REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK, FISHERIES AND COOPERATIVES

BUILDING CLIMATE RESILIENCE IN THE AGRICULTURE SECTOR OF KENYA

A: Background

Climate change is threatening food production systems and therefore affecting millions of Kenyans who depend on agriculture in terms of livelihoods, food security, economic growth, employment creation, off-farm employment and foreign exchange earnings. The sector is highly sensitive to climate change due to its high dependence on climate and weather – largely rainfed farming systems. The sector accounts for just over 25% of the country's gross domestic product (GDP) and another 27% of GDP indirectly through linkages with other sectors. The sector employs more than 40% of the total population and more than 70% of Kenya's rural people derive their livelihood from farming and other related enterprises. The sector accounts for more than 47% of foreign exchange earnings.[1]

Climate change is already evident in a number of ways. Consistent warming trends, more frequent and intense extreme weather events, and crop pests and disease have been observed across the country in recent decades (see Annex). As a result, climate change will place an additional burden on efforts being made by the country to meet long-term development goals in line with **Vision 2030 and The Big Four Agenda.** Slow agricultural productivity growth, declining income growth, and problems of maintaining food security will have far-reaching consequences on the country.

The combination of the characteristics of agriculture—its importance as an economic sector, its vulnerability to climate change — make building resilience to climate change in the country an enormous challenge. For the sector to meet the food and income needs of current and future generations, the government, individual farmers, community groups, and the private sector will need to implement comprehensive mitigation and adaptation strategies, which will require targeted investments.

[1] Kenya National Bureau of Statistics (2019).

B: Call for Action:

1. **Scaling up climate financing investments into the agriculture sector from various sources (incl. national budget):** Building resilience in the agricultural sector poses enormous challenges in the face of climate change. Building resilience requires reducing vulnerability by minimizing the impacts of climate change and raising adaptive capacity. This in turn requires targeted investments to effect adaptation and mitigation strategies. Available statistics show that attention to the agricultural sector is inadequate both in terms of government budgetary allocation and resource utilization. On average, Kenya used to spend over 10% of its total government budget on agriculture in the first decade after independence. This declined to an average of 7.5% in the period between 1980 and 1989 and dropped to 3% in the 1990 to 2000 period and to 1.2% in 2000/1. It then increased to 6.5% in 2008/9 and thereafter 5.1% in 2009/10 and 3.6% in 2012/13 (Figure 1). For some time, it has averaged 4% (Institute of Economic Affairs, 2014). As a result, the Government of Kenya falls short of meeting the Maputo Declaration of allocating 10% of its budget to the agricultural sector. Funds allocation to agriculture sector remain amongst the lowest yet food security is one of the priorities under the Big Four Agenda.

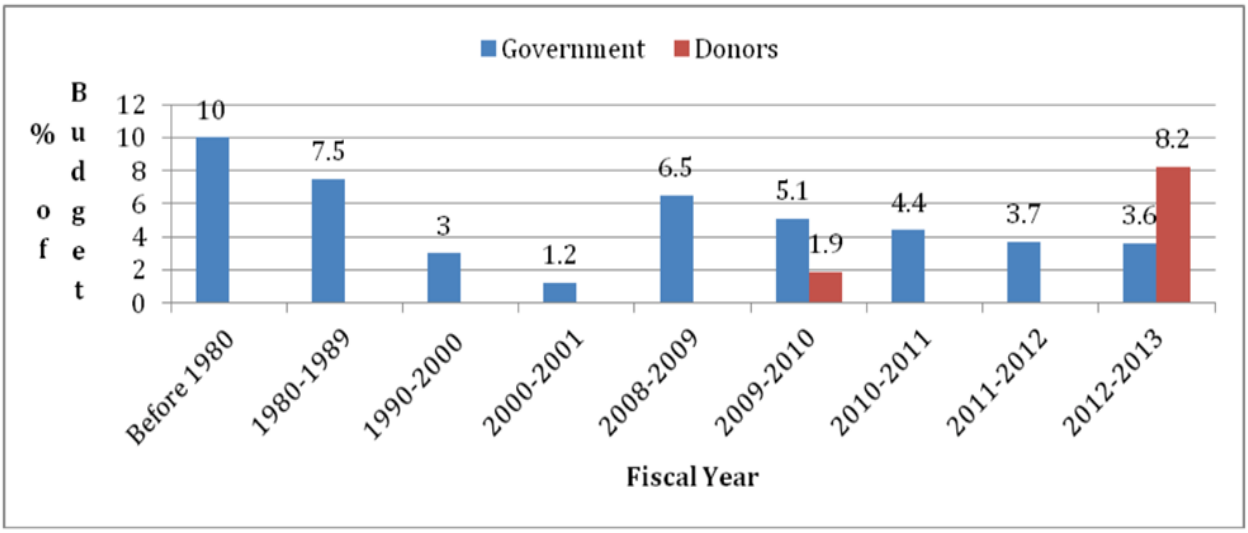


Figure 1: Proportion of agriculture and rural development/national budget

With increasing pressure from the adverse impacts of climate change, the current national budget allocation of 3.8% is grossly inadequate to enable the country to meet the food and income needs of current and future generations in the face of climate change. This calls for greater flexibility and incremental budgetary allocation for the agriculture sector. In addition, private sector offers a huge opportunity to mobilize climate action and finance in agriculture. The government needs to provide an enabling environment to incentivize and leverage private sector capital.

2. **Undertake long-term future climate scenarios:** Dealing with the short and longer-term impacts of climate change on agricultural systems will require improved understanding on vulnerability of our agricultural production systems through future climate scenarios analysis. The analysis will be useful in deepening understanding of the projected changes; and the potential impacts of climate change, indicating the

adaptability/suitability of farming systems under changing climatic conditions across the country and recommend appropriate adaptation options to build longer-term adaptive capacity and resilience. This will entail evaluating a combination of current climate data with future climate change predictions for 2030 and 2050 with a view of providing critical synthesis of the evidence and future scenarios of climate change to inform policy- and decision-making.

3. **Support capacity building and training:** The scale and uncertainty of the long-term impacts of climate change on agriculture, the urgency of action required and the power asymmetries that exist between the different actors mean that managing climate change poses specific institutional challenges. The ministry's capacity constraints that exist are well documented and there is a need to build its capabilities to coordinate and support the sector's response to climate change. Recent studies across agriculture training institutions and recently-graduated youth in 24 counties have established that: a widened gap between skills possessed by youth and those required by the job market; inadequate technical skills and knowledge on climate change and climate-smart technologies by the extension service providers; and climate change has not been adequately integrated into Kenya's formal agricultural education, extension and training systems such as the Kenya School of Agriculture (KSA), Agricultural Technology Development Centres (ATDCs), Agricultural Training Centres (ATCs) and Agriculture Technical Vocational Education and Training (ATVET). This calls for integration of climate change into the formal education, extension and training systems.

C: Implementation Matrix

Activity	Sub-activity	When	Responsible
Scaling up climate finance investments into agriculture sector	Sensitization session with Parliamentary Committees on Agriculture (Senate & NA)	March/April 2020	**MoALF&C**
	Sensitization session with CoG Committee on Agriculture	March/April	**MoALF&C** and **CoG**
	Breakfast meeting with private sector actors (KEPSA, KAM, FKE, KNCC&I	April 2020	**MoALF&C** and KEPSA, CIAT
	Breakfast meeting with CSOs in the agriculture space	April/May 2020	MoALF&C and **CCAFS**
	Breakfast meeting with development partners	May 2020	**MoALF&C** and AGNES
Long-term future climate scenarios	Experts meeting to agree on the scope of work to inform LTS and NDCs	March 2020	**MoALF&C** and AGNES

	Modeling of climate future scenarios	March/April 2020	**CIAT, CCAFS, ILRI** and **WWF**
	Experts validation meeting	April/May 2020	**MoALF&C** and AGNES
	Final future climate scenarios Report	June 2020	**MoALF&C** and AGNES
Capacity building and training	Convene meeting of experts, KSA and relevant tertiary agriculture training institutions	March 2020	MoALF&C and EAI-AKU
	Support review of curricula for tertiary-level institutions	April-June 2020	MoALF&C and EAI-AKU
	Experts validation meeting	July/Aug 2020	MoALF&C
	Capacity building on big data, climate information and agro-advisory services	July 2020 and beyond	MoALF&C, KALRO, CIAT

ANNEX

INCREASING DISASTER FREQUENCY UNDER CLIMATE CHANGE AND RELATED EFFECTS IN KENYA

Trends in Drought and Floods

Drought and floods are the most significant of the climate-related disasters in Kenya. Before 1970s, on average, Kenya experienced drought every 10 years. The pattern has however changed, with the ratio of drought years to normal years exponentially rising between 1970 and 2011. The frequency and impacts of both drought and floods, and the number of people they affect, have been on the increase in the recent past. Figure 2 illustrates the number of people affected by drought and floods in Kenya from 1971 to 2009.

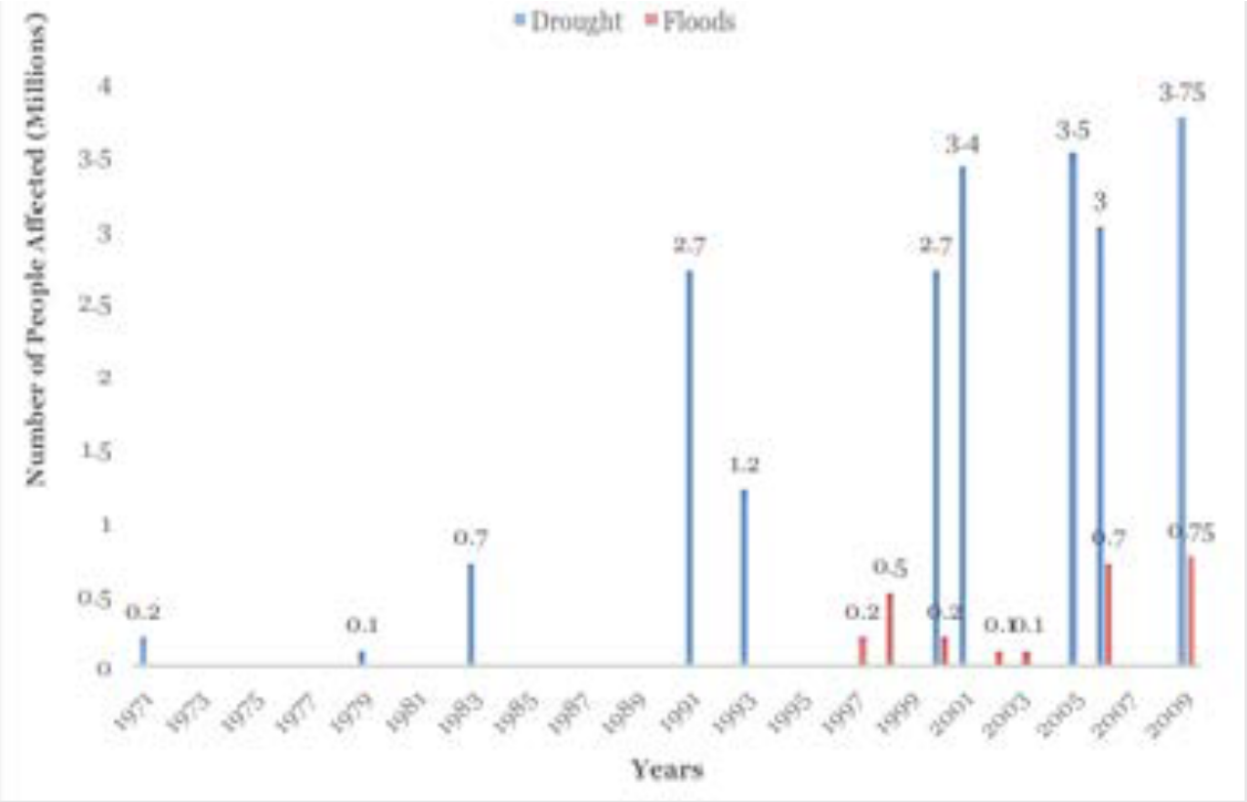


Figure 2: Number of People Affected by Drought and Floods in Kenya from 1971 to 2009 (Adapted from MoSSP (2009)).

Droughts

The country's drought cycles have been reduced from 20 years (1964-1984), to 12 years (1984-1996), to two years (2004-2006), to a yearly occurrence of drought recorded in the period between 2007 and 2012. In addition to affecting up to one-tenth of the nation's population and devastating livelihoods, these drought events also have large impacts on the country's economy. One study found that the 1998-2000 drought had an estimated economic cost of US$2.8 billion. This pales in comparison to the assessment of the lengthy

2008-2011 drought, which brought an estimated US$12.1 billion in damage and losses to the Kenyan economy. It is estimated that between 2008 and 2011, drought caused losses in the livestock and agriculture sectors worth KES 699.3 billion for livestock (72.2% of total losses) and KES 121.1 billion for crops (12.5% of total losses). Along with a series of other internal and external shocks, the severe drought witnessed between 2008 and 2011 contributed to the reduction of the growth rate of Kenya's GDP from an average of 6.5 per cent between 2006 and 2007, to an average of 3.8 per cent between 2008 and 2012 (GoK, 2012a).

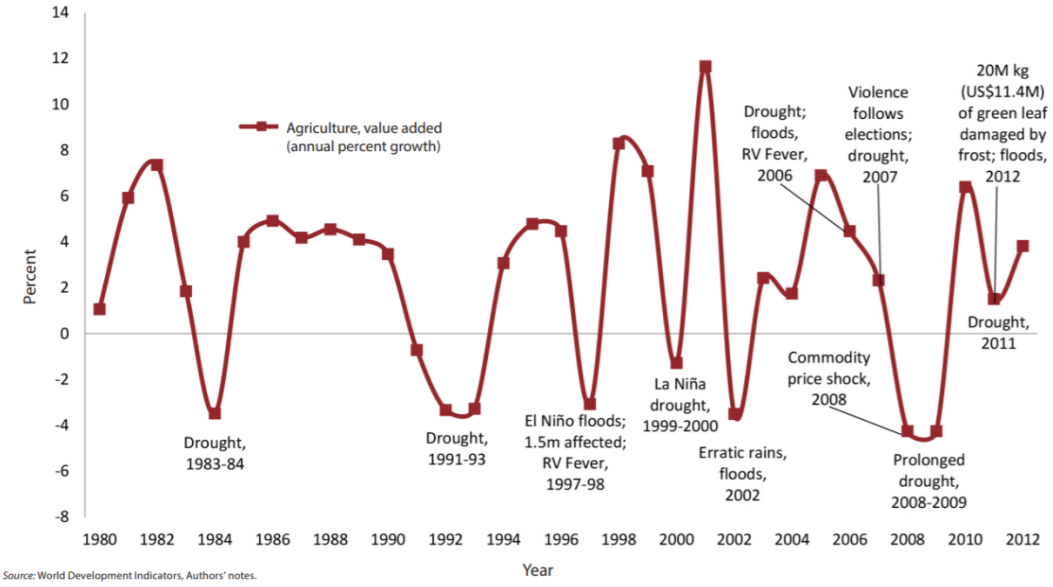
TABLE 1: HISTORICAL COMPARISON OF DROUGHT EVENTS IN KENYA

MAJOR DROUGHT EVENTS	GOK[2] AND INTERNATIONAL HUMANITARIAN AID RECEIVED (US$)	NUMBER PEOPLE AFFECTED[3]	TOTAL POPULATION	% OF POPULATION AFFECTED
2011	427.4m	3.75m	41.4m	9.1%
2009	432.5m	3.79m	39.3m	9.6%
2006	197m	2.97m	36.3m	8.2%
2003/2004	219.1m	2.23m	34.4m	6.5%
1998-2001	287.5m	3.2m	31.9m	10.0%

Source: USAID 2018.

More frequent droughts hamper economic growth in the agricultural sector and perpetuates the vulnerability of farmers to adapt. Figure 1 shows how droughts and other disasters cause serious shocks to agricultural production. Overall, droughts cause the greatest economic impact; on average, a 0.6% decline in GDP growth is observed in Kenya in years of poor rains (World Bank, 2015a).

FIGURE 1: Historical timeline of major agricultural production shocks in Kenya, 1980–2012



Source: D'Alessandro et al. 2015.

Floods

Flooding has been a perennial problem in Kenya, and due to increased variability in rainfall as a result of climate change, the possibility of flash floods is rising. Flooding affects agriculture by damaging crops directly, preventing farmers from harvesting at the right time and causing crops to rot, and damaging infrastructure that is critical to getting produce to markets. Not as much data is available on flooding and its quantified impacts on agriculture.

Pests and Diseases

It is hard to avoid the current news of the locust invasion in Kenya, the worst in over 70 years. This can be attributed to climate change, and other pests and diseases are on the increase as well. The locusts will stifle agricultural economic growth and affect the livelihoods of many low-income farmers who will find it difficult to recover. Maize lethal necrosis has emerged and is wreaking havoc on the country's staple crop, and fall armyworm caused crop damage of 47% in infected fields (Kumela et al. 2019). Livestock diseases are also projected to be exacerbated by climate change (Dinesh et al. 2015).

References

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