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INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT PAPER

ON A

PROPOSED ADDITIONAL CREDIT

IN THE AMOUNT OF SDR 22.6 MILLION
(US\$30 MILLION EQUIVALENT)

TO THE REPUBLIC OF KENYA

FOR THE

KENYA WATER SECURITY AND CLIMATE RESILIENCE PROJECT

October 5, 2023

Water Global Practice
Eastern And Southern Africa Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective August 31, 2023)

Currency Unit = Kenya Shilling (KES)

US\$1 = KES 145.60

US\$1 = SDR 0.75

FISCAL YEAR

July 1 – June 30

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ABBREVIATIONS AND ACRONYMS

AF	Additional Financing
C-ESMP	Contractor’s Environmental and Social Management Plan
CPF	Country Partnership Framework
CRI	Core Results Indicator
DO	Development Objective
EHS	Environmental Health and Safety
EIRR	Economic Internal Rate of Return
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
E&S	Environmental and Social
FEWS	Flood Early Warning Systems
FM	Financial Management
FRM	Flood Risk Management
GBV	Gender Based Violence
GoK	Government of Kenya
GRM	Grievance Redress Mechanism
IBRD	International Bank for Reconstruction and Development
ICR	Implementation Completion Report
IDA	International Development Association
IFMS	Flood Mitigation Structures
IP	Implementation Progress
IMT	Irrigation Management Transfer
ISC	Implementation Support Consultant
IWUA	Irrigation Water Users Association
LNISP-1	Lower Nzoia Irrigation Scheme Phase 1
M&E	Monitoring and Evaluation
NIA	National Irrigation Authority
NLC	National Lands Commission
MoWSI	Ministry of Water, Sanitation, and Irrigation
O&M	Operations and Maintenance
PDO	Project Development Objective
PAH	Project Affected Households
PMU	Project Management Unit
PPSD	Project Procurement Strategy Document
RAP	Resettlement Action Plan
RD	Regional Director
RVP	Regional Vice President
SEA	Sexual Exploitation and Abuse
SH	Sexual Harassment
TC	Tertiary Canal
WRA	Water Resources Authority

TABLE OF CONTENTS

I. BACKGROUND AND RATIONALE FOR ADDITIONAL FINANCING	7
II. DESCRIPTION OF ADDITIONAL FINANCING	13
III. KEY RISKS	16
IV. APPRAISAL SUMMARY	18
V. WORLD BANK GRIEVANCE REDRESS	23
VI. SUMMARY TABLE OF CHANGES	24
VII. DETAILED CHANGE(S).....	24
VIII. RESULTS FRAMEWORK AND MONITORING	27



BASIC INFORMATION – PARENT (Kenya Water Security and Climate Resilience Project - P117635)

Country Kenya	Product Line IBRD/IDA	Team Leader(s) Pieter Waalewijn		
Project ID P117635	Financing Instrument Investment Project Financing	Resp CC SAEW3 (9389)	Req CC AECE2 (6542)	Practice Area (Lead) Water

Implementing Agency: Ministry of Water, Sanitation and Irrigation

Is this a regionally tagged project? No	
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Bank/IFC Collaboration No

Approval Date 18-Jun-2013	Closing Date 30-Nov-2023	Expected Guarantee Expiration Date	Original Environmental Assessment Category Full Assessment (A)	Current EA Category Full Assessment (A)
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Financing & Implementation Modalities

<input type="checkbox"/> Multiphase Programmatic Approach (MPA)	<input type="checkbox"/> Contingent Emergency Response Component (CERC)
<input checked="" type="checkbox"/> Series of Projects (SOP)	<input type="checkbox"/> Fragile State(s)
<input type="checkbox"/> Performance-Based Conditions (PBCs)	<input type="checkbox"/> Small State(s)
<input type="checkbox"/> Financial Intermediaries (FI)	<input type="checkbox"/> Fragile within a Non-fragile Country
<input type="checkbox"/> Project-Based Guarantee	<input type="checkbox"/> Conflict
<input type="checkbox"/> Deferred Drawdown	<input type="checkbox"/> Responding to Natural or Man-made disaster
<input type="checkbox"/> Alternate Procurement Arrangements (APA)	<input type="checkbox"/> Hands-on Expanded Implementation Support (HEIS)



Development Objective(s)

(a) increase access to irrigation water for project beneficiaries and (b) enhance the institutional framework and strengthen capacity for water security and climate resilience in certain areas of the territory of the Recipient.

Ratings (from Parent ISR)

	Implementation					Latest ISR
	03-Feb-2022	14-Apr-2022	24-Aug-2022	07-Dec-2022	25-May-2023	19-Jul-2023
Progress towards achievement of PDO	MU	MS	MU	MU	MS	MS
Overall Implementation Progress (IP)	MS	MS	MU	MS	S	S
Overall Safeguards Rating	MS	MU	MU	MU	MU	MS
Overall Risk	H	H	H	H	H	H
Financial Management	MS	MS	MS	MS	MS	MS
Project Management	MS	MS	MS	MS	S	S
Procurement	MS	MS	MS	MS	MS	MS
Monitoring and Evaluation	MS	MS	MS	MS	S	S

BASIC INFORMATION – ADDITIONAL FINANCING (SECOND ADDITIONAL FINANCING FOR KENYA WATER SECURITY AND CLIMATE RESILIENCE PROJECT - P181345)

Project ID	Project Name	Additional Financing Type	Urgent Need or Capacity Constraints
P181345	SECOND ADDITIONAL FINANCING FOR KENYA	Cost Overrun/Financing Gap	No



	WATER SECURITY AND CLIMATE RESILIENCE PROJECT		
Financing instrument	Product line	Approval Date	
Investment Project Financing	IBRD/IDA	27-Oct-2023	
Projected Date of Full Disbursement	Bank/IFC Collaboration		
30-Sep-2025	No		
Is this a regionally tagged project?			
No			

Financing & Implementation Modalities

<input checked="" type="checkbox"/> Series of Projects (SOP)	<input type="checkbox"/> Fragile State(s)
<input type="checkbox"/> Performance-Based Conditions (PBCs)	<input type="checkbox"/> Small State(s)
<input type="checkbox"/> Financial Intermediaries (FI)	<input type="checkbox"/> Fragile within a Non-fragile Country
<input type="checkbox"/> Project-Based Guarantee	<input type="checkbox"/> Conflict
<input type="checkbox"/> Deferred Drawdown	<input type="checkbox"/> Responding to Natural or Man-made disaster
<input type="checkbox"/> Alternate Procurement Arrangements (APA)	<input type="checkbox"/> Hands-on Expanded Implementation Support (HEIS)
<input type="checkbox"/> Contingent Emergency Response Component (CERC)	

Disbursement Summary (from Parent ISR)

Source of Funds	Net Commitments	Total Disbursed	Remaining Balance	Disbursed	
IBRD				<div style="width: 0%;"></div>	%
IDA	129.60	114.81	2.60	<div style="width: 98%;"></div>	98 %
Grants	2.80	2.80		<div style="width: 100%;"></div>	100 %

PROJECT FINANCING DATA – ADDITIONAL FINANCING (SECOND ADDITIONAL FINANCING FOR KENYA WATER SECURITY AND CLIMATE RESILIENCE PROJECT - P181345)



FINANCING DATA (US\$, Millions)

SUMMARY (Total Financing)

	Current Financing	Proposed Additional Financing	Total Proposed Financing
Total Project Cost	146.06	30.00	176.06
Total Financing	146.06	30.00	176.06
of which IBRD/IDA	111.32	30.00	141.32
Financing Gap	0.00	0.00	0.00

DETAILS - Additional Financing

World Bank Group Financing

International Development Association (IDA)	30.00
IDA Credit	30.00

IDA Resources (in US\$, Millions)

	Credit Amount	Grant Amount	SML Amount	Guarantee Amount	Total Amount
Kenya	30.00	0.00	0.00	0.00	30.00
National Performance-Based Allocations (PBA)	30.00	0.00	0.00	0.00	30.00
Total	30.00	0.00	0.00	0.00	30.00

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

Yes No

Does the project require any other Policy waiver(s)?

Yes No

**INSTITUTIONAL DATA****Practice Area (Lead)**

Water

Contributing Practice Areas**Climate Change and Disaster Screening**

This operation has been screened for short and long-term climate change and disaster risks

PROJECT TEAM**Bank Staff**

Name	Role	Specialization	Unit
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Winnie Achieng Adhoch	Team Member	STEP	AECE2
Extended Team			
Name	Title	Organization	Location



I. BACKGROUND AND RATIONALE FOR ADDITIONAL FINANCING

A. Introduction

1. **This Project Paper seeks the approval of the Executive Directors to provide a second additional financing (AF) in the amount of SDR 22.6 million (US\$30 million equivalent) from the International Development Association (IDA) to the Republic of Kenya for the Water Security and Climate Resilience Project (P117635).** The purpose of the second AF is to meet a financing gap for Lower Nzoia Irrigation Scheme Phase 1 (LNISP-1) activities under component 1 of the parent project, which occurred due to significant cost overruns and exchange losses. The second AF will allow the project to achieve its PDO through completion of all the 14 irrigation blocks, and fully delivering the LNISP-1 activities.

2. **The second AF includes a restructuring of the parent project with the following changes:** (i) extension of the closing date by 18 months from November 30, 2023, to May 31, 2025 to complete LNISP-1 works as originally planned. A two-month extension was approved in a recent restructuring to allow the Government of the Republic of Kenya (GoK) to complete its internal processes. The extension will allow for completion of LNISP-1 and the operationalization and transfer of the scheme to the Irrigation Water User Associations (IWUAs); and (ii) revision of the results framework. No further changes are envisioned under this AF. The GoK formally conveyed the need for a second AF and closing date extension in its letter, dated July 31, 2023.

3. **LNISP-1 activities are priority infrastructure investments for the Government of Kenya (GoK) in Western Kenya, between Busia and Siaya counties included in the Kenya Agricultural Sector Development Strategy and Kenya’s Vision 2030.** The LNISP-1 activities are expected to contribute to achieving the country’s goals in food security, economic growth, and enhanced climate resilience for farmers. Water security and climate resilience are critical issues for Kenya, given that its people and economy are highly vulnerable to climate change impacts. Over the past 50 years, changes in temperature and rainfall patterns have resulted in more frequent weather-related disasters such as floods and droughts with a profound impact on Kenya’s economy and people’s well-being. Further, warming in Kenya and in the rest of continental Africa is projected to be greater than the global mean (2.8°C) during the 21st century,¹ resulting in more frequent and intensive climate shocks, including in the project area. To build resilience against flood and drought and the resulting agricultural and food security risks – the 2022 National Irrigation Services Strategy sets high ambitions for irrigation expansion nationally, including triggering private sector participation, including a tripling of the water managed area by 2030. LNISP-1 activities will constitute an important contribution to integrated expansion and intensification of irrigated agriculture in Kenya building the resilience of farmers in Busia and Siaya counties.

4. **Rain-fed agriculture remains the dominant source of staple food production and is the foundation of livelihoods for most of the rural poor in Kenya, including in Busia and Siaya counties².** Seventy-five percent of women work in small -scale farming, compared to 51 percent of men. Despite women’s central role in agriculture production, they hold only around 10 percent of land titles and own only 1.62 percent of agricultural land. Gender gaps in access to secure land, extension services and

¹ The IPCC (AR4) projected warming averaged over 21 models for the unmitigated medium-emissions A1B scenario, is between 2.5°C and 4°C across Kenya, with a median value of around 2°C by the middle of the century for the East African region, and of 3.2°C by 2100.

² Republic of Kenya (2013). National Climate Change Action Plan, 2013–2017: Vision 2030. URL: <https://cdkn.org/wp-content/uploads/2013/03/Kenya-National-Climate-Change-Action-Plan.pdf>



trainings, skills, and use of irrigation water led to gaps in crop yields of up to 20-30 percent between male and female managed agricultural enterprises. The impact of climate change is widening these gender gaps.³ Agricultural extension and market linkages for small-scale commercial farming is lagging. Women have little or no voice in the management of water resources. The Kenya Water Resources Authority has established a gender representation of 30 percent as a pre-condition for community water groups to access water resources in Kenya. However, formal representation is insufficient to address gender inequality, and it needs to be coupled with efforts to increase the empowerment of women in leadership and decision-making positions where substantive gaps remain⁴. The parent project has supported the establishment of IWUA and block committees for irrigation water management and governance, but female (as well as youth) access and representation in leadership positions requires attention. Strengthening women representation, voice and leadership in these IWUA bodies will be key in addressing the gender gaps in water governance.

5. **Gains of the already completed infrastructure for flood mitigation structures will help strengthen the resilience of communities living in Busia and Siaya counties towards climate shocks, especially floods.** The Lower Nzoia Basin is one of the ten most flood prone areas in Kenya. Recent flooding in some of the most heavily populated areas of the basin led to massive displacement of local communities, loss of life and property, disease outbreaks and an influx of land-based pollutants into the lake during the floods. In line with the GoK objective to strengthen resilience to climate change threats in the lower Nzoia Basin, the Kenya Water security and Climate Resilience Project financed the construction of 34km of northern and southern dikes downstream Busia and Siaya Counties resulting in protection of an estimated 66,700 people from floods. In addition, the project supported improvement of the Flood Early Warning Systems (FEWS) and communications and provision of technical support to the ministries involved in Flood Risk Management (FRM), in the Operations and Maintenance (O&M) of the FEWS and enhancing community preparedness. The irrigation is designed to absorb rainfall shortages and shocks based on long-term trend analysis and projected climate variability, through Nzoia river runoff. The rainfall in the vicinity of Lake Victoria is characterized by two rainy periods: the “long rains” and the “short rains”, which occur between March and May and October and November respectively. Severe convectional rains are experienced near the shores of Lake Victoria, and crop production is severely affected not only by droughts, but also short-term dry spells.

B. Background and components of the Kenyan Water Security and Climate Resilience Project (P117635)- Parent Project

6. The parent project (P117635, Credit No. IDA 52680) was approved on June 18, 2013, with financing of US\$155 million equivalent. It became effective on October 24, 2013, and is currently scheduled to close on November 30, 2023).

7. The Project Development Objective (PDO) is to: (a) increase access to irrigation water for project beneficiaries, and (b) enhance the institutional framework and strengthen capacity for water security and climate resilience in certain areas of the territory of the Recipient. The project’s implementing entity is the Ministry of Water, Sanitation, and Irrigation (MoWSI). The project aims to improve water security and

³ UNDP 2020. UNDP 2020. Kenya Gender Analysis

Report https://climatepromise.undp.org/sites/default/files/research_report_document/undp-ndcsp-kenya-gender-analysis-report.pdf

⁴ Speranza and Bikketi (2018) Engaging with Gender in Water Governance and Practice in Kenya, in Frohlich et al (eds), Water Security Across the Gender Divide. <https://core.ac.uk/download/pdf/219475231.pdf>



build climate resilience to droughts and floods by strengthening water and climate risk investment planning, preparation and implementation that is supported by an enhanced enabling institutional framework. The original project scope had three components:

- a) **Component 1: Water Resources Development (US\$76.8 million equivalent)** – which includes the construction of the LNISP-1; agricultural support activities and preparation of the water sector investment pipeline.
- b) **Component 2: Effective Water Sector Institutions (US\$56.3 million equivalent)** – which includes support for water sector transition and reforms, and improved water resources management and planning.
- c) **Component 3: Support for Project Implementation (US\$15.2 million equivalent)** – which includes support for project management and coordination of activities.
- d) The project also had a project preparation advance (US\$3 million) and an unallocated amount of US\$3.7 million).

8. **The project has gone through six restructurings as summarized below, the first being an AF and thereafter various changes aimed at downscaling the project, streamlining implementation arrangements, and simplifying the results framework.** The current IDA credit amounts to US\$111.3 million equivalent.

- a) The first restructuring in June 2015, consisted of an AF of US\$58 million (Credit No. 56740-KE), and a US\$3.5million grant from the Korea World Bank Group Partnership Facility Trust Fund (TF-A0761).⁵ The AF scaled up the project to include Flood Mitigation Structures (IFMS) and early warning systems in the Lower Nzoia Basin and a water distribution network in Mombasa.
- b) The second restructuring in September 2017 streamlined implementation arrangements, simplified the project results framework, and cancelled US\$13 million equivalent from the original credit. This was in response to slow implementation progress caused by a complex design. Major contracts for both the LNISP-1 and the IFMS were not yet mobilized.
- c) The third restructuring in June 2019 responded to continued delays in the infrastructure component and major land acquisition delays. A further US\$70 million equivalent was cancelled (from both the original credit and the first AF), reducing the project scope by dropping capacity strengthening activities and significantly reducing the water distribution network investments in Mombasa, technical assistance for the national water infrastructure pipeline, and agricultural support. It also removed contingencies and space for cost escalations of the LNISP-1 activities.
- d) Significant progress was achieved thereafter; however, delays in land acquisition for both LNISP-1 activities and the IFMS made evident that the project would not be able to deliver the targeted results. Thus, a fourth restructuring was undertaken in February 2022 to revise the PDO by dropping anticipated outcomes in agricultural productivity and adjust related PDO indicator targets, including reducing the targets related to irrigated area and number of farmers with irrigation and drainage services.
- e) The fifth restructuring was undertaken in November 2022 when the remaining infrastructure activities in component 1 significantly started to turn around. The restructuring provided a nine-month extension of the project closing date to September 30, 2023, to complete

⁵ TF-A0761 already closed on December 2021.



as much priority works as possible of LNISP-1 activities and the infrastructure for IFMS that could be funded with the remaining funds (US\$15.8 million at that time). It focused immediate attention on a limited set of prioritized activities, enabling the project to deliver some tangible outcomes on PDO indicators, against available financing.

f) The sixth restructuring of September 2023 extended the projects by two months to allow Government processing of the second additional financing, moving the closing date to November 30, 2023.

9. The November 2022 restructuring and associated action plan have demonstrably resulted in the infrastructure works proceeding smoothly, leading to a favorable outlook for project implementation.

The project turn-around and delivery of the agreed priority works and actions was enabled through a new agreement among MoWSI, the National Irrigation Authority (NIA) and National Lands Commission (NLC) aimed to ease the land acquisition process at the tertiary canals that was affecting project implementation. The project is on track to fully disburse by current closing date. Based on the principle of minimizing involuntary resettlement impact and maintaining the sustainability and ownership principles of the infrastructure, and in line with replicating international and in-country experiences, the Government agreed to: (a) reduce the footprint of the farm canals (tertiary canals) through revision of the design, effectively avoiding any physical relocation of Project Affected Households (PAHs) and cutting tertiary canals' maintenance roads; and (b) only construct tertiary canals where farmers voluntarily consent to provide access to the canal construction on a minor portion of their farm in return for receiving irrigation water access through this productive asset. This consent replaced the approach of monetary compensation for land acquisition as previously envisioned. This new approach was included in the action plan developed in parallel with the fifth restructuring through the revision of RAP 4.

C. Current status

10. As a result of the last restructuring, component 1 (LNISP-1 activities) has had a positive turnaround. Current disbursement is 97.82 percent. The first portion of the LNISP- 1 activities (blocks 1-5) is now well on track, and only completing the remaining portion of LNISP-1 (irrigation works to serve blocks 6 to 14) and instatement of farm connections is pending to deliver the full scope of LNISP-1 as included in the works contracts, ESIA and RAP implementation. Challenges related to land acquisition have been overcome in the past year with significant progress made on the prioritized portion of LNISP-1 activities (blocks 1-5) with all land plots handed over to the contractor, proactive resolution of land related grievances and the formalized change in approach for the tertiary canals. Moreover, land acquisition has also progressed in the remaining portion of LNISP-1 activities (blocks 6-14) with some parcels already compensated for, and others already awarded by NLC only pending budget allocation. Additional budget needed to compensate the balance of 53 ha in remaining portion of LNISP-1 (Blocks 6-14) is currently assessed at approximately US\$2.7 million. The flood protection works and Bunyala scheme rehabilitation were finalized in March 2023. Ancillary agricultural and irrigation management support has been ongoing and achieved some results despite the lack of irrigation services to accompany them.

11. Under component 2, the project has achieved its institutional strengthening objectives and is fully completed. MoWSI has completed several critical reforms to enhance the legal, policy, and regulatory framework for managing Kenya's scarce water resources, including new water policy, new water law (Water Act 2016), and several regulations governing water resources management, water services, water harvesting and storage, and irrigation. The project has also contributed to strengthening the capacity of critical sector institutions, such as the Water Resources Authority (WRA). The WRA has



received technical assistance, training, analytical tools, and decision-support systems to become more effective in its role as a regulator of Kenya's water resources. The WRA has also gazetted (under section 24 of the Water Act) Kenya's six major river basins and prepared (with project support) basin plans, and sub-catchment plans to promote integrated management and allocation of water resources at the basin level. The project has also helped strengthen the WRA's financial base. Thus, through a strengthened legal mandate, better information, analytical and regulatory tools, WRA's capacity to manage Kenya's scarce water resources has dramatically improved over the three and half years of project support.

12. **Under component 3, the project is successfully supporting the implementation arrangements of the project.** The project has a well-functioning PMU and support to project implementation is expected to continue under the second AF.

13. **Progress towards achievement of the PDO is rated 'Moderately Satisfactory' (MS), and Overall Implementation Progress (IP) is rated 'Satisfactory' (S).** The PDO rating was upgraded from "Moderately Unsatisfactory" (MU) to MS on May 25, 2023, and the IP rating from MU to MS on December 7, 2022, and later to S on May 25, 2023, following turn-around of project implementation. The overall safeguards rating is currently Moderately Satisfactory (MS) in recognition of the sustained improvements in implementation of the project Construction Environmental and Social Management Plans (C-ESMPs) and closing out of all pending environmental and health safety (EHS) actions identified in the previous mission. The satisfactory ratings are expected to be maintained during implementation of the second AF, given the new approach to land acquisition, the strong PMU, improvement in the Supervising Engineer's routine EHS quality assurance inspections and audits and the fact that both the Supervision Engineer and the contractor are already on site and contracts are performing satisfactorily.

14. **The project follows the audit and financial reporting requirements, and in compliance with its legal covenants.** The activities related to ensuring compliance with the legal covenant related to the operation and management of the LNISP-1 activities are ongoing. An irrigation Management Transfer (IMT) Plan has been developed and will be discussed with the counties, IWUAs and National Irrigation Authority (NIA) in order to reach a common understanding of how the irrigation scheme will be transferred to the IWUAs for operations. As irrigation blocks get completed, they will be transferred to IWUA for operations, leading to full compliance of the covenant in irrigation blocks 1-5. Similar transfer arrangements will be undertaken for the additional irrigation blocks to be completed under the second AF (blocks 6-14).

D. Rationale for Additional Financing

15. **The project remains a priority for the GoK.** It is a transformational investment to address the irrigation gap in Kenya. As a flagship project for Kenya, the project remains a major instrument for the government to boost production and climate resilience, as well as save on operating costs from converting the Bunyala scheme from a pumped to a gravity scheme (saving about KES 3 million per month). Economically, with sunk costs in all the primary infrastructure that have already been constructed but very few farmers yet to be connected via secondary and tertiary canals, the second AF will support completion of the project activities, leveraging impact for farming communities in Busia and Siaya counties.

16. **The second AF is aligned with the World Bank Group Country Partnership Framework (CPF) for Kenya (FY23-28, Report No. 172255-KE).** The overarching goal of the CPF is to support Kenya's transformation into a middle-income economy that achieves inclusivity and resilience. The three higher-level outcomes of the CPF are: (i) faster and equitable labor productivity and income growth; (ii) greater



equity in service delivery outcomes; and (iii) greater resilience and sustainability of Kenya's natural capital. The second AF directly contributes to these outcomes, particularly supporting objective 7 on reducing Kenya's water insecurity. It is also closely aligned with the forthcoming Kenya Climate Change and Development Report with its focus on improving water productivity and addressing the services gap in irrigation to improve climate resilience.

17. **The second AF will close the financing gap for completing the LNISP-1 activities, the most critical and significant infrastructure investment linked to the PDO and important in building farmers' resilience to climate-change exacerbated droughts and dry-spells.** The second AF will cover the financing gap on the irrigation scheme (Blocks 6-14) and related infrastructure and equipment, Environment and Social Risks and impact management, technical services (construction supervision, technical assistance, institutional and agronomic support, design studies), and project management. These activities were part of the parent project objective and scope.

18. **The second AF will support the achievement of the parent project's activities. The land acquisition process is nearing completion and complex civil works are already completed.** Finishing the works as originally targeted will mean providing access to irrigation services to 11,133 farmers and over 3,905 ha of arable land. Both the supervising engineering consultant and the contractor are in place with active contracts that will cover the remaining implementation period and scope of works. All complex civil works (river diversion, long main canal, lined sections, aqueducts, etc.) are already completed under the parent project, and remaining works are primarily less complex earthen canals and drains in the rice-growing area. Land acquisition process completion for Blocks 6 - 14 is only pending allocation of compensation budget from the proceeds of the second AF.

19. **The 18-month extension carries additional benefits enhancing project sustainability for the farmers.** Farmers have been successfully trained on agricultural productivity through various methods such as support in construction of 5 additional nurseries, a 4th cycle of System of Rice Intensification demonstration, establishment of six trials furrow sites, training on land preparation, farmer-field events and market-linkages. IWUAs have been established with demonstrations done where tertiary canals have been installed under the parent project. While these agricultural activities have delivered successfully thus far, the hands-on training to IWUAs, scheme manager and the roll-out of the Irrigation Management Transfer plan could only start with the finalization of tertiary canals, which has now advanced, and the extension period will be critical for operationalizing management for the LNISP-1 and sustainability of irrigation management arrangements beyond the project. This period will also be utilized to reinvigorate IWUA elections, gender representation and activities to strengthen access to information and voice for female farmers. Under the second AF, a new gender target is included in the Results Framework to monitor closure of identified gender gap in leadership structures.

20. **With the second AF, similar activities will continue for farmers in Blocks 5 – 14 as tertiary canals are installed, and the project will support the purchase of operation and maintenance equipment.** These activities are largely financed with parallel KfW financing that will continue and will be complemented with IDA for the remainder of the project. While time does not allow for reinstatement of productivity targets during the project period, these activities will support kickstarting production and enhance long-term sustainability of the project. The envisaged scheme will provide a flexible irrigation service to enable production of high value horticultural crops in the upper blocks and rice in the low-lying blocks. Since irrigation is a necessary but not sufficient condition for improved irrigated agriculture, the agricultural support component will, with additional resources, support this program in the original project footprint. Longer-term agricultural support will be mainstreamed through national agricultural support programs,



including the National Agricultural Value Chain Development Project (P176758), supported by the World Bank. Also, it provides the opportunity to support GoK in adopting lessons learned into an irrigation investment framework and approach, and to prepare a smarter pipeline of investments. The period for extension is particularly important for institutional strengthening, including female and youth representation in LNISP-1 activities’ leadership and management.

II. DESCRIPTION OF ADDITIONAL FINANCING

A. Scope of the Additional Financing

21. **The second AF will support the US\$30 million financing gap as well as extend the project closing date by 18 months, needed to complete LNISP-1 activities, and continue the support provided to IWUAs and farmers through the agricultural activities under component 1.** The second AF will finance works (including contingencies and provisional sums), engineering and other consulting costs, and operational cost associated with the completion of LNISP-1 activities. No changes are envisioned in the implementation arrangements or in the scope of the project. Table 1 shows the current and second AF costs by component and the revised total project costs and financing.

Table 1: Revised Project Costs

	PARENT PROJECT (US\$M) (including first AF and second and third restructuring, as of June 2019)						Second AF (US\$M)			GRAND TOTAL
	IDA	GoK	KFW	KWTF	Bene-ficiary	Total	IDA	GoK/KFW/ KWTF/ Beneficiary	Total	
1: Component 1: Water Resources Development	78	14.30	16.44	3.5	0	112.24	27.00	-	27.0	139.24
2: Component 2: Effective Water Sector Institutions	15.74	-				15.74	-	-	-	15.74
3: Support for Project Implementation	16.91	0.50				17.41	3.00	-	3.0	20.41
Project preparation advance	0.67					0.67				0.67
Totals	111.32	14.80	16.44	3.5	0	146.06	30	0	30	176.06

Component 1: Water Resources Development (US\$27 million equivalent)

22. **The component will finance the remaining civil works, and the continuation of the supervision engineering services for the completion of the Lower Nzoia Irrigation Scheme Phase 1.** The works include the completion of about 9km of the main canal and associated secondary canals, tertiary canals and field canals that were not completed under the parent project due to funding constraints. This will provide access to irrigation services for 2,912 ha in Blocks 6 – 14 and complete field canals and farm leveling in Blocks 1 – 14. Irrigation would be gravity fed thus mitigating climate change and reducing potential emission from pumping energy demand. Table 2 summarizes the



second AF costs for component 1.

Table 2: Summarized estimated Second AF Component 1 costs

No	Component/ Sub-component	Cost items	Total Cost (US\$ million)
1	Lower Nzoia Irrigation	Irrigation and drainage infrastructure	16.2
2		Implementation Support Consultancy- Phase 1	3.8
3		Land Acquisition	2.7
4	Agricultural Support and Value Chain Management		1.7
5	Participatory Irrigation Management		1.6
6	Operations and Maintenance Equipment		1.0
		GRAND TOTAL	27.0

23. **The component will finance cash compensation under the RAP** related to the land acquisition of approximately 53 hectares of land to compensate 1652 PAHs affected by the works under the second AF (blocks 6 to 14). Table 3 summarizes the details of land acquisition progress, including those already completed under the parent project. The same tertiary canal approach agreed for blocks 1-5 will also be applied in the remaining blocks. The estimated expenditures total approximately US\$2.7 million equivalent and comprise seven percent of the total cost of the second AF. Pending resettlement-related cash compensation for the remaining PAH have been awarded by NLC and are only pending budget allocation before implementation.

Table 3: Land Acquisition Progress under LNISP-1 activities (Component 1).

Irrigation Blocks	Number of Parcels	Land size (Hectares)	Number of PAH	Compensation status
Intake, Headworks PAH RAP 1	158	56.6	170	Completed under parent project
Main Canal of blocks 1 to 7 RAP 3	720	75	1,164 (91 physically displaced)	Completed under parent project, except for 22 parcels in block 7
Main Canal of block 10* RAP 3	245	17.6	347 (3 physically displaced)	Process ongoing: NLC issued awards to all the parcels on September 20, 2022. Compensation awaiting budget allocation, to be financed from the AF.
Secondary Canals of blocks *6,7, 8, 9, 11, 12, 13, 14 RAP 3	988	35.5	1305 (26 physically displaced)	

*Blocks 8, 9, 11, 12, 13 & 14 don't have main canal passing through, blocks 1-5, and 10 do not have secondary canals.

24. **The component will continue to support agricultural and value chain activities for the farmers.** Building on the gains made in the agronomical support, establishment of IWUAs, market linkages, the demonstrations and practical trainings in irrigation water management already undertaken for the farmers in Block 1-4, the second AF will provide similar support for the farmers in Blocks 5-14. Technical assistance will continue to be provided to the beneficiary communities and farmers on climate-smart agronomical practices, resource-efficient irrigation management (both on farm and at the scheme level),



value chain development, and sustaining the natural capital upon which the scheme depends. It will support the NIA with the process of gradual Irrigation Management Transfer to the IWUAs for long-term financially sustainable irrigation service delivery.

Component 3 - Support for Project Implementation (US\$3 million equivalent)

25. **This component will finance project management costs, which will continue under the second AF.** The support includes (i) PMU support consultancies for contract management, procurement, financial management, safeguards management, monitoring, and evaluation; and (ii) incremental operating costs associated with the overall coordination of project activities; (iii) the cost of managing and mitigating the environmental and social impacts. The scope of activities includes implementation of environmental and social management plans (ESMPs), RAPs, and GBV/SEA risk management, and communication and stakeholder engagement. The project has a RAP implementation consultant, and the GRM and PMU are well sensitized on GBV risks and experienced with good practice on SEA/SH follow up and confidentiality protocols. This component will also finance studies and technical assistance to assess and improve the quality of the irrigation investments, contributing to the development of lessons learned and supporting development of a program of evidence-informed investments and pathways for irrigation development in Kenya as proposed under the National Irrigation Sector Investment Plan. It will support a thorough final project ICR development.

B. Other Proposed Changes

26. Proposed changes under the second AF and a level two restructuring cover changes in component costs, as described in the previous section.

27. **PDO and Results Framework.** There are no changes proposed to the PDO. The results framework has been amended to restore the original targets of three PDO indicators to count all farmers and all hectares to be serviced from LNISP1 activities (blocks 1 – 14), as well as revised the overall beneficiaries’ number to reflect the change in number of total beneficiaries. Further, the intermediate level indicator related to the number of household water connections in Mombasa (an activity under the parent project, but unconnected to LNISP1) was revised and its target will be reduced from 7000 to 3000 Households (18,000 people). The original full scope of household connection target in Mombasa is deferred owing to the delays in the completion of the Mwache dam, which aims to supply bulk water needed for these connections and is still ongoing under the Coastal Region Water Security and Climate Resilience Project (P145559).

Table 4: Summary of changes to the Results Framework under the second AF

Indicator	Proposed Change with AF/restructuring
PDO- Area provided with irrigation and drainage services (ha) (CRI, Hectare (Ha))	The end target is increased from 2,385 to 3,905 to account for all hectares serviced with the full completion of the LNISP-1
PDO- Farmers gaining access to new/improved irrigation and drainage services (Number)	The end target is increased from 7,600 to 11,133 to account for all farmers gaining access with full completion of the LNISP-1
PDO- Project beneficiaries	-The end target is changed to 127,904 beneficiaries. Sub indicators:



Indicator	Proposed Change with AF/restructuring
	"Irrigation (Number)" target was increased from 7,600 to 11,133. -Sub-indicator "Mombasa water distribution (Number)" target is reduced from 42,000 to 18,000
Intermediate indicator	-Number of household water connections (new or rehabilitated) in Mombasa reduced from 7,000 to 3,000 -Number of farmers trained in improved agriculture practices (including irrigated agriculture). A sub-indicator is added on share of female trainees with a target of 40 percent. -A new gender-themed indicator is added: Female Representation in IWUA leadership with a target of 33 percent. -Length of flood protection structures (indicator included during first Additional Financing) rectified from 44 kilometer to 34 kilometer, as per the project scope.

C. Implementation Arrangements

28. **The project’s institutional and implementation arrangements remain unchanged.** The MoWSI will continue as the lead implementation agency. A competent, well-staffed PMU is currently in place, with offices in both Kisumu and Nairobi. The PMU operates under the oversight of a project steering committee chaired by the Principal Secretary, MoWSI. Various consultants and experts provide technical, project management, and E&S risk management support to the PMU. The second AF will make it possible for these critical support services to continue throughout the project extension period.

III. KEY RISKS

29. **The overall risk remains high.** The project remains exposed to several risk factors rated moderate, high or Substantial (including political and governance, macroeconomic, technical, institutional, fiduciary, and E&S) that could undermine the achievement of the PDO, or, in the case of E&S, cause unintended negative impacts. The following paragraphs provide a brief description of each of the critical risk factors with high or substantial levels.

30. **Institutional capacity for implementation and sustainability risk is rated substantial.** MoWSI has now proven the successful implementation of blocks 1-5 and the National Irrigation Authority has experience in developing and managing similar irrigation schemes in Kenya. At the same time, the institutional arrangements for managing irrigation services are still evolving and thus pose a sustainability risk. The extended time period will be utilized to strengthen the irrigation management transfer process and build further the capacity of IWUAs. The PMU has a mix of MoWSI staff and consultants, including full-time environmental and social safeguards specialists, procurement and contract management specialists, financial management specialists, M&E specialists, communications specialists, and community mobilizers who also focus on monitoring gender and citizen engagement activities. These specialists are key to mitigate implementation risks.

31. **Fiduciary risk is substantial.** The risk has remained substantial because of the budget and funds flow challenges, which pose persistent difficulties across the entire World Bank portfolio. There are no



outstanding audits, but funds flow often takes longer than planned, causing delays in project implementation. In most cases, once the budget is approved, there are delays in uploading annual work plans, procurement plans, and cash plans in the integrated financial management information system (prerequisites for spending the approved budget). Project appropriations are usually lower than forecast project cash flow. Procurement and financial management (FM) functions and controls are adequate, but occasional slippages occur, especially in payment processing. As a mitigation measure, the PMU has approved a simplification of the contract payment procedure and included standard operating procedures with turn-around times and accountability through a tracking system.

32. **Environmental and Social risks are “High’.** Key environmental issues relate to the potential for flooding hazards, occupational health and safety, increased in traffic flow and accidents, and waste management. The experience with the parent project demonstrated that the client and contractor have continued to sustain their commitment to EHS compliance throughout the life of the project. There are continuous improvements in closing out routinely identified EHS corrective actions, with weekly and monthly EHS quality assurance inspections and audits. Over time, the EHS culture of the project has improved as the Bank continues to supervise and provide remedial measures for redress. The second AF will retain the EHS instruments and measures for the parent project, and follow the same implementation and supervision arrangements, which is relatively well resourced and experienced with an Independent Panel of Expert that offer routine EHS advisory to the PMU, a full time Senior Environmental Specialist on the PMU and an experienced full time EHS Advisor on the supervising engineer. The main social risks concerns relate to land acquisition and involuntary resettlement. Overall, 4 Resettlement Action Plans (RAPs) covering impact footprint of various project investments have been prepared and are being implemented. RAP 1 has been fully implemented; RAP 2 is nearly complete, except 307 parcels that need to be de-gazetted to revert such lands to owners; and RAP 3 (main and secondary canals from block 6-14) is under implementation. The second AF allows for the use of IDA funds to complete compensation of approximately 1652 PAHs within the scope of RAP 3 (works in the irrigation blocks 6 to 14), and thus guarantee land access for contractors to proceed with outstanding works. Design alternatives and changes in the land acquisition approach would reduce impacts related to RAP 4. All RAPs are implemented alongside other environmental and social mitigation measures including C-ESMPs, GRMs, and periodic stakeholder consultations. At the last ISM, the overall environmental and social performance of the project was rated ‘moderately satisfactory’.

38. **Stakeholder Risk is considered substantial.** While there is broad-based support for the project, coordination and communication sometimes proved challenging. With a closer alignment with County Development Plans and their executives, and enhanced clarity on implementation between MoWSI, NIA and Counties, this risk is proactively addressed. During the past year, the PMU and NIA have worked with local leadership and through community consultations to inform and seek consent by individuals and build momentum for the changing approach. The project will continue this participatory approach, deliver demand-based services (tertiary/feeder canals) and strengthen citizen engagement through well-functioning IWUAs and their general assemblies. A Grievance Redress Mechanism is functional, with the formation of grievance committees at various levels, effective tracking of grievances and its resolution mechanisms, with close follow up from the PMU on timely resolution of cases.



IV. APPRAISAL SUMMARY

A. Economic and Financial Analysis

39. **The methodological approach of the EFA follows good practice in the sector⁶⁷ and is in line with recent guidelines published on economic and financial analysis.⁸** The financial analysis was performed from the perspective of beneficiaries. The economic analysis also differed from the financial analysis due to a shadow price that was assumed for the main project inputs and outputs. A detailed EFA is included in project files.

40. **Twenty-two financial models were developed, of which sixteen are main crop models and six are for the agricultural farm models.** The period of analysis is 20 years to account for the phasing and gestation of the proposed interventions. Economic benefits from the agricultural farm models have been aggregated using average incremental net benefits and beneficiaries for each agricultural activities under the project interventions and assuming an adoption rate of 70 percent, extracted from the costing exercise. Benefits are phased-in progressively for all types of interventions.

41. **The financial analysis shows that the targeted activities are sound. The economic analysis also shows that the project is economically viable.** Economic costs associated with agricultural activities were estimated at US\$46.78 million. The economic costs have then been deducted from the overall economic benefit stream to obtain the project's net incremental benefit stream. The discount rate applied in the economic analysis is 8 percent. The base case economic analysis shows satisfactory results, with a Net Present Value at US\$31.69 million and a 24.61 percent Economic Internal Rate of Return (EIRR), suggesting that the overall project is economically profitable.

42. **Sensitivity analysis.** Results were tested for sensitivity to variations in benefits and costs and for various lags in the realization of benefits. A delay of 2 years in the generation of benefits or a decline of 30 percent relative to the base scenario would reduce the EIRR to 17.58 percent and 17.60 percent respectively, substantially above the discount rate. Cost overruns would have very moderate impact, with EIRR falling to 19.50 percent with a 30 percent increase. All scenarios show robust results under all hypothetical scenarios (Table 5).

⁶ Gittinger, P., 1982. *Economic analysis of agricultural projects*

⁷ World Bank (2001). *Economic Analysis of Investment Operations: Analytical Tools and Practical Applications*. WBI Development Studies, World Bank Institute, World Bank, Washington, D.C.

⁸ IFAD, 2015. *Economic and Financial analysis of rural investment projects, basic concepts and rationale*.



Table 5: Results of the sensitivity analysis

Net cash flow - Scenario	EIRR (%)	NPV (million US\$)
base scenario	24.61%	31,688,549
costs +10%	22.78%	29,125,978
costs +20%	21.08%	26,563,407
costs +30%	19.50%	24,000,836
benefits +10%	26.41%	37,419,975
benefits +20%	28.01%	43,151,401
benefits -10%	22.59%	25,957,123
benefits -20%	20.28%	20,225,697
benefits -30%	17.60%	14,494,271
benefits delayed 1 year	20.73%	25,667,973
benefits delayed 2 years	17.58%	20,093,365

B. Technical

43. **The completion of the Lower Nzoia Irrigation Project Phase 1 areas is a flagship GoK infrastructure which will realize the long-awaited gravity irrigation system.** This infrastructure will have a transformational impact in the two project counties, Siaya and Busia, as well as contribution towards the region and the nation food security and climate resilience. The second AF addresses a financing gap and will not finance new activities. It did not undergo a formal Paris Alignment process. However, the do-no-harm principle was aligned: the second AF is aligned with the Nationally Determined Contributions⁹ in reducing fossil energy use in irrigation pumping and explicitly through providing access to irrigation services builds resilience against increasing climate shocks¹⁰.

44. **Completion of the infrastructure is paramount to achieving project targets. As of today, all headworks have been completed and 22.3 km out of the planned 31.4 kilometers total of the main canal (MC) are mostly completed with associated civil and electro-mechanical works.** The following head works structures have been completed as of today: diversion weir with three sediment flushing sluice gates, intake structure with two sluice gates and two AVIO automatic gates, covered connecting channel 137 meters long, head works canal 2.7 km. long, four box culverts (canal crossings), four footbridges, emergency weir, cross regulator with two automatic AVIS control gates, two cross drain structures, service road 2.7 km. long, sand trap with two flushing gates and bifurcation (head regulator) with vertical gates.

45. **Significant progress has been achieved on the Tertiary canals (TC) that are completed for blocks 1 and 2, and the remaining Block 3 and 4 will be completed by end of October 2023.** Works related to field canals, except few, drains and land levelling are not implemented under the current scope, and will be completed during the second AF. Moreover, the rehabilitation of 621 ha Bunyala irrigation scheme in Block 8 has been finalized and is awaiting connection to the main canal for gravity supply. Its connection to gravity irrigation removes a pumping burden (around KES 3 million/month energy cost). Currently, a culvert is under construction at the 22.3 km mark to allow the main canal to cross the Siaya-Ruambwa road. Once this culvert is completed, the main canal will be extended with the support of the second AF

⁹ Government of Kenya (2020) Kenya’s Updated Nationally Determined Contribution

¹⁰ Geophysical risk is considered low because of the nature and location of the investments and assessed for design of works.



for 9.15km, and it will provide gravity irrigation to the entire 3,905ha irrigation areas of Phase 1.

46. **The remaining works to complete the LNISP-1 activities through the second AF are similar and technically simpler than the completed works, and are mostly related to earth works in the rice-growing areas:** (i) field canals, drains and land levelling to irrigate 824 ha in block 1 to 4; (ii) about 9.15km of earthen main canal and associated secondary canals, field canals, drains and land leveling to irrigate 3,081ha in block 5 to 14 to ease droughts and water stress (iii) bringing 621 ha area of Bunyala irrigation scheme, into gravity system by removing huge pumping burdens thus reducing emissions: (iv) drains and flood protection works to address climate change-exacerbated floods; (v) completion of the irrigation management facilities; (vi) hydro-mechanical and electrical works to increase energy efficiency (vii) resource center development for IWUAs with facilities for both men and women. The cost and time estimate are based on a thorough analysis of outstanding works Bill of Quantities, time-based engineering and other consulting costs with the extension, contractor work schedules and have in-built contingencies and provisions for contractual price adjustments during extension. It also includes limited operational costs. The duration of the extension is based on a 15-month construction period and a provision for additional time for land acquisition completion upfront and test runs and portion of defects liability period.

47. **In addition, the second AF will provide agricultural support, value chain management and participatory irrigation management support to the entire scheme.** Building on the gains made in the agronomical support, establishment of IWUAs, market linkages, and the demonstrations and practical trainings in irrigation water management for the farmers in block 1-4, continuous support will be provided through the second AF implementation project period. Among the activities that will continue to be implemented are capacity building activities and direct training to all farmers, the development, production and maintenance of two model farms, and the enhancement of farmers access to extension and advisory services with particular focus on female farmers' needs.

48. **Gender and social inclusion. The second AF will address the gender gaps in women's representation and empowerment in leadership positions in IWUAs, as well as the gender gap in their access to technical extension services.** This will include specifically tailored gender-differentiated training content on agronomy, farmer organization and market access. Further, the second AF will continue to provide support to participatory resource-efficient irrigation management through training, sensitizing IWUAs on gender-compliance to consider 30 percent female representation (up from below 20 percent currently) and equipping the IWUAs to achieve a successful irrigation transfer of the scheme by its finalization and to be platforms for dialogue and feedback from the communities. This, too, will include specific women-only trainings with female farmers on voice and representation in order to address self-imposed gender norms, and to ensure that female representatives are empowered to take up leadership roles, which has proven effective in earlier irrigation projects in Kenya¹¹. IWUA meetings and elections will also explicitly consider inclusivity, particularly on people living with disability. All the training activities will make provision for flexible time and convenient location to include women, persons with disability and the poor.

49. **The second AF will extend the engineering supervision services to provide overall project management.** This will include management of the issuance of construction drawings, issuance of Interim Payment Certificates (IPCs), monitoring progress of the construction works, providing quality

¹¹ Van Koppen and Hussain (2007) Gender and irrigation: overview of issues and options.
<https://doi.org/10.1002/ird.296>



control/quality assurance and handling all contractual matters arising. This consultant will continue to also: (a) provide support to the irrigated agriculture and participatory irrigation management activities with adequate citizen engagement and gender inclusivity, (b) support the implementation of the Environmental Management Plan (EMP) where the environmental and social safeguards will be carried out in accordance to project safeguard documents and provide oversight on gender and citizen engagement activities, and (c) monitor and evaluate (M&E) all activities under the second AF. Through parallel support, NIA is improving its quality control mechanisms. Citizen Engagement focuses on better embedding IWUA management and accountability on irrigation service delivery within the farming communities, through trainings, general forums, and support to awareness raising for the community including specifically for female representatives.

50. **With uninterrupted continuation of work, smooth land acquisition, as well as assured readiness of the contractor, it's anticipated to complete major infrastructures as follows:** (i) 9.15km MC (Block 6 to 14) in 10 months, (ii) 30 km SC in 11 months; (iii) 37 km TC and drains in 15 months, and (iv) 1.4million m³ land levelling as scheduled in 15 months' time.

51. **A participatory and forward-looking lessons-learnt exercise is ongoing.** Major lessons regarding readiness, coordination, quality control, land acquisition integrated planning, safeguards, and approaches for community mobilization and organization are documented and already integrated within the project. Moreover, during the second AF these lessons will be integrated into the proposed National Irrigation Sector Investment Program document with project support to provide an overall forward look and practical approach to irrigation development in Kenya.

C. Financial Management

52. **The Financial Management continues to be adequate.** There are no outstanding audits. The last audit report had an unqualified (clean) audit opinion. The quarterly Interim Financial Reports are up to date. The accountant is experienced and qualified to handle all the financial aspects of the project. The project will use the same accounting systems and procedures. A tool has been developed to resolve the issue of delays in payments, which will be tested as this continues with implementation. The risk rating is assessed as moderate.

D. Procurement

53. **Procurement under the second AF will follow "The World Bank's Procurement Regulations for IPF Borrowers, dated July 2016, and revised in November 2017, August 2018, November 2020, and September 2023", hereafter referred to as the "Procurement Regulations".** However, all ongoing procurement activities under the parent project will continue to follow the "Guidelines, Procurement of Goods, Works, and Non-Consulting Services, under IBRD Loans and IDA Credits & Grants, by World Bank Borrowers, dated January 2011 and revised in July 2014", and the "Guidelines, Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011, and revised in July 2014". The second AF will also be subject to "Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants (revised as of July 1, 2016) and other provisions to be stipulated in the project's Legal Agreement with the Borrowers."

54. For any new procurement activity under the AF, a Project Procurement Strategy for Development (PPSD) will be developed to formulate the best procuring approach/solution that will also form the basis for the Procurement Plan setting out the selection methods to be followed by the borrower during project implementation in the procurement of goods, works, and non-consulting and consulting services financed



under the second AF.

E. Environment and Social including Safeguards

55. **Overall, Lower Nzoia Irrigation Scheme Phase 1 is expected to have positive social benefits by improving the livelihoods of farmers through enhanced agricultural production.** The second AF is expected to directly benefit over 11,000 people, including smallholder farmers who are currently engaged in rain-fed subsistence agriculture (primarily maize and beans) and livestock rearing. Nonetheless, Lower Nzoia Irrigation Scheme Phase 1 will also have some adverse impacts.

56. **The second AF does not trigger any new safeguard policies (as the project scope remains the same), will retain the Category A rating of the parent project and its safeguards instruments and tools will remain applicable.** MoWSI prepared, consulted stakeholders, and disclosed Environmental and Social Impact Assessments (ESIA), Environmental Management Plan (ESMP), and four Resettlement Action Plans (RAPs) for the Lower Nzoia Irrigation Scheme as the project has adverse and significant environmental impact, including on the social and biophysical environment. The ESIA was disclosed on February 5, 2013, while RAPs 1, 2, and 3 were disclosed on February 12, 2020; and RAP 4 disclosed on May 13, 2021 (revised and redisclosed on January 31, 2023). OP 4.10 was considered relevant for the parent project, particularly for the investment pipeline, not for LNISP-activities 1 as there are no known Indigenous Peoples (IPs) in the area. This remains the case and under the AF with its focus on LNISP-1 activities - no new activities warrant utilization of the Vulnerable Groups Management Plan that was prepared under the parent project.

57. **E&S instruments and tools are in place and are being used to manage any emerging and ongoing E&S risks which are limited to normal site specific and temporal civil works.** Prior to contractor mobilization and commissioning of works, the contractor prepared Construction Environmental and Social Management Plans (C-ESMPs) that were reviewed and cleared by the supervising engineer, the client, the independent panel of expert and the World Bank. The same will be retained and continue to be used for the second AF. The project EHS supervision arrangements that will continue to be retained for the second AF is experienced in EHS risk management and is well resourced with full time EHS specialist on the client, supervising engineer and the contractor's teams with further ad hoc advisory support from the independent panel of expert. With these in place, the project EHS risks that are typical are considered manageable.

58. **In terms of social instruments, while RAP 1 and RAP 2 are very advanced and should be completed including with an implementation review and RAP 1 disclosed by end of 2023 and RAP 2 after de-gazettement of 307 parcels that are no longer required with redesign; RAP 3 implementation will extend under the second AF period as it affects main and secondary canals from blocks 6 to 14.** Compensation for remaining 53 hectares is pending. All these PAHs compensations have been already awarded by the National Land Commission (NLC) following Kenyan law and the provisions and procedures of the associated RAP approved by the World Bank and are pending execution of payment by NLC following the allocation of budget. The expenditures related to land compensation are those associated to land and/or assets on it, which are referred to as improvements. Such assets include properties, such as residential and non-residential structures, crops and trees, boreholes / shallow wells, graves, fences, among other assets. All PAPs under RAP 3, who have yet to receive their compensation, will be compensated between three to six months after approval of the second AF, to bring closure to the RAP.

59. **All compensation payments will be processed by the NLC through a bank account for each PAP**



to ensure traceability and transparency. The implementation RAP consultant is supporting to capacitate the PAPs to relocate, access training for income enhancement, access compensations and its utilization under the supervision of the Project Management Unit (PMU). The PMU is conducting internal and external audits to ensure proper flow, use, and management of project funds.

60. **RAP 4 governs the approach to planning, execution, consent around construction of tertiary/field canals.** Based on the principle of minimizing involuntary resettlement impact and maintaining the sustainability and ownership principles of the infrastructure, in addition to replicating international and in- country experiences, the Government agreed to: (a) reduce the footprint of the farm canals (tertiary canals) through revision of the design, effectively avoiding any physical relocation of Project Affected Households (PAHs) and cutting tertiary canals' maintenance roads; and (b) only construct tertiary canals where farmers voluntarily consent to provide access to the canal construction on a minor portion of their farm in return for receiving irrigation access through this productive asset.

61. **The Grievance Redress Mechanism is now expanded to all components of the project in addition to the irrigation component and has proved to work well with proactive resolution of grievances raised by PAPs.** Grievance management committees have been formed at various levels, and grievances and their resolution are effectively tracked. Community sensitization and awareness on SEA/SH and Violence against Children is ongoing and a necessary budget is allocated. Conflict Management Committees and Gender focal point are present in all 14 blocks. A Gender Compliance Committee team has also been constituted at project level.

62. **Overall, the client has a strong PMU and a site supervising engineer both of whom are resourced with experienced environmental, social and communication specialists.** Besides, the project will retain services of other consulting firms who support the client with pre-land acquisition processes and RAP implementation. In addition, the PMU has engaged the services of a succession lawyer and land surveyors on contract basis.

V. WORLD BANK GRIEVANCE REDRESS

63. Communities and individuals who believe that they are adversely affected by a project supported by the World Bank may submit complaints to existing project-level grievance mechanisms or the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the Bank's independent Accountability Mechanism (AM). The AM houses the Inspection Panel, which determines whether harm occurred, or could occur, as a result of Bank non-compliance with its policies and procedures, and the Dispute Resolution Service, which provides communities and borrowers with the opportunity to address complaints through dispute resolution. Complaints may be submitted to the AM at any time after concerns have been brought directly to the attention of Bank Management and after Management has been given an opportunity to respond. For information on how to submit complaints to the Bank's Grievance Redress Service (GRS), please visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the Bank's Accountability Mechanism, please visit <https://accountability.worldbank.org>.



VI. SUMMARY TABLE OF CHANGES

	Changed	Not Changed
Results Framework	✓	
Components and Cost	✓	
Loan Closing Date(s)	✓	
Implementing Agency		✓
Project's Development Objectives		✓
Cancellations Proposed		✓
Reallocation between Disbursement Categories		✓
Disbursements Arrangements		✓
Safeguard Policies Triggered		✓
EA category		✓
Legal Covenants		✓
Institutional Arrangements		✓
Financial Management		✓
Procurement		✓
Other Change(s)		✓

VII. DETAILED CHANGE(S)

COMPONENTS

Current Component Name	Current Cost (US\$, millions)	Action	Proposed Component Name	Proposed Cost (US\$, millions)
C1: Water Resources Development	112,240.00	Revised	C1: Water Resources Development	139,240.00
C2: Effective Water Sector Institutions	15,740.00		C2: Effective Water Sector Institutions	15,740.00
C3: Support for Project Implementation	17,410.00	Revised	C3: Support for Project Implementation	20,410.00



Project Preparation Advance	667.00		Project Preparation Advance	667.00
Unallocated	0.00		Unallocated	0.00
TOTAL	146,057.00			176,057.00

LOAN CLOSING DATE(S)

Ln/Cr/Tf	Status	Original Closing	Current Closing(s)	Proposed Closing	Proposed Deadline for Withdrawal Applications
IDA-52680	Effective	01-Oct-2020	30-Nov-2023	31-May-2025	30-Sep-2025
IDA-56740	Effective	31-Dec-2022	30-Nov-2023	31-May-2025	30-Sep-2025
TF-A0761	Closed	31-Dec-2020	31-Dec-2021	31-Dec-2021	30-Apr-2022

Expected Disbursements (in US\$)

Fiscal Year	Annual	Cumulative
2013	0.00	0.00
2014	2,684,676.00	2,684,676.00
2015	5,482,536.00	8,167,212.00
2016	4,554,437.00	12,721,649.00
2017	6,586,869.00	19,308,518.00
2018	19,238,041.00	38,546,559.00
2019	15,265,998.00	53,812,557.00
2020	25,548,985.00	79,361,542.00
2021	13,326,404.00	92,687,946.00
2022	15,281,434.00	107,969,380.00
2023	7,624,523.00	115,593,903.00
2024	15,227,970.00	130,821,873.00
2025	15,538,140.00	146,360,013.00
2026	6,846,960.00	153,206,973.00



SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Latest ISR Rating	Current Rating
Political and Governance	● Substantial	● Moderate
Macroeconomic	● Moderate	● Moderate
Sector Strategies and Policies	● Moderate	● Moderate
Technical Design of Project or Program	● Moderate	● Low
Institutional Capacity for Implementation and Sustainability	● Substantial	● Substantial
Fiduciary	● Substantial	● Substantial
Environment and Social	● High	● High
Stakeholders	● Substantial	● Substantial
Other		
Overall	● High	● High

LEGAL COVENANTS – SECOND ADDITIONAL FINANCING FOR KENYA WATER SECURITY AND CLIMATE RESILIENCE PROJECT (P181345)

Sections and Description

No information available

Conditions



VIII. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: Kenya

SECOND ADDITIONAL FINANCING FOR KENYA WATER SECURITY AND CLIMATE RESILIENCE PROJECT

Project Development Objective(s)

(a) increase access to irrigation water for project beneficiaries and (b) enhance the institutional framework and strengthen capacity for water security and climate resilience in certain areas of the territory of the Recipient.

Project Development Objective Indicators by Objectives/ Outcomes

Indicator Name	PBC	Baseline	Intermediate Targets									End Target
			1	2	3	4	5	6	7	8	9	
Increase access to irrigation water for project beneficiaries												
Area provided with irrigation and drainage services (ha) (CRI, Hectare(Ha))		0.00	750.00	2,000.00								3,905.00
Action: This indicator has been Revised		Rationale: <i>The net area of 4,043ha (which equals is equivalent to net 10,000 acre) has reduced due to an increase of settlements over time. In the Engineer's design report for the infield irrigation system of 2020, a revision was made and this figure changed to 3,905ha. This indicator measures directly improved climate resilience that is built into the irrigation service parameters.</i>										



Indicator Name	PBC	Baseline	Intermediate Targets									End Target
			1	2	3	4	5	6	7	8	9	
Farmers gaining access to new/improved irrigation and drainage services (Number)		0.00										11,133.00
Action: This indicator has been Revised	Rationale: The net area of 4,043ha (which equals is equivalent to net 10,000 acre) has reduced due to an increase of settlements over time. In the Engineer's design report for the infield irrigation system of 2020, a revision was made and this figure changed to 3,905ha, accordingly total farmers number was also slightly reduced to 11,133.											
of which female (Percentage)		0.00										35.00
Action: This indicator is New	Rationale: This indicator measures registered female farmers gaining access to irrigation and drainage. This indicator is not revised, but changed from text to percentage. Actual Current refers to female farmers registered (even if no access yet).											
Of which female (Text)		0.00										0.35
Action: This indicator has been Marked for Deletion	Rationale: Not deleted, but replaced with identical appropriately labeled supplemental gender indicator with percentage.											
Direct project beneficiaries (Number)		0.00	111,841.00									127,904.00
Action: This indicator has been Revised	Rationale: This indicator has been revised to reflect the cumulative changes made in the other indicators - [adjustment of new/improved irrigation services to 11,133] and [number of household benefitting from water supply in Mombasa - 3000 times 6 for household members]											



Indicator Name	PBC	Baseline	Intermediate Targets									End Target	
			1	2	3	4	5	6	7	8	9		
of which female beneficiaries (Percentage)		0.00	35.00	35.00									35.00
Action: This indicator has been Revised													
of which irrigation farmers (Number)		0.00											11,133.00
Action: This indicator has been Revised													
of which flood protection beneficiaries (Number)		0.00											66,700.00
Action: This indicator has been Revised	Rationale: People protected by Flood Mitigation Structures (dykes) and FEWS.												
of which people benefitting from agricultural activities (extension, training and inputs) (Number)		0.00											31,500.00
Action: This indicator has been Revised													
of which Capacity building of WRA		0.00											571.00



Indicator Name	PBC	Baseline	Intermediate Targets									End Target
			1	2	3	4	5	6	7	8	9	
and other sector institutions (Number)												
Action: This indicator has been Revised	Rationale: This indicator has been revised to reflect the actual results from Oct 2022 mission reports.											
of which people benefiting from Mombasa water distribution (Number)		0.00										18,000.00
Action: This indicator has been Revised												
Enhance the institutional framework and strengthen capacity for water security and c.resilience												
Water Resources Authority (WRA) Established and Operational (Text)		WRA not established										WRA established and operational
Action: This indicator has been Revised												
Water Act, Sector Policy and Regulations adopted (Text)		Water Act in draft form with Ministry	Water Act in draft form with ministry	Water Act submitted to Cabinet	Water Act submitted to Parliament and Senate	Water Act Adopted	Water Policy submitted to Cabinet	Transition Plan Adopted for Implementation	Water Policy submitted to Parliament and Senate	Water Policy Adopted	Water Policy Adopted	Water Policy and Bill adopted, regulations adopted.
Action: This indicator has been Revised												



Indicator Name	PBC	Baseline	Intermediate Targets									End Target	
			1	2	3	4	5	6	7	8	9		
Percentage of institutions mandated by the Water Act that have been established (Percentage)		0.00											100.00
<i>Action: This indicator has been Revised</i>													
Number of people with increased flood protection (Number)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66,700.00	66,700.00	66,700.00	66,700.00
<i>Action: This indicator has been Revised</i>													

Intermediate Results Indicators by Components

Indicator Name	PBC	Baseline	Intermediate Targets									End Target		
			1	2	3	4	5	6	7	8	9			
C1: Water Resources Development														
Lower Nzoia Irrigation Water User Association (IWUA) established and operational (Yes/No)		No										Yes	Yes	Yes



Indicator Name	PBC	Baseline	Intermediate Targets									End Target
			1	2	3	4	5	6	7	8	9	
Action: This indicator has been Revised												
Number of farmers trained in improved agriculture practices (including irrigated agriculture) (Number)	0.00	200.00	400.00	600.00	800.00	2,000.00	2,500.00	3,000.00	3,500.00	4,000.00	12,600.00	
Action: This indicator has been Revised												
of which female (Percentage)	0.00										40.00	
Action: This indicator is New												
Number of household water connections (new or rehabilitated) in Mombasa supported under the project (Number)	0.00	0.00	0.00	0.00	1,475.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	
Action: This indicator has been Revised	Rationale: <i>The target number of household water connections in Mombasa will be reduced to 3000. The additional 4000 connections in Mombasa previously envisioned will require prior investments in the network and the completion of Mwache dam to supply the bulk water. Construction of Mwache dam is currently being undertaken though the ongoing Coastal Region Water Security and Climate Resilience Project (P145559).</i>											
Number of studies completed to advance investment	0.00	0.00	0.00	2.00	2.00	2.00	3.00	6.00	9.00	12.00	12.00	



Indicator Name	PBC	Baseline	Intermediate Targets									End Target
			1	2	3	4	5	6	7	8	9	
pipeline (Number)												
Action: This indicator has been Revised	<p>Rationale: <i>Updated to reflect that PMU not WRA is responsible for data collection. The studies currently undertaken are: 1. Feasibility Study for Malewa Dam and Water Supply to OI Kalou, Naivasha and Gilgil Towns in Nyandarua and Nakuru Counties, 2. Kwale County Water Supply Masterplan, 3. Detailed Design of Kwale Town Water Supply and Tender Document Preparation 4. Detailed Design of Msambweni Town and Tender Document Preparation, 5. Detailed Design of Lunga Lunga Town Water Supply and Tender Document Preparation 6. Detailed Design of Ukunda Town and Tender Document Preparation 7. Detailed Design of Lower Check Dam in Mwache. 8. Malewa Dam ESIA & RAP 9. Kwale Town ESIA & RAP 10. Msambweni Town, Lunga Lunga Town and Ukunda Town ESIA & RAP 11. Likoni ESIA & RAP 12. Mombasa NML ESIA & RAP 13. Mombasa WML ESIA & RAP.</i></p>											
Length of flood protection structures (dykes) constructed/rehabilitated (Kilometers)		0.00										34.00
Action: This indicator has been Revised	<p>Rationale: <i>Indicator was introduced in first additional financing to track progress on dyke construction. It is revised to correct the target, which is 34 kms and not 44 kms. The plan (in the meantime completed) was to build 17 kms of dykes on either side of the Nzoia River. There were some secondary dykes planned originally, but with the rising of lake Victoria these have become obsolete and undesirable.</i></p>											
Female Representation in IWUA leadership (Percentage)		20.00										33.00
Action: This indicator is New	<p>Rationale: <i>Meaningful representation of female farmers in IWUA leadership (apex and block committees), measured by headcount of female representation, and women leaders undergone specific leadership training.</i></p>											
C2: Effective Water Sector Institutions												



Indicator Name	PBC	Baseline	Intermediate Targets									End Target
			1	2	3	4	5	6	7	8	9	
Six Basin Plans Developed and Adopted (Number)		0.00	0.00	0.00	0.00	0.00	1.00	3.00	6.00	6.00	6.00	6.00
Action: This indicator has been Revised	<p>Rationale: Baseline 2013 – zero. Expected target by year 7 is six basin plans. Analytical tools are based on the water and climate risk information system knowledge base and supporting modeling tools (e.g. simulation, optimization, multi-criteria analysis) to analyze implications of proposed water investments and climate scenarios. Structured stakeholder consultations are held to help envision the future of the basin and agree on criteria and indicators for a ‘well-managed’ basin. Rolling basin plans are developed based on the analytical and stakeholder inputs to support development and management decisions.</p>											
Number of new or upgraded monitoring stations (hydrological, hydro-meteorological and ground water) (Number)		0.00	1.00	1.00	1.00	1.00	41.00	41.00	41.00	91.00	91.00	91.00
Action: This indicator has been Revised												
Land area (ha) under sustainable land and water management in Nzoia watershed (Hectare(Ha))		0.00										1,450.00
Action: This indicator has been Revised												
Number of sub-catchment management plans developed		44.00										59.00



Indicator Name	PBC	Baseline	Intermediate Targets									End Target
			1	2	3	4	5	6	7	8	9	
(Number)												
<i>Action: This indicator has been Revised</i>												
Lower Nzoia flood forecasting and early warning system (FFEWS) upgraded and operational (Yes/No)	No											Yes
<i>Action: This indicator has been Revised</i>												
C3: Support for Project Implementation												
Project M&E Established and Operational (Text)	NA	Not Established	Not Established	Not Established	M&E system partially established	M&E system operational	M&E system fully operational	M&E system fully operational	M&E system fully operational	M&E system fully operational	M&E system fully operational	Fully Operational
<i>Action: This indicator has been Revised</i>												

Monitoring & Evaluation Plan: PDO Indicators					
Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Area provided with irrigation and	This indicator measures the	Semi-	Periodic	National Irrigation	National Irrigation



drainage services (ha)	total area of land provided with irrigation and drainage services under the project, including in (i) the area provided with new irrigation and drainage services, and (ii) the area provided with improved irrigation and drainage services, expressed in hectare (ha).	Annual	progress reports	Authority (NIA) progress reports, M&E system	Authority (NIA)
Farmers gaining access to new/improved irrigation and drainage services	Access means the farm/plot is connected to the irrigation and drainage system and farmer is a registered user.	semi-annual	Periodic Progress Reports	Farm registers, ISC completion reports	PMU
of which female	Supplemental Indicator	Semi-Annual	Periodic Progress reports	Farmer registers, ISC completion reports	PMU
Of which female					
Direct project beneficiaries	Direct beneficiaries are people or groups who directly derive benefits from an intervention (i.e., children who benefit from an immunization program; families that have a new piped water connection). Please note that this indicator requires	Semi-Annual	M&E system, periodic progress reports	project MIS data	PMU



	supplemental information. Supplemental Value: Female beneficiaries (percentage). Based on the assessment and definition of direct project beneficiaries, specify what proportion of the direct project beneficiaries are female. This indicator is calculated as a percentage.				
of which female beneficiaries	Based on the assessment and definition of direct project beneficiaries, specify what percentage of the beneficiaries are female.	Semi-Annual	Mombasa, NIA, WRMA quarterly progress report		PMU
of which irrigation farmers	as PDO indicator	semi-annual	as PDO indicator		PMU/NIA
of which flood protection beneficiaries	People living in protected area	Semi-Annual	NWSHA and ISC reports		PMU
of which people benefitting from agricultural activities (extension, training and inputs)	This indicator tracks extension services, trainings and inputs provided to beneficiaries.	semi-annual	ISC reports	ISC registers	NIA/PMU
of which Capacity building of WRA and other sector institutions					
of which people benefitting from Mombasa water distribution	Beneficiaries from the connections, one connection per HH, and 6	Semi-annual	Project reports		PMU



	<p>people per household.</p> <p>No more intervention (connections) are planned. It was agreed that there being no more water connections envisaged, the target for this indicator be revised downwards.</p> <p>Meters were procured but with delays in network improvement and Mwache dam installation is not currently opportune to do the household connections now and this this target is reduced. This will be done in future.</p>				
<p>Water Resources Authority (WRA) Established and Operational</p>	<p>WRA will be considered established and operational if (i) it is established under section 11 of the Water Act 2016; (ii) has adequate and qualified staff; (iii) has the necessary planning and regulatory tools, including but not limited to spatial</p>	<p>Semi-annually</p>	<p>Ministry of Water, Sanitation and Irrigation</p>	<p>Water sector reform progress reports</p>	<p>MoWSI</p>



	knowledge base, decision-support systems and a functional water resource monitoring network; and (iv) has an annual operational budget that is fully funded, through a combination of water abstraction fees and government transfers.				
Water Act, Sector Policy and Regulations adopted	“Adopted” means passed by parliament (in case of the Water Act and regulations) and approved by cabinet (in the case of policy).	Semi-Annual	Periodic Progress Reports	MOWSI-PIU Reports	MoWSI
Percentage of institutions mandated by the Water Act that have been established	Institutions means all the sector agencies mandated by the Water Act 2016, including water works development agencies, water services regulatory board, national water harvesting and storage authority, water resources regulatory authority, water tribunal etc. “The objective is to operationalize the water	Semi-Annual	Periodic Progress Reports	MOWSI PIU reports	MoWSI



	<p>Act, targeting 13 national institutions. The institutions are: WASREB, WRA, Water Appeals Board (WAB), Water Sector Trust Fund. Others are the Water Works Development Agencies (WWDA), namely, Athi, Tana, Tanathi, Coast, Northern, L. Victoria North, L. Victoria South., Central Rift Valley and North Rift Valley”.</p>				
<p>Number of people with increased flood protection</p>	<p>These are the people living on the banks of River Nzoia, both Northern and Southern who are prone to effects of floods. - 2 Counties in the Nzoia Basin (Chevyawa & Shibale communities both in Busia County and Nyandorera Community in Siaya County). Number of people targeted with increased flood protection is 66,700. This includes 20,658 direct beneficiaries, with the rest being residents of the 180 villages in the vicinity of</p>	<p>Semi-Annual</p>	<p>Periodic progress reports</p>	<p>Water Harvesting and Storage Authority Reports / ISC progress reports</p>	<p>PMU</p>



	the Lower Nzoia Flood Protection activities. This includes people located directly adjacent to the area to be protected by the dykes as well as people in nearby communities that will benefit from protection to roads and other community infrastructure.				
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Monitoring & Evaluation Plan: Intermediate Results Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Lower Nzoia Irrigation Water User Association (IWUA) established and operational	Lower Nzoia IWUA will be considered established and operational if (i) it is established under section 20 of the Irrigation Act 2019 and duly registered as a legal entity under the Societies Act or Cooperative Societies Act; (ii) its members have been trained on issues of water management, irrigation techniques and practices, maintenance, financial management, social inclusivity and gender	Semi Annual	NIA Reporting		NIA



	mainstreaming; (iii) has held at least one meeting of the general assembly; (iv) it has assumed the responsibility for managing the irrigation scheme as per the transfer agreement with NIA; (v) it has an annual operational budget that is fully funded, through a combination of irrigation services fees and other funds as per section 57 of the irrigation regulations; and (vi) it has submitted at least one annual report and a copy of audited accounts to the supervising entity				
Number of farmers trained in improved agriculture practices (including irrigated agriculture)	Number of farmers trained.	Semi Annually	Project Reports		NIA/PMU
of which female	Female beneficiaries trained in agricultural practices, either through regular trainings or women-only trainings.	Semi-Annual	ISC reports		NIA
Number of household water connections (new or rehabilitated) in Mombasa supported under the project	To be measured in all DMA's in which MOWASCO project work is taking place. Baseline is to be established when work in	Semi-annually	Project reports, billing statistics		MOWASCO / PMU



	each DMA begins, and to be consolidated for all project DMAs.				
Number of studies completed to advance investment pipeline	A 'study' in this project include pre-feasibility, Feasibility, Detailed Design Studies, Masterplans, ESIA and RAP.	Semi-annual	Periodic Progress Reports	MoWSI and agency records	PMU
Length of flood protection structures (dykes) constructed/rehabilitated	Indicator tracks outputs related to flood protection infrastructure.	Semi-annual	Periodic Progress Reports	National Water Harvesting and Storage Authority	NWSHA / PMU
Female Representation in IWUA leadership	Female representation in IWUA (%)	Semi-Annual	IWUA records, ISC reporting	This indicator will be based on IWUA records on representation, and will include records of gender-disaggregated training on IWUA leadership. This indicator measures female representation, but the M&E methodology will capture female, youth and people with disability inclusivity in leadership.	NIA / PMU
Six Basin Plans Developed and Adopted	This intends to measure the development of the WCIS.	Semi-Annual	Periodic Progress Reports	WRA progress report	WRA/PMU



Number of new or upgraded monitoring stations (hydrological, hydro-meteorological and ground water)		Semi-Annual	WRA progress reports, M&E system	Period Progress Reports	WRA/PMU
Land area (ha) under sustainable land and water management in Nzoia watershed		Semi-Annual	WRA progress reports, M&E system	Periodic Progress Reports	WRA/PMU
Number of sub-catchment management plans developed		Semi-Annual	WRA reports	Periodic Progress Reports	PMU / WRA
Lower Nzoia flood forecasting and early warning system (FFEWS) upgraded and operational	The upgraded FFEWS will be considered operational when (i) the National Flood Forecasting and Early Warning Center at the Kenya Meteorological Department (KMD) disseminates at least two flood warnings/advisories for the Lower Nzoia area; and (ii) the National Flood Mapping and Impact Assessment Center at WRA disseminates the flood inundation and impact maps associated with the flood warning	Semi-Annual	WRA reports		WRA/PMU
Project M&E Established and Operational	The project M&E system is a GIS-based information system that can	Semi-Annual	Project Progress Reports	M&E System outputs	PMU



	<p>systematically capture, analyze, and visualize spatially referenced data on project activities and results.</p> <p>The M&E system shall be considered established and operational if (i) the information system is place to collect, analyze and report data on project activities and results; (ii) a dedicated team has been appointed to be in charge of the M&E system, and appropriate training has been undertaken for all staff working on M&E activities; and (iii) at least two semi-annual performance reports are prepared and published.</p>				
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The World Bank

Second Additional Financing for Kenya Water Security and Climate Resilience Project (P181345)
