COMBINED PROJECT INFORMATION DOCUMENTS / INTEGRATED SAFEGUARDS DATA SHEET (PID/ISDS)
CONCEPT STAGE

Report No.: PIDISDSC17290

Date Prepared/Updated: 18-Nov-2016

I. BASIC INFORMATION

A. Basic Project Data

Country:	Kenya	**Project ID:**	P154784
		Parent Project ID (if any):	
Project Name:	Kenya Climate Smart Agriculture Project (P154784)		
Region:	AFRICA		
Estimated Appraisal Date:	17-Oct-2016	**Estimated Board Date:**	31-Jan-2017
Practice Area (Lead):	Agriculture	**Lending Instrument:**	Investment Project Financing
Borrower(s):	The National Treasury		
Implementing Agency:	Ministry of Agriculture, Livestock and Fisheries		

Financing (in USD Million)

Financing Source	Amount
BORROWER/RECIPIENT	29.70
International Development Association (IDA)	250.00
Total Project Cost	279.70

Environmental Category:	B - Partial Assessment
Concept Review Decision:	Track II - The review did authorize the preparation to continue
Is this a Repeater project?	No
Other Decision (as needed):	

B. Introduction and Context

Country Context

1. Kenya's economy is larger and growing faster than previously estimated. Rebasing of its

Gross Domestic Product (GDP) reveals that Kenya?s economy is the ninth largest in Africa and fifth largest in Sub-Saharan Africa (after Nigeria, South Africa, Angola, and Sudan) . Kenya?s growth compares favorably with other countries. It no longer lags behind its regional peers or other lower-middle-income countries. Average growth between 2010 and 2013 was 6.2 percent? significantly higher than the 5.3 percent average for Sub-Saharan Africa. Kenya?s 2013 growth rate of 5.7 percent was above the 5.0 percent average growth rate for lower-middle income countries. In December 2014, Kenya?s GDP was estimated at US$55.2 billion (up from US$44.1 billion before rebasing), with GDP per capita standing at US$1,246 (up from US$994). Kenya is now a lower-middle-income country, according to the World Bank classification, with Gross National Income (GNI) per capita of US$1,160 in 2013. The economy was estimated to have grown 5.4 percent in 2014 and expected to grow by 6 percent in 2015 on the backdrop of significant improvement in external and internal balances, such as falling oil prices; and public investment, mainly in infrastructure (energy and the standard gauge railway). The World Bank projects that Kenya?s GDP will grow 6.6 percent in 2016, and 7.0 percent in 2017.

2. Although poverty rates in Kenya seem to have fallen, formidable challenges at reducing poverty and increasing shared prosperity, in particular in rural areas, remain. Poverty reduction has been driven by solid growth across most sectors of the economy. But improvements in income are not evenly shared amongst people and inequality appears to be rising among regions. According to the World Bank Group Kenya Country Partnership Strategy (CPS 2014-2018), Kenya?s poverty rate has been falling?from 47 percent in 2005/06 to about 39 percent based on best estimates in 2012/13. But in the remote, arid, sparsely populated north-eastern parts of the country (Turkana, Mandera, and Wajir), poverty rates are above 80 percent. The scale of consumption poverty in Kenya is staggering, and is concentrated in rural areas. Based on the last national household budget survey, close to half of the population (nearly 17 million Kenyans) was poor in 2005. The vast majority of the poor lived in rural areas and were more likely to depend on income and consumption from crops and livestock, as their main source of livelihood. Revised poverty estimates indicate that in 2013 nearly 4 in 10 Kenyans continue to live in extreme poverty.

3. As the roles of national and county governments are restructured, and new county institutions are created, a fundamental challenge is to maintain the delivery of agricultural services. Under the new constitution adopted in 2010, the central government is devolving responsibility for multiple functions to 47 elected county governments and providing a minimum of 15 percent of national revenues to counties to carry out those functions. The main functions for agriculture (crop and animal husbandry services, extension, agricultural marketing and other related services) were transferred in August 2013 (the national government remains in charge of policy and research). With some exceptions, County agricultural services are in an embryonic state, with limited and in some cases no technical and/or operational capacity.

Sectoral and Institutional Context

4. In Kenya, agriculture remains one of the most important sectors of the economy. But about 83 percent of Kenya?s land area is in the Arid and Semi-Arid Lands (ASALs), which are mainly pastoral areas and the remaining 17 percent (where 80 percent of population lives) is classified as medium to high agricultural potential zone. In 2013, the sector contributed almost 27 percent to the national GDP . The crops, livestock and fisheries sub-sectors contributed approximately 78, 20 and 2 percent to agricultural GDP respectively. The sector employs more than 75 percent of the workforce (also accounts for more than one-fifth of formal employment), generates most of the country?s food requirements, and plays a key role in poverty reduction. It

also generates nearly two-thirds (65 percent) of merchandise exports and roughly 60 percent of foreign exchange earnings.

5. Overall, Kenya?s agricultural sector performance has been highly volatile with growth rates dipping into negative territory in nine years between 1980 and 2012 (Figure 1 below). Kenya?s agricultural growth rate has averaged between 3.4 percent during 1995-2003 and decreased to an average of 2.1 percent in 2003-2011 period. Recent years have witnessed increased volatility in agricultural growth rates with debilitating impacts on rural households incomes and employment; urban and rural food security, poverty reduction and the country?s overall economic growth. The sector?s growth in real gross value-added decelerated in 2013 to 2.9 percent from a revised growth of 4.2 percent in 2012. The lowest agricultural GDP growth rate and value-added was noted in 2008, during a period which Kenya experienced the post-election violence following the country?s 2007 general elections.

6. Extreme weather events, largely droughts and to a lesser extent floods, have been the principal driver behind the volatility in the agricultural sector?s performance in Kenya. The frequency and intensity of severe weather events have increased and this trend will be further amplified in the future as temperatures rise due to climate change . The World Bank?s agricultural sector risk assessment (2014) highlighted that recurring drought has profound effects on the agricultural sector, particularly in maize (main staple food) and livestock (in pastoral systems) production. Frequent drought events resulted in precipitous crop losses, livestock deaths, spikes in food prices, increased food insecurity and malnutrition for the poor and led to rural population displacement (temporary migrations).

7. Kenya?s strong reliance on rain fed maize production system in meeting its food needs and growing consolidation of production toward maize (and dry beans) has rendered the country increasingly vulnerable to supply disruptions and food shortages. Amid declining yields, productivity gains have come largely through land expansion into marginal areas that receive lower and more variable rainfall. This trend, coupled with Kenya? increasingly erratic rainfall, has made the country?s maize production more susceptible to moisture stress and year-on-year yield variability, with significant implications for national food security. This has contributed to a growing structural deficit in maize/food production, a gap currently filled by rising imports, aggravating the country?s exposure to globally-driven commodity price shocks. Emergency food aid and other ex-post responses has helped fuel growing dependency and declining resilience, particularly among the poorest and especially those in the ASALs.

8. Livestock production plays an important socio-economic role in many areas across Kenya, particularly in the ASALs where it accounts for as much as nine-tenths of employment and family income. Extensive livestock systems and pastoralists in Kenya?s northern rangelands are particularly vulnerable to the effects of drought. Estimated losses to livestock populations from droughts that have occurred within the most recent decade amount to more than US$1.08 billion. Ancillary losses related to production assets and future income and the costs of ex-post response measures are likely several times that figure. The increased incidence of droughts across the ASALs in recent years means that affected communities have less time to recover and rebuild their assets. This has weakened traditional coping mechanisms and handicapped household resilience against future shocks.

9. Climate variability is already having an impact on agriculture and food security in Kenya,

as a result of increased prevalence of extreme events (especially droughts) and increased unpredictability of weather patterns. For example, severe droughts that occurred in 1991/92, 1995/96, 1998/2000, 2004/2005, and 2008-11, resulted in precipitous crop losses, livestock deaths, spikes in food prices, increased food insecurity and malnutrition for the poor, and led to rural population displacement (temporary migrations). Two noteworthy extreme climate events are the 1998 El Nino and the 2009 drought, which resulted in a combined total cost of US$2.8 billion (about 7 percent of the 2010 GDP equivalent). Frequent droughts also make Kenya significantly food insecure. In 2015, it ranked 83rd of 109 countries, on the Global Food Security Index (GFSI). Kenya is also highly vulnerable to climate change risks. The Center for Global Development ranks Kenya 13th out of 233 countries globally for ?direct risks? due to ?extreme weather? and 71st out of 233 for ?overall vulnerability? to climate change, even when adjusted for coping ability.

10. Kenya?s average annual temperatures increased by 1Â°C between 1960 and 2003 , and by 1.5Â°C in the country?s drier regions. Climate change is projected to reduce agricultural yields and livestock productivity, worsening the effect of climate shocks on the food system. Agriculture in Kenya is largely (98 percent) rain fed and thus extremely vulnerable to increasing temperatures and droughts. Estimates of crop yield and livestock losses will vary greatly, but most global climate models project severe and adverse consequences, especially for the most food-insecure regions. In Kenya, studies also show that by 2030, under a business as usual scenario, climate change will most likely reduce yields of staple crops (by 12 percent in maize, 23 percent in rice, and 13 percent in wheat). Crop land suitability is also expected to change, especially in wheat and maize. Depending on the region and types of production systems, water scarcity will result in less productive pastures, lower dairy yields, and higher risk of the spread of diseases.

11. Climate change will exacerbate the vulnerability of Kenya?s agricultural sector as projections show increases in mean annual temperature of 1Â°C to 1.5Â°C by 2030. Consequently, changes in rainfall distribution and more frequent extreme events, such as prolonged drought and floods are predicted to result in more water shortages, especially in ASAL regions. While precipitation is projected to increase between 0.2 and 0.4 percent per year in Kenya, the direction and magnitude of change will vary considerably across regions, and warming-induced increases in evaporation rates are likely to offset the benefits of precipitation increases in some regions. Meeting this challenge will require both investments in building resilience to near-term shocks and in adapting to long-term climate change. In this context, climate smart agriculture (CSA) offers an appropriate strategic framework for responding to and reducing the adverse effects of climate change.

12. Agriculture is the largest source of Greenhouse Gas (GHG) emissions in Kenya, contributing about 58.6 percent to total GHG emissions. Contributions of other sectors to national GHG emissions are: energy (25.3 percent), industry (3.2 percent) and waste management (1.2 percent). The agricultural sector is also a key driver of deforestation and land degradation, which account for an additional 32 percent of national GHG emissions. Agricultural emissions are likely to increase from 20 MtCO2e in 2010 to 27 MtCO2e in 2030, largely driven by livestock methane emissions, which account for 96.2 percent of agricultural emissions. Agriculture, therefore, needs to reduce its GHG emissions and become part of the solution to tackle climate change. The sector plays an important role in sequestering carbon in soil and trees on farms. It has the biophysical potential to offset and sequester about 20 percent of total annual emissions

through improved soil management techniques. Currently, the world?s soils hold three times more carbon than the atmosphere. Soils also have significant potential to absorb a larger amount of carbon from the atmosphere than they currently do. Restoring this carbon to the soil will not only sequester carbon from the atmosphere, but also boost productivity, increase water retention (leading to greater resilience when droughts occur), bring land back into production (thereby reducing pressure on biodiversity and forests), and boost incomes (thereby benefiting the rural poor). Similarly, Kenya?s livestock GHG emission intensities (i.e. amount of GHGs emitted per unit of product) amongst the highest in the world; this is mainly due to low livestock productivity. With the continuing rising demand for livestock products this threatens to become a growing problem. Increasing livestock productivity (e.g., through improved forages and providing adequate year-round feed resources) would increase incomes, protect people?s asset base, as well as reduce GHG e/unit of product.

13. The proposed CSA project can help Kenya meet the rising demand for food; and attain the Sustainable Development Goals (SDGs) of ending poverty (SDG1) and hunger (SDG2), and combating climate change and its impacts (SDG13). But this would require investing in agricultural technologies, innovations and management practices (TIMPs) that would lead into CSA?s triple-win: increased agricultural productivity, enhanced resilience to climate change, and reduced GHG emissions.

14. Kenya has a wide spectrum of CSA policies, strategies and plans that would help secure the triple-win. The Vision 2030 recognizes the significance of agriculture to its goal of achieving an average GDP growth rate of 10 percent per year up to the year 2030. This level of growth will be crucial for attaining the SDGs 1 and 2 of ending poverty and hunger, respectively. Kenya?s Agricultural Sector Development Strategy (ASDS, 2010?2020) operationalizes the Vision 2030 by focusing on transforming smallholder agriculture from low-productivity subsistence activities to more innovative, agri-business oriented agriculture. Regarding adaptation to climate change, ASDS prioritizes investments in weather information systems, research on drought tolerant crop varieties, soil and water conservation, water harvesting, and strengthening integrated pest management systems. For livestock, it prioritizes improved management of grazing systems, biogas, livestock diversification, and improved breeding of animals.

15. Kenya also has a National Climate Change Response Strategy (NCCRS, 2010) that provides a framework for integrating climate change into development priorities. The National Climate Change Action Plan (NCCAP, 2012) operationalizes the NCCRS, and emphasizes low-carbon, climate-resilient development pathway for the economy that is critical for achieving SDG 13 of combating climate change and its impacts. In the NCCAP, Kenya planned for a low-carbon Nationally Appropriate Mitigation Actions (NAMAs) pathway for six sectors, namely energy, transport, industry, agriculture, forestry and waste management. The first activity undertaken under the NAMAs process was the analysis of emissions from the forestry and agriculture sectors. Selected practices for mitigation in the NCCAP included restoration of forest on degraded lands; REDD+; agroforestry; increase tree cover to 10 percent of total land area; conservation tillage; limiting use of fire in cropland; rangeland management; improved cook stoves; biogas; and management of agricultural wastes. The proposed Project will support these interventions, which are aimed at achieving the CSA triple-win of increasing productivity, building resilience to climate change, and reducing GHG emissions.

16. The Kenya Climate Change Bill (2014) is about to be approved by the President, after

undergoing a public hearing and passing through the Senate. More recently, Kenya has developed a Climate-Smart Agriculture Program (CSAP, 2015?2030), that will be jointly implemented by MoALF, the Ministry of Environment and Natural Resources (MENR), and the Ministry of Water and Irrigation (MoWI). The Vision for the CSAP is a ?climate resilient and low carbon growth sustainable agriculture that ensures food security and contributes to national development goals in line with Kenya Vision 2030.? In addition, Kenya has a National Policy on Climate Finance (2015) that seeks to position Kenya to better access climate finance through a variety of mechanisms. With support from the World Bank, the International Center for Tropical Agricultural (CIAT) recently developed a Kenya CSA Country Profile. The Profile systematically assesses the state of CSA nationally, including agricultural practices that deliver higher productivity, improved resilience, and lower emissions. It also assesses the institutional, policy, and finance entry points for taking CSA options to scale. The Profile will be an important mechanism for building awareness of country options, facilitating dialogue, and helping identify high-interest CSA options and opportunities for investments to deliver on the triple win. The Profiles coupled with prioritization tools can provide in depth analyses of agricultural practices, detailed assessments of their ?climate-smartness?, and costs and benefits of various investments. The ongoing development of County-level CSA risk profiles and prioritization of interventions would bring this information to the relevant level of devolved governance in Kenya.

17. At the international level, Kenya has been actively engaged in dialogue on mainstreaming climate change into agricultural policies, plans, and actions. The country is a signatory to the United Nations Conventions on Combating Desertification (UNCCD), Framework Convention on Climate Change (UNFCCC) and Conservation of Biological Diversity (UNCBD). Regionally, Kenya is implementing the Comprehensive Africa Agriculture Development Programme (CAADP) Framework (2010) and the East African Community Climate Change Policy (EACCCP). Both of these frameworks emphasize sustainable land and water management for improved agricultural productivity through research, technology adoption and dissemination; and agricultural GHG emissions reduction. In July 2015, Kenya declared its Intended Nationally Determined Contributions (INDC) to UNFCCC that by 2030, the country seeks to abate its total GHG emissions by 30 percent relative to the ?business as usual? scenario of 143 MtCO2-e. It is suggested that US$40 billion would be required to finance the mitigation and adaptation efforts across six key sectors until 2030.

Relationship to CAS/CPS/CPF

18. The Kenya CPS (2014-2018) highlights achieving rapid and uninterrupted growth over a decade or more as the foundational challenge for Kenya. The CPS indicate that for Kenya to make a huge dent on poverty, support for the growth and realization of people?s potential must focus on sectors and locations where the majority of the poor can benefit. In rural areas, the single most sustainable impact would be to improve agricultural performance, both in terms of increased productivity and resilience to shocks, including climate change risks. The proposed KCSAP aims at fulfilling two priority domains of the CPS: (i) Domain 2 ? ?Protection and potential for shared prosperity?, KCSAP will contribute to Outcome 4 (Greater agricultural productivity), and Outcome 6 (Improved capacity to manage risks from Climate Change); and (ii) Domain 3 ? ? Consistency and equity in delivering a devolution dividend?, KCSAP will contribute to Outcome 8 (Better provision of agricultural extension services by counties) and Outcome 9 (Adequate systems to monitor performance of services delivery by counties). The proposed project is also well aligned with current GoK policies and priorities as articulated above.

19. The proposed Project is also in line with the Africa Climate Business Plan: Accelerating

Climate Resilience and Low-Carbon Development. The Plan aims at boosting the region?s ability to adapt to the changing climate while reducing GHG emissions through a number of concrete actions in various sectors. For agricultural sector, the Plan is focusing on promoting climate-smart agriculture, creating climate-resilient landscapes, and promoting integrated watershed management. It underscores that there is a range of agricultural management solutions, which can improve crop productivity, enhance resilience to climate shocks and reduce carbon emissions.

C. Proposed Development Objective(s)

Proposed Development Objective(s) (From PCN)

20. The proposed development objective is to increase agricultural productivity and build resilience to climate change risks in the targeted smallholder farming and pastoral communities in Kenya.

21. The PDO is informed by the CSA concept; one that ambitiously aims to integrate climate change risks responsiveness into agricultural development activities. The CSA outcomes are increased productivity, enhanced resilience, and reduced GHG emissions. While the concept is new and still evolving, many of the practices that make up CSA already exist worldwide and are used by farmers to cope with various production risks – particularly droughts and floods. The utility of CSA then comes in as a way of explicitly integrating productivity, adaptation, and mitigation planning, often done in isolation; and understanding of expected outcomes of CSA investments on different users and locations over time.

Key Results (From PCN)

22. Achievement of the proposed PDO will be measured using the following outcome indicators: (i) Increased yields of selected crop and livestock value chains (percent); (ii) Direct project beneficiaries adopting TIMPs leading to CSA triple-win (percent); (iii) Increased land covered due to adoption of agro-forestry and sustainable land management (SLM) practices (percent); (iv) Improved access to agro-weather, technical and market information by direct beneficiaries(percent); and (v) Direct project beneficiaries (number), of which female (percent). A detailed results monitoring framework and indicators will be developed during the project preparation, and enhanced by quantitative modeling of uncertainties along the impact pathway .

D. Concept Description

A. Concept

23. Climate resilient agriculture that increases productivity requires a major shift in the way land, water, soil nutrients and genetic resources are managed to ensure that they are used more efficiently, effectively and equitably. Making such a shift requires considerable investments in ongoing and new technologies, rural/production infrastructure, financing/credit mechanisms, as well as improving farmers? access to climatic information and markets. Actions to build climate resilience can, in many cases, also mitigate climate change by reducing GHG emissions or increasing carbon sinks.

24. Kenya has three main agricultural production systems. The smallholder mixed crop-livestock system found in areas that receive more than 1,000 mm of rainfall annually (high potential zones), spreading from central Kenya, through the central Rift Valley to western Kenya and the coastal strip. This system takes the form of a maize-based, dairy production system with or without cash crops, such as coffee, tea and horticulture. The crop-livestock-tree production

(Agro-silvo-pastoral) system found in areas that receive between 750 and 1,000 mm of rainfall annually (medium potential zones). This system focuses on integration of livestock and crops, soil and water conservation, and growing drought tolerant and early maturing crops. In some areas, irrigation schemes have also been set up to enhance crop production. The pastoral/extensive livestock production system found in areas receiving 200?750 mm of rainfall annually (low potential zones), stretching from north and north-eastern Kenya to the southern parts bordering Tanzania. Livestock production, mainly beef animals and small ruminants, are the major enterprises under small-scale, but also some large scale ranches

25. KCSAP will primarily focus on supporting interventions aimed at increasing productivity and building resilience to climate change, with reduction of GHG emissions as a potential co-benefit , where possible and appropriate, through: (a) Promoting sustainable, community?driven rangeland management and improved access to quality livestock services in ASALs (i.e. in pastoral/extensive livestock production systems); (b) Improving water/soil management, especially within smallholder maize systems in the marginal rainfall zones (i.e. in smallholder mixed crop-livestock, crop-livestock-tree production (Agro-silvo-pastoral systems), and crop-forest production (agro-forestry)); (c) Supporting the generation and dissemination of improved agricultural technologies, innovations, and management practices, and building a sustainable seed system; and (d) Enhancing access to quality climate/agro-weather, advisory services, and market information among farmers/herders for improved decision making.

26. KCSAP interventions will be concentrated in selected counties within the crop-livestock-tree production system and pastoral/extensive livestock production system (mainly in ASALs), with high potential for increasing production, but ones that are also prone to droughts. To maximize the impact of project interventions, about 15 - 20 counties will be selected using these criteria: (a) vulnerability to climate change, extreme weather events, and variable rainfall; (b) potential for increasing agricultural and livestock production; (c) current share in national agricultural production; (d) climate change projections; and (e) poverty distribution and rates. The project design would be informed by the following seven main principles:

(i) Prioritization of promising TIMPs: CSA is very context specific?what is CSA in one place is not necessarily CSA in another place?so there is a need to prioritize technologies that are most promising for specific places and provide the best value for money. The CCAFS-CIAT CSA Prioritization Framework is one such approach that entails a series of activities to filter a long list of possible CSA options into a set of best-bet practices and services for an area ;

(ii) Scaling-up promising TIMPs: The Bank and other donor-funded projects in Kenya, such as the Kenya Adaptation to Climate Change in Arid and Semi-Arid Lands (KACCAL) and Kenya Agricultural Productivity and Sustainable Land Management Project (KAPSLMP) have used participatory and community-driven development (CDD) approaches to pilot a number of adaptation and mitigation TIMPs including financing options, such as the Payment for Ecosystem Services (PES). While existing TIMPs are a good starting point and their broader application needs to be scaled up, new technologies must be developed to achieve the CSA triple-win;

(iii) Value chain (VC) approach: An approach that focuses on developing priority, promising agricultural and livestock commodities in the respective counties, through interventions covering production, value addition and links to markets will be taken. This approach will look at supply chains, delivery channels, and enabling environment issues, to identify and address bottlenecks

and leverage points in the chains. Innovation platforms and methodologies, such as LINK developed by CIAT provides approaches for developing innovative business models that take a value chain approach and link smallholder farmers to markets; and IFC can finance private sector investments, such as in animal health services, commercial-scale bio digesters, solar-pumps, micro-and-drip irrigation, seed production and distribution, on-farm storage, weather info/ advisory/climate services, rural credit, and processing facilities;

(iv) Gender sensitivity: Looking at various interventions through a gender lens to ensure that the project benefits women as much as possible. Alternative livelihood interventions would be primarily geared for women participants. Special care would be paid to ensure that intervention do not contribute to increased drudgery and burden for women;

(v) Nutrition informed: Favoring those interventions and leveraging activities that have a direct and indirect links with improving the nutritional outcome (dietary/nutrients diversification using fruit tree and vegetables) of the project beneficiaries, particularly women and children under the age of five;

(vi) Collaboration with other World Bank Group Agencies: The VC development approach will require a close collaboration with the International Finance Corporation (IFC) and the Multilateral International Guarantee Agency (MIGA), which have greater roles to play in agricultural value addition, linking smallholder farmers to markets (i.e. inputs, outputs and financial markets); and abating political risk for local and international private investors, respectively; and

(vii) Complementarity with other interventions: Ensuring that synergies and alignment with other Bank-funded projects, such as the National Agricultural and Rural Inclusive Growth Project (NARIGP), and the Rural Roads Project (RRP), given that could be operating in the same counties, will allow for greater complementarity and impact.

27. Although reduced GHG emissions might be co-benefits, these will nonetheless be measured. At appraisal stage, the project will undertake GHG accounting to estimate the impact of project interventions against a baseline. It is expected that by improving per unit efficiency, the project will have a positive impact on GHG net emissions.

Project Components

28. The proposed project will comprise four components briefly presented below:

Component 1: Upscaling Climate-Smart Agricultural Practices (US$100 million)

29. This component aims at supporting and incentivizing smallholder farmers to implement TIMPs that provide triple-wins: increased productivity, stronger resilience and reductions in GHG emissions, as co-benefits. It will comprise two subcomponents.

Subcomponent 1.1: Supporting Pastoral/Extensive Livestock Production Systems (US$40 million)

30. Livestock production is a key contributor to CSA?s three strategic outcomes: (i)

agricultural productivity and food security - animals contribute directly (through meat and milk output) and indirectly (through fertilization, draft power) to food production and also to income diversification; (ii) adaptation to climate change - livestock represents a diversification asset, a coping mechanism for households (risk management tool, that contributes to household resilience), and a contributor to the management of organic matter in soils (through manure), which improves water retention and drought resistance; and (iii) mitigation - there is typically a great potential for reducing GHG emission intensity among low productivity ruminant systems, and carbon sequestration in pastures.

31. This subcomponent will therefore support interventions aimed at: (a) increasing productivity of livestock (e.g. feeding practices, animal health, herd management and off-take rates); (b) promoting integrated soil fertility and SLM practices based on crop-livestock integration (e.g., manure management, biogas production, use of crop residues and food products) and modern inputs; and (c) supporting market access (e.g., stock routes/migratory corridors, watering points, quarantine or holding grounds and animal markets).

32. In the arid lands, ensuring that pastoralists can access feed and water resources at critical times is essential to resilience. Demography and increased pressure on land and water are greatly challenging the traditional arrangements through which sedentary and mobile populations have managed resources. The project will thus support the development of new management practices and institutional arrangements that can secure pastoralists? access to resources, especially during drought and the dry season. In the semi-arid lands, interventions may aim at increasing the efficiency of animal production (e.g., feeding practices, animal health, herd management and off-take rates), increasing crop-livestock integration (e.g., manure management, use of crop residues and food by-products), and increasing institutional mechanisms and markets for resilience.

33. Interventions inter alia could promote: (i) innovative rangeland co-management (state and local community) approaches that leverage customary forms of collective action and economic instruments to reward sound pasture management; (ii) development of fodder production, storage and marketing; (iii) small-scale fattening operations managed by pastoral communities, to which young animals from mobile herds could be sent for fattening before commercialization; and (iv) sustainable resource use practices, including contour ridges and barriers, cisterns for storing rainfall and runoff water, controlled/rotational grazing, grazing banks, homestead enclosures, residue/forage conservation and other practices ensuring access to feed and water resources during drought. ILRI has relevant research outputs to contribute to these interventions.

Subcomponent 1.2: Supporting Smallholder Mixed Crop-Livestock-Tree Systems (US$60 million)

34. The smallholder mixed crop-livestock-tree systems account for more than 70 percent of total maize output in Kenya. Characterized by low productivity, these systems are increasingly vulnerable to extreme and variable weather. Thus, achieving national food security will require concerted efforts and targeted investments to improve yields and strengthen their resilience.

35. This subcomponent will therefore focus on: (a) improving water and soil management; (b) promo ting livelihoods and crop diversification, including drought-tolerant crops (e.g., legumes - beans, cowpeas, pigeon pea etc.,), intensive dairy production and agro-forestry systems; (c) investing in small-scale irrigation development; and climate risk mitigation initiatives,

including exploring the smallholder adapted crop insurance options.

36. KCSAP support under this component will aim at promoting sustainable intensification and increasing climate resilience of Kenya?s small-scale, rain fed production systems. This will be achieved through myriad, yet mutually-supportive interventions designed to improve crop yields and reduce losses (pre-and post-harvest) in the near-term, and to mitigate climate change impacts via adaptation over the long-term. Project interventions will focus on, inter alia, curbing rainfall run-off, improving soil nutrition and moisture holding capacity, and strengthening fertilizer- and water-use efficiency. This will be achieved via incentivizing broad farmer adoption of improved water, soil and land resource TIMPs. To promote income diversification, the project will promote take-up of animal husbandry, micro-gardening, agro-forestry and other income generating activities less dependent on rainfall.

37. KCSAP investments will be guided by County Integrated Development Plans (CIDPs) and community priorities. Integrating project activities within the CIDPs will ensure alignment, sustainability and optimization of outcomes. In the case of high agricultural (medium-to high rainfall) potential areas in the central and western highlands, interventions will broadly focus on improving maize yields and farm-gate prices via quality, drying and storage upgrades. In more marginal, more variable rainfall zones, greater emphasis will be placed on stimulating farmers? uptake of more robust, drought-tolerant crops (e.g., cowpeas, cassava, millet and sorghum). Project interventions will also aim to enhance risk-sharing and strengthen smallholder access to markets across target food commodity chains via catalyzing upgrades (i.e. product, process) and downstream linkages (horizontal and vertical).

38. Matching grants will be provided to common interest groups (CIGs) organized along the VCs to finance community micro-projects. The grants will enable smallholder farmers adopt TIMPs developed under Component 2. Making direct payments to farmers conditional on adoption of climate adaptation and mitigation practices will lead to better CSA triple-win outcomes.

Component 2: Strengthening Climate-Smart Agricultural Research and Seed Systems (US$60 million)

39. Building strong research capacity and seed systems at the national level is critical for achieving the CSA triple-win: increasing productivity, building resilience and reducing GHG emissions. Strong and sustained support to agricultural research and development (R&D) can have large payoffs as evidenced by R&D?s significant contribution to the impressive agricultural growth achieved in Brazil, China and India. More broadly, returns to investment in agricultural research have been high and the benefits will only rise as the losses from climate-induced crop and livestock systems failure increase. Investments in seed and animal breeds research and their market-driven distribution systems will better equip farmers and livestock keepers with timely access to quality, affordable seeds (also for forage crops - grasses, legumes, herbage, fodder trees and regeneration practices) and planting materials; and animal breeds that respond to their specific needs (e.g., higher-yielding, fast maturing, drought resistant, and heat tolerant breeds) and that would help them better manage growing climate change risks. This component will have two subcomponents ? supporting CSA research and innovations, and building competitive and sustainable seed system.

Subcomponent 2.1: Supporting Climate-Smart Agricultural Research and Innovations (US$40 million)

40. A renewed urgency, and international and national commitment, is needed to sustain CSA research to deliver needed science-based solutions. Kenya should act now given that developing improved TIMPs can take many years. Developing improved seeds, planting materials and livestock breeds that are more adapted to changing climates to meet rising food demand, while at the same time reducing GHG emissions will need significantly more investment in agricultural research and development. It also requires commitment to strengthen the Kenya Agricultural and Livestock Research Organization (KALRO); build partnerships with international research institutes (e.g., CGIAR institutes, such as the World Agroforestry Centre (ICRAF) and the International Livestock Research Institute (ILRI), International Center for Tropical Agriculture (CIAT), ICRISAT, which operate in Kenya) and local universities (e.g., University of Nairobi, Jomo Kenyatta University of Agriculture and Technology (JKUAT), Moi and Egerton); and engage the private sector (contracted extension services delivery model) to facilitate the uptake of TIMPs at local levels. But agricultural research and innovation processes require long-term political commitment, financial stability, human resources, and institutional strength. Thus this subcomponent would finance activities aimed at strengthening national agricultural research system (NARS) and competitive collaborative research grants focusing on CSA research and innovations.

Subcomponent 2.2: Building a Competitive and Sustainable Seed Systems (US$20 million)

41. Kenya has one of the more developed cereal (maize and wheat) seed systems in Africa with over 70 registered seed merchants. But legume seed systems are poorly developed. Highly regulated, the formal cereal seed system produces over 30,000 tons of seed per annum. But only supplies about one-quarter of the country?s total seed needs. The remaining supply mostly comes from recycled seeds. While robust seed research by KALRO and CIMMYT, among others, have resulted in the release of dozens of improved maize and other varietals (e.g., drought-tolerant, high-yielding, disease-resistant, and short-season) that can help farmers better respond to climate and market signals and manage uncertainty, adoption among smallholders remains low. Even in ASAL regions that receive less than 500 mm of rainfall per annum, farmers continue to grow maize rather than drought-tolerant crops, such as sorghum and millet. Such areas could benefit more from short duration legumes, such as beans, cowpea and pigeon pea. As a result, the productivity of many staple crops (e.g., wheat and maize) remains below regional averages.

42. The project will promote pluralistic seed systems model depending on level of crop development. Working with KEPHIS , Kenya Seed Company (KSC), KALRO, CIMMYT , ICRAF and other stakeholders, KCSAP will finance activities geared towards strengthening seed research (e.g., seed production and processing equipment, TA and training, grants for community-level seed multiplication, etc.,), as well as promoting commercially viable multiplication and distribution systems to ensure that farmers and pastoralists have access to the right seeds at the right time. Specifically, KCSAP will finance interventions related t o: (i) strengthening the capacity of KALRO?s research centers/institutes in the production of foundation seed; (ii) supporting private sector companies involved in the commercial seed production and community-based seed multiplication systems; (iii) promoting the use of selected drought-resistant seeds; (iv) strengthening seed associations and inter-professional organizations; (v) supporting innovative mechanisms of seed marketing; and (vi) strengthening seed policy, production and distribution

strategies and institution al support to the national seed control and certification agency.

Component 3: Supporting Agro-weather, Market, Climate and Advisory Services (US$30 million)

43. Improving productivity and resilience of smallholder farmers requires access to timely, cost-effective, and personally relevant information on improved agricultural practices, markets, prices, inputs, weather?and news of impending disasters. Integrating information on weather and markets into planning for CSA interventions and sustainable agriculture development entails: (a) use of modern tools for climate data sourcing and analysis, including automatic meteorological measurements and satellite data products on a near real-time basis; (b) analysis of weather risks and assessment of impacts using advanced crop?weather interactions modeling; (c) formulation of highly practical advice that farmers can apply directly to their operations; and (d) dissemination of weather and market advisories to farmers using modern information and communication technologies (ICT).

44. The quality of these climate and market information services are critically low or non-existent in many parts of Kenya. Under this component, KCSAP will address this obstacle by developing modern agro-weather forecasting and dissemination tools, as well as marketing information system to help farmers address the challenges of climate variability and change and enhance their resilience.

45. Building on infrastructure already provided to KALRO under the Kenya Agricultural Productivity and Agribusiness Project (KAPAP), as well as experiences of BNPP-funded Agro-weather Tools for Climate Smart Agriculture pilots in Embu, Kenya, this component will finance interventions related to the following: (i) improving agro-meteorological forecasting and monitoring; (ii) developing climate-smart, location-specific agro-weather and market information system and advisories using ?big data?; and (iii) building institutional and technical capacity for agro-meteorological observation, forecasting and market advisory dissemination.

Subcomponent 3.1: Improving Agro-meteorological Forecasting and Monitoring (US$15 million)

46. One of the main obstacles to effective meteorological forecasting is Kenya?s limited agro-meteorological observation network. To improve data collection and geographic coverage, existing agro-meteorological and hydro logical stations will be upgraded, whilst modern, near real time automated weather stations (AWS) will be installed in areas lacking the facilities. KCSAP will work with other initiatives that are already in-place to expand the country?s agro-meteorological and hydrological network to meet international standards. This subcomponent will therefore finance the following investments: (a) installation of new AWS, hydrometric stations and rain gauges to complement existing weather infrastructure; (b) upgrade and modernization of the existing agro-meteorological network and priority hydrological stations country-wide; (c) establishment of agro-meteorological centers in targeted counties to improve drought and flood forecasts; and (d) development of the Kenya Meteorological Services (KMS) early warning system (EWS), and building institutional capacity for disaster preparedness and mitigation.

Subcomponent 3.2: Developing Integrated Weather and Market Information System (US$5 million)

47. Systems that integrate agro-weather and market information are either non-existent or

rudimentary in Kenya. KCSAP will address this problem under this subcomponent by financing activities related to: (a) developing ?big data? for CSA; (b) developing Market Information Systems (MIS) and services; and (c) delivering integrated weather and market advisory services using ICT. Big data crop-weather analytics help farmers in making decisions on what, when, and where to plant. Using advanced statistical and data mining/machine learning algorithms, time series data of crop yields will be combined with weather observations at daily resolution from agro-meteorological stations and satellite data, soil and management factors to reveal climate and weather patterns, and detect the limiting factors for crop production. This would subsequently be used to generate timely and site-specific recommendations on crop cultivars, soil preparation, sowing rate and time, fertilization, irrigation, pest and diseases control, harvest time, and storage options. Access to reliable market information from the MIS using ICT empowers farmers to obtain and negotiate fair market prices for their crops subsequently improving their income and livelihoods. It also reduces their overall risk and results in greater price stability in supply and demand, in addition to improving overall market transparency. Using multiple ICT channel to reach target users will allow bi-directional information exchange - allowing the collection of data from farmers, as well as information delivery to farmers. Rapid and geographically targeted agro-weather information will be disseminated using SMS and smart phone applications, and through more conventional radio, television, bulletins and print messages. Interactive Voice Response (IVR) systems that render weather conditions into human speech will also be incorporated.

Subcomponent 3.3: Building Institutional and Technical Capacity (US$10 million)

48. The capacity for agro-meteorological observation, forecasting and advisory dissemination needs to be strengthened at the MoALF, KMS, KALRO, and at county governments. KCSAP will finance activities related to human and institutional capacity building at these agencies. This will include: (a) defining proper configuration of the main elements of the system; including automated monitoring, new forecast techniques, big data analytics and modernization of management; (b) analyzing and utilizing big data for various purposes; and (c) providing the hardware and software needed for interaction of data from a variety of sources in a way that is efficient and scalable. Capacity of scientists at national and county levels will be strengthened in the area of crop modeling, using both deterministic and statistical models of different complexity levels. KCSAP will partner with national and international research and academic institutions to provide state-of-art training in agro-meteorology, climate science, including downscaling and weather predictions, artificial neural network and machine learning applications, seasonal forecasting, ICT, GIS and remote sensing. KALRO?s capacity to implement a national soil information service based on soil spectroscopy and remote sensing technology to help target interventions and monitor impacts on soil health will be further enhanced .

Component 4: Project Coordination and Management (US$20 million)

49. The Project will be implemented by MoALF with close collaboration with MENR and MoWI at the national level and county governments at subnational level. Activities financed under this component will comprise coordination, fiduciary aspects, M&E, safeguards monitoring and compliance, and day-to-day implementation of the project; and consists of three subcomponents.

Subcomponent 4.1: Project Coordination (US$15 million)

50. The purpose of this subcomponent is to ensure that the project is implemented in accordance with the Financing Agreement. A Project Coordination Unit (PCU) and a small team of experts located at the national and participating county levels will be established. Costs related to national and county level project coordination (i.e., salaries of the contract staff, operations and maintenance (O&M), office space rental, fuel and spare parts of vehicles, office equipment, furniture and tools, among others) will be financed. Safeguards monitoring and compliance will be carried out under this subcomponent.

Subcomponent 4.2: Monitoring & Evaluation and Impact Evaluation (US$5 million)

51. An M&E system will be established to collect and process appropriate information, to verify the output, effects and eventually the impacts of project activities over time. Baseline information for M&E will be collected as part of the preparation process. In addition to the routine M&E functions (e.g., data collection, analysis and reporting), it will also finance the baseline, mid-point and end of project impact evaluation of the project; and the development and operation of the ICT-based Climate Smart Agriculture Information System. Where possible, M&E approaches will be harmonized with continental and global efforts (e.g., Global Alliance for CSA and the Alliance for CSA in Africa) to build robust and harmonized evidence of the impacts of TIMPs supported by the project to achieve CSA triple-win.

Subcomponent 4.3: Contingency Emergency Response (US$0 million)

52. This subcomponent will finance natural disasters risk management (DRM) activities in the agriculture sector. The contingency emergence response financing will be triggered through formal declaration of a national emergency and upon a formal request from the GoK. In such cases, funds from unallocated category and other project components could be reallocated to finance emergency response expenditures and meet crises and emergency needs.

53. The subcomponent will finance the training and capacity building for disaster risk management (DRM); community-managed disaster risk reduction (CMDRR) interventions; development of an EWS; and response, mitigation, recovery and reconstruction following climate-induced natural disasters. Implementation of this subcomponent will follow the provisions of the DRM Manual.

54. Annex 3 outlines in more detail some key interventions envisioned under each project component.

II. SAFEGUARDS

A. Project location and salient physical characteristics relevant to the safeguard analysis (if known)

29. The project will be implemented at selected locations on a national scale. The activities will be implemented in the rural areas and will include projects in rural infrastructure, such as watering points, quarantine or holding grounds and animal markets of fodder production, storage and marketing sustainable resource use practices, including contour erosion and barriers, cisterns for storing rainfall and runoff water, controlled/rotational grazing, grazing banks, homestead enclosures, residue/forage conservation and other practices ensuring access to feed and water resources during drought, agro-forestry projects and hydromet systems/stations.

B. Borrower's Institutional Capacity for Safeguard Policies

30. The MoALF will the implementing agency of KCSAP. MoALF will work closely with MoENR and MoWI. These ministries have adequate capacity and experience of implementing Bank-funded projects, including knowledge for implementing World Bank safeguards in the devolved context. However, the implementation of previous projects identified a number of significant capacity issues in monitoring and enforcement of environmental and social safeguards compliance. KCSAP will allocate resources to build the counties' capacity in for safeguards implementation, based on institutional capacity assessment that would be carried out at the project preparation stage.

C. Environmental and Social Safeguards Specialists on the Team

Gibwa A. Kajubi (GSU07)

Svetlana Khvostova (GEN01)

D. POLICIES THAT MIGHT APPLY

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	The initial scoping of the proposed project interventions suggests that due to the nature of proposed activities, the potential environmental and social impacts will be moderate, largely reversible and site-specific. The identification mission noted that the potential project investments in rural infrastructure and agriculture VCs will trigger the Environmental Assessment (OP 4.01). Given that specific micro-project designs and locations would not be known at the time of project preparation, the project will take framework approach to managing safeguards. There are three framework reports that will need to be developed by GoK: (a) Environmental and Social Management Framework (ESMF); (b) Resettlement Policy Framework (RPF); and (c) Vulnerable and Marginalized Group Framework (VMGF). These frameworks will need to cover the types of activities envisioned; identify potential impacts of these activities; propose screening mechanisms and processes of assessing their impacts; and designing mitigation measures. The scope of these frameworks, the exact implementation arrangements and costs will be identified during project preparation. The preparation of ESMF, RPF and the VMGF will include wide public consultations and will be disclosed prior to project appraisal. During project implementation, based on the screening, an Environmental Assessment (EA)/ Environmental Management Plans (EMPs), Resettlement Action

		Plans (RAPs) and Vulnerable and Marginalized Group Plans (VMGPs) will be developed for individual subprojects.
Natural Habitats OP/BP 4.04	TBD	Applicability of this policy will be confirmed during project preparation, based on the target areas of project interventions.
Forests OP/BP 4.36	TBD	Applicability of this policy will be confirmed during project preparation, based on the target areas of project interventions.
Pest Management OP 4.09	Yes	The project is envisioned use of agrochemicals to implement activities such as fodder production and agro-forestry projects. A Pest Management Plan (PMP) will be prepared to promote the adoption of an Integrated Pest Management (IPM) approach, which stresses non-chemical pest management methods as much as possible, with use of agrochemicals only as a “last resort” when other methods are not sufficiently effective. The PMP would describe specific actions needed to be implemented, timeframes, estimated costs, monitoring indicators, institutional and beneficiary roles and responsibilities etc.).
Physical Cultural Resources OP/BP 4.11	TBD	Applicability of this policy will be confirmed during project preparation, based on the target areas of project interventions.
Indigenous Peoples OP/BP 4.10	TBD	Applicability of this policy will be confirmed during project preparation, based on the target areas of project interventions. Should it be confirmed during the project preparation that the implementation will cover the areas where vulnerable and marginalized groups are present, the project will prepare the VMGF, which will then guide the preparation of VMGPs, where required.
Involuntary Resettlement OP/ BP 4.12	Yes	The project activities may require land acquisition and may result in the loss of community resources. To guide the process of compensation, the project will prepare the RPF and publicly disclose it in Kenya and in the World Bank InfoShop prior to project appraisal.
Safety of Dams OP/BP 4.37	TBD	
Projects on International Waterways OP/BP 7.50	TBD	
Projects in Disputed Areas OP/ BP 7.60	TBD	

E. Safeguard Preparation Plan

1. Tentative target date for preparing the PAD Stage ISDS

26-Sep-2016

2. Time frame for launching and completing the safeguard-related studies that may be needed. The specific studies and their timing should be specified in the PAD-stage ISDS.

The ESMF, RPF and VMGF will be prepared, consulted upon and publicly disclosed before project appraisal in November 14, 2016.

III. Contact point

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V. Approval

Task Team Leader(s):	Name: Ladisy Komba Chengula	
Approved By		
Safeguards Advisor:	Name: Nathalie S. Munzberg (SA)	Date: 13-Dec-2016
Practice Manager/ Manager:	Name: Dina Umali-Deininger (PMGR)	Date: 13-Dec-2016
Country Director:	Name: Thomas O'Brien (CD)	Date: 21-Dec-2016

1 Reminder: The Bank's Disclosure Policy requires that safeguard-related documents be disclosed before appraisal (i) at the InfoShop and (ii) in country, at publicly accessible locations and in a form and language that are accessible to potentially affected persons.