages are highly vulnerable to divisive politics and it is likely that their current collective approach to addressing community issues will come under serious challenge, especially during an election period. AFOSC will continue to reinforce the messages and continue involvement of the community in the 'frontline' process. AFOSC will also continue to develop local action plans to address the key risks identified, reinforcing the community consultations and reflections. The next step will also involve building bridges with other stakeholders at the local, district and county level to build on the successes achieved at the village level. Prior to 'Action at the Frontline', the targeted villages in Mandera West felt a limited sense of responsibility towards resolving their issues, seeing them as the mandate of 'outsiders' like the County administrators and the Area Member of Parliament. As these high-risk communities now start to address their own needs, it is hoped that the political agendas of others will not undermine their efforts.

The wider importance of local cross border security

By Joseph Lopaga Etengan, LRDA¹

Inter-clan tension, cattle rustling, competition for scarce resources and the proliferation of small arms are all factors that contribute to protracted levels of conflict—and all are found on the South Sudan-Kenya border. To bring an end to the cycle of revenge killings that were paralysing relations on this border, a high-level security meeting was facilitated by a local NGO. Delicate negotiations were required to bring all the stakeholders together, and a series of subsequent meetings within the communities are now needed to disseminate the meeting resolutions. It is through the small-scale 'behind the scene' initiatives like this that the more high profile NGOs can continue their resilience agenda.

Losolia Rehabilitation Development Association (LRDA) has been helping to address insecurity at the Toposa-Turkana Nadapal-Loki Corridor. Nadapal is the checkpoint at the Kenya-Sudan border, whilst Lokichoggio (Loki) is the Kenyan town closest to the Sudan border. LRDA has recently facilitated meetings to help repair damaged relationships between the Toposa and Turkana pastoralist communities caused by a series of retaliatory attacks. A high-level cross-border security meeting was brought together security organs from Kapoeta East County, (Eastern Equatoria State, South Sudan) and their counterparts from Turkana West District (Turkana County, Kenya). The meeting helped the cross-border security forces to put the past behind them and forge ahead in a spirit of good neighbourliness. Dissemination meetings in the *kraals* are now needed to help educate the local communities to respect the rule of law, and to not attack government personnel or institutions in either country.

Bringing two sides together

A cross-border security meeting was needed to address the strained relationships and months of heightened tensions that had followed the killing of the Officer Commanding Police Station (OCS) in Loki—allegedly by some Toposa bandits. The Kenyan authorities viewed the killing as a deliberate and callous act, and accused the South Sudan authorities of neither apologising nor apprehending the culprits. The dialogue to initiate the Toposa-Turkana security meeting began with a series of community mobilisation exercises within South Sudan. Contacts were made with key stakeholders and government officials, and community level meetings were held in target *kraals* bordering the Turkana community in and around Narus, Nadapal, Newsite and Natinga. This internal process was led by LRDA in collaboration with CRS and the Local Authority of Kapoeta East County. Across the border in Kenya LRDA then visited Loki, and liaised with Turkana



Kenya delegation in discussion with S.Sudan/Photo credit: LRDA

West Local Authorities who took the lead in mobilising the Turkana community and the local authorities of the district to attend the meeting.

The meeting itself was held in Nadapal on the Kenya/South Sudan border and brought together key security personnel from both countries, with District/County Commissioners leading their respective delegations. The Kenya delegation included the District Commissioner, OCPD (Chief of Police), Army officers, Border Patrol Police, Administration Police, National Intelligence Service (NIS), Criminal Investigation Department (CID), and other officers including those from Customs and Immigration. The delegation also included the Turkana County Sub Administrator for Turkana West as well as Member of County Assembly (MCA) and the Africa Inland Church

¹ Joseph Lopaga Etengan, Losolia Rehabilitation Development Association (LRDA)



(AIC) Bishop. The South Sudan delegation, headed by the Kapoeta East County Commissioner comprised of almost the same cadre of officers of various ranks including Chief of Police, Army, NIS, CID, Executive Director, Chief Administrator of Kauto Sub-County, Immigration and Custom officers, among others.

The meeting was officiated and opened by both Commissioners, and was addressed by a large number of government officials. Altogether over 65 people attended. It started badly with each side accusing the other of starting the conflict, or not taking corrective measures to address the root causes. According to the Kenya delegation, the Toposa had carried out raids in the aftermath of the death of the OCS, heightening tensions

along the common border. The head of the South Sudan delegation attributed these killings to bandits/criminals who are found in every society, and refuted claims that the killings were organised. From his point of view the killing of the OCS was itself a revenge killing after the murder of a Toposa prison soldier in Narus by suspected Turkana bandits one week earlier.

After lengthy discussions, in which speaker after speaker said both communities have much in common and that it should be possible to resume the historical ties for the benefit of both communities, the officials on both sides agreed to adopt the following resolution:



Chief of police, Nadapal/Photo credit: LRDA

1. The Kenya delegation accepts the apology of the government of South Sudan on the killing of OCS Loki.
2. Both delegations resolved to move with speed and preach peace to the local communities through *baraaza*/community meetings, starting from their home areas before going to those outside.
3. The meeting affirmed that this is a partial agreement meant to foster peace and give people the chance to interact and trade across the border.
4. Both delegations asked the peace NGOs and the Turkana County Government to take the lead and in the near future to organise a large meeting to crown the achievements of this meeting and review past peace initiatives.
5. Both delegations called for sharing of information by security agencies as a strategy to counter and prevent insecurity and cattle raids.
6. The meeting called for disarmament across borders as a permanent solution to insecurity. It called on disarmament to be given priority in all policy matters affecting Kenya and South Sudan.
7. The delegations called on Turkana and Toposa communities to avoid *panya*/illegal entry points when entering either Kenya or South Sudan. Communities must be educated to use proper designated border points.
8. The meeting called on South Sudan leaders to look into the possibility of paying the fines imposed by Kenya court on the 3 young men arrested in Loki for being in Kenya illegally.
9. Separate meetings with *kraal* leaders, youth, women and other opinion leaders from both communities must be held to disseminate the resolutions of this meeting. The local communities must be educated to respect and not attack government officials/soldiers, government vehicles and camps/installations.
10. Toposa and Turkana livestock should be allowed to share water and pasture in key areas.
11. Respect should be given to government installations—police stations, army barracks, network towers, vehicles and soldiers.

12. Dissemination committees comprised of the local administration, *kraal* elders, youth and NGOs should disseminate the resolutions of this meeting to both communities in general, and specifically to *kraals* bordering each other.

youth in particular stay engaged. They reiterated that it is lack of opportunities for the youth that is driving them to undertake cattle rustling.

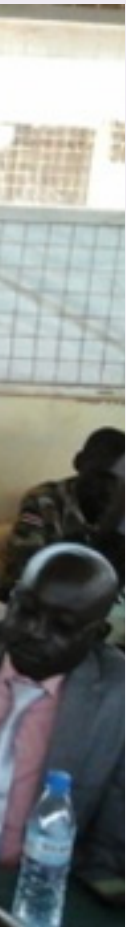
Next steps

The objective of the Cross Border Security meeting was to provide a platform for the security teams of both countries to reach out to each other following the killing of the Loki OCS. The meeting would break the silence and allow the teams to reconnect and collaborate on cross border issues for the benefit of both countries. It is hoped the peace process will now continue out to the community members in general—restoring normality for a broader and more inclusive process to take place at a later date. An additional objective was to stop or reduce incidences of cattle rustling and other forms of violence in the corridor. What the process now requires is a serious follow up and dissemination of the meeting resolutions to the *kraal* level so that everybody, including the youth, becomes aware and the process is sustainable. On the Kenya side, the local NGO: LOPEO should take the lead while LRDA should do the same on the South Sudan side to ensure target *kraals* receive the messages and abide by the important resolutions passed by the meeting.

Note: LRDA has recently organised another successful peace and security meeting in Lodwar between the Governor of Eastern Equatoria State and Governor of Turkana County. Many of the same issues were discussed at this highest level and agreement was reached on important issues. A signing ceremony is due to be held with the Toposa and Turkana community members in attendance in December 2015.

Lessons learnt and on-going challenges

1. **Apologies, forgiveness and rebuilding relationships.** When government authorities are no longer in conversation with each other, the presence of a neutral partner becomes crucial. In this case there was a complete breakdown of communication between the authorities of Kapoeta East County in South Sudan and their counterparts in Turkana West District in Kenya, following the events and the aftermath of the OCS killing in Loki. The partner must be honest and neutral in order to win the trust and confidence of both parties.
2. **Individual and collective responsibility.** Mobilising the local community members to attend the meeting was the hardest part. Most could not believe that the process would work following months of killings, cattle rustling and general insecurity. Most adopted a 'wait and see' attitude, including a local Chief who refused to accompany the delegation.
3. **Civic education.** Once an agreement is reached, its success hangs in the balance unless people are sensitised to the resolutions made. The delegations in this case called on Turkana County Government, and INGOs e.g. PACT and CRS, and other peace actors in the region, to move with speed to facilitate the dissemination of the meeting resolutions to the entire populations of Turkana West and Kapoeta East County.
4. **Continuous engagement.** Furthermore the delegations asked NGOs and other development partners, including county administrations, to take the lead in programmes that would enhance food security and improve livelihoods so that the



Communal Land Associations in Karamoja

By Proscovia Nnamulondo (ULA), Gaynor Paradza (ILC Secretariat) and Jan Cherlet (ILC Secretariat)¹

In Karamoja the creation of Communal Land Associations (CLAs) has enabled communities to establish legal entities that they can use to register their claims to customary land, as provided for under the Ugandan law. The CLAs are yet to receive their registration certificates from the government however, which risks undermining the confidence that the communities currently have in the CLA process.

Introduction

In Karamoja, Uganda, half of the total land area is held by communities on a customary basis. These communal lands are not demarcated or registered and are prone to land grabbing, mostly for tourism or mining. The Uganda Land Alliance (ULA) has empowered communities to assert their land rights by supporting the creation of 52 Communal Land Associations (CLA). Although the 1998 Land Act provided a legal basis for the creation of CLAs, no attempt had ever been made to implement this. Several of the recently established CLAs have been able to reverse land grabs or claim fair compensation for investments in community territories.

Background

The Constitution of Uganda states that all land belongs to the citizens of Uganda and that they can hold this land under four different land tenure systems: customary, freehold, leasehold and *mailo*.² Customary tenure is the predominant tenure system in Uganda. In the northern regions of Uganda, an estimated 98.8% of plots are held under customary tenure.³ Many challenges are associated with customary land tenure, mostly due to the lack of demarcation or formal registration. This exposes the customary users of these lands to the violation of their rights.

Karamoja is a sub-region in North Eastern Uganda characterised by rangelands and erratic rainfall. It is home to about 1.2 million people, the majority of whom are indigenous Karamojong with pastoral and agro-pastoral livelihoods. It is the poorest sub-region of Uganda in terms of human development.⁴ Approximately half of the land area in Karamoja is held by these agro-pastoral communities on a customary basis. Their lands were never delimited or registered because:

(a) The local administration did not have the capacities or

mechanisms to do this

(b) The communities were disorganised or unaware of their land rights

(c) The government delayed the implementation of legal provisions that would have increased community's control over customary tenure land.⁵

Since Karamoja is richly endowed with gold, marble, iron ore, tungsten, limestone, oil and gas, it has attracted many investors, in particular since the protracted armed conflicts in northern Uganda started reducing. Approximately 17,000 km² or 62% of the total land area of Karamoja has been licensed for mineral exploration and exploitation.⁶ There are 51 companies with 136 concessions. Very few companies have actually started exploration or exploitation, because the majority of the concessions were given to speculators looking to attract investors.⁷ The land held under customary tenure is particularly prone to unlawful licensing or leasing. This exacerbates the vulnerable position of the agro-pastoral communities that depend on it.

Solution

Section 15 of the 1998 Land Act provides a legal basis for the formation of Communal Land Associations (CLA) by any group of persons for the purpose of managing communally owned land. In addition, the Land Regulations of 2001 stipulate the procedures for the formation, registration and dissolution of such CLA. While the legal basis and procedures for the CLAs had already been stipulated in respectively 1998 and 2001, no attempt had ever been made to implement them. The Uganda Land Alliance (ULA), a consortium of civil society organisations and individuals, judged that the creation of CLAs would be the most viable option to protect the customary land rights of communities in Karamoja.

*"We need to make an agreement...Even if they have a licence, they should first come to talk to the elders and officials."*Ochwee Zakaria, village head.

ULA supported the creation of 52 CLAs in four districts of Karamoja. Each CLA usually represents one sub-clan. The formation of the CLAs enabled communities to have legal entities, which they could use to register their claims to the customary land as provided for under the Ugandan law. A CLA is composed of over 30 members drawn from all sectors and minor clans of one single sub-clan. The CLA is managed by a management committee of nine people, at least three of which are women. Several of the recently established CLAs have been able to reverse land

1 The opinions expressed in this brief are those of the authors and do not necessarily constitute an official position of the International Land Coalition, nor of its members or donors.

2 *Mailo* land is the land held in perpetuity by traditional kings, as stipulated in the 1900 Uganda Agreement.

3 Burke, C. and Kobusingye, D.N. (2014) Women's Land Rights in Northern Uganda: West Nile, Acholi, Lango, Teso and Karamoja. Oxford: Oxfam International. Available at: <http://landwise.landesa.org/record/2628>

4 GoU (Government of Uganda) (2011). Uganda Demographic and Health Survey of 2011. Kampala: Government of Uganda.

5 LANDac (2012). Uganda -Food Security and Land Governance Factsheet. Utrecht: LANDac. Available at: <http://www.landgovernance.org/system/files/Uganda%20Factsheet%20-%20202012.pdf>

6 Kabiswa, C. (2014). The Interface between Land and Mining in Karamoja, Presentation at Northern Uganda Land Platform Meeting, Kotido.

7 Human Rights Watch (2014) How can We Survive Here? The Impact of mining On Human Rights in Karamoja, Uganda. New York: Human Rights Watch. Available at http://www.hrw.org/sites/default/files/reports/uganda0214_insertWithcover.pdf

grabs or claim fair compensation for investments in their territories.

Activities

Awareness-raising (2009-2013): ULA organised community outreach sessions to raise awareness among men and women about their land rights. This helped communities to realise the threats they faced and appreciate the need to protect their land rights. The CLAs were introduced as one of the tools available for them to use to protect their land rights. Between November 2012 and March 2013, ULA mobilised communities to teach the people to know their land rights and appreciate the need for CLAs. The communities were taught how the CLAs would enable them to protect their land. The leadership of the districts of Kotido, Moroto, Napak and Kaabong allowed ULA to go ahead and mobilise people to form CLAs.

Community mapping (2009-2010): With support from Dan Church Aid and the Ford Foundation, ULA carried out community mapping of communal land and resources to support the CLA registration. The mapping involved the community, the elders and the Area Land Committees (representing the government). They identified and mapped the communal lands in the area, boundaries, grazing areas, watering points, the areas for gathering fruits and firewood, and the shrines. Through the community-mapping project, it became clear that most communal lands in Karamoja were extremely susceptible to land grabbing.⁸

Actual formation of the CLAs (2012-2013): After the awareness sessions, a number of sub-clan leaders expressed their readiness to form CLAs and elect management committees. The formation of the CLAs started in November 2012 and continued in 2013. ULA staff, in conjunction with statutory land administrators, presided over the election of members of the management committees of the CLAs. Every management committee had to be composed of nine members, at least three of which women. The different members of the committee represent the different minor clans. ULA supported the creation of 52 CLAs in four districts of Karamoja: Kaabong, Kotido, Moroto and Napak. This included support to the drafting of a constitution and procedures for the democratic management of the affairs of the CLAs, because the 1998 Land Act requires that each CLA present a constitution to the District Registrar of Titles.

Capacity Building (2012-2013): The clan elders, CLAs, Area Land Committees, District Land Boards, and other local government officials underwent three to four-day courses that aimed at building their capacities and skills so that they could perform their roles as stipulated in the 1998 Land Act.

Negotiations with investors (2013-present): Several of the recently established CLAs have started negotiations with investors active in their territories. In Moroto District, a mining company agreed to pay UGSh 120million (about USD 48,000) to the Rupa community before it started mining marble on seven hectares of the communal lands. Members of the CLA management committee as well as representatives of the local government were involved in the negotiations, which were supported by the District Land Board. In Kaabong District, CLA members successfully blocked a tourism company from carrying out any activity after discovering that it had fraudulently acquired land by forging the signatures of local leaders. Also in Kaabong district, a South-African company occupied around 400 acres of communal land without the community's consent. The CLA is currently taking steps to make the company pay for their land or force it to leave the area.⁹

Importance of the case for people-centred land governance

The CLAs are democratic institutions through which communal land users can participate in land governance and engage with other stakeholders. The CLAs are therefore a good practice example of inclusive decision-making. The CLAs also prevent land grabbing in an effective and legally sound manner. CLAs are legal entities that exercise jurisdiction over communal land and resources on behalf of the land users. The CLAs empower communities to defend their land rights, enter into negotiations, or challenge on-going negotiations concerning their land. Finally, the formation of CLAs is also a good example of constructive collaboration between the civil society, communities and the government.

Achievements

Before ULA started working in Karamoja, governance of communal land was weak. The communities were unaware of the legal basis provided by the 1998 Land Act for the protection of communal lands. As a result, communities were marginalised from decision making on land and their communal lands were vulnerable to land grabbing.

- Now the communities are more aware of their land rights and the procedures for safeguarding their land. The people have started feeling more empowered to legally protect their communal land. The sense of vulnerability and helplessness is slowly disappearing.¹⁰
- The capacity of members of traditional and formal land administration structures has improved. These individuals now have a good understanding of their mandate and are able to articulate their responsibilities. The false belief that land in Karamoja does not belong to anybody is dying away and respect

⁹ The CLAs have undergone training on group dynamics and business skills, and the project will play a critical role in linking the CLAs with private sector on matters of access to financial services from money lending institutions and all matters of land transactions.

¹⁰ As well as the efforts of District Council to pass ordinances for environmental conservation, CLAs regulate the number and types of activities in their land e.g. charcoal burning, bricks laying etc.

⁸ A joint outreach [ULA, formal and informal land administration structures, technocrats both from District Local Government and Lower Local Government] was conducted to disseminate information on Land Rights. The aim was to create a sense of sustainability among the formal and informal structures.

for people's land rights is taking root.

- Each of the 52 CLAs created by ULA has a map of the communal lands managed by the CLA. All CLAs are still waiting for the registration certificate from the government.
- ULA secured commitments from all seven districts of Karamoja that a regional land office will be established in Moroto district to facilitate the deposition of communal land ownership documentation. ULA also obtained the commitment that all districts will appoint and submit the names of district land board members to the Ministry for approval, as determined by the 1998 Land Act. This has already been done in some districts.

Lessons Learned

For civil society: It is more effective for civil society organisations to work with existing structures rather than introduce new structures. Likewise, it can more easily negotiate the collaboration of the government and administrative structures when it works through existing policies. It is possible that under performance of policy makers and administrators is due to a lack of knowledge and capacity rather than reluctance. Since the buy-in of policy makers determines the success of an initiative, it is important to allocate resources to building capacities of the policy makers.

For policy makers: Policy makers who want to duplicate the solution described in this case study should work with various stakeholders from the civil society and the community. The collaboration should build the capacity of existing structures and institutions to appreciate and deliver their mandates. When the government strengthens the land management structures of a community, it increases the community's power to negotiate with investors. There is a need to link traditional land management structures with formal land management structures and vice versa. The lack of understanding of the two structures and their roles keeps the two structures at parallels. This explains why some government facilities are not utilised by the communities—who in theory should be the beneficiaries.

Challenges

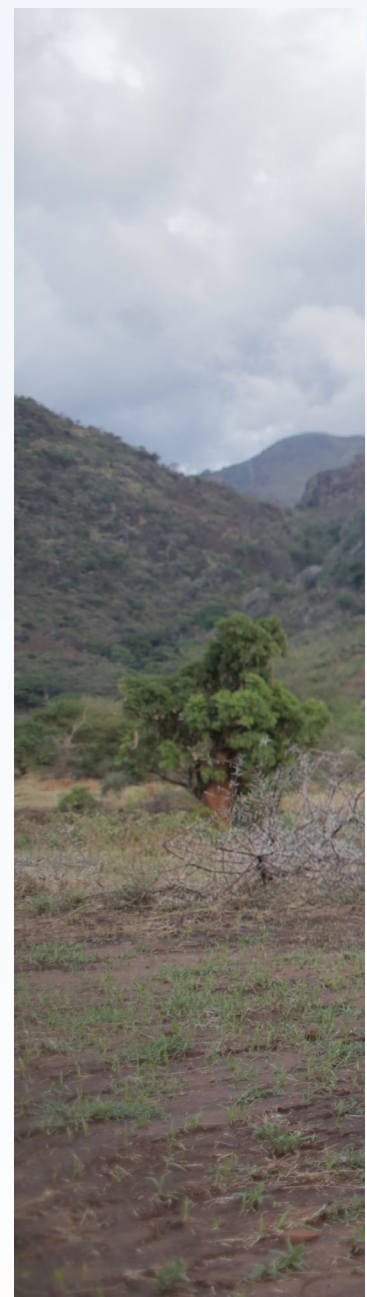
Low capacities of the communities: Low literacy and high poverty levels of the communities in Karamoja posed a challenge. ULA staff had to rely more on face-to-face awareness-raising sessions, given that print material could not be widely used at community level. In addition, radio broadcasting was not a solution either, because very few people could afford radio sets and when they are available, they are usually preserved for men.

Empowering women: Although the 1998 Land Act specifies that not less than one-third of the members of the management committee of a CLA must be women, the involvement of women had to be discussed at length

with elders and in community awareness sessions. This is because women, traditionally, are excluded from decision making on land matters. Until today, sections of society strongly feel that men can effectively represent women in handling land matters, without the need for women to play any direct role. However, securing the inclusion of women in the management committees was just the beginning of the struggle. Whenever CLA meetings were held, very few women would attend compared to men. The common explanation was that it was the men who had the information on land and that the absence of women was inconsequential. When women attend meetings, they play a largely passive role. However, through continuous training and follow-up meetings, some women started participating actively in the activities of their CLAs.

Lack of resources in land administration: According to the Land Act, the District Registrar of Titles has a central role to play in the formation and registration of CLAs. Unfortunately, this position has remained vacant in most districts in Karamoja. This has created a big challenge for the entire process. ULA had to submit the constitution of CLAs directly to the ministry, as no administrative structure exists yet at district level. Discussions are on going with the Ministry of Lands, Housing and Urban Development (MLHUD) to ensure that districts set up the necessary administrative structures. Some officials of the MLHUD have informally expressed reservations over registering a big number of CLAs at once, since this is the first attempt to form CLAs in the country. Until today, the registration of the CLAs has not been completed. This is an important challenge, as there is a risk that the communities will start losing their confidence in the CLAs.¹¹

¹¹ ULA activities are funded by its partners, but formalisation and registration is the mandate of Government. The Lands Ministry has stated that there are no budget allocations to carry on the work.



Follow-up: The sustainability of this initiative is very high because of the high degree of cooperation among the stakeholders including traditional leaders, local government representatives and civil society organisations. In addition, the solution described in this case study falls within the provisions of the Ugandan land policies and legislation. ULA did not introduce something new.

The CLAs fall within the provisions of the existing Land Law. Nothing new was introduced. CLAs provide a

collective voice and a defensive mechanism that will effectively check land grabbing. They work against the isolation of few people, usually leaders, to secretly transact land. Their design easily attracts the attention of the government, development organisations and donor communities, as a suitable mechanism to defend the rights of properties being owned communally e.g. grazing land in pastoral areas and community forests.



Head of Musopo Village seated on stool with Moroto mountain behind him. ©ILC/Jason Taylor

Is Kenya on track in building drought resilience? Using Theory of Change to map progress

By Paul Obunde,¹ Yuko Kurauchi, Francis Opiyo² and Irene Karani³

For Kenya to achieve its commitment to 'end drought emergencies' a unified monitoring and evaluation framework is needed that can coordinate the diverse interventions being undertaken over the short and long-term. The EDE Secretariat has designed a dynamic framework, and provided training to EDE partners, that will allow interventions to be monitored effectively and evidence-based decisions to be made.

The need for a results-based M&E system

Since the September 2011 Nairobi Heads of State Summit for IGAD and East Africa Community, Kenya has made some remarkable progress to operationalise its Country Programme Paper for the Intergovernmental Authority on Development (IGAD) Drought Disaster Resilience and Sustainability Initiative (IDDRSI), widely known as the Ending Drought Emergencies (EDE). Coordinated and concerted efforts of the government and other partners to finalise common programme frameworks (CPFs⁴), and the establishment of a fully-fledged secretariat for EDE coordination at the national level, are some of the key achievements so far. With nearly three years having passed since the Nairobi Declaration however, some outstanding questions still remain:

- Are we on the right track towards the 10-year EDE goal of ending drought emergencies by 2022 and to what extent are the EDE's envisaged results being achieved?
- How are the achievements in Kenya contributing to the overall regional goal set forth in the IDDRSI: i.e. drought disaster resilient communities, institutions and ecosystems in arid and semi-arid lands (ASALs) of the IGAD region achieved by 2027?

In Kenya, of the seven pillars for the implementation of the EDE⁵, Pillar 6 on 'Institutional Development and Knowledge Management' was created with the aim of providing an enabling environment for delivery of the EDE commitments. One of

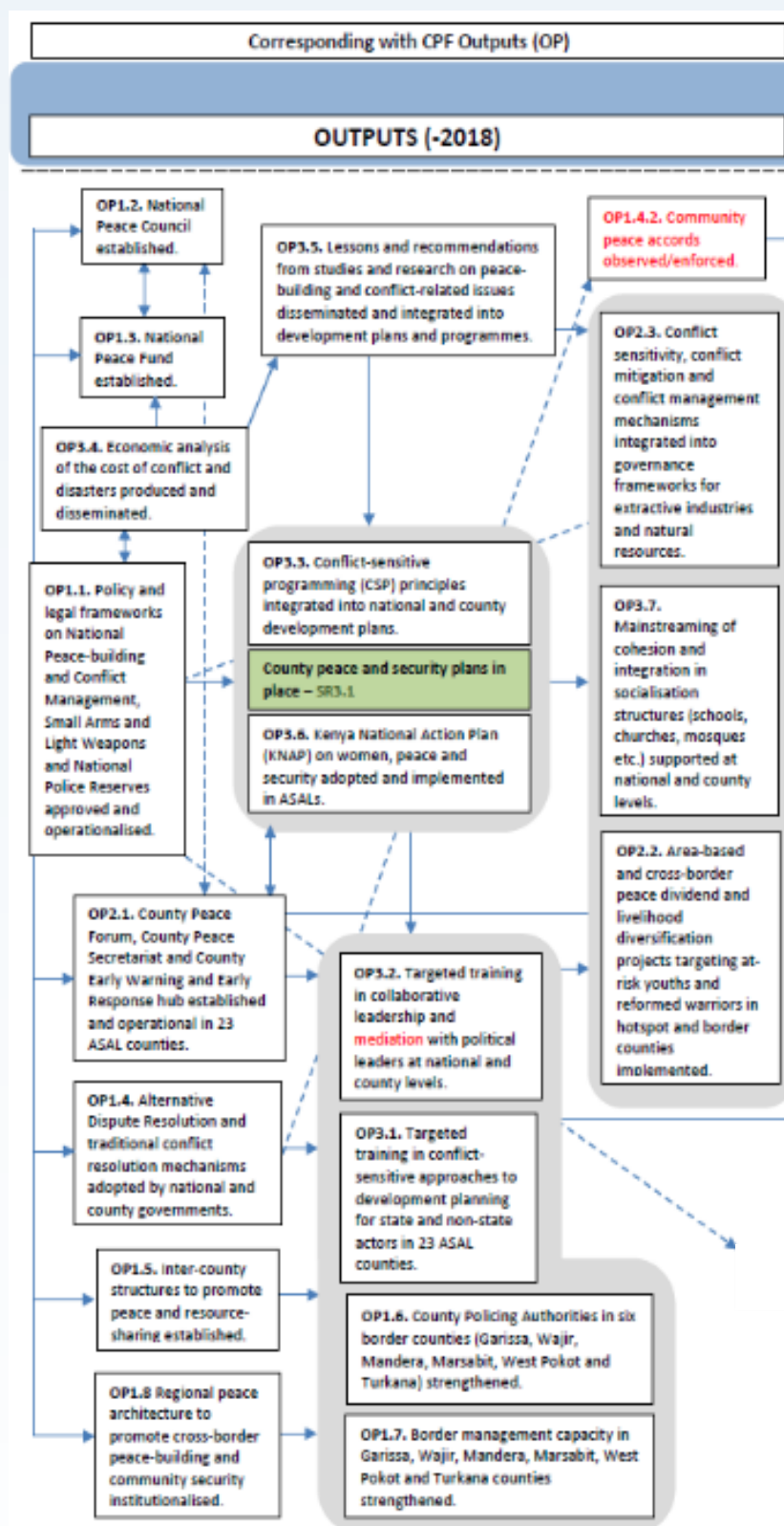


Figure 2: Theory of Change Map for EDE Pillar 1: Peace and Security

1 National Drought Management Authority (NDMA), Kenya, EDE Secretariat and Chair of EDE Pillar 6

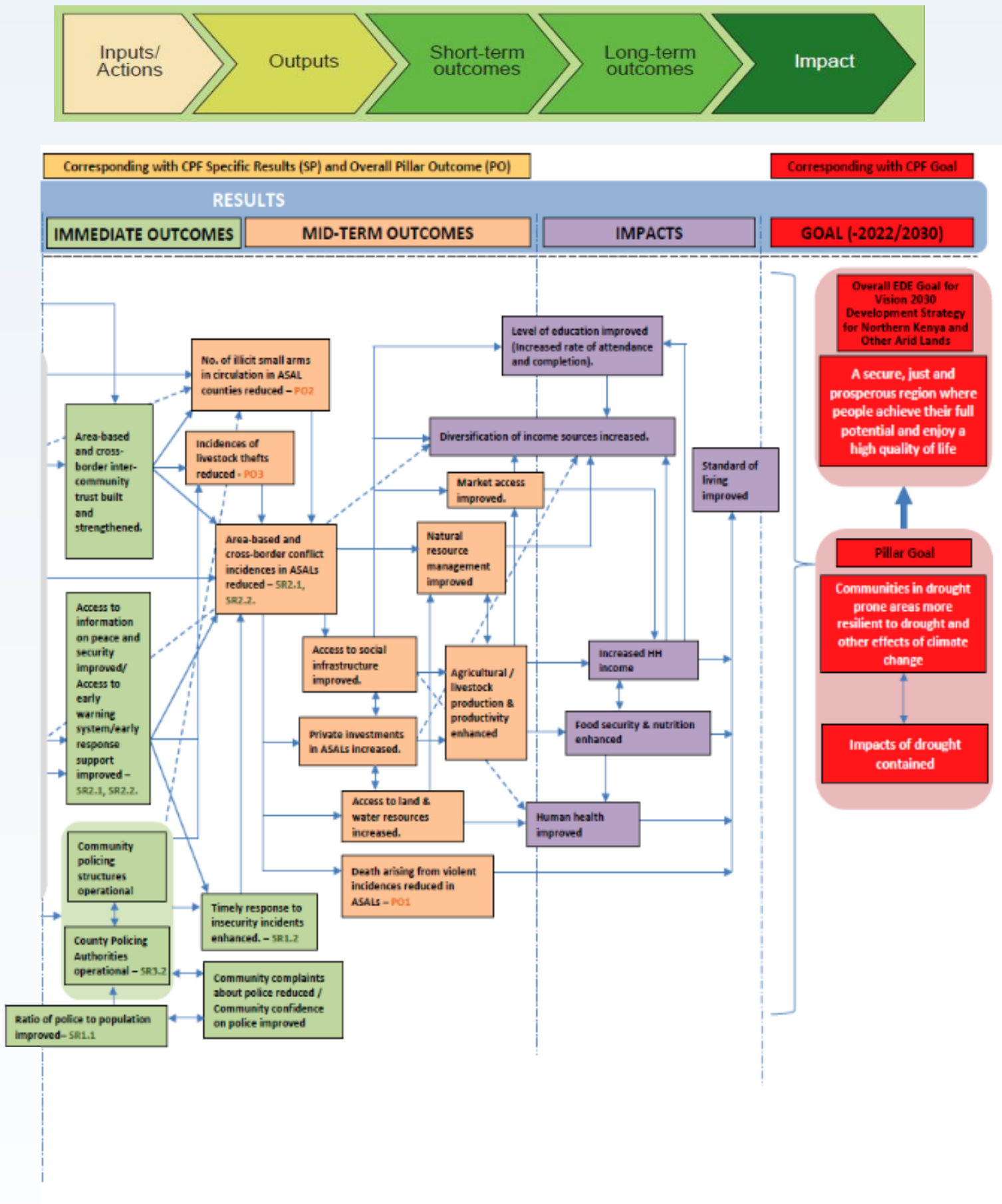
2 United Nations Development Programme (UNDP), Global Policy Centre on Resilient Ecosystems and Desertification, Member of EDE Pillar 6

3 LTS Africa, a consultancy firm based in Kenya, www.ltsi.co.uk

4 www.ndma.go.ke

5 Peace and security, Climate-proofed infrastructure, Human capital, Sustainable livelihoods, Drought risk management, Institutional development and knowledge management.

Figure 1: Different Levels of Changes within the M&E Framework



Resilience Focus 3

the core tasks of Pillar 6 is to facilitate the development of a programme-wide, results-based monitoring and evaluation (M&E) system through which to assess and measure concrete progress made by the respective EDE pillars for building resilience of drought affected communities in the country. At present, most of the EDE partners apply project-based M&E approaches. These

approaches place emphasis primarily on immediate and directly deliverable products or services (i.e. outputs), to be brought about within the project implementation period as a result of specific inputs and activities. This poses the challenge for how the numerous resilience interventions can be tracked, beyond their lifespan of a few years at most, to determine their medium-term

	Pillar (Pillar Statements)	Immediate Outcomes
01	Pillar 1: Peace and Security (Effective response to peace and security threats in ASAL counties by a strengthened peace and security infrastructure) 	<ul style="list-style-type: none"> Ratio of police to population improved Timely response to insecurity incidences enhanced Peace and security information access improved Formal (County) and informal (community) policing mechanism effective Community confidence on police improved Area-based and cross-boarder community trust built
02	Pillar 2: Climate-proofed infrastructure (Constructed in timely manner and sustainably maintained National climate-proofed infrastructure projects in ASALS increased in number and budget allocated) 	<ul style="list-style-type: none"> Climate-proofed infrastructure constructed in timely manner and sustainably maintained National climate-proofed infrastructure projects in ASALS increased in number and budget allocated
03	Pillar 3: Human Capital (A more healthy, skilled, innovative, resourceful and motivated human capital in the ASALS.) 	<ul style="list-style-type: none"> Trained social services professionals in ASALS increased Access to quality social services (i.e., education, health and nutrition) increased Social services provided in a timely and sustainable manner Real time data and info on education and health available Enrolment in ECD, primary & secondary education increased
04	Pillar 4: Sustainable Livelihoods (ASAL Livelihood systems enhanced) 	<ul style="list-style-type: none"> Animal health delivery system improved Capacity of Livestock Marketing Associations increased Efficiency of existing/emerging livestock and crop value chains increased Market linkages in livestock enhanced Governance of land tenure improved Natural resource management improved Water use efficiency for livestock/crop production increased
05	Pillar 5: Drought Risk Management (Institutions, mechanisms and capacities that build resilience to drought and climate change developed and strengthened.) 	<ul style="list-style-type: none"> DRR/CCA/SP concepts and principles mainstreamed into government plans Scalable DRR/CCA/SP initiatives enhanced Access to/utilization of drought information system increased Access to/utilization of DCF enhanced
06	Pillar 6: Institutional Development and Knowledge Management (Institutional strengthening, Coordination, Policy, M&E, 	

effects (i.e. outcomes) and their long-term consequences (i.e. impacts) that result from their outputs; as well as the sustainability of these results and their contributions to the ultimate EDE goal for 2022. Moreover, project specific outcome indicators, even among closely linked projects within a programme, usually have quite different metrics and their outcomes cannot be aggregated at higher levels.

In view of the broad-based and multi-sectoral nature of the EDE, there is a need for a shift, or expansion, in focus; moving from uncoordinated short-term monitoring of project performance to more coordinated longer-term measurement of results or changes in the lives of beneficiaries. The introduction of a common and unified

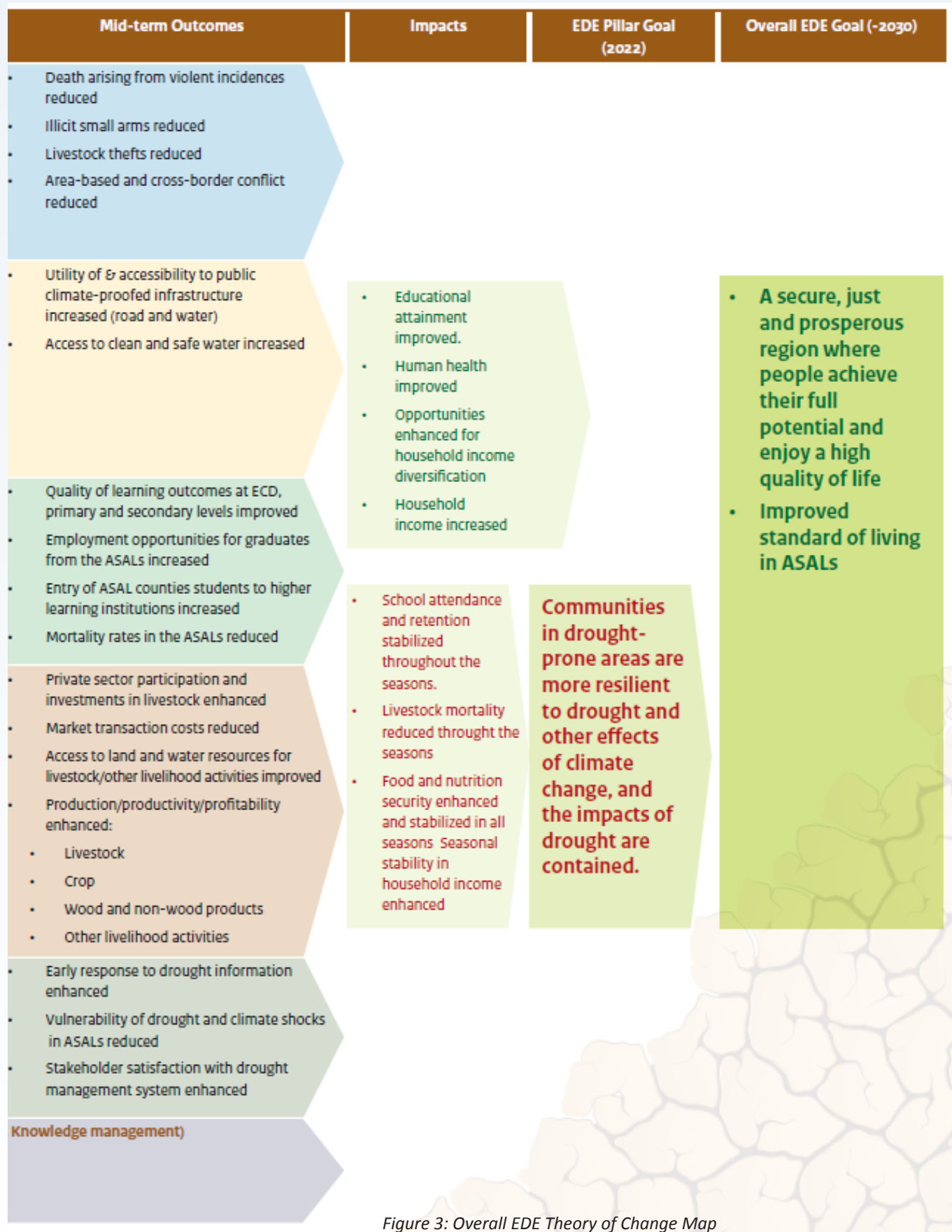


Figure 3: Overall EDE Theory of Change Map

M&E framework will help reinforce the EDE partners' joint accountability to their communities in drought-prone ASAL areas with and for whom they are working. It will also promote transparency by regularly and explicitly demonstrating the number and extent of outcomes and the impacts attained/not-attained, based on a set of mutually agreed result indicators.

Theory of Change Approach

In order to develop an effective and sustainable M&E framework for EDE, a theory of change (TOC) approach was adopted. TOC is a tool which helps to map out the sequence of changes that are theoretically anticipated to occur from inputs to outputs, to outcomes, and to further higher-level and long-term impacts—while examining assumptions about how these causal changes might happen, i.e. change pathways (see Figure 1). All the EDE pillar teams received desk-/practice-based training on the concept and practical application of TOC. As a result Pillars 1-5, with the close technical support of Pillar 6, developed individual TOC maps (see example in Figure 2 above). These maps elaborate how their committed priority activities will realise a chain of intended positive changes on the ground.

The TOC maps for each individual Pillar were then

consolidated to create an overall EDE TOC map, as shown in Figure 3 above. The exercise enabled the participants to enhance their understanding on the nature and degree of complementarity/mutual dependence within and among the pillar activities throughout the overall change pathways. For example, the achievement of outcomes related to climate-proofed infrastructure investments under Pillar 2 depend largely on the progress of the Pillar 1 activities on peace and security in the arid and semi-arid lands (ASAL) areas. By the same token, contributions by Pillar 4 to increase household incomes are pivotal for attaining many of the proposed Pillar 3 (human capital) outcome indicators.

Pillar teams also defined measurable and representative indicators in correspondence with each of the result statements they had identified, and set their baseline figures as of July 2014 (the start of the current phase of the EDE CPF) as well as the targets for the milestone years of 2018 (end of the current phase of the EDE CPF), 2022 (the EDE 10-year goal) and 2030 (the GOK's Vision 2030 goal).

Operationalising the M&E Framework

The EDE M&E Framework technical working group (TWG) is the coordination structure that has led the framework development and will drive its implementation. The EDE

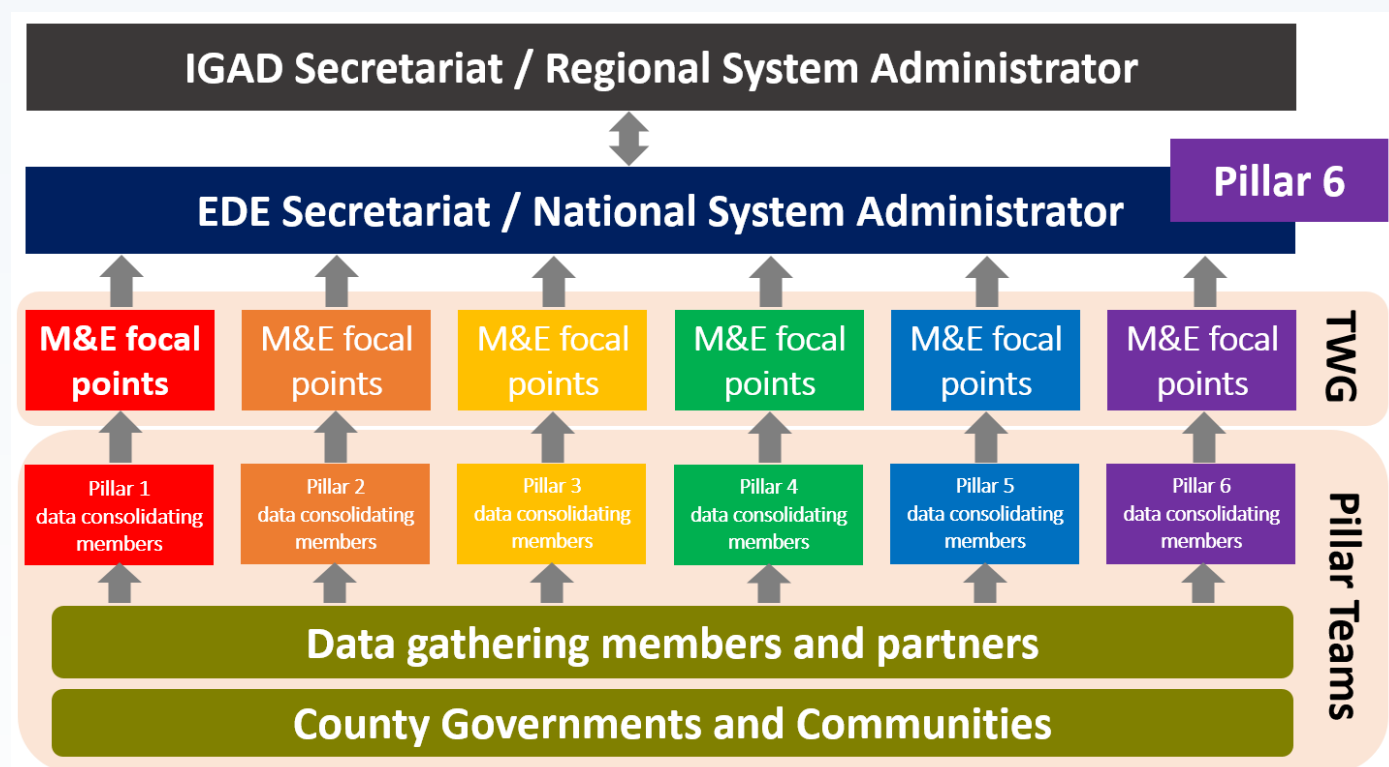


Figure 4: EDE M&E Framework Data Submission Flow

Secretariat, as the TWG chair, will facilitate and coordinate the process of data collection, transmission, analysis, presentation, reporting, utilisation, and any other follow up actions related to the M&E framework. It will serve as the national administrator of a web-based M&E management information system (MIS) within the IDDRSI architecture and will communicate directly with the regional MIS administrator within the IGAD Secretariat to contribute necessary country data and participate in the regional M&E process.

TWG representatives from Pillar 1-6, as the pillar M&E focal points, will submit the compiled pillar indicator data to the EDE Secretariat in the agreed-upon format, and in an agreed-upon frequency, and will participate actively in the periodic monitoring and evaluation process. Pillar 6 technical members will provide the EDE Secretariat and the TWG focal points from Pillar 1-6 with necessary technical backstopping support to promote the effective and timely implementation of the M&E framework.

The Kenya National Bureau of Statistics or national government agencies may collect some of the indicator data centrally, while other data may be gathered with the support of the county governments and/or non-state partners, including the beneficiary communities. To ensure the availability and accessibility of all the data during the M&E framework development process, each EDE pillar was required to clearly stipulate the data gathering members/partners, and data consolidating members, for all of their proposed indicators. Data consolidating organisations will play a critical role in the coordination of data gathering members/partners, data compilation, quality assurance, and timely submission of consolidated data to the pillar TWG focal person(s) for their further communication with the EDE Secretariat. Figure 4 illustrates the hierarchy and interaction of the key stakeholders within the EDE M&E system.

Periodic monitoring and evaluation reports will not only demonstrate the EDE pillars' progress in implementing the CPFs, but will also enhance evidence-based decision-making. They will help identify key gaps in CPF implementation and provide practical recommendations; for example on how to improve operation and coordination, match funds with priorities, and ensure proper resource utilisation. It is envisaged that the TWG will be responsible for subsequently facilitating the integration of key elements of the EDE M&E findings and recommendations into pillar/sector plans at national and sub-national levels, as well as into partners' programming processes.

Way Forward

The M&E framework, once finalised in late 2015, will allow the EDE partners to:

- Learn better from experiences to improve practices and activities, and make informed and evidence-based decisions on the future of the initiative—especially in enhancing resilience which is long term goal;
- Have higher transparency and more internal and external accountability of the resources used and the results obtained;
- Improve communication with the beneficiaries of the EDE initiative and promote their empowerment;
- Define and refine appropriate monitoring approaches, and help partners to provide feedback in guiding result-oriented drought adaptation and management in Kenya;
- Enhance the chances of attracting climate finance for the long term goals of the CPF;
- Inform the similar efforts on M&E in other IDDRSI participating countries, as well as at IGAD regional level, and promote harmonised and coordinated drought resilience planning and implementation in the HoA region.

It is important to note that the EDE M&E framework, like all other M&E frameworks, is a living document. As the EDE CPF becomes subject to changes during its lifetime, so will the M&E plan. The feasibility of the underlying logic of the change pathways must be regularly reviewed in accordance with changing circumstances. The TOC maps will be amended whenever necessary to close the gaps between the theory and reality, with corresponding indicators adjusted accordingly.



REGIONAL SHAREFAIR ON GENDER AND RESILIENCE

Strengthening Resilience by Empowering Women

CONTEXT

The new Sustainable Development Goals (SDGs), and the broader sustainability agenda, aim at addressing the root causes of poverty and the universal need for inclusive, sustainable and resilient development. Resilience commonly covers broad development concerns, including the capacity of people (men and women, boys and girls) and systems to mitigate, adapt to, recover, and learn from shocks and stresses from both the natural and social environment in ways that reduce vulnerability and increases well-being.

In Africa, resilience is frequently tried, and on a regular basis the region is exposed to political, economic and environmental adversities, challenging development progress and sustainability of programmatic interventions. These comprise climatic variations, land degradation, drought, and floods, resulting in chronic vulnerabilities such as altering food insecurities, economic losses, chronic displacement as well as heightened tensions as especially vulnerable populations are forced to compete for access to key, but increasingly scarce, livelihood resources.

The region also continues to be challenged by conflicts further undermining livelihood security, agricultural production and economic growth in general.

In the context of general and chronic vulnerability, women and girls are often exposed to additional, gender-specific barriers which exacerbate the challenges women face. In Africa, women are the frontline nutrition care givers in the family, producing, storing, cleaning and cooking the food for consumption and caring for the welfare of infants, young children and other family members. At time of shock, women's role in providing food and care for the family becomes often more critical depending on disaster impact and scarcity of resources. However, women and girls tend to have more limited access to resources, assets and services they need to develop their livelihoods.

Climate changes have also hit women and girls particularly hard since they are responsible for collecting water and fuelwood, and now have to walk longer distances. This also increases their risk to be exposed to sexual violence

(which affects at times also men and boys) and have resulted in school drop out of girls, and early marriages as coping strategies in households. In addition, as result of climate change, men often migrate looking for alternative sources of income, whereas women and children are left behind with additional work burden, as they take on additional tasks usually carried out by men. The discrepancies in power relations consistently render women more vulnerable to the impacts of livelihood shocks, despite their important role in mitigating them. On the other hand, women's specific skills and knowledge are essential for households and communities to adapt before and after a shock or stress, yet women are rarely part in conceptualizing the solutions to these challenges, and their voices remain too often unheard in determining resilience interventions.

To enhance women's resilience, there is need for a binary strategy that, on one hand, strengthens women's individual resilience and capitalizes on community capital and resilience so that women and youth can claim their rights, and participate in development planning; and on the other, strengthens the capacities of Government and Partners to enhance women's resilience in affected countries. More knowledge is needed on successful ways to enhance women's resilience in the region, targeted efforts on sharing and disseminating this knowledge, to better integrate a gender perspective in the resilience agenda and its implementation.

SHAREFAIR OBJECTIVES

UN Women, together with key partners including UN agencies, civil society, governments, private sector and academic and research institutions, proposes to hold a Sharefair on 'Gender and Resilience' in 2016 that will provide an opportunity to further explore the role of women in building and strengthening resilience, and promote dialogue and sharing of experiences on gender-responsive resilience-related programmes and policies in Africa to accelerate the achievement of the SDGs.

Preliminary proposed objectives of the Sharefair include:

- i) **Multi-stakeholder and Multi-sectoral Dialogue:** Provide a one-time platform for bringing together governments, development partners, civil society, academic and research institutions and private sector to discuss and consult on the key issues, opportunities and barriers in promoting gender equality within the gender and resilience agenda;
- ii) **Expanding the Evidence Base:** Gather, present and discuss existing, new and forthcoming research and knowledge regarding gender equality and resilience including evidence that women's empowerment is a critical strategy to building resilience and the achievement of the sustainable development goals;
- iii) **Solution Oriented South-South Collaboration:** Showcasing and sharing good practices of gender-sensitive resilience-related policies, interventions and development models that can be adapted and scaled up. Within the international frameworks, explore the local specificity for a more effective national implementation;
- iv) **Uniting Women in Building Resilience:** Provide and create a durable network/ platform to link women's associations and groups from across the region;
- v) **Joint Theory of Change:** The established multi-stakeholder platform will inform the development of a Theory of Change that, based on a solid body of evidence, will ensure the Sharefair comes up with a clear preposition on the key role of women in building resilience and then in accelerating implementation of SDGs; and
- vi) **Framework/roadmap for programmatic and policies actions to upscale gender-sensitive resilience solutions:** The platform will create an opportunity for actions to amplify resilience solutions and create sustainable change beyond the Sharefair within the SDGs implementation framework.

PROPOSED PARTNERS

Convening partners for the Sharefair will be the Intergovernmental Authority on Development (IGAD) that launched the Drought Disaster Resilience Sustainability Initiative (IDDRSI) as a comprehensive strategy that aims at ending drought emergencies in the Horn of Africa, where the 8 Member countries of IGAD (Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda) are located. One of the objectives of the IDDRSI is to mainstream gender in drought resilience programmes and to build and strengthen partnerships throughout the IGAD region around gender and resilience. To further these efforts a Gender and Resilience Working Group has been recently established and UN Women is supporting its operationalization and strengthening. The regional sharefair on Gender and Resilience, led by UN Women and jointly implemented by IGAD and other development partners, is proposed as one of the flagship activities of the Gender and Resilience Working Group. Other UN Agencies that are committed to be actively involved in the Sharefair Planning include FAO, IFAD, IOM, OCHA, UN HABITAT, UNAIDS, UNDP, UNEP, UNHCR, UNICEF and WFP. Several other partners are expected.

PROPOSED THEMES

(With a focus on gender mainstreaming)

Environment Related Themes	<ul style="list-style-type: none"> • Environment and Climate Change • Prevention and mitigation of disaster impact in agriculture and natural resources management • Policy options for disaster risk reduction and management • Climate change financing
Agriculture Related Themes	<ul style="list-style-type: none"> • Climate-smart agriculture and sustainable livelihoods • Energy • Technology and infrastructure innovation (i.e. labour-, water and soil-saving technologies)
Peace and Security Related Themes	<ul style="list-style-type: none"> • Conflict Prevention, Resolution and Peace building • Protection from gender-based violence in disaster contexts
Migration Related Themes	<ul style="list-style-type: none"> • There is mounting concern over the situation of forced migration and related patterns. UN Women has been spearheading important work in this area and is currently the Chair of the global group on migration. • FAO, one of the key SF partners, has also been working in forced displacement situations with the aim of responding to the immediate needs of vulnerable households; increasing the resilience of their livelihoods to shocks crises; and addressing the root causes of food insecurity and malnutrition. • IGAD has also been active in the region and operationalized the Regional Migration Policy Framework • The sharefair will provide opportunity to highlight and dialogue on this important issue and explore linkage to key on-going processes and events - notably the World Humanitarian Summit to take place in Istanbul in May 2016.
Cross-cutting Themes	<ul style="list-style-type: none"> • Inclusive humanitarian response and accountability to affected populations • Social protection and Community Safety Nets • Preparedness and Early Warning Systems • Inclusive participation and leadership skills in Resilience • Market access, trade and financial services
Research and Data Related Themes	<ul style="list-style-type: none"> • Research and Knowledge Management • Sex-disaggregated data and evidence base for policy planning

SHAREFAIR PARTNERS



Food and Agriculture Organization
of the United Nations



PROPOSED IMPLEMENTATION APPROACH

The Sharefair will build on the successes and lessons learnt from previous similar events organized by UN Women and other partners in 2014 (on Rural Technologies) and 2015 (on Extractive Industries) that have established a signature concept for regional knowledge exchange and action. The Sharefairs represent platforms for policymakers, academics, development practitioners and communities to meet to discuss timely issues and move forward the knowledge boundaries on timely topics, network and curate the conditions for change. Robust lessons learned from previous Sharefairs using inter alia partner debriefings will influence the implementation and guide the upcoming Sharefair.



PROPOSED VENUE AND TIMING

Time

The proposed timing of the Sharefair is October or early November 2016.

Venue

The proposal is to hold the 2016 Sharefair in a resilience challenging place to be closer to rural communities and bring out the resilience

ANTICIPATED RESULTS

The event will facilitate a long-term collaboration amongst regional stakeholders with the aim of identifying problems, using data and predictive methods, and mobilizing support and resources to incubate, accelerate, and scale effective solutions. The main expected outcome will be the creation of a strong regional network to amplify resilience solutions beyond the event, sustaining change in policy and practice within relevant macro-economic frameworks, and generate gender sensitive programmatic solutions.

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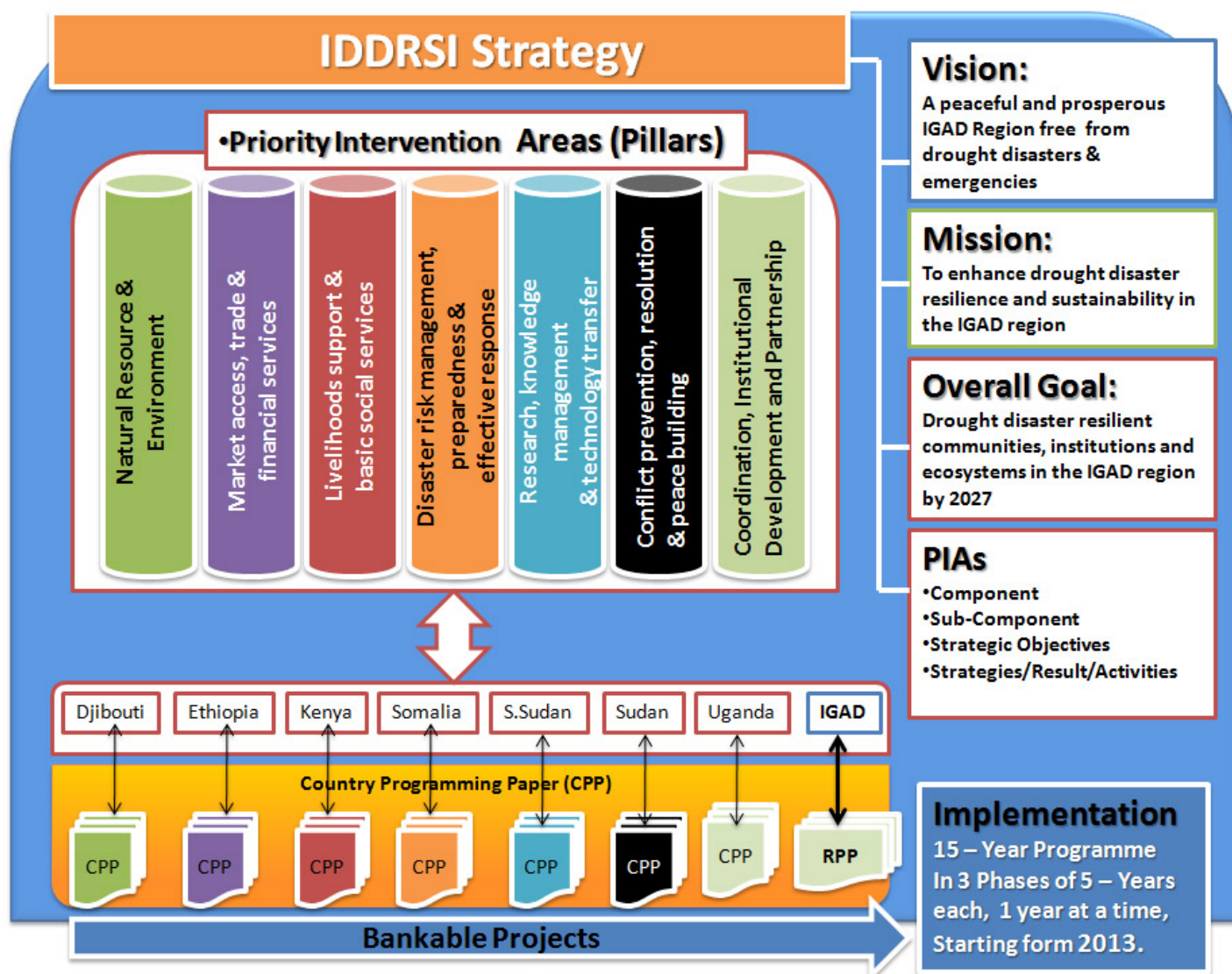


Diagram from <http://resilience.igad.int/> -



A woman packages dried fish; Kalokol, Near Lake Turkana, Kenya. Credit: Kelley Lynch/DLCI

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