Agriculture Adaptation Co-Benefits Project Examples

1. Kenya - Climate-Smart Agriculture Project

2. Sri Lanka - Climate-Smart Irrigated Agriculture Project

WORLD BANK GROUP
Climate Change

Updated December 5, 2019

WORLD BANK GROUP
Climate Change

	Kenya - Climate-Smart Agriculture Project USD 250M (FY 17)
Project Development Objective (PDO)	To increase agricultural productivity and **build resilience to climate change risks** in the targeted smallholder farming and pastoral communities in Kenya, and in the event of an Eligible Crisis or Emergency, to provide immediate and effective response
Step 1 – Vulnerability Context	§8:Virtually all (98 percent) agriculture in Kenya is rain-fed and extremely vulnerable to increasing temperatures and droughts. Average annual temperatures rose by 1°C between 1960 and 2003 and by 1.5°C in the country's drier regions. Projections to 2030 show mean annual temperature in Kenya increasing again by 1.0–1.5°C. **By significantly affecting water availability and soil quality, rising temperatures will worsen the effects of more frequent and intense drought. Changes in rainfall patterns and temperatures can alter growing seasons and the spectrum of agricultural activities that can be sustained. Most global climate models project severe and adverse consequences for crops and livestock, especially for the most food-insecure regions.** Studies in Kenya find that by 2030, under a business-as-usual scenario, climate change will reduce yields of staple crops (maize by 12 percent, rice by 23 percent, wheat by 13 percent) as well as prospects for cropland to sustain maize and wheat production. Depending on the region and type of production system, water scarcity will result in less productive pastures, lower dairy yields, and higher risks that crop and livestock diseases will spread.
Step 2 – Specific Intent	The proposed Kenya Climate-Smart Agriculture Project (KCSAP) contributes to a range of higher-level objectives. It can help Kenya meet rising food demand and attain the SDGs of ending poverty (SDG1), ending hunger (SDG2), **and combating climate change and its impacts (SDG13)**, and it also contributes to the Government of Kenya's (GoK's) Vision 2030 development strategy, launched in 2008. [..] **With respect to adaptation to climate change, ASDS prioritizes investments in weather information systems, research on drought-tolerant varieties, soil and water conservation, water harvesting, and integrated pest management. For livestock, ASDS prioritizes improved management of grazing systems, biogas, livestock diversification, and improved breeding.** KCSAP is closely aligned with the World Bank Group Kenya Country Partnership Strategy FY 2014–2018 (approved by the Board of Executive Director in 2014, Report Number 87024) and its goals of eliminating extreme poverty and boosting shared prosperity by 2030, **as well as the Africa Climate Business Plan: Accelerating Climate Resilience and Low-Carbon Development.**

WORLD BANK GROUP
Climate Change

	Kenya - Climate-Smart Agriculture Project USD 250M (FY 17)
Step 3- Activity Linkage	<u>Component 1</u>: **Upscaling Climate-Smart Agricultural Practices (US$ 150 million):** This component will finance interventions that promote and facilitate the adoption of TIMPs to achieve the CSA triple-wins of increased productivity, enhanced resilience (adaptation), and reduced GHG emissions (mitigation) per unit of output (as co-benefits). >> **Adaptation co-benefits can be assigned since the financed activities have a strong motivation to increase resilience through CSA.** <u>Component 2</u>: **Strengthening Climate-Smart Agricultural Research and Seed Systems (US$ 50 million)** Its three subcomponents support CSA research and innovations, build competitive and sustainable seed systems, and strengthen technical and institutional capacity to coordinate and deliver research and seed system outputs.>> **Adaptation co-benefits can be assigned since the financed activities will increase and improve CSA through research.** <u>Component 3</u>: **Supporting Agro-weather, Market, Climate, and Advisory Services (US$ 30 million)** This component will finance the development of agro-weather forecasting and marketing information system and their dissemination tools through three subcomponents: improving agrometeorological forecasting and monitoring; using big data to develop a climate-smart, agro-weather and market information system and advisories; and building institutional and technical capacity for agro-meteorological observation and forecasting, agricultural statistics collection and analyses, and market advisory services. **By translating climate information into actionable knowledge, agro-weather tools will improve producers' long-term capacity for adopting CSA TIMPs, managing weather shocks and climate risks, and sustaining agricultural production under changing climatic conditions**. >>> **Adaptation co-benefits can be assigned since the financed activities will lead to improved informed decision making under climate change and an increase in the use of CSA.**

	Kenya - Climate-Smart Agriculture Project USD 250M (FY 17)
Climate Co-benefit Assessment	Due to the very strong climate change vulnerability context and intent, this project has a very high adaptation co-benefits. The vulnerability context specifically touches upon the past trends, future climate trends and the impact of climate change on population as well as crop & livestock's' vulnerability. Given that climate change resilience is a very strong driver behind the project, 100% adaptation can be assigned.
	Mitigation co-benefits are also assigned for activates related to soil fertility, agro-forestry and renewable energy measures, which reduces adaptation co-benefits.
	Total adaptation co-benefits = US$ 220 million [US$ 133.5 million (C1) + US$ 38.5 million (C2) + US$ 30 million (C3) + US$ 17.6 million (C4)]
	(* Total Mitigation co-benefits = US$ 30 million [US$ 16.5 million (C1) + US$ 11.5 million (C2)+ US$ 2.4 million (C4)]

WORLD BANK GROUP
Climate Change

	Sri Lanka – Climate –Smart Irrigated Agricture Project USD 100M (FY18, Preliminary)
Project Development Objective (PDO)	To enhance climate resilience, improve agricultural productivity, and increase income of targeted farming communities in selected watersheds in Sri Lanka.
Step 1 – Vulnerability Context	Page 3: Climate change is expected to continue to impact the agricultural sector in general, but this will be especially acute for Sri Lanka's smallholder farmers. The World Bank-CIAT Climate Smart Agriculture (CSA) country profile for Sri Lanka (2015) points to critical vulnerabilities related to the **overreliance on rain-fed systems, limited access to irrigation systems, and limited diversification (paddy rice comprises about 46% of the total harvested area)**. Heat distress suffered by animals reduces the rate of animal feed intake and results in poor growth performance. Droughts and floods are recurrent and are the most common risks to agricultural production. Multiple climate-related risks may cause far-reaching consequences for these farmers due to their limited access to improved technologies, such as watering and silage production techniques, drought/heat tolerant breeds, etc.
Step 2 – Specific Intent	To enhance climate resilience, improve agricultural productivity, and increase income of targeted farming communities in selected watersheds in Sri Lanka.
Step 3 – Activity Linkage	<u>**Component 1**</u>: **Promote Climate-Resilient Agricultural Systems (US$ 80 million)** The objective of this component is to build climate-resilience in agricultural production systems through a series of activities at farm level, complemented by interventions in mini watershed areas. It finances rehabilitation and reconstruction of irrigation systems and water catchment, and promotes agricultural practices that improves soil health and water use efficiency. >>> **Adaptation co-benefits can be assigned since these activities address vulnerabilities due to over-reliance on rain-fed systems, limited access to irrigation systems, and water scarcity in agricultural practice.**

Agriculture case study in adaptation Contin'd (2 of 2)

	Sri Lanka – Climate –Smart Irrigated Agricture Project USD 100M (FY18, Preliminary)
Step 3 – Activity Linkage	**Component 2**: **Enhance Climate-Resilient Value Chain Management (US$ 10 million)** The objective of this component is to enhance climate resilience beyond farm gate and provide integrated end-to-end solutions in selected commodity value chains. Two out of four activities focus on (i) developing small holder inclusive value chains for climate-resilient commodities; (ii) technology adoption and overcoming constraints in the input supply and weather insurance in value chains; >>> **Adaptation co-benefits can be assigned to this component since focus areas (i) and (ii) can be considered as adaptation measures** **Component 3**: **Institutional Development, Knowledge and Capacities(US$ 5 million)** The objective of this component is to ensure sustainability in the approach of building climate resilience through a long term adaptive management of agriculture, soil and water resources. It finances capacity building of existing institutions to provide climate advisory services and promote evidence based policy consultation on water management. >>> **Adaptation co-benefits can be assigned since this component enhances technical adaptive capacity.** **Component 4**: **Project Management (US$ 5 Million)** Pro-rated for climate co-benefits
Climate Co-benefit Assessment	**Total adaptation co-benefits = US$ 34 million** [US$ 80 million (C1) + US$ 5 million (C2) + US$ 5 million (C3) + US$ 4.7 million (C4) • C1 has been assigned with 100% adaptation co-benefits for addressing vulnerabilities due to over-reliance on rain-fed systems, limited access to irrigation systems, and water scarcity in agricultural practice. • C2 has been assigned with 50% adaptation co-benefits as 2 out 4 focus areas targeting on enhancing climate resilient value chain. • C3 has been assigned for 100% adaptation co-benefits as it enhances technical adaptive capacity for agriculture, soil, and water resources management. • C4 is pro-rated for climate co-benefits