

REPUBLIC OF KENYA

Ending Drought Emergencies:  
Common Programme Framework for  
Sustainable Livelihoods

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## Table of Contents

Key data .....	ii
Acronyms .....	iii
Acknowledgements .....	v
1 Executive summary .....	1
2 Situation analysis.....	2
2.1 Sector analysis .....	2
2.2 Critical issues to address .....	4
2.2.1 Institutional capacity .....	4
2.2.2 Strategic planning for sustainable livelihoods .....	5
2.2.3 Implementation .....	6
2.2.4 Changing social and demographic patterns.....	6
2.2.6 New financing opportunities .....	6
2.2.7 Trends and missing links in pastoral natural resource management .....	7
2.3 Justification for the common programme .....	8
2.4 Contribution to relevant policies and sector priorities .....	8
3 Programme framework.....	10
4 Cross-cutting issues.....	13
4.1 Gender and diversity .....	13
4.2 Links with other EDE pillars .....	13
5 Risk management .....	16
6 Institutional arrangements .....	17
6.1 Programme management and implementation.....	17
6.2 Coordination mechanisms.....	17
6.3 Monitoring and evaluation .....	20
7 Resources .....	20
Annex 1 Results framework .....	21

## Key data

<b>Country</b>	Kenya
<b>Title</b>	Ending Drought Emergencies Common Programme Framework: Sustainable Livelihoods
<b>Duration</b>	July 2014 – June 2018
<b>Total budget</b>	Kshs. 40,020 million
<b>Overall objective</b>	Enhanced resilience of ASAL livelihoods to the effects of drought and climate change.
<b>Expected results</b>	<ol style="list-style-type: none"><li>1. Increased income from, and consumption of, livestock and livestock products.</li><li>2. Improved management of water, crops and rangeland resources.</li></ol>
<b>Focus area and population</b>	Arid and semi-arid counties, approximately 15 million people (36% of the national population)
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## Acronyms

ARIS	Animal Resources Information System
ASALs	Arid and Semi-Arid Lands
ASDS	Agricultural Sector Development Strategy
CA	Conservation Agriculture
CAADP	Comprehensive Africa Agriculture Development Programme
CBPP	Contagious Bovine Pleuro-Pneumonia
CCPP	Contagious Caprine Pleuro-Pneumonia
CFA	Cash for Assets
CIDP	County Integrated Development Plan
EDE	Ending Drought Emergencies
FFA	Food for Assets
FMD	Foot and Mouth Disease
GAP	Good Agricultural Practice
HNRM	Holistic Natural Resource Management
IGAD	Intergovernmental Authority on Development
LAPSSET	Lamu Port-South Sudan-Ethiopia Transport corridor project
MoALF	Ministry of Agriculture, Livestock and Fisheries
MIS	Management Information System
MTP	Medium Term Plan
NCD	New Castle Disease
NDCF	National Drought Contingency Fund
NDMA	National Drought Management Authority
NEPAD	New Partnership for Africa's Development
NKIF	Northern Kenya Investment Fund
NRM	Natural Resource Management
PPR	Peste des Petits Ruminants
S&G	Sheep and goat (pox)
VGs	Voluntary Guidelines (on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security)
VSVP	Veterinary Surgeons and Veterinary Para-Professionals



## **Acknowledgements**

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## **1 Executive summary**

This is the fourth of six common programme frameworks that have been developed to operationalise the Ending Drought Emergencies (EDE) Medium Term Plan, which is an integral part of the Kenya Vision 2030 Second Medium Term Plan for 2013-17.<sup>1</sup>

The overall goal of the EDE sustainable livelihoods pillar is to strengthen the resilience of livelihoods in arid and semi-arid counties to the effects of drought and climate change. This task is made more challenging by the deep-seated inequalities and vulnerabilities of the region, by the growing unpredictability of dryland environments and economies, and by institutional weaknesses at all levels.

However, devolution presents a unique opportunity to reverse historical biases in public policy and investment and to promote a range of livelihood options which are more attuned to the distinct realities of the arid and semi-arid lands (ASALs). The region has a comparative advantage in livestock production, although a more diverse range of livelihood activities is now being pursued, particularly by those living in or near settlements. Underpinning all ASAL development is the critical importance of sustainable natural resource management.

This framework provides a common strategy around which all stakeholders can harmonise their interventions in support of sustainable livelihoods in ASALs. It has two broad components: increasing the contribution of livestock to the pastoral economy and the sustainable management of rangeland, water and crops for ASAL livelihoods.

Implementation of the framework will be led by existing structures within the Ministry of Agriculture, Livestock and Fisheries at both national and county levels, working closely with other state and non-state partners. The total budget is Kshs. 40,020 million.

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<sup>1</sup> The others are on peace and security, climate-proofed infrastructure, human capital, drought risk management, and institutional development and knowledge management.

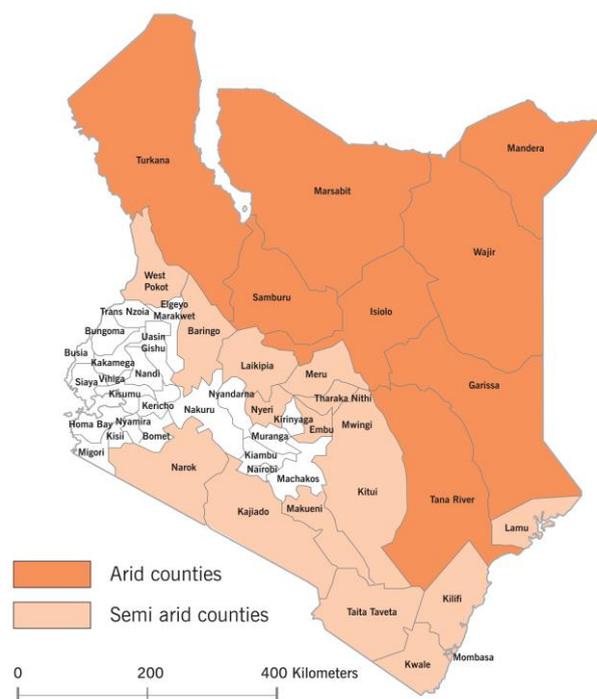
## 2. Situation analysis

### 2.1 Sector analysis

Kenya's arid and semi-arid lands cover 48 million hectares, equivalent to approximately 80 per cent of the country's total land surface. Of this, 9.6 million hectares support marginal agriculture, almost 15 million hectares are suitable for largely sedentary livestock production, and the remaining 24 million hectares are dry and suitable only for nomadic pastoralism.<sup>2</sup>

The ASALs are among the least developed areas in Kenya and have the highest poverty levels: more than 60 per cent of the population subsist on less than one dollar a day. Reinforcing this is a cycle of insecurity, climate change, and environmental degradation. ASAL counties display many of the characteristics of remote rural areas caught in chronic poverty, experiencing multiple and interlocking forms of disadvantage. However, despite their high poverty, the ASALs are also endowed with immense natural resources, with 70 per cent of the country's livestock, 90 per cent of its wild game and a wealth of unexploited minerals.<sup>3</sup>

The defining feature of the ASALs is aridity. Annual rainfall in arid areas ranges between 150mm and 550mm and mainly supports pastoral livelihood systems. In semi-arid areas it ranges between 550mm and 850mm and supports a mixed economy, including rain-fed and irrigated agriculture, agro-pastoralism, small-scale businesses based on dryland products and tourism-related activities.<sup>4</sup> Climate projections suggest that in future there may be longer and more frequent dry periods interspersed with intense but shorter and less predictable periods of rainfall.<sup>5</sup> For the ASALs such weather patterns are likely to intensify water stress, reduce crop yields, exacerbate flooding, increase the incidence of human and livestock disease, accelerate desertification, reduce biodiversity, deplete water and rangelands, and intensify resource-based conflicts. If the region's isolation, insecurity, and weak integration persist, then vulnerability will deepen.



<sup>2</sup> Republic of Kenya (2006) 'Arid Lands Resource Management Project (ALRMP) Phase II baseline survey

<sup>3</sup> Republic of Kenya (2012) 'Vision 2030 Development Strategy for Northern Kenya and other Arid Lands'

<sup>4</sup> Barrow, E. and Mogaka, H. (2007) *Kenya's Drylands – Wastelands or an Undervalued National Economic Resource*, IUCN

<sup>5</sup> Stockholm Environment Institute (2009) *The Economics of Climate Change in Kenya*, Oxford: SEI

As a result, food production will become less predictable and food security and poverty reduction efforts will be undermined.

Drought is the most extensive and damaging hazard in the ASALs. The Post-Disaster Needs Assessment of the 2008-11 drought period estimated total losses and damages of US\$12.1 billion, of which the livestock sector accounted for 72 per cent. Economic growth slowed by an average of 2.8 per cent per year.<sup>6</sup> Other studies estimate that existing climate-related shocks cost Kenya as much as US\$0.5 billion per year, or equivalent to around two per cent of GDP.<sup>7</sup> The recurring nature of drought and humanitarian suffering in Kenya, coupled with a rapidly increasing population, reinforce the need for sustainable strategies to end drought emergencies and build the resilience of ASAL communities to climate-related shocks.

The severity of a drought's impact is determined by the interaction between levels of exposure and vulnerability. Food security and livelihoods are being undermined by a number of factors, including insecurity and conflict, high population growth, sedentarisation, weakening community institutions, limited education opportunities, past poor governance and corruption and the shortcomings of contingency planning and response. As a result, vulnerability is deepening. The overall challenge is to sustain livelihoods in an environment that is becoming more unpredictable, and where people's access to and control over critical livelihood resources such as land is insecure.

Previous government policies did not fully promote the sustainable development and management of ASAL resources as an integral part of drought risk reduction, poverty alleviation and economic growth. As a result, the importance of diversifying economic activity was overlooked in favour of agricultural intensification and specialisation.<sup>8</sup> However, the Kenya Vision 2030 Second Medium Term Plan (MTP II) for 2013-17 recognises the ASALs as a new frontier in the transformation of Kenya's economy.<sup>9</sup> Within the Kenya Vision 2030 MTP II, the Ending Drought Emergencies (EDE) MTP advocates investment in sustainable livelihood practices that are critical to building resilience to climate-related shocks.

Recent institutional changes in Kenya reinforce this shift in emphasis, particularly the requirements in the Constitution with regard to economic and social rights (Article 43 of the Bill of Rights) and the introduction of devolved governance. The Kenya Vision 2030 MTP II acknowledges that promoting sustainable livelihoods is the mandate of both the national and county governments.

The concept of sustainable livelihoods is gaining greater prominence in debates on ASAL development. Integral to this is the need to mainstream a sustainable livelihoods approach in poverty reduction and environmental management. This brings together the thinking and

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<sup>6</sup> Republic of Kenya (2012) 'Kenya Post-Disaster Needs Assessment: 2008-11 Drought'

<sup>7</sup> Stockholm Environment Institute (2009)

<sup>8</sup> Behnke, R. and Muthami, D. (2011) 'The Contribution of Livestock to the Kenyan Economy', IGAD Livestock Policy Initiative Working Paper No. 03-11

<sup>9</sup> Republic of Kenya (2013) 'Kenya Vision 2030 Second Medium Term Plan (2013-17). Transforming Kenya: pathway to devolution, socio-economic development, equity and national unity'

practice of poverty reduction, sustainable development, participation, and empowerment in a framework for policy analysis and programming. A sustainable livelihoods approach has many benefits: it can help formulate policies and design programmes that are cognisant of the various risks and opportunities faced by ASAL communities; it can help people harness their coping and adaptive strategies and make sustainable use of natural resources; and it can strengthen the capacity of institutions and networks at the national and local levels that create an enabling environment for sustainable livelihood practices.

## 2.2 Critical issues to address

In light of the above, some of the critical issues which this programme will address are discussed below.

### 2.2.1 Institutional capacity

Policy and institutional arrangements at national and county levels have the potential to transform many of the relationships that influence sustainable livelihoods, such as the choice of strategies, access to capital, or returns to investment. Despite the role of national and county institutions in devising sustainable livelihood programmes, these are not yet effective. Measures are needed which promote collaboration between and within the different levels of government, as well as the participation of communities in policy formulation and decision-making. The institutional capacity challenges which currently prevent this can be found at three levels (Table 1).

*Table 1: Examples of institutional challenges*

National	County	Community
<ul style="list-style-type: none"> <li>▪ Insufficient flexibility in policy, planning and resource allocation systems to adapt to the complex nature of the ASALs and their changing needs, such as a widening wealth gap, an expansion of private sector engagement, and a growing settled population looking for jobs.</li> <li>▪ Lack of drought contingency finance means that funds for early response can only be obtained through budget re-allocations which are time-consuming and shift resources away from investments in resilience.</li> </ul>	<ul style="list-style-type: none"> <li>▪ County government structures are not yet fully developed and operational and their capacities are yet to be tested.</li> <li>▪ The detailed allocation of functions between the national and county governments is still open to constitutional interpretation and inter-governmental negotiation.</li> <li>▪ Mechanisms for inter-county collaboration are as yet rudimentary but will be critical in reducing cross-jurisdictional livelihood stresses.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Traditional structures that ensure sustainable resource management have been progressively weakened, due to the adoption of sedentary lifestyles and inadequate recognition of traditional governance systems in development planning.</li> <li>▪ Mechanisms that facilitate public engagement under the devolved structures and that integrate traditional systems of ASAL resource management are not well established. County governance structures are still evolving and county planning is still technocrat-led.</li> </ul>

### 2.2.2 Strategic planning for sustainable livelihoods

Although closely linked to institutional capacity, strategic planning is critical to integrating sustainable livelihoods in long-term resilience-building and development planning,<sup>10</sup> for the following reasons.

*First, County Integrated Development Plans (CIDPs) are sector-based and the opportunity to build complementary linkages across sectors may be missed.* The sustainable livelihoods approach provides an opportunity for holistic and integrated policy formulation and programming. For example, rural-urban linkages are a key dimension of sustainability in ASALs. While devolution allocates significant planning powers and development resources to county governments, many county institutions, NGOs and communities do not yet have the capacity to carry out their new responsibilities. Moreover, the mechanisms to negotiate between competing interests and resolve conflicts are weak. A deeper understanding is needed of the appropriateness and effectiveness of existing county planning systems, including their relevance and suitability for promoting sustainable livelihoods and poverty alleviation.

*Second, more capacity is needed for livelihoods-focused and people-centred planning, as well as the establishment of accountability frameworks at the county level.* These measures will ensure adherence to constitutional principles of public participation and rights-based development. Making sustainable livelihoods central to national and county planning processes should strengthen the capacity of local communities and government sectors responsible for marginal agriculture, livestock and water. Areas of capacity support may include public participation (including the poor, women, young people, nomadic households and minority groups), developing livelihood baselines, the use of real-time statistical data, enhancing the capacity to act on early warning information in a timely manner, and the use of complementary instruments in climate change adaptation, drought risk reduction and social protection.

*Third, formal planning systems need to be more flexible and attuned to the local realities in ASALs.* This can be achieved by integrating indigenous and scientific knowledge into formal planning processes so that planning priorities reflect local realities and reinforce community adaptive strategies.<sup>11</sup> It may also be achieved by recognising and responding to livelihood dynamics across county and international borders. For example, landscape-level planning (such as integrated watershed management) and the reinforcement of mobility across boundaries are both key strategies that enhance livelihood sustainability.

*Fourth there is a need for integrated cross-sectoral planning, which links sectors and harmonises the contributions of all actors and partners (donors, civil society and the private sector) at national and county levels.* The recently approved National Policy for the Sustainable Development of Northern Kenya and other Arid Lands (Sessional Paper No. 8 of

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<sup>10</sup> The first strategic goal of the Hyogo Framework for Action is ‘the integration of disaster risk reduction into sustainable development policies and planning’.

<sup>11</sup> Examples include livestock mobility, the management of drought reserves, the development of buffer areas of crop or forage production, the activation of social networks, and the spreading of risk.

2012), and the institutional arrangements it puts in place, provide an over-arching framework to pursue this, since the policy is both geographically focused and multi-sectoral in nature.

### **2.2.3 Implementation**

Common programming brings together integrated programmes that promote sustainable livelihoods, but a key issue to address is the quality of implementation. Specific concerns include the need for:

- Integration of sustainable livelihoods approaches into programme implementation at national and county levels.
- Scalability of interventions that contribute to sustainable livelihoods and mechanisms that facilitate early response during drought.
- Effective cross-sectoral and multi-agency coordination and implementation.
- Accountability between partners and with locally rooted civil society institutions.
- Closer engagement between the public and private sector and other stakeholders.

### **2.2.4 Changing social and demographic patterns**

Rapid population growth, global environmental change, and shifting socio-economic conditions are creating new demands and priorities in the ASALs. The commercialisation and individualisation of pastoral production are widening the wealth gap, and in places wage labour is replacing family labour. The scale and rate of land fragmentation in pastoral areas is attributed to weak land tenure systems and land grabbing, inappropriate water development (intensive groundwater abstraction), crop production in strategic grazing reserves and the expansion of irrigated agriculture, the spread of invasive species (such as *Prosopis juliflora*), and the establishment of wildlife reserves, conservancies and private enclosures.<sup>12</sup> The combined effects of these changes pose serious challenges to ASAL livelihoods.

### **2.2.5 Food and nutrition security**

The primary policy challenge for ASAL counties is to ensure food and nutrition security by promoting interventions that support sustainable marginal agricultural and livestock production systems. Household food availability has been decreasing due to a general decline in crop production across the country. Efforts to increase rain-fed and irrigated crop production, as well as livestock production, are constrained by climate stress, inadequate extension services and production technologies, limited access to affordable credit (high investment in irrigation), poor post-harvest management and storage facilities, and limited access to and control over critical livelihood resources.

### **2.2.6 New financing opportunities**

A number of new financial mechanisms can be exploited to support sustainable ASAL livelihoods. These include index-based insurance schemes targeting livestock and crop production, payment for ecosystem (wildlife) services, and carbon credit mechanisms. There

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<sup>12</sup> REGLAP (2010) 'Pastoralism Demographics, Settlement and Service Provision in the Horn and East Africa: Transformation and Opportunities', London: Humanitarian Policy Group / Overseas Development Institute

are now approximately 160 conservancies, located in various ASAL counties, some of which are negotiating long-term agreements with wildlife agencies on how the revenue generated from wildlife can cushion sustainable livelihood programmes.<sup>13</sup> In northern Kenya, oil and gas reserves will generate new sources of finance, both in the short term (such as compensatory mechanisms provided by companies) and in the long term (shares of revenue). However, the mechanisms are not yet in place to ensure that these deliver sustainable change for communities. Experience elsewhere in Africa suggests that the challenges of doing so in areas of high inequality and dependence on natural resources are high.<sup>14</sup>

Cash and food for assets (CFA/FFA) programmes also provide a ‘new finance’ mechanism to promote sustainable livelihoods. These build resilience to shocks through asset creation (such as rainwater harvesting for production), thus helping protect food-insecure households. Additional financing opportunities include the Equalisation Fund and other constitutional measures for addressing historically marginalised areas, public-private partnerships, and the proposed Northern Kenya Investment Fund.

### **2.2.7 Trends and missing links in pastoral natural resource management**

Pastoralists’ access to water, for both human and animal consumption, is a major element of their livelihoods and of the management of pastoral natural resources (water, pasture, land and trees). It is determined by two factors: infrastructure, investments and technologies (which influence the physical control of and access to water) on the one hand, and institutions (which influence the rules of use, power relationships, and either cooperation or competition) on the other. Changes in water tenure (i.e. water rights) and in the physical control of access to water can induce changes in the appropriation of pastoral land. For example, there is *de facto* appropriation of pastoral land surrounding water points by those who control these sources.

As a result, the following trends are observed: 1) environmental degradation, displacement and conflict; 2) enclosures and appropriation of new water resources and the surrounding grazing areas; and 3) new practices of private trucking and marketing of water. As a result, vulnerable groups are excluded from accessing water that was previously managed as common property.

The linkages at work in these processes are complex and play a major role in the competition for scarce resources in pastoral drylands, especially given the often negative socio-economic impacts of hydraulic infrastructures (such as boreholes, underground cemented cisterns, and canals). Understanding and addressing these linkages adequately is a major challenge for sustainable livelihoods and poverty reduction in pastoral areas.

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<sup>13</sup> See, for example, Osano, P. et al (2013) ‘Why Keep Lions Instead of Livestock? Assessing wildlife-tourism based payment for ecosystem services involving herders in the Maasai Mara, Kenya’, *Natural Resources Forum*, UN

<sup>14</sup> See, for example, European Parliament (2011) ‘The Effects of Oil Companies’ Activities on the Environment, Health and Development in Sub-Saharan Africa’

### **2.3 Justification for the common programme**

This programme framework provides a common strategy around which all stakeholders can harmonise their interventions in support of sustainable livelihoods in ASALs. Evidence shows that in spite of comparatively high levels of investment in livelihood programmes in the ASALs in the past, food insecurity remains exceptionally high and livestock diseases continue to be prevalent. This framework is therefore an important tool to ensure that programming is more coherent, coordinated and efficient.

The focus of sustainable livelihoods programming is on gains that will be achieved over a long period of time. Devolved government structures are still evolving, and new actors may emerge who do not comprehend or work with agreed county priorities. As a result, poor coordination may lead to unsustainable livelihood interventions, the duplication of activities, or the omission of critical interventions or targeted beneficiaries.

In an environment where many development partners are showing increasing interest in sustainable livelihoods, common programming is even more important. It provides a coordinated mechanism to manage conflicting institutional, organisational, sectoral or donor interests and ensure an equitable distribution of interventions. By aligning programmes, policies and funding with national and county priorities, the framework reinforces inter-agency collaboration and complementarity, thus strengthening mutual accountability between development partners and the local leadership.

### **2.4 Contribution to relevant policies and sector priorities**

The Kenya Vision 2030 Second Medium Term Plan (2013-17) recognises drought risk management and EDE as one of the ‘foundations for national transformation’. The argument that underpins the EDE strategy, that climate (and hence livelihood) resilience can only be built by addressing inequalities in access to public goods and services, is drawn from Sessional Paper No. 8 of 2012 on the National Policy for the Sustainable Development of Northern Kenya and other Arid Lands (the ASAL Policy), and the associated Vision 2030 Development Strategy for Northern Kenya and other Arid Lands.

In implementing the measures set out in this framework, the Government and its development partners will also contribute to implementation of the following policy commitments:

- The Agricultural Sector Development Strategy (ASDS) and the wider Comprehensive Africa Agriculture Development Programme (CAADP) of NEPAD, which recognise the constraints on further growth in Kenya’s highlands and the likelihood that the greatest gains in future will be realised in marginal areas. Recent research is already driving a reconsideration of the contribution of the ASALs to GDP and greater awareness of their multiple economic values and benefits.<sup>15</sup>
- National Food and Nutrition Security Policy, 2011, and the National Nutrition Action Plan, 2012-17

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<sup>15</sup> See, for example, Mortimore, M. (2009) *Dryland Opportunities: A New Paradigm for People, Ecosystems and Development*, Gland: IUCN; UN (2011) *Global Drylands: A UN System-Wide Response*, United Nations Environment Management Group; Behnke/Muthami, op cit.

- National Livestock Policy, 2008
- National Land Policy, 2009
- National Climate Change Response Strategy, 2010, and National Climate Change Action Plan, 2013
- African Union Policy Framework on Pastoralism. The EDE strategy includes a commitment to domesticate the AU Framework within the Kenyan context.

The goal of the common programme framework is to align funding to the critical issues that will end drought emergencies. To that end, and with particular reference to the sustainable livelihoods pillar, this programme will not focus on everything in the Agriculture Sector Medium Term Plan but rather on areas that will have the greatest immediate impact on ending drought emergencies. The linkages between this framework and the priorities of the Agriculture Sector are illustrated in Table 2.

**Table 2: Links to Agriculture Sector priorities**

<b>Priority</b>	<b>Contribution of this framework</b>
Decreasing the cost of production	<ul style="list-style-type: none"> <li>▪ The cost of production in the ASALs is heavily influenced by poor infrastructure. While the sustainable livelihood pillar will work to increase the efficiencies of value chains and improve disease surveillance and control, the infrastructure pillar will have a far greater impact on the cost of production. This is also true of sectors other than agriculture and natural resource management.</li> <li>▪ In recent years there has been a significant increase in the importance of casual labour and petty trade in the ASALs. Much of this is related to the agricultural sector and increasing pressure on agricultural livelihoods, but with the discovery of oil and minerals, the importance of casual labour / formal employment is likely to rise further. In addition, there is increased recognition that access to social protection for chronically vulnerable populations (addressed by the EDE pillar on drought risk management), stops or slows the slide into poverty, particularly for the poorest households. It helps families be more food secure and hold on to their assets during shocks.</li> </ul>
Supporting smallholder irrigation schemes	<ul style="list-style-type: none"> <li>▪ The MoALF is committed to providing water for smallholder irrigation in the counties, but the management of this water (in terms of both irrigation efficiency and soil moisture content) will be critical if irrigation schemes are to succeed. It will also be critical for purposes other than irrigation. This programme will therefore focus on increased water-use efficiency in agricultural production through appropriate agricultural practices and efficient irrigation technologies.</li> </ul>
Upgrading animal genetics	<ul style="list-style-type: none"> <li>▪ In areas prone to drought, improvements in animal genetics in order to promote production can make people more vulnerable, because higher-producing animals require more food and more frequent watering. In the absence of improved infrastructure and availability of both water and veterinary services, breed improvement is not a priority for this programme.</li> </ul>
Improving disease control	<ul style="list-style-type: none"> <li>▪ This is a critical issue for the programme, which will focus on three aspects of disease control: improved surveillance, improved coverage of</li> </ul>

	vaccination programmes for diseases of public importance, and improved access to veterinary services.
Improving livestock marketing systems	▪ This is largely dependent on an improved road network and communication system. However, the programme will focus on improving the management of rural markets and value chain efficiency.
Increasing the quantities of fish produced through aquaculture	▪ Water constraints and high temperatures are major limiting factors on aquaculture in the ASALs. This has not therefore been included as a priority in this programme.
Improving the efficiency of the Lake Turkana fishing value chain	▪ This is a key priority for this programme, on both sides of Lake Turkana.

### 3 Programme framework

The overall goal of the EDE sustainable livelihoods framework is to contribute to the enhanced resilience of ASAL livelihoods to the effects of drought and climate change. This will be achieved through two overarching programmes.

#### 1. Increased contribution of livestock to the pastoral economy

Livestock production is the dominant economic activity in the ASALs and the most important livelihood for pastoral communities. Livestock provide a variety of livelihoods services to rural households since they are, among other things, a source of food, cash income, manure, draught power and haulage, savings, insurance, social capital and female empowerment. Since poor households benefit more from these services, programmes should build on them to maximise their poverty-reducing benefits.

The ASALs have a comparative advantage in livestock production compared with other parts of the country, but face numerous challenges. The spatial distribution of livestock rather than their number is a key cause of overgrazing. High coefficients of variation in rainfall reinforce the importance of mobility, but this is increasingly being curtailed by settlements, boundaries, resource-based conflict, competing forms of land use, and declining rangeland resources, particularly the systematic disappearance of palatable pasture species due to invasive species. Livestock production is further affected by a combination of recurrent drought, climate change, poor physical and marketing infrastructure, and livestock diseases and pests; livestock health systems in the ASALs have been under-resourced since the 1980s.

#### 2. Sustainable management of rangeland, water and crops for ASAL livelihoods

Sustainable use and management of natural resources is an integral part of all ASAL development. Whilst the production of livestock remains the primary economic activity in the ASALs, particularly in the more arid counties, this is changing as people come to rely more on other resources such as charcoal and fuel-wood, employment, petty trade and crop farming – with many of these alternative livelihoods being destructive, unsustainable or of high risk or marginal economic return. Any programme aiming to improve the resilience of ASAL

livelihoods to drought must therefore address these but, in accordance with the principles of the EDE framework, by targeting the most critical actions that build the foundations for development.

The discovery of oil, gas and underground water, and the investments and opportunities offered by LAPSET, could offer significant alternative livelihood opportunities to ASAL communities if designed and implemented equitably. However, experience shows that all too often such resources rarely benefit the majority of local people and often lead to increased tension and conflict.

It has too often been assumed that the solution to the challenges facing the ASALs is more water. However, new water can create rather than solve problems, particularly when it is poorly sited in critical grazing areas, leads to sedentarisation and localised degradation,<sup>16</sup> or fails to take account of the needs of downstream users. The more pressing concern is better management of existing water sources and more efficient water use.

Land is a critical factor in sustaining ASAL livelihoods and has special cultural and aesthetic significance. To an outsider, the under-populated arid lands appear to be empty lands, ripe for alternative forms of production and investment. This is partly because the pastoral economy is undervalued. But for pastoralists, different areas of rangeland are important at different times: some are reserved for drought periods while others are of high ecological or cultural importance.

Customary institutions ensure the wise use and effective management of natural resources; degradation is much less evident in open rangelands. However, there are few controls over the spread of settlements and water points, and few mechanisms to ensure a fair distribution of the wealth from the natural resource base. Land pressures in rapidly urbanising areas are more acute because of proximity to towns and the impact of enclosures and sub-division. Between 1960 and 1990, increased land sub-division encouraged an influx of non-pastoral land management systems leading to the loss of many dry-season grazing areas.

The actual land area available for use in the ASALs is reduced because large parts have been appropriated for other purposes. Nearly 15 per cent of the land in agro-ecological zone 5 (semi-arid) has been alienated for national parks and reserves. The National Land Policy and National Spatial Plan, once implemented, will provide a framework to address many of the land challenges facing the ASALs. There is also innovative work at the local level to formalise customary practice in partnership with county authorities.

The sustainable livelihoods common programme framework is summarised in Table 3, and a more detailed results framework is in Annex 1.

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<sup>16</sup> Farah, K.O. et al (1996) 'The Management and Development of the Arid Communal Rangelands in North-Eastern Kenya: A Critical Analysis of the Past and Present', African Pastoral Forum Working Paper Series No. 7; Walker, R. and Hassan, O. (2002) 'Pastoralists Under Pressure: The Politics of Sedentarisation and Marginalisation in Northern Kenya', Nairobi: Oxfam

**Table 3: Sustainable livelihoods framework**

<b>Overall outcome:</b>	
Enhanced resilience of ASAL livelihoods to the effects of drought and climate change.	
<b>Results:</b>	
Increased income from, and consumption of, livestock and livestock products.	Improved management of water, crops and rangeland resources.
<b>Outputs:</b>	
<ol style="list-style-type: none"> <li>1. Improved animal production and health.</li> <li>2. Improved market linkages and private sector investment in livestock.</li> <li>3. Increased efficiency of value chains for emerging livestock (including fish, poultry and bees).</li> </ol>	<ol style="list-style-type: none"> <li>1. Improved governance of land tenure.</li> <li>2. Improved natural resource management.</li> <li>3. Increased water use efficiency in agricultural production.</li> </ol>
<b>Priority activities:</b>	
<p><b>Output 1:</b></p> <ul style="list-style-type: none"> <li>▪ Active and passive surveillance (using mobile platforms, ARIS, and range and water monitoring).</li> <li>▪ Comprehensive support to vaccination programmes for priority diseases (PPR, S&amp;G pox, CCPP, NCD, FMD, CBPP).</li> <li>▪ Establishment of an effective and efficient animal health delivery system.</li> <li>▪ Provision of broad-scale training on animal production and health.</li> </ul> <p><b>Output 2:</b></p> <ul style="list-style-type: none"> <li>▪ Support livestock market management through establishment of national / county livestock marketing boards and support to the co-management approach.</li> <li>▪ Investigate mechanisms for improved delivery of livestock insurance.</li> <li>▪ Support linkages to the private sector and the development of supply contracts for livestock and livestock products.</li> <li>▪ Support the development of innovative, water-efficient systems for feeding livestock.</li> <li>▪ Provide technical support to government and private sector companies to enable the establishment of effective slaughter houses and quarantine systems.</li> </ul> <p><b>Output 3:</b></p> <ul style="list-style-type: none"> <li>▪ Support fish farming and marketing (using ponds, cages and capture).</li> <li>▪ Promote value chains for emerging livelihoods (poultry, bee-keeping etc).</li> </ul>	<p><b>Output 1:</b></p> <ul style="list-style-type: none"> <li>▪ Roll out the Voluntary Guidelines (VGs) and capacity building for County Land Management Boards / community leaders.</li> <li>▪ Development of community by-laws and reciprocal agreements between communities to manage access to land and water resources.</li> </ul> <p><b>Output 2:</b></p> <ul style="list-style-type: none"> <li>▪ Develop / update county and regional watershed management plans.</li> <li>▪ Build capacity for holistic natural resource management (which incorporates the activities below).</li> <li>▪ Build capacity for the development and community-level management of water points.</li> <li>▪ Support programmes promoting the payment of environmental services.</li> <li>▪ Build capacity and market linkages for the sustainable use of wood and non-wood products.</li> </ul> <p><b>Output 3:</b></p> <ul style="list-style-type: none"> <li>▪ Support appropriate irrigation initiatives and innovations in water-use efficiency.</li> <li>▪ Support the adoption and local utilisation of nutritious drought-tolerant crops.</li> <li>▪ Support Good Agricultural Practice (GAP) and Conservation Agriculture (where there is sufficient water or in irrigation schemes).</li> <li>▪ Support improved post-harvest management, market linkages and private sector investment in agriculture.</li> <li>▪ Support peri-urban agriculture in rural towns.</li> </ul>
<b>Beneficiaries and geographical focus:</b>	
Pastoral and agro-pastoral households in all ASAL counties, including actors in the livestock value chain.	Households in all ASAL counties given their high dependence on both the management of natural resources and water-use efficiency.

## 4 Cross-cutting issues

### 4.1 Gender and diversity

Most pastoral societies are highly differentiated along gender and generational lines. Key assets and resources, such as land, livestock, water and cash, are generally controlled by older men rather than by women or youth, reflecting the subordinate position of women in society and the cultural limitations placed on their public roles. Men's control over productive assets obscures the important role of women in livestock production and agriculture.

The demands of livestock production and certain cultural practices impede the education and career development of both boys and girls. The constraints on girls' and women's education are evident in the literacy gender gap. Literacy rates in Northern Kenya as a whole are low,<sup>17</sup> but those for women are even lower, illustrating the 'double bind' that women experience on account of both their gender and their social group.<sup>18</sup>

Gender roles are changing under the impact of urbanisation and commercialisation. The welfare of women and girls is also threatened by environmental problems which increase the pressure of providing water and fuel-wood for the household. Growing economic differentiation is also affecting vulnerable groups. Some of the very poorest people no longer engage in the pastoral economy and rely on wage labour or petty trade. Most communities have social protection systems to care for the vulnerable, but people with disabilities and those with HIV/AIDS still face high levels of stigma. The positive qualities of traditional institutions, which provide invaluable social assistance, can be harnessed for multiple benefits, including as platforms for economic and social development (such as savings and credit schemes or adult literacy programmes), and to mobilise young people's engagement in development.

Urbanised young people may have different values and aspirations from their rural age-mates, but their economic options are limited. With few opportunities for work or training they are vulnerable to being drawn into conflict and anti-social behaviours. In pastoral social systems, ageing is traditionally associated with increasing political authority, but these norms are being challenged. The particular issues affecting pastoralist youth are not yet being addressed by national youth policies.

### 4.2 Links with other EDE pillars

**Peace and security:** Conflict and insecurity limit trade and exchange and constrain access to productive resources. When rangeland is closed-off by conflict, its under-grazing can also

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<sup>17</sup> Republic of Kenya (2008) 'Kenya Integrated Household Budget Survey, 2005-06'

<sup>18</sup> Kipuri, N. and Ridgewell, A. (2008) 'A Double Bind: The Exclusion of Pastoralist Women in the East and Horn of Africa', London: Minority Rights Group International

lead to degradation, the loss of biodiversity and the spread of alien or unpalatable species.<sup>19</sup> Sustainable livelihoods are not possible to achieve in a climate of instability and insecurity.

**Climate-proofed infrastructure:** Economic growth created by more sustainable livelihoods generates revenue to invest in other sectors such as infrastructure development. In turn, better infrastructure provides a foundation for economic growth and an incentive for private sector engagement, helping to ensure more cost-effective access to markets.

**Human capital:** Higher incomes will create surpluses to invest in education and protect against ill-health. Conversely, productive and sustainable livelihoods depend on a healthy and skilled workforce. Demand for jobs is rising as the population grows. The pastoral system can absorb only a finite number of people; a growing proportion will either prefer or be forced to make a living outside pastoralism.

Indigenous knowledge of ecology, medicine and animal health is abundant in the ASALs but scattered and threatened by over-exploitation and bio-piracy. It could be more effectively harnessed to strengthen livelihoods and inform innovation. Research is the cutting edge of economic development and empowerment, but few institutions of higher learning focus on issues relevant to the ASALs. As a result, there are fewer scientific breakthroughs in livestock than in crop research. Conventional technologies used in higher rainfall areas may not be appropriate in the ASALs. New technologies are needed, particularly in integrated natural resource management, crop-wildlife-livestock interactions, eco-tourism, livestock marketing, animal health, and crop/pasture seed varieties. These could be developed through partnerships between ASAL counties, farmers, research institutions and universities.

**Drought risk management:** Income growth and diversification helps drought-affected households spread their risks and improve their adaptive capacity. More specifically, the actions under this framework to improve the functioning of livestock markets will facilitate commercial offtake during periods of drought. In turn, better risk management helps protect households against asset loss. Since droughts can be anticipated and managed, failure to do so has major consequences for sustainable livelihoods. Pastoralists manage unpredictability and exploit opportunities by using highly specialised risk-spreading strategies, such as herd maximisation and diversification, the loaning of animals, and mobility. If these strategies are reinforced, pastoral production may have an advantage in an increasingly variable and unpredictable climate.

ASAL livelihoods are particularly vulnerable and emergencies and shocks are expected to occur on an increasingly regular basis. Building sustainable livelihoods alone will not stop the negative effects of droughts. In the short to medium term all ASAL livelihoods will remain dependent on timely emergency drought response in some form. Thus all pillars are essential in establishing sustainable livelihoods and ending drought emergencies. In order to build resilience and long-term sustainability, a better balance and alignment between development and emergency activities and funding is urgently needed. Development

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<sup>19</sup> WISP (2008) 'Policies that Work for Pastoral Environments: A six-country review of positive policy impacts on pastoral environments'

interventions may not be totally disaster-proof. However, with better planning and coordination they should be emergency-aware, integrating drought contingency mechanisms and the means for early response when stress deepens. Better coordination will also ensure that they contribute to achieving the goal of sustainability more rapidly.

**Institutional development and knowledge management:** A coordinated approach to addressing the effects of drought and climate change is key to achieving enhanced resilience of ASAL livelihoods. This requires the support of effective institutions that are able to drive the development process in a coherent manner. In addition, the availability of information and knowledge crucial to providing the evidence base that informs investment choices is critical to achieving results.

## 5 Risk management

The principle risks associated with this framework, and the measures being taken to mitigate them, are shown in Table 4.

*Table 4: Risks and mitigating measures*

	<b>Risk</b>	<b>Mitigating measures</b>
1	Insecurity and growing resource-based conflict, especially in arid areas.	<ul style="list-style-type: none"> <li>▪ Close collaboration with the peace and security pillar of the EDE, and its efforts to establish mechanisms for peace building and conflict resolution.</li> </ul>
2	Persistent drought and a more unpredictable climate may divert attention from long-term planning.	<ul style="list-style-type: none"> <li>▪ Support for the National Drought Contingency Fund (NDCF) at both national and county levels, which will provide dedicated finance for early drought response (and therefore reduce the diversion of funds from long-term programmes).</li> </ul>
3	Governance challenges, including an increase in populations and settlements.	<ul style="list-style-type: none"> <li>▪ Capacity assessments will identify critical gaps that may inhibit the successful implementation of this programme, and for which support will be provided.</li> </ul>
4	High dependence on rain-fed agriculture and low agricultural productivity.	<ul style="list-style-type: none"> <li>▪ The infrastructure pillar of the EDE is investing in water harvesting technologies.</li> <li>▪ This framework will promote and support climate-smart agricultural practices.</li> </ul>
5	Global dynamics, such as spikes in international oil prices and slow economic recovery in donor countries.	<ul style="list-style-type: none"> <li>▪ Whilst county funding currently accounts for only around four per cent of the total budget, this is expected to increase significantly and reduce the reliance on external donors.</li> </ul>
6	High levels of unemployment and poverty in ASALs.	<ul style="list-style-type: none"> <li>▪ The programme is expected to generate employment and sources of revenue, so the programme itself is a mitigating measure to this risk.</li> </ul>

In addition, a number of general assumptions may be made about the likelihood of achieving the objectives of this programme:

- By aligning the common programme framework to county and national development priorities, the chances of success are increased.
- Pooling of resources (such as time, finance, and technical expertise) and targeting of interventions will increase efficiency and effectiveness.

- The high level of commitment of the national and county governments, local communities and partners provides a strong impetus to make the programme succeed.
- Participatory approaches in formulating the county interventions for inclusion in the framework suggest an existing commitment to prioritise community needs in the CIDPs.
- The commitment of the national and county governments to this framework suggests that broader political dynamics will not affect its implementation.
- Co-financing by all parties, including county governments and development partners, will enhance the feasibility of the common programming approach.

## 6 Institutional arrangements

### 6.1 Programme management and implementation

The institutional framework for the programme is shown in Figure 1. A number of different levels of programme management and implementation are proposed:

- **Decision-making:** the Council of Governors, with the Cabinet Secretaries for the Ministry of Agriculture, Livestock and Fisheries and the Ministry for Devolution and Planning, will oversee the allocation of development partner resources to the different counties. Decisions will be made based on available funding and the financing gap at county level. Counties will present proposals for financing through technical county cluster groups.

It is important to note that these arrangements will change over time as they adapt to rapidly evolving coordination and management structures and in order to include additional sectors (such as trade, marketing and commerce) which are all exceptionally important for ASAL livelihoods. For the time being it is envisaged that the coordination mechanisms anchored in the MoALF will provide an inter-ministerial linkage with other relevant ministries as well as with private sector stakeholders.

- **Technical county cluster groups:** Given the need for synergy between counties within the same geographical area, technical county cluster groups will be established. These will comprise the County Ministers of Agriculture (or their representatives) and will review and agree on proposals to be submitted to the Council of Governors.
- **County Ministries of Agriculture** will be primarily responsible for implementation using available staff and resources (including those provided under the ASDS).

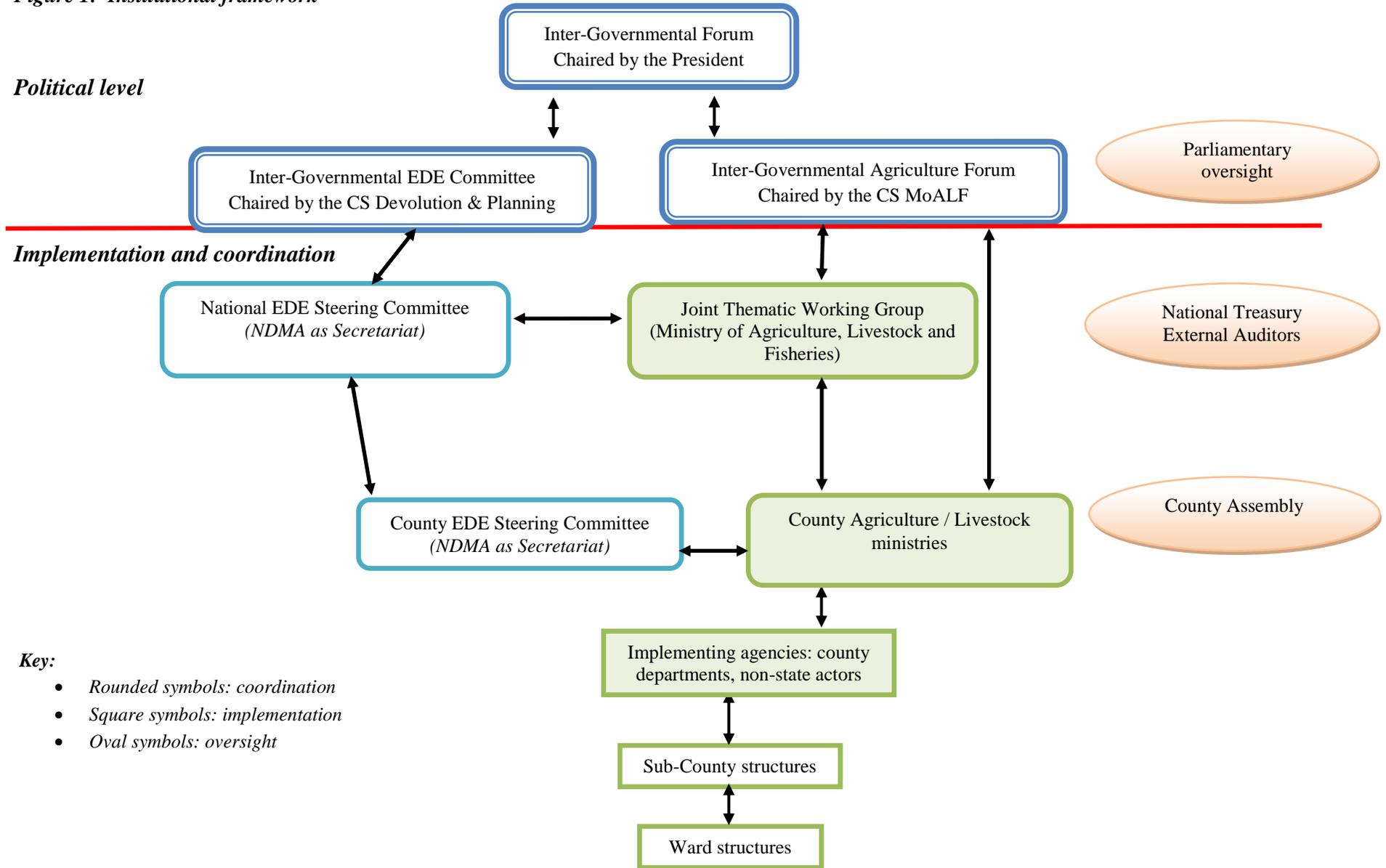
### 6.2 Coordination mechanisms

The programme will be coordinated through existing structures:

- **National level:** coordination will be housed within the MoALF and progress will be reported to the counties through the Inter-Governmental Agriculture Forum.

- **Cluster level:** the programme will be coordinated by the technical county cluster groups.
- **County level:** coordination will be the responsibility of the County Ministries of Agriculture.

**Figure 1: Institutional framework**



### **6.3 Monitoring and evaluation**

As part of its oversight responsibility, the MoALF will ensure that appropriate monitoring, evaluation and reporting mechanisms are in place and applied by all implementing partners. This will be done within the framework of the overall monitoring and evaluation systems for the EDE Common Programme Framework, which will be designed, facilitated and supported by its sixth pillar. The targets and timeframes for each indicator in the results framework (Annex 1) will be agreed with partners within the first six months of implementation.

## **7 Resources**

The total amount of funds required is Kshs. 40,020 million, of which a minimum of Kshs. 1,531 million is already secured through county budgets. These figures will be further refined during the inception phase. Since the agriculture sector is now largely devolved, more work is needed to determine the precise funding situation in each county. By December 2014, i.e. after the first six months of implementation, a clearer picture of financing needs will have been established.

The mandate of the Livestock Offtake Fund, which has already been gazetted, will be widened to encompass this programme. Disbursements from the Fund will be overseen by the Council of Governors and by the Cabinet Secretaries for Agriculture, Livestock and Fisheries and for Devolution and Planning.

## Annex 1 Results framework

	OVI	MOV	ASSUMPTIONS
<b>GOAL (BY 2022)</b>			
Communities in drought-prone areas are more resilient to drought and other effects of climate change, and the impacts of drought are contained.	Number of people requiring food assistance as a result of drought emergencies.	KFSSG food security assessments	<ul style="list-style-type: none"> <li>Investments made across all pillars of the EDE, and functional links established between the pillars.</li> <li>Alternative sources of finance established and operational, such as the NDCF and ARC, and scalability mechanisms in place.</li> <li>Adequate economic, political and climatic stability.</li> </ul>
	% of children under five stunted in each of the 23 most drought-affected counties.	Health sector MIS	
	Value of livestock lost in drought compared with previous drought episodes.	Post-Disaster Needs Assessment	
	Kenya manages drought episodes without recourse to international emergency appeals. (Yes/No)	GoK and UN documents	
<b>OVERALL PILLAR OUTCOME</b>			
Enhanced resilience of ASAL livelihoods to the effects of drought and climate change.	% improvement in resilience score. % improvement in long-term household food security.	Resilience analysis reports	<ul style="list-style-type: none"> <li>Other priority areas under the EDE MTP are given sufficient attention.</li> </ul>
<b>SPECIFIC RESULTS</b>			
1. Increased income from, and consumption of, livestock and livestock products.	% improvement in economic gains from livestock.	Household economic survey	<ul style="list-style-type: none"> <li>Livestock remains an important component of livelihoods in the ASALs, even for middle- and low-income households, as well as households that are engaged in crop production.</li> </ul>
	% decrease in the incidence of malnutrition.	Nutrition surveys	
2. Improved management of water, crops and rangeland resources.	% improvement in economic gains from natural resources.	Household economic survey	<ul style="list-style-type: none"> <li>National and county government commitment to improved natural resource management.</li> </ul>
<b>OUTPUTS</b>			
<b>Result 1: Increased income from, and consumption of, livestock and livestock products.</b>			
1.1 Improved animal production and health.	% reduction in livestock morbidity & mortality.	Livestock diseases surveillance data	<ul style="list-style-type: none"> <li>The Veterinary Authority is able to coordinate nationwide disease control activities across the different counties.</li> </ul>

	OVI	MOV	ASSUMPTIONS
	% increase in household milk availability.	Household economic survey NDMA monthly drought EW bulletins	
1.2 Improved market linkages and private sector investment in livestock.	% increase in numbers of livestock sold.	Market information systems, market reports & NDMA monthly drought EW bulletins	<ul style="list-style-type: none"> <li>The ability to manage range resources, coupled with the ability to save and borrow money, will enable livestock keepers to benefit from seasonal price fluctuations and market their animals when the price is high,</li> </ul>
	% increase in livestock price.		
1.3 Increased efficiency of value chains for emerging livestock (including fish, poultry and bees).	% increase in quantity of fish, poultry and honey marketed.		<ul style="list-style-type: none"> <li>As infrastructure improves in the ASALs, so will opportunities to diversify into other forms of livestock production.</li> </ul>
<b>Result 2: Improved management of water, crops and rangeland resources.</b>			
2.1 Improved governance of land tenure.	No. of county land use plans.	Land use maps & reports	<ul style="list-style-type: none"> <li>Improved governance of tenure will provide incentives for NRM, particularly in areas of conflict between pastoralists and agriculturalists and where income from wood and charcoal is significant, and help reduce conflict.</li> </ul>
	Area of community land registered.		
2.2 Improved natural resource management.	Improved water catchment conservation.	Satellite imagery Field reports Sales of fodder	<ul style="list-style-type: none"> <li>Improved NRM will enable greater and more sustainable revenue from wood products and is a precondition for improvements in the contribution of livestock to livelihoods.</li> </ul>
	Recovery of degraded land.		
	Conservation of fodder for livestock.		
	No. of functional water points.		
	Community forest management.		
2.3 Increased water use efficiency in agricultural production.	Increased area under irrigation.	Maps and reports Agricultural census Nutrition surveys	<ul style="list-style-type: none"> <li>Increased efficiency of water use in agricultural production will decrease the susceptibility of agricultural producers to drought shocks.</li> </ul>
	Increased area under conservation agriculture & Good Agricultural Practice (GAP).		
	Increased access to markets.		
	Improved nutritional status.		

ACTIVITIES	MEANS	BUDGET 2014-18 (Kshs m)	
<b>Output 1.1: Improved animal production and health</b>			
Active and passive surveillance (using mobile platforms, ARIS, and range and water monitoring).	Mobile phones & digital pens for county veterinary officers; mobile phones for animal health assistants; expansion of the range & water model; activation of the livestock movement platform.	2,001	The government must set aside sufficient funds for disease surveillance which has to be centrally managed rather than on a county-by-county basis.
Comprehensive support to vaccination programmes for priority diseases (PPR, sheep & goat pox, CCPP, NCD, FMD, CBPP).	National vaccination strategies; sufficient quantity of vaccine; cold chain equipment; functional delivery mechanisms.	6,960	Development (through to commercialisation) of thermo-stable vaccines & the combination of vaccines so that one vaccine can effectively cover multiple diseases strains.
Establishment of an effective and efficient animal health delivery system.	Scale up the franchise model piloted by Sidai; establish operational and supervision requirements for animal health technicians; more technical staff in county veterinary offices.	2,001	Acceptance by the Kenya Veterinary Board and VSVP Act 2011 that, given current job cuts within the State Department of Livestock, there is an urgent need for animal health technicians.
Provision of broad-scale training on animal production and health.	Radio, TV and web-based training supported by demonstration (both through PFS groups and listener groups).	435	County-level buy-in so that budgets are made available in counties.
<b>Output 1.2: Improved market linkages and private sector investment in livestock.</b>			
Support livestock market management through establishment of national / county livestock marketing boards and support to the co-management approach.	Training of livestock market management committees and county marketing boards; establishment of regulations for co-management and revenue sharing.	435	County-level acceptance of the revenue sharing model.
Investigate mechanisms for improved delivery of livestock insurance.	Research contracts.	87	A functional, commercialised livestock insurance system.
Support linkages to the private sector and the development of supply contracts for livestock and livestock products.	Commodity exchange platforms linked to livestock marketing associations; negotiations with private sector-run end markets; support to livestock producer groups and micro-finance institutions such as village banks.	174	Concurrent investments in infrastructure enable cost-effective access to markets.

ACTIVITIES	MEANS	BUDGET 2014-18 (Kshs m)	
Support the development of innovative, water-efficient systems for feeding livestock.	Integration of livestock into irrigation systems, feedlots and fodder production using hydroponics.	870	
Provide technical support to government and private sector companies to enable the establishment of effective slaughter houses and quarantine systems.	Technical expertise; establishment of food safety requirements from end markets.	87	An effective livestock traceability, disease surveillance & control system is essential if livestock are to comply with international standards and qualify for export.
<b>Output 1.3: Increased efficiency of value chains for emerging livestock (including fish, poultry and bees).</b>			
Support fish farming and marketing (using ponds, cages and capture).	Identify, and provide coordinated support to, critical points for integration along the value chain.	1,305	Concurrent investments in infrastructure enable cost-effective access to markets.
Promote value chains for emerging livelihoods (poultry, bee-keeping etc).		1,305	
<b>Output 2.1: Improved governance of land tenure.</b>			
Roll out the Voluntary Guidelines (VGs) and capacity building for county Land Management Boards / community leaders.	Expertise on VGs; resource use mapping and planning; satellite imagery and ground-truthing; community meetings and negotiations.	1,827	County land management boards are established and their mandate (and that of the NLC and the Ministry of Lands) is clarified.
Development of community by-laws and reciprocal agreements between communities to manage access to land and water resources.	Community meetings and negotiations; legal expertise; involvement of county administration and police.	2,001	Concurrent work on conflict management and community-level training on the voluntary guidelines.
<b>Output 2.2: Improved natural resource management.</b>			
Develop / update county and regional watershed management plans.	Review of current plans; additional water mapping (using the UNESCO Radar technology); analysis of the options that new findings present.	2,610	Agreement to roll out the UNESCO water-mapping approach to other areas of the country.
Build capacity for holistic natural resource management (which incorporates the activities below).	Training of NGOs, county staff and community leaders; link to by-laws and tenure rights.	2,001	Sufficient number of trained professionals that can provide HNRM training and adapt the approach so that it is suitable to the target areas.

<b>ACTIVITIES</b>	<b>MEANS</b>	<b>BUDGET 2014-18 (Kshs m)</b>	
Build capacity for the development and community-level management of water points.	Development / rehabilitation of strategic water points (based on solid rules of access and payment of management / maintenance fees); training of / support to Water User Associations.	2,001	Community agreement to pay a service charge for water; community ability to manage access to water points (linked to the reciprocal agreements above).
Support programmes promoting the payment of environmental services.	Market assessment; carbon assessment; capacity building and business establishment.	870	Existence of a model to enable the payment of carbon credits for sustainably managed charcoal production (as charcoal is the most common wood product).
Build capacity and market linkages for the sustainable use of wood and non-wood products.	% increase in income from wood / non-wood products; sustainable management plans for wood/non-wood products.	1,305	Supportive legislation.
<b>Output 2.3: Increased water use efficiency in agricultural production.</b>			
Support appropriate irrigation initiatives and innovations in water-use efficiency.	Support siting and design of appropriate irrigation schemes; build capacity for scheme management; promote appropriate agronomic practices; investigate innovations in water-use efficiency (drip irrigation, hydroponics), integrate livestock into irrigation schemes.	4,350	Concurrent investments in infrastructure enable cost-effective access to markets.
Support the adoption and local utilisation of nutritious drought-tolerant crops.	Promote adoption and carry out research on new varieties and their adoption (millet, sorghum, grain amaranth, quinoa, teff, greengrams etc).	1,740	
Support Good Agricultural Practice (GAP) and Conservation Agriculture (where there is sufficient water or in irrigation schemes).	Support to extension on CA and GAP; provision of appropriate inputs for mechanisation.	3,480	Concurrent investments in infrastructure enable cost-effective access to markets.
Support improved post-harvest management, market linkages and private sector investment in agriculture.	Post-harvest management; cooperatives; contract farming; agricultural insurance; linking input provision to supply contracts; privatised extension services.	1,740	
Support peri-urban agriculture in rural towns.	Capacity building of peri-urban groups.	435	
<b>TOTAL</b>		<b>40,020</b>	