Kenya County Climate Risk Profile Annex: West Pokot County

Annex 1

Dairy Production

The table below describes some of the factors of production for various dairy livestock commodities in West Pokot County.

Table 1: Average Milk Animal Endowment and Milk Production, West Pokot County

Type of Livestock	Head of Household							
	Male		Female		Youth		All	
	Animals	Milk (L/Day)	Animals	Milk (L/Day)	Animals	Milk (L/Day)	Animals	Milk (L/Day)
Local Cattle	3	1.5	2	1.7	3	1.6	3	1.6
Cross breed cattle	3	4.8	5	4	3	4.1	3	4.6
Exotic Cattle	3	4.8	2	8			3	5.1
Exotic dairy goats	3	0.1					3	0.1
Camels	1	3.2			2	10	2	5.1

Source: ASDSP Household Survey 2014

Annex 2

Climate analysis

For the current study, past trends and future projections of precipitation- and temperature-related hazards such as flooding events (including flash floods) and drought during the growing season were analyzed. The growing season was defined as follows: the first season (Season 1) is the 100-day wettest period during the months of January to June, while the second season (Season 2) is the 100-day wettest period during the months of July-December. In the case of floods, the focus was on heavy precipitation events during the first and second season, defined as the 95th percentile of daily precipitation. For each pixel, the 95th percentile of daily precipitation distribution conformed of 100 wettest days per season per year was calculated. Then we identified the 95 extreme percentile value, which was plotted in time series[1]. Fluctuations in heavy precipitation events can have important consequences on water availability for agriculture by impacting drought and flood events.

To assess the degree of adequacy of rainfall and soil moisture to meet the potential water requirements for agriculture, the focus was on drought stress, represented by the maximum number of consecutive days in each season where the ratio of actual to potential evapotranspiration (ETa/ETp) is below 0.5. This was calculated for each pixel per season per year[2] by evaluating soil's water capacity and evapotranspiration in order to define the number of days that could undergo a level of stress.

Two Representative Concentration Pathways (RCPs) were used, also known as the four greenhouse gas concentration (not emissions) trajectories adopted by the IPCC for its fifth Assessment Report (AR5) in 2014. The two RCPs, RCP2.6 and RCP8.5, are named after a possible range of radiative forcing values in the year 2100 relative to pre-industrial values (+2.6 and +8.5 W/m2, respectively). The pathways are used for climate modelling and research. They describe two possible climate futures, considered possible depending on how much greenhouse gases are emitted in the years to come. RCP 2.6 assumes that global annual GHG emissions (measured in CO2-equivalents) peak between 2010 and 2020, with emissions declining substantially thereafter. In RCP 8.5, emissions continue to rise throughout the 21st century.

[1] In this case, we only used precipitation as input file.

[2] In this case, as input files we used maximum temperature, minimum temperature, precipitation, solar radiation, and water capacity of soil.

Annex 3

Adaptation Strategies

The table below describes the common adaptation practices adopted by farmers in West Pokot County. The information was obtained from workshop and interviews with value chain actors and Climate Experts.

Table 2: Adaptation strategies in West Pokot

Adaptation strategy	Value Chains	Chain Link	Inputs	Results	Challenges
Value addition	Cattle, goats, onion, maize	Post-harvest Production	Facilities (milk processing, grain processing); refrigerator or coolers; pasteurization	Add value; market diversification; improved product; increased shelf-life	High cost of inputs; infrastructure constraints (e.g. electricity/ refrigerators
Staggered Planting	Onion, maize	Production	Seeds and seedlings; irrigation	Continuous production; greater flexibility for marketing	Low access to information; climate uncertainty
Use of certified seeds, drought tolerant varieties	Onion, maize	Production	Seeds, Seedlings	Improved productivity; soil conservation; water conservation	high input costs; low access to information
Improved post-harvest storage and handling	Onion, maize	Post-harvest Production	Storage and processing facilities; storage space on-farm	Improved longevity; aggregate volume; price control	Low access to facilities, limited resources for investment by private sector; low organization (groups)
Supplementary and improved feeding	Cattle, goats	Production	Materials for paddocking, grinding maize stover, silage hay, pasture conservation	Increased yields; reduced use of inputs; improve nutrition during drought conditions	Low technology adoption

Water harvesting	All	Production	Water pans; shallow wells; storage tanks	Reduced distance to water source; yields; irrigation potential; reduced animal movement and reduced territory conflicts	Lack of funds; water scarcity; intrusion by other members
Improved livestock and animal breeds	Goats, camel	Production	Hybrids; vaccinations	Improve animal quality, productivity and resilience to drought/ floods	Lack of finances; social norms
Use of fertilisers (organic and inorganic)	Onion, maize	Production	Mango seedlings; foliar spray, inorganic basal fertilizer	Increase soil water holding capacity; increased yields	Water scarcity; poor soils; insecure land tenure

Source: Authors compilation