

PROJECT INFORMATION DOCUMENT (PID)

CONCEPT STAGE

Report No.: PIDC302

Project Name	Kenya - Enhancing Water Security & Climate Resilience (P117635)
Region	AFRICA
Country	Kenya
Sector(s)	General water, sanitation and flood protection sector (30%), Irrigation and drainage (20%), General agriculture, fishing and forestry sector (20%), Public administration- Water, sanitation and flood protection (20%), General energy sector (10%)
Lending Instrument	Specific Investment Loan
Project ID	P117635
Borrower(s)	Government of Kenya
Implementing Agency	Ministry of Water and Irrigation
Environmental Category	A-Full Assessment
Date PID Prepared	29-May-2012
Estimated Date of Appraisal Completion	04-Mar-2013
Estimated Date of Board Approval	11-Jul-2013
Concept Review Decision	

I. Introduction and Context

Country Context

Kenya is emerging from a strong, but uneven, decade of growth. Annual growth rates from 2000 to 2009 averaged 3.9 percent, an increase from the previous decade's average of 2.3 percent. Post-election violence throughout 2008, combined with a severe drought that started in 2007, the global financial crisis, and high food and fuel prices resulted in a dramatic decline in the country's economic performance and a negative per capita growth rate in 2008. The economy recovered in 2010 and reached a growth rate of 5.6 percent, underpinned by structural reforms, a new Constitution and a spur in infrastructure investment. In 2011, a series of domestic and external shocks reversed the momentum, with the growth rate decreasing to approximately 4.5 percent. While national absolute poverty has declined, it is still high in comparison with neighboring countries such as Tanzania and Uganda. The Kenyan profile also reveals strong regional disparities in the distribution of poverty (with the lowest incidence in the Central province and the highest in the North Eastern province), as well as rising inequalities in the distribution of incomes in urban areas.

With Tourism and agriculture (followed closely by industry and services) the main drivers of

growth, Kenya's economy is vulnerable to erratic climatic patterns and a fragile natural resource base, including limited water availability. The World Bank estimates that climate variability costs the country an average of 2.4 percent of GDP per year and water resources degradation, a further 0.5 percent, which has seriously affected the country's competitiveness. Environmental threats are numerous – including unsustainable water abstractions, poor land use practices, deforestation, encroachment in recharge areas, and pollution – which have already seriously degraded many critical watersheds.

In 2007, the Government of Kenya (GoK) released Vision 2030, its framework for addressing these challenges and making Kenya a middle-income country by 2030. Vision 2030 seeks nothing less than a transformational change, achieving annual average GDP growth rates of 10% over the period in order to make the 'leap from poverty to widely shared prosperity and growth.' Vision 2030 has three pillars: economic, social, and political. Obtaining water security and reducing vulnerability to climatic variability and change are featured prominently as cross-cutting issues affecting all pillars and are highlighted as prerequisites for sustaining economic growth through increased production and tourism, as well as ensuring equity and social stability.

Sectoral and Institutional Context

Kenya has limited freshwater endowments and is projected to face rapid increases in water demand driven by growth and urbanization. A 2011 World Bank ESW estimated annual average surface water availability to be 19.7 billion m³ and annual safe groundwater yield to be 0.62 billion. Kenya is already classified as 'water scarce', and the mere 526 m³ per capita annual freshwater availability places it in the bottom ten percent of countries globally (in comparison, South Africa has at a per capita water availability of approximately 1000 m³ and Benin enjoys approximately 3000 m³ per capita water availability). Over 80 percent of Kenya's land area is arid or semi-arid. There is growing competition (and even conflict) over limited water resources, and rising population, economic growth, and urbanization are projected to rapidly increase pressures on the water resource base. At the sub-national level, the mismatch between water availability and rising demands is in many cases even more extreme; the 2011 ESW found that areas around the major cities of Nairobi, Mombasa, and some Western centers are the most critically water stressed and this is projected to worsen by 2030.

Kenya faces the additional challenge of high inter-annual and intra-annual rainfall variability that results in frequent and severe droughts and floods. Recent droughts (1998-2000, 2007-2009) have led to widespread crop damage and livestock deaths, extensive power rationing due to reduced hydropower generation, and a dramatic decline in economic activities in many sectors. The 2011 drought was the worst in 60 years, affecting approximately 3.5 million people and forcing Kenya to declare a national disaster. Floods have routinely devastated the country. In 2008 alone, around 300,000 were affected, particularly in the Lake Victoria Basin and the lower Tana River. Recent history has demonstrated that Kenya's people and its economy are already highly vulnerable to climatic variability and associated hydrologic shocks, but it is projected that the intensity and frequency of extreme events will increase under a changing climate.

Kenya has yet to adequately manage its 'difficult' hydrology, as evidenced in decades-long underinvestment in water storage that has not kept pace with growing needs or reigned in water's most destructive forces. Investment in storage has been stalled since the mid-1990s and existing storage capacity has not been adequately maintained, leading to issues of siltation and degradation that reduce effective storage further. Kenya's total water storage, including hydropower generation,

is approximately 4.1 billion m³, or 103 m³ per capita, which is dismally low compared to other countries (in comparison, North Africa has a per capita storage of just under 6000 m³ and South Africa, just under 700 m³). When only non-hydropower uses are considered, per capita storage drops to 3 m³. Further, thus far, water storage investments have been primarily driven by single sector considerations, and synergies from multi-purpose investment have not been fully captured. Beyond water storage, multiple and weak institutions, ineffective water allocation systems, low water use efficiencies, and high system losses plague Kenya's water sector. On average, 60% of the urban population and 40% of the rural population have access to safe drinking water. Only 2% of Kenya's cultivated area is under irrigation. Pollution of waterways is rampant, reducing the economic life of existing infrastructure and increasing the costs of water treatment, with knock-on effects in terms of prices for the end users.

GoK is planning a large scale water investment program to address these challenges, as well as new reforms to align the sector to the 2010 Constitution of Kenya. The Ministry of Water and Irrigation's (MWI) Water Sector Strategic Plan (2010) and the draft Water Harvesting and Storage Management Policy (2010) focus on reducing the water infrastructure gap through single and multipurpose storage. This approach is in line with the World Bank ESW that found substantial opportunities for multi-purpose storage that can secure reliable water supply, manage floods, provide irrigation, and generate hydropower. Vision 2030's 'flagship projects' in the water sector include large and medium size multipurpose water storage facilities, rehabilitation of the hydro-meteorological network, and rehabilitation and expansion of major irrigation schemes and urban water supply and sanitation in key satellite towns. Water investments in related sectors (e.g., tourism and agriculture) also feature prominently.

GoK has requested the World Bank's support to prioritize, prepare, and finance these water resources development opportunities. Vision 2030 flagship projects and other regionally-identified investment options are in various stages of preparation. MWI recognizes that the scale of its water sector investment needs requires a framework for organizing and sequencing support to the sector. Given the World Bank's own disengagement in large-scale water resources infrastructure (the last major investment being Ndakaini dam in 1993), a phased approach of long-term support is proposed, whereby priority investments are selected in a dynamic and ongoing basis and according to agreed criteria and needs. MWI has also requested that the World Bank support the sector reform process associated with aligning the Water Policy and Act to the 2010 Constitution of Kenya. The proposed Enhancing Water Security and Climate Resilience Project responds to these requests.

Relationship to CAS

The proposed Enhancing Water Security and Climate Resilience Project is included in the current Country Partnership Strategy (2010-2013) and has been preceded by a World Bank ESW that analyzed and prioritized potential water storage investments for further detailed assessments and studies. As water is a cross-cutting issue, the proposed project is well aligned with all three pillars of the Country Partnership Strategy, particularly the first and third. The first objective, unleashing Kenya's growth potential, would be supported through improvement of core infrastructure (outcome 1.2) by developing new water sources to support economic growth. The second objective, reducing inequality and social exclusion, could be supported through expansion of basic services (outcome 2.1), as well as by the development of new water sources. The third objective, managing resources constraints and environmental challenges, would be supported through improved water resources management in catchment areas and infrastructure investments to increase resilience to climate variability (including extremes of droughts and floods) and change.

The proposed project is also aligned with the Africa Regional Strategy, and particularly Pillar Two – Vulnerability and Resilience. Reducing vulnerability and building resilience in the water sector is the central purpose of the proposed project. To this end, the project would support establishing the minimal water infrastructural platform (including water storage) required to buffer against the most severe hydrologic shocks (including floods and droughts) and to lift Kenya out of a history of food insecurity, low productivity and constrained growth. Beyond infrastructure investments, the project would support the enabling institutional and information base to ensure that water investments are sustainably planned, developed and maintained for long term prosperity.

The proposed project would build on and complement other ongoing activities in Kenya's water program. For example, it will be informed by and complement the World Bank Water and Sanitation Service Improvement Project's (WaSSIP's) detailed water master plan studies for Nairobi and the Coast. The World Bank Natural Resources Management Project and Western Kenya Community Driven Development and Flood Mitigation Project are providing support for watershed management, irrigation, and flood control, and ongoing experience could strengthen water resources management and climate risk management investments under the proposed project. It will also link closely with programs being supported by other development partners. On the analytical side, the project will benefit from the update of the National Water Master Plan ongoing with JICA support, as well as the pre-investment studies carried out by the Nile Basin Initiative in the Mara, Sio-Malaba-Malakisi, Yala, and Gucha-Migori sub-basins. On the investment side, the project could benefit from potential co-financing of investment with others such as AfDB and the Netherlands, who have expressed preliminary interest in some priority projects under preparation by GoK.

II. Proposed Development Objective(s)

Proposed Development Objective(s) (From PCN)

The project development objective is to support the institutionalization of processes and water-related investments to strengthen climate-resilient water resources development and management in Kenya.

The PDO will support the higher level objectives of inclusive and sustained growth through the achievement of water security and resilience to climate variability.

Key Results (From PCN)

Key results that the proposed Project will support are:

- (i) Improved prioritization and preparation of investments in water resources development;
- (ii) Increased water storage and enhanced performance of water investments;
- (iii) Increased resilience to floods and droughts within the project impact area(s);
- (iv) Strengthened water resources management and development capacity of MWI and other relevant entities.

III. Preliminary Description

Concept Description

The proposed Project is designed as a framework operation that would support the Government of Kenya (GoK) in realizing its longer-term vision by establishing a rigorous selection process for

preparing priority water investments. Achieving climate resilient water security for economic development and growth is far beyond the possibilities of one operation. GoK recognizes that its vision of transforming the water sector requires a dedicated, long-term commitment that is best approached at a practical level in phases, whereby the myriad and vast investment needs are implemented according to a transparent process and quality assurance standards. The proposed Project responds to this need through the development of an investment framework, with agreed upon criteria and guidelines for selecting and preparing priority investments.

The investment framework would set the ‘rules of the game’ by making transparent the decision-making process on investments selection, ensuring that selected investments are well-prepared, amongst the most effective for realizing the objectives, and implemented in a sustainable manner. The single, consistent investment framework could eventually be broadened beyond the proposed project in order to facilitate implementation of GoK’s larger investment program, which would include support from other development partners, the private sector, etc. The framework approach of the proposed Project has been agreed with the Ministry of Water and Environment (MWI) and is in line with their vision for an “umbrella program” for the implementation of the Water Sector Strategic Plan (2011), through which they encourage Development Partners to coordinate support. The advantage of the framework approach is that it would provide GoK and the World Bank the opportunity to invest early in priority schemes provided that they are well-prepared, while establishing a rigorous investment framework for selecting and preparing subsequent investments.

World Bank engagement is expected to span over an 8-10 years period. The first phase of the proposed Project is expected to be in the order of US\$ 350 million, with subsequent phases to follow (either through an APL, new SILs or with Additional Financing). The total budget envelope will be determined during project preparation and will reflect the vast water investment needs in Kenya, which the Project aims to support. The longer-term and phased approach demonstrates the Bank’s commitment to the sector, while providing necessary flexibility and opportunities for reframing the subsequent phases, as needed and if conditions on the ground change substantially (particularly in light of the evolving institutional and reform process).

The proposed Project would have three components: (i) water resources development; (ii) water resources planning and management; and (iii) support to water sector institutional reforms. The total budget, particularly for Component 1, could be increased with co-financing from other development partners.

Component 1: Water Resources Development (US\$ 305 million)

This component would support climate resilient water security and economic growth through water resources development investments that are prepared in line with the eligibility and preparation framework. Such investments could include:

- Bulk water supply (large-scale, transformative water storage projects for single- and multipurpose use);
- Groundwater development.
- Flood management infrastructure.
- Activities to ensure sustainability of investments (e.g., catchment management for selected sites, community outreach, etc.).
- Enhanced productive water uses (e.g., irrigation development and water supply).

The investment framework will clearly specify the investment selection criteria and preparation guidelines (covering various aspects, including technical preparation, financial and economic analyses, environmental and social management, long term operations and management sustainability, community participation, implementation arrangements and institutional capacity). In order to test the robustness of the investment framework and the capacity of the country to adequately prepare investments in accordance with it, between one and three investments will be assessed using the framework and appraised prior to project approval, with the expectation that at least one of the investments will be financed upon project effectiveness. These investments will be selected from amongst the most advanced GoK priority projects, including possibly ones under preparation with support from other World Bank-financed projects. Funding will be committed to additional water resources investments during project implementation, as schemes are selected and prepared in accordance with the investment framework.

Three to four candidate investments have been identified are actively being reviewed for consistency with the proposed PDO and for their readiness in terms of the investment framework. The potential investments are:

- Nzoia Irrigation scheme – currently being designed under the Natural Resources Management Project. Additional work needed to fully prepare Nzoia irrigation scheme by appraisal is being fast-tracked.
- Ruiru wellfields in Nairobi – identified as a potential water supply option in the Water Supply Master Plan for Nairobi, supported under Water Supply and Sanitation Improvement Project (WaSSIP).
- Maira Dam – a site located in Western Kenya that is currently being studied under the Nile Basin Initiative/Nile Equatorial Lakes Subsidiary Action Program's Sio-Malaba-Malakisi (SMM) River Basin Management Project.
- Mwache Dam – a project that has been given high priority by MWI, Ministry of Regional Development Authorities (MoRDA), the Coast Development Authority (CDA), and the Coast Water Services Board (CWSB). Consideration is being closely coordinated with the preparation of the Water Supply Master Plan for the Coast Region/Mombasa, supported under WaSSIP.

Component 2: Water Resources Planning and Management (US\$ 30 million)

This component aims to support: (i) comprehensive water sector planning (including upgrading the water resources monitoring network; improving the knowledge base, including facilitating data sharing, and building analytical tools; strengthening decision support systems for climate risk adverse planning and building a pipeline of sound and well-prepared investments; and associated capacity building) and (ii) disaster risk reduction and climate risk management measures (forecasting, early warning and preparedness plans, etc.). Specific activities could include the following:

- Upgrading water resources monitoring network. This could include enhancing the network for hydro-meteorological, surface and groundwater monitoring; improving the water quality and pollution monitoring network; and strengthening water quality laboratories.
- Improving the knowledge base. Strengthening and consolidating the water resources and climate information base, including strengthening information management infrastructure and practices.

- Strengthening analytical capacity. Building in-house water resources assessment capacity within the institutions responsible for water resources management and development, and strengthening the capacity for water resources investment planning through the development / application of decision support tools and models (economic, financial, technical, social, environmental, etc.) . This might include improved decision support tools for climate risk management in river basin planning and for coordinated water infrastructure operations.
- Catchment/basin Planning. Support for integrated water resources planning through the preparation of consolidated catchment/basin-level water resources development and management plans (building on ongoing initiatives, including National Water Resources Master Plan, Water Supply and Sanitation Plans for the Coast and Nairobi, Kenya Water Sector Investment Plan, etc).
- Climate risk management. Activities could include: providing technical support for forecasting, early warning and preparedness plans for droughts and floods in priority areas, building on the ASAL and Western Kenya CDD/Flood Mitigation projects; improving the climate knowledge base, analytics, forecasting and warning systems; and scaling up instruments for climate risk management (e.g. climate insurance schemes, land use planning).

Component 3: Support to Water Sector Institutional Reforms (US\$ 15 million)

1. This component aims to support: (i) enhancement and strengthening of the ongoing institutional and legal reforms associated with aligning the water sector to the Constitution of Kenya (2010), with a view to creating the conditions for ensuring the sector's long-term contribution to sustainable economic growth; and (ii) implementing agencies to effectively implement and manage the project, including the establishment of a Project Coordination Unit that will provide for effective project implementation throughout the institutional transition and beyond.
2. This component would also support the institutional and legal reforms associated with the forthcoming National Water Policy and Water Act 2012. To align the sector with the 2010 Constitution of Kenya, a new National Water Policy has been prepared and is planned to be implemented starting in 2012. A Water Act 2012 has been submitted to the Committee for the Implementation of the Constitution. It is expected that a new institutional framework for water resources management and development will be created and that the transition to this new structure will take place over a period of at least three years. This component would support the establishment of mechanisms and measures to ensure that the project will be successfully implemented during a possibly turbulent transition period, and beyond.
3. Specific activities could include: technical assistance to GoK in reforming water sector in line with the mandate of the 2010 Constitution; implementation support for overall project management covering planning, design, and construction supervision phases, as well as required training and capacity building; support for inter-agency coordination, as well as effective reporting, monitoring and evaluation; and fiduciary and safeguard management, including financial and technical audits.

IV. Safeguard Policies that might apply

Safeguard Policies Triggered by the Project	Yes	No	TBD
Environmental Assessment OP/BP 4.01	x		
Natural Habitats OP/BP 4.04			x

Forests OP/BP 4.36			x
Pest Management OP 4.09			x
Physical Cultural Resources OP/BP 4.11			x
Indigenous Peoples OP/BP 4.10			x
Involuntary Resettlement OP/BP 4.12	x		
Safety of Dams OP/BP 4.37	x		
Projects on International Waterways OP/BP 7.50	x		
Projects in Disputed Areas OP/BP 7.60		x	

V. Tentative financing

Financing Source	Amount
BORROWER/RECIPIENT	0.00
International Development Association (IDA)	350.00
Total	350.00

VI. Contact point

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