

**INTEGRATED SAFEGUARDS DATA SHEET  
APPRAISAL STAGE**

**Report No.: ISDSA8363**

**Date ISDS Prepared/Updated:** 11-Dec-2014

**Date ISDS Approved/Disclosed:** 17-Dec-2014

**I. BASIC INFORMATION**

**1. Basic Project Data**

<b>Country:</b>	Kenya	<b>Project ID:</b>	P145559
<b>Project Name:</b>	Coastal Region Water Security and Climate Resilience Project (P145559)		
<b>Task Team Leader:</b>	Gustavo Saltiel		
<b>Estimated Appraisal Date:</b>	18-Aug-2014	<b>Estimated Board Date:</b>	16-Dec-2014
<b>Managing Unit:</b>	GWADR	<b>Lending Instrument:</b>	Investment Project Financing
<b>Sector(s):</b>	Water supply (50%), General water, sanitation and flood protection sector (25%), Public administration- Water, sanitation and flood protection (15%), Irrigation and drainage (10%)		
<b>Theme(s):</b>	Water resource management (40%), City-wide Infrastructure and Service Delivery (30%), Climate change (20%), Rural services and infra structure (10%)		
<b>Is this project processed under OP 8.50 (Emergency Recovery) or OP 8.00 (Rapid Response to Crises and Emergencies)?</b>			No
<b>Financing (In USD Million)</b>			
Total Project Cost:	200.00	Total Bank Financing:	200.00
Financing Gap:	0.00		
<b>Financing Source</b>			<b>Amount</b>
BORROWER/RECIPIENT			0.00
International Development Association (IDA)			200.00
Total			200.00
<b>Environmental Category:</b>	A - Full Assessment		
<b>Is this a Repeater project?</b>	No		

**2. Project Development Objective(s)**

The development objective of this project (KWSCR-2) is to sustainably increase bulk water supply to Mombasa County and Kwale County, and increase access to water and sanitation in Kwale County.

### 3. Project Description

The Kenya Water Security and Climate Resilience Program adopts a long-term programmatic approach, whereby a series of investment operations linked to the same overarching objective are undertaken. This approach provides the necessary flexibility for the phasing of investment operations to address opportunities and challenges as they emerge. It is expected that the program will be implemented over a period of ten to twelve years, which demonstrates the Bank's long term commitment to Kenya's water sector. The first operation in the series, the Kenya Water Security and Climate Resilience Project 1 (KWSCR-1) supports laying a strong institutional and legal foundation for sector growth and sustainability and the roll-out of Kenya's vast water sector investment program. The Coastal Region Water Security and Climate Resilience Project (KWSCR-2) is the second operation in the series, focusing on water security and climate resilience in the coastal region and complements the first project that focuses on national capacity-building, investment pipeline development, and a targeted irrigation investment in western Kenya.

The proposed Project would have three components, focusing on: Mwache Dam and Related Infrastructure (C1); Kwale County Development Support (C2); and Project Management (C3). Each component is briefly discussed below.

Component 1: Mwache Dam and Related Infrastructure (US\$ 165 million)

Sub-Component 1.1: Civil Works and Related Infrastructure (US\$ 160 million)

The priority development of Mwache Dam was conceived under the Water Supply Master Plan for Mombasa and Other Towns Within Coast Province, prepared under the Water Supply and Sanitation Improvement Project (WaSSIP), financed jointly by the World Bank and the Agence Française de Développement (AFD). Ultimately, the dam is expected to provide 186,000 m<sup>3</sup>/day (67.9 MCM/year) for urban water supply to Mombasa County and Kwale County

The dam site is located across the Mwache River at the Fulugani village (Kwale County), about 22 km west of the city of Mombasa in the coastal region of Kenya and near the coastline. The proposed dam is a concrete gravity dam with height of about 78m and with a reservoir capacity of about 118 million m<sup>3</sup>. This component will finance the construction of the main dam (Mwache), one check dam, raw water transmission lines (gravity-fed) to the treatment plant, transport infrastructure (approach road to dam site and bridges), electromechanical equipment and buildings related to the dam site i.e. all of the infrastructure needed to supply water (raw water, before treatment works) to the water supply system in the coastal region. The component would also include implementation of the environmental management plan and dam safety plans. Specific activities for the sedimentation management plan will be developed under this Sub-component, while implementation of these activities will be financed under Sub-Component 1.2 (refer below).

A GoK-appointed Dam Safety Panel of Experts (DSPE), consisting of experts in dam engineering design and construction, geology, and hydrology / sedimentation and financed under KWSCR-1, are guiding the finalization of the dam design and safety plans.

Sub-Component 1.2: Mwache Catchment Management (US\$ 5 million)

The Mwache watershed has undergone significant degradation as results of poor land use practices in pursuing food production, resulting in a general decline in soil, livestock and crop productivity,

upstream erosion, downstream flooding, and sedimentation. These threaten the economic lifespan of the proposed Mwache reservoir, and also threaten the livelihood and food security of the people, many of whom already live in extreme poverty.

This Sub-component aims to improve sustainability of the Mwache catchment, integrating conservation activities with the needs of local communities to develop sustainable economic activities. Recognizing that a robust watershed management strategy entails addressing ecosystem degradation at the watershed level, this sub-component support an integrated, participative approach to water resources management, introducing sustainable livestock, agriculture, forestry and land management practices, and integrating conservation activities with the needs of local communities to develop sustainable economic activities. Activities under the sub-component will be based on livelihoods, to ensure that communities will have incentives to play an active and engaged role in conversation activities. Activities will involve promoting approaches to improve sustainable land and water management of the catchment, in line with the agreed sedimentati on management plan. The activities well target erosion-prone “hot spot” sub catchment areas in each of the three counties, which are to be determined by the Regional Office of WRMA based on a transparent selection criteria. In addition to community-led initiatives, the subcomponent will also fund the acquisition of heavy machinery needed for removing the sediment loads from the check dams.

#### Component 2: Kwale County Development Support (US\$ 25 million)

This Component will support development in Kwale County, where the Mwache Dam is located, through investments in water supply and sanitation in rural communities and small towns; a demonstration irrigation scheme to inform design and establish viability of a large scale irrigation program in Kwale in the future, and livelihoods investments. By supporting these activities, Component 2 will bring near-term and medium-term benefits to Kwale County, in parallel to the planning and preparation for the large-scale infrastructure that would supply water to Kwale (from Mwache, and other sources) in the long-term.

##### Sub-Component 2.1: Water Supply Investments (US\$ 12 million)

This sub-component will support increased access to water supply in small towns and rural communities in Kwale County. In terms of urban supply, priorities include increased supply to Kwale and Kinango towns, both of which are currently supplied from Marere springs. Priority investments include replacement of two old transmission lines from (i) Marere-Kwale town, and (ii) Marere-Kinango town. The Coast Water Masterplan envisaged a total of about 4,000m<sup>3</sup>/d to be supplied from Marere Springs to Kwale and Kinango towns by the year 2015, against a total demand of about 6,000m<sup>3</sup>/d for the two towns. This supply would rise to about 8,800m<sup>3</sup>/d by 2035, when supply to Mombasa from Marere springs is expected to have declined with the development of other bulk water sources, including Mwache Dam. Other investments will include water distribution network rehabilitation and expansion in Kwale, Kinango and Ukunda towns. This will ensure maximum utilization of current supply to these towns, as well as develop capacity for additional water supply after completion of the Mwache Dam. This sub-component will also finance construction of new boreholes and extension of the distribution system in Msambweni town as an immediate intervention. Preparation of designs and tender documents for these works, a water resources master plan for Kwale County, and other relevant preparatory studies will be financed under the ongoing KWSCR-1.

In terms of rural supply in Kwale County, priority will be given to communities affected by the

construction of the dam. It will establish viability and support the construction of pipelines from off-takes on main pipelines that are part of the bulk water system, kiosks or yard taps, and other low-cost near-term options for rural water supply including point sources (boreholes, protected dug wells, and protected springs); rainwater collection; and small dams across seasonal streams. These rural water supply activities will be designed based on community priorities, and attention will also be placed on strengthening the operation and maintenance system to enhance sustainability.

Investments to be supported under this sub-component will be selected and prepared in line with the KWSCRIP Investment Framework. Application of the Investment Framework, which will continually be improved through application and refinements under KWSCRIP-1, will help ensure that transparent selection criteria are used for selection of sub-projects, and that selected sub-projects are prepared according to agreed quality assurance standards, including on technical, economic, financial, environmental, social and institutional aspects.

#### Sub-Component 2.2: Sanitation Investments (US\$ 4 million)

This sub-component will support increased access to improved sanitation facilities in both urban and rural areas. On the policy side, the project will support the development of a strategy to promote house hold sanitation, taking into account cultural beliefs. In addition, communities will be trained on sanitation and hygiene. Working together with the Water and Sanitation Program (WSP), this sub-component will support Kwale county to improve the enabling environment for scale up and sustainability of rural sanitation and hygiene, and will support Kwale County to strengthen the programmatic conditions to implement Community-Led Total Sanitation (CLTS) and sanitation marketing at scale, which will be reinforced by continued Behavior Change Communication (BCC). The core objectives of the campaign are to create a need for improved sanitation among the target audience and educate the target audience on improved sanitation options and hygiene (including handwashing with soap).

In terms of infrastructure, Kwale County has no piped sewer system. The urban population relies on septic tanks while pit latrines are used in rural areas. Sanitation services and hygiene practice in rural areas that include Community Led Total Sanitation (CLTS) services are provided by non-governmental organizations with funding from respective development partners. Investments under this sub-component will include construction of public sanitation facilities in selected schools and health facilities in both rural and urban areas, in line with post 2015 targets and indicators. Additional activities will include construction of at least one sludge treatment facility for management of sludge from septic tanks and pit latrines in urban areas and public institutions. Preparatory work for these activities will include the preparation of a sanitation/sewerage master plan cover Kwale urban and rural areas under KWSCRIP-1, and the sewerage master plan for Kwale town being prepared by CWSB under WaSSIP.

#### Sub-Component 2.3: Sustainable Livelihoods Improvement (US\$ 5.5 million)

This sub-component seeks to improve livelihoods in Kwale County the “area of influence” of the Mwache dam, defined as those areas of the Mwache watershed that are located in Kwale County, through support to benefit-sharing and sustainable livelihood paradigms for the largely rural communities in the area. Focus will be where required catchment conservation practices are not sustainable per se, such as in steep slope and river bank crop cultivation, where alternative livelihoods need to be supported. In these areas, the component will aim to develop alternative livelihood activities for common interest groups currently dependent on the unsustainable use of

natural resources, focusing on new income-generating activities.

This component will adopt a demand-driven approach, whereby proposals will be sought from communities in the treatment catchments and forest perimeters to invest in livelihood enhancing micro-projects which support the natural resource base. These could include opportunities to establish afforestation schemes, development of private sector/community partnerships for timber, fuel-wood and/or fodder production, production/sale of seedlings, introduction of productivity-enhancing techniques of agro-forestry or conservation farming, beekeeping, and other investments in farm agriculture development will be supported.

#### Sub-Component 2.4: Irrigation Demonstration Project (US\$ 3.5 million)

This sub-component will support the final preparation and implementation of a demonstration irrigation project for about 100 ha. The activities will identify intervention strategies for irrigation development and implementing different agricultural practices. The demonstration project will also establish the viability of developing a larger (around 2000 ha) irrigation scheme in the area. This information will allow the GoK to make a decision on how to best allocate the potential additional supply of water available from Mwache dam in the future.

This sub-component will entail the construction of the irrigation and drainage (I&D) infrastructure; agricultural support services; value chain and marketing linkages development; and participatory irrigation management (PIM) through the Irrigation Water User Association (IWUA). The demonstration phase will include the advance construction of one check dam with a capacity to deliver 3 million cubic meters (MCM) of water annually, which will allow commencement of irrigation activities even while the main dam is being constructed. The check dam will also serve a dual purpose to hold, remove and reduce the sediment loads to the Mwache dam site. The demonstration project is expected to test land tenure and use aspects, the market for the high value crops, different irrigation technologies, and farmers ability to adapt to innovative technology and capacity to pay for O&M costs.

#### Component 3: Project Management

Component 3 will support effective project implementation through the completion of KWSCR-2. Specifically, this component will finance the required office space, goods (e.g., vehicles), equipment (e.g., computers), staff, consultant services, travel, training and operating costs that will allow for the successful implementation of project activities. These responsibilities include project management and coordination, procurement and financial management, project monitoring and evaluation (including impact evaluation), social and environmental safeguards management and oversight, and strategic project communications and outreach.

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

The proposed project is located in Coast Province in Kenya, Kwale district and spans between Kasemeni and Mwavumbo locations, approximately 22 km west of Mombasa Island by road. The dam is proposed to be constructed on Mwache River, which lies in undulating terrain, between sea level and 300 metres above sea level and drains into the Indian Ocean through Mwache Creek at Port Reitz south of Mombasa Island.

Mwache river basin covers an area of 2,250 km<sup>2</sup> and lies between 14m to 300m above sea level and

exhibits gentle slopes in the upper regions and flat in the lower regions. The proposed dam site in the sub-catchment is located near Fulugani village of Kasemeni Division in Kinango District and falls in a straight stretch of the river Mwache located inside a gorge. The Mwache dam site and surrounding area comprises of sand rock formation, considered to be sound and suitable for construction of any type of dam

In general the project area has a bi-modal rainfall pattern with well drained loamy sand soils. The long rainy season (long rain) starts in March and extends up to July. The short rainy season which starts in October and extends up to December have less rain than long rain season. The annual rain is about 1074 mm. The area experiences significant heavy flows during the wet season with notable silt deposition and riverbed scouring from strong storm flows. The riverbed is characterized with pools of stagnant water that are beneficial to the farmers, watering livestock as well as limited fishing. Further downstream is the Mwache River estuary that begins from the Bonje Bridge into the dense mangrove forest of Mwache Creek that gives way into the sea at Port Reitz.

The project area is homogeneous with respect to the social setting, vegetation cover and economic characteristics. The physiography, however, varies over short distances from ragged and undulating landscape to steep valleys towards the sea and flat zones to the north and west. Land gradient is one of major land characteristic which plays an important role in determination of its suitability for farming activities and type of irrigation in view of high erosion risk and low workability.

The site is characterized by a mixture of environmental features including forests, deep valleys, open lands, cultivated lands, variety of reptiles and rodents, etc. There are also social and economic features such as settlements, institutions, cultural sites, watering points, grazing areas and sand harvesting locations on Mwache river.

With respect to social aspect, the project area is inhabited by the Durumas, a sub-tribe of the Mijikenda and categorized as vulnerable and marginalized by the Constitution of Kenya. They are mostly engaged in subsistence farming, fishery, livestock, sand harvesting, among others. Land ownership in the project area is clan based, and this influences the settlement trends. Family homestead clusters are generally distributed on all sides of the dam site, creating a significant interaction and potential conflict with the dam components. Kasemeni of Kinango District (project location) is among areas least developed in terms of infrastructure such as road network, electricity, sanitation and water supply.

The RAP has estimated that approximately 4,250 people, constituting about 746 families/households in 18 villages, would be resettled due to the construction of Mwache Dam.

## 5. Environmental and Social Safeguards Specialists

Zarafshan H. Khawaja (GSURR)

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6. Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment	Yes	Construction of the dam related infrastructure on

OP/BP 4.01		<p>river Mwache is likely to reduce environmental flow downstream of the dam with negative consequences on the productivity and ecological integrity of the Mwache creek and its dependent biophysical and socio- economic environment. Based on the Environmental and Social Management Framework (ESMF) for the KWSCR -1 an Environmental and Social Management Impact Assessment (ESIA) has been prepared for the project, which will be the basis of an Environmental and Social Management Plan that will prepare detailed measures to mitigate identified impacts.</p> <p>The ESIA has establish potential positive and negative impacts, which include decreased water quality due sedimentation; disruption of aquatic habitat and ecological system downstream of River Mwache.</p> <p>Construction of the dam related infrastructure on river Mwache is likely to reduce environmental flow downstream of the dam with negative consequences on the productivity and ecological integrity of the Mwache creek and its dependent biophysical and socio- economic environment. Based on the Environmental and Social Management Framework (ESMF) for the KWSCR -1 an Environmental and Social Management Impact Assessment (ESIA) has been prepared for the project, which will be the basis of an Environmental and Social Management Plan that will prepare detailed measures to mitigate identified impacts.</p> <p>The ESIA has establish potential positive and negative impacts, which include decreased water quality due sedimentation; disruption of aquatic habitat and ecological system downstream of River Mwache.</p> <p>Since the Mwache dam is envisaged to bring 67.9 million cubic meters of water per year to Mombasa, disposal of additional wastewater generated may have environmental impacts. As a result, an ESIA analysis, based on the ESMF for KWSCR-1, will be conducted for this additional wastewater in the future, as needed.</p>
Natural Habitats OP/BP 4.04	Yes	Project activities related to dam construction may

		<p>lead to alterations in flow regimes of freshwater into Mwache Creek, such as reduction in silt discharge, which could cause changes in nutrient cycling in the creek ecosystem effectively disrupting the marine life trends and the associated productivity including the mangrove development. Inundation of the area can also change the ecological settings – biological diversity, indigenous species of flora and fauna, potential transformation of the ecological characteristics due to invasive species including vectors.</p> <p>For this reason, the Natural Habitats policy is triggered. The project will strive to retain the ecological functions of the wetlands, which include water purification, flood protection, habitat for aquatic animal and plant species.</p>
Forests OP/BP 4.36	Yes	Proximity of Mwache Forest and the associated ecological importance as well as the climatic values, is a factor that triggers the policy. Activities proposed under Mwache Catchment Management will involve promoting approaches to improve sustainable land and water management in Kwale and include afforestation of the catchment area to reduce erosion and sedimentation of Mwache Dam.
Pest Management OP 4.09	Yes	Although the project will not be financing pesticides, support to development of an irrigation scheme under Component 2 is likely to involve use of different types of agrochemicals to control diseases pests, and vectors. The project will promote the use of integrated pest management approaches and seek to reduce reliance on synthetic chemical pesticides. An Integrated Pest Management Plan (IPMP) has been prepared in accordance with the IPM Framework for KWSCR -1 to provide guidance on the pest and pesticide. The IPMP provides guidance on assessment of environmental and health risks associated with the envisaged pesticide use and integration of specific measures to these risks in the project design.
Physical Cultural Resources OP/BP 4.11	Yes	The project is likely to inundate cultural heritage sites/graves and /or encounter cultural resources during the construction of the dam. The ESIA will address impacts on physical cultural resources and provide a cultural resources management plan, including “Chance Finds”. Guidance on addressing chance finds for individual investment during project



		implementation has been prepared as part of the ESMF for KWSCR-1.
Indigenous Peoples OP/BP 4.10	Yes	<p>The project area is inhabited by the Durumas, a sub-tribe of the Mijikenda and categorized as vulnerable and marginalized by the Constitution of Kenya. Thus, a Vulnerable and Marginalized Groups Plan (VMGP) has been prepared is expected to be disclosed in the country and Infoshop in August 2014. This document was prepared based on Vulnerable and Marginalized Groups Framework (VMGF), which was prepared and disclosed under KWSCR-1 and in close consultation with the VMG. A social assessment was undertaken to understand sociocultural and other relevant social and economic characteristics of Durumas and to ensure that the grievance mechanisms reflect the availability of judicial recourse and customary dispute settlement mechanisms among the VMGs.</p> <p>As with the RAP, the initial VMGP will cover all the project components being financed by IDA whose scope and activities are defined at this time. An updated VMGP would incorporate the facilities associated with the dam but not financed by IDA, while specific VMGPs for sub-projects in water supply, sanitation, catchment management and livelihoods activities will be prepared once the exact location and scope of these sub-projects are defined.</p>
Involuntary Resettlement OP/ BP 4.12	Yes	<p>The main sub-component under the project (Sub-Component 1.1) includes the construction of a dam across Mwache River in Kasemeni Division of Kinango District in Kwale County. This includes the Mwache Dam and reservoir, related roads and bridges, and the two check dams for sedimentation. The main impacts on involuntary resettlement are related to the dam, as these activities will require the acquisition of the land and properties, impacting assets and requiring physical resettlement of some of the households.</p> <p>Other project activities—particularly those pertaining to water supply and sanitation investments, but also possibly activities focusing on livelihoods and catchment management—could also affect land and assets.</p> <p>To address the issues related to land acquisition and</p>

		<p>resettlement, a Resettlement Action Plan (RAP) has been prepared and disclosed in the country and Infoshop on August XX, 2014. This RAP was prepared in accordance with the principles detailed in the Resettlement Policy Framework (RPF), which was prepared for the KWSCR-1 and covers all the components being financed by the IDA in this phase of the project whose scope and activities are known and defined at this time. This includes the Mwache Dam itself (SC 1.1) as well as the 100 ha irrigation pilot (SC 2.3).</p> <p>Initial estimates for the dam and reservoir are that about 4,250 people (746 families/households) in 18 villages would be displaced by the dam, requiring resettlement. This figure is subject to confirmation of the final design of the project. The figures for the 100 ha irrigation pilot are to be confirmed, following completion of the RAP (expected by August 2014).</p> <p>Safeguards documents for the facilities associated with the dam (but not financed under the IDA loan)—including the water treatment plant, pumping stations, and transmission lines—would not be included in the scope of the main RAP. However, the RAP can be updated at a future date to incorporate the impacts from these associated facilities, if needed.</p> <p>Specific RAPs for sub-projects in water supply and sanitation (and, if applicable, for the catchment management and livelihoods activities) will be prepared once the exact location and scope of these sub-projects are defined as part of implementation. These specific RAPs will be based on the principles of the existing RPF prepared under KWSCR-1.</p>
Safety of Dams OP/BP 4.37	Yes	<p>The proposed dam is a concrete gravity dam with a height of about 78 m and with a reservoir capacity of about 118 million m<sup>3</sup>. The dam is expected to supply 186,000 m<sup>3</sup>/day (67.9 MCM/year) for urban water supply. An independent Dam Safety Panel of Experts (DSPE) comprising dam design/construction, geology/geotechnical and hydrology/sediment experts has been established to review the concept, design and construction of Mwache Dam. The DSPE has held two missions in September 2013 and March - April 2014, and has provided comments and</p>

		<p>recommendations on the dam design, which will be reflected in the final design.</p> <p>Per OP/BP 4.37, four key Dam Safety Plans will be prepared. These include (i) Quality Assurance and Construction Supervision Plan; (ii) Instrumentation Plan; (iii) Operation &amp; Maintenance (O&amp;M) Plan; and (iv) Emergency Preparedness Plan (EPP).</p> <p>The Quality Assurance and Construction Supervision Plan is currently under preparation, and is expected to be completed by the finalization of appraisal. This plan is being prepared as part of the preparation of the Terms of Reference for the Owner's Engineer (OE), whose consultancy will be process under the ongoing Kenya Water Security and Climate Resilience Project (KWSCR-1). The Instrumentation Plan will be finalized as a part of the detailed design, and will be submitted to the DSPE and World Bank for review. The final O&amp;M Plan and EPP will be prepared six months and twelve months respectively prior to the first reservoir impoundment during implementation. The outlines for both of these documents have been prepared as part of project preparation.</p>
Projects on International Waterways OP/BP 7.50	No	OP/BP 7.50 will not be triggered by the proposed investment. The Mwache Dam is located on the Mwache river, whose basin lies fully within Kenya's borders.
Projects in Disputed Areas OP/ BP 7.60	No	OP/BP 7.60 will not be triggered by the proposed investment.

## II. Key Safeguard Policy Issues and Their Management

### A. Summary of Key Safeguard Issues

<p><b>1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:</b></p> <p>The long-term KWSCR Program is expected to have positive benefits through investments that increase water storage for productive use and increase resilience to floods and droughts. However, water resources development investments including infrastructure for bulk water supply (dam and groundwater development), flood management, upstream catchment management, and downstream productive water uses (irrigation and water supply development) may result in adverse environmental and social impacts. Potential adverse impacts may include loss of land or structures, loss of critical habitats, interruption to migratory patterns, displacement of people, loss of access to areas for livelihood support and public safety issues. The selection process builds on Kenya's legal framework for environmental management that is already in place and will underpin Project implementation.</p>
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KWSCR-2, which is financing the Mwache Dam and related infrastructure, has been assigned an Environmental Assessment Category A. It triggers the following Safeguard Policies: Environmental Assessment OP/BP 4.01, Involuntary Settlement OP/BP 4.12, Safety of Dams OP/BP 4.37, Pest Management OP/BP 4.09, Indigenous Peoples OP/BP 4.10, Physical Cultural Resources OP/BP 4.04, Natural Habitats OP/BP 4.04, and Forests OP/BP4.36. A full Environment and Social Impact Assessment (ESIA), Resettlement Action Plan (RAP), Integrated Pest Management Plan (IPMP), and Vulnerable and Marginalized Groups Plan have been completed and disclosed both in country and through the World Bank Infoshop prior to appraisal of the project.

Overall, the project is expected to have positive social benefits by improving the regular supply of potable water to the coastal region, specifically Kwale and Mombassa Counties and improving the livelihoods of communities surrounding Mwache Dams through local development and enhanced agricultural production. Initial estimates for the Mwache dam and reservoir are that about 746 families (4,250 people) would be displaced by the dam, requiring resettlement. This figure is subject to confirmation of the final design of the project.

**2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:**

Construction of large dams provides ecological as well as social challenges even though the ultimate facility is generally beneficial to the stakeholders and the country in general. Specific impacts to be mitigated include loss of habitats and lands, degradation of land and water resources, environmental degradation, and potential adverse impacts on health. Impoundment of large volumes of water has implications on the upstream systems through shifting of ecosystem boundaries upstream as a result of changes in flood regimes. At the dam site itself and the inundated areas, implications ranges from slowed silt, nutrients and pollutant transportation rate to downstream zones, potential loss and/or introduction of species (both plants and animals), displacement of social and economic features and land use changes for the residual riparian landowners. Finally, downstream impacts are associated with regulated flows of the affected rivers/streams, shifting of species to upstream areas, safety risks and land use changes due to the constant flows trends introduced by the dam.

The ESIA, RAP, IPMP, and VMGP prepared for KWSCR-2 provide mitigation measures to address potential negative impacts of the project. It is incumbent upon the MEWNR as implementer of the the Project, and the Bank as financier, to ensure the mitigation measure proscribed in the safeguards documents are implemented.

**3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.**

The Mwache Dam has been selected as a priority source of water to meet demand and increase water security for the coastal region as part of the Water Supply Master Plan for Mombasa and Other Towns within the Coast Province, prepared under the Water and Sanitation Service Improvement Project (WaSSIP). The Master Plan evaluated 5 development scenarios that included different combinations of water resources. A multi-criteria analysis, consisting of four key parameters (engineering, economics, environmental and social aspects, and political economy), was used for comparison purposes. These scenarios considered several surface and ground water alternatives to meet the demand for water in the region. The recommended scenario (Scenario "B1") includes three phases of development between 2015 and 2035, which would include water supply from well fields (Baricho, Tiri), springs (Mzima, Marere), aquifers (Waambewni), and dams (Mwache and Mkurumudzi). Phase 1 of Scenario "B1" includes the development of Mwache

Dam.
<b>4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.</b>
<p>The GoK has established the Environmental Management and Coordination Act (EMCA) of 1999, which empowers the National Environmental Management Authority (NEMA) with an oversight role on environmental compliance. In accordance with the EMCA, NEMA is responsible for conducting annual environmental audits and carrying out due diligence on the projects that have already undertaken EIAs, as well as those in the process of undertaking EIAs. MEWNR has been implementing World Bank-funded projects, including KWSCR-1, and has the necessary structures in place for overseeing safeguard issues. However, overall capacity for implementation of environmental and social safeguards policies is still low. Inadequate capacity to execute the required social and environmental risk mitigation measures could lead to high negative social and environmental impacts and undermine project results.</p> <p>To mitigate this, an Environmental and Social Management Framework (ESMF), a Resettlement Policy Framework (RPF), and a Vulnerable and Marginalized Groups Framework (VMGF) have been prepared under KWSCR-1. It applies to KWSCR-2 and will guide project implementation and preparation of site-specific environmental and social impact assessments and resettlement action plans for specific project investments, particularly those being identified in components 2 and 3. The Project Management Unit (PMU), established under KWSCR-1 will support the executing agencies (CDA and CWSB) to prepare and supervise the implementation of environmental and social instruments. The PMU includes social and environmental safeguards specialists, and will be responsible for ensuring the application of social and environmental frameworks (ESMF, VMGF and RPF) and supervising the implementation of safeguards instruments.</p> <p>For KWSCR-2, the PMU has prepared an Environmental and Social Impact Assessment, a Resettlement Action Plan, a Vulnerable and Marginalized Groups Plan, and an Integrated Pest Management Plan for KWSCR. While these instruments address the entire project, they focus primarily on component 1, Mwache Dam and related infrastructure.</p> <p>In order to enhance capacity of the PMU, CDA, and CWSB, training programs related to preparation and the implementation of the Social and Environmental Management Plan, the Resettlement Action Plan, and Vulnerable and Marginalized Groups Plan will be provided. The World Bank team will carry out close, field-based implementation support and supervision.</p>
<b>5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.</b>
<p>Potential stakeholders are found at throughout the coastal region and specifically in the Mwache catchment, including WRUAs, farmers, municipalities, county governments, national ministries, civil society, and others. The ESIA, RAP, and VMGP detail the stakeholder consultations conducted to date as well as those to be carried out during and after project implementation.</p>

### ***B. Disclosure Requirements***

<b>Environmental Assessment/Audit/Management Plan/Other</b>	
Date of receipt by the Bank	17-Jun-2014
Date of submission to InfoShop	18-Jun-2014

For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors	15-Jul-2014
<b>"In country" Disclosure</b>	
Kenya	23-Jun-2014
<i>Comments:</i>	
<b>Resettlement Action Plan/Framework/Policy Process</b>	
Date of receipt by the Bank	30-Sep-2014
Date of submission to InfoShop	03-Oct-2014
<b>"In country" Disclosure</b>	
Kenya	04-Oct-2014
<i>Comments:</i>	
<b>Indigenous Peoples Development Plan/Framework</b>	
Date of receipt by the Bank	30-Oct-2014
Date of submission to InfoShop	29-Oct-2014
<b>"In country" Disclosure</b>	
Kenya	04-Oct-2014
<i>Comments:</i>	
<b>Pest Management Plan</b>	
Was the document disclosed prior to appraisal?	Yes
Date of receipt by the Bank	12-Feb-2013
Date of submission to InfoShop	13-Feb-2013
<b>"In country" Disclosure</b>	
Kenya	13-Feb-2013
<i>Comments:</i> IPMP for KWSCR-1 and the ESIA cover the anticipated PM issues for this project. Disclosure dates are those of the IPMP that covers the Kenya Water Security and Climate Resilience Program.	
<b>If the project triggers the Pest Management and/or Physical Cultural Resources policies, the respective issues are to be addressed and disclosed as part of the Environmental Assessment/Audit/or EMP.</b>	
<b>If in-country disclosure of any of the above documents is not expected, please explain why:</b>	

### ***C. Compliance Monitoring Indicators at the Corporate Level***

<b>OP/BP/GP 4.01 - Environment Assessment</b>			
Does the project require a stand-alone EA (including EMP) report?	Yes [ <input checked="" type="checkbox"/> ]	No [ <input type="checkbox"/> ]	NA [ <input type="checkbox"/> ]
If yes, then did the Regional Environment Unit or Practice Manager (PM) review and approve the EA report?	Yes [ <input checked="" type="checkbox"/> ]	No [ <input type="checkbox"/> ]	NA [ <input type="checkbox"/> ]
Are the cost and the accountabilities for the EMP incorporated in the credit/loan?	Yes [ <input checked="" type="checkbox"/> ]	No [ <input type="checkbox"/> ]	NA [ <input type="checkbox"/> ]
<b>OP/BP 4.04 - Natural Habitats</b>			

Would the project result in any significant conversion or degradation of critical natural habitats?	Yes [ ] No [ × ] NA [ ]
If the project would result in significant conversion or degradation of other (non-critical) natural habitats, does the project include mitigation measures acceptable to the Bank?	Yes [ × ] No [ ] NA [ ]
<b>OP 4.09 - Pest Management</b>	
Does the EA adequately address the pest management issues?	Yes [ × ] No [ ] NA [ ]
Is a separate PMP required?	Yes [ × ] No [ ] NA [ ]
If yes, has the PMP been reviewed and approved by a safeguards specialist or PM? Are PMP requirements included in project design? If yes, does the project team include a Pest Management Specialist?	Yes [ × ] No [ ] NA [ ]
<b>OP/BP 4.11 - Physical Cultural Resources</b>	
Does the EA include adequate measures related to cultural property?	Yes [ × ] No [ ] NA [ ]
Does the credit/loan incorporate mechanisms to mitigate the potential adverse impacts on cultural property?	Yes [ × ] No [ ] NA [ ]
<b>OP/BP 4.10 - Indigenous Peoples</b>	
Has a separate Indigenous Peoples Plan/Planning Framework (as appropriate) been prepared in consultation with affected Indigenous Peoples?	Yes [ × ] No [ ] NA [ ]
If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?	Yes [ × ] No [ ] NA [ ]
If the whole project is designed to benefit IP, has the design been reviewed and approved by the Regional Social Development Unit or Practice Manager?	Yes [ ] No [ ] NA [ × ]
<b>OP/BP 4.12 - Involuntary Resettlement</b>	
Has a resettlement plan/abbreviated plan/policy framework/process framework (as appropriate) been prepared?	Yes [ × ] No [ ] NA [ ]
If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?	Yes [ × ] No [ ] NA [ ]
<b>OP/BP 4.36 - Forests</b>	
Has the sector-wide analysis of policy and institutional issues and constraints been carried out?	Yes [ ] No [ ] NA [ × ]
Does the project design include satisfactory measures to overcome these constraints?	Yes [ ] No [ ] NA [ × ]
Does the project finance commercial harvesting, and if so, does it include provisions for certification system?	Yes [ ] No [ × ] NA [ ]
<b>OP/BP 4.37 - Safety of Dams</b>	
Have dam safety plans been prepared?	Yes [ × ] No [ ] NA [ ]

Have the TORs as well as composition for the independent Panel of Experts (POE) been reviewed and approved by the Bank?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Has an Emergency Preparedness Plan (EPP) been prepared and arrangements been made for public awareness and training?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>The World Bank Policy on Disclosure of Information</b>	
Have relevant safeguard policies documents been sent to the World Bank's Infoshop?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>All Safeguard Policies</b>	
Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Have costs related to safeguard policy measures been included in the project cost?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]

### III. APPROVALS

Task Team Leader:	Name: Gustavo Saltiel	
<b><i>Approved By</i></b>		
Regional Safeguards Advisor:	Name: Alexandra C. Bezeredi (RSA)	Date: 11-Dec-2014
Practice Manager/ Manager:	Name: Jonathan S. Kamkwalala (PMGR)	Date: 17-Dec-2014