ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Regular Size Full Proposal

Country/Region: Kenya
Project Title: AWARE: Adaptation for Water Access and Resilience in Ewaso Nyiro River Basin
Thematic Focal Area: Water, Ecosystem Restoration, Food Security, Early Warning Systems
Implementing Entity: National Environment Management Authority
Executing Entities: United Nations Children's Fund (UNICEF), World Food Programme (WFP)
AF Project ID:
IE Project ID: **Requested Financing from Adaptation Fund (US Dollars):**
Reviewer and contact person: Mahamat Assouyouti **Co-reviewer(s):**
IE Contact Person:

Technical Summary	The project "AWARE: Adaptation for Water Access and Resilience in Ewaso Nyiro River Basin" aims to make Vulnerable communities in EWASO NYIRO RIVER BASIN experience improved well-being, water access, food security, and reduced vulnerability to climate change and climate-induced shocks, contributing to sustainable development and climate resilience. This will be done through the five components below: Component 1: Climate-resilient Water Access for Human and livestock Consumption (USD 9.38M). Component 2: Ecosystem restoration and climate resilient livelihoods for food and nutrition security (USD 5.5M) Component 3: Enhanced early warning systems and Anticipatory action (USD 800,000). Component 4: Systems strengthening for enhanced and inclusive climate adaptation coordination and knowledge management (USD 693,484) Component 5: Enhanced water quality through climate resilient waste management (USD 500,000) Requested financing overview: Project/Programme Execution Cost: USD 1,562,696 Total Project/Programme Cost: USD 18,433,180

	Implementing Fee: USD 1,566,820 Financing Requested: USD 20,000,000 The initial technical review raised several issues such as the compliance with the Environmental and Social Policy of the Fund and its gender policy, the full cost of adaptation reasoning, sustainability of project outcomes, compliance with relevant national technical standards, compliance with risk framework of the AF as well as the alignment with the Fund's results framework, as is discussed in the number of Clarification Requests (CRs) and Corrective Action Request (CAR) raised in the review. The second technical review raised several issues such as the compliance with the Environmental and Social Policy of the Fund and its USP guidelines, the full cost of adaptation reasoning, sustainability of project outcomes, compliance with risk framework of the AF as well as the alignment with the Fund's results framework, as is discussed in the number of Clarification Requests (CRs) and Corrective Action Request (CAR) raised in the review. The third review finds that the proposal has addressed most of the CR and CAR requests, some outstanding issues related to core indicators and alignment with the results framework remain. The fourth (final) technical review dated August 13 finds that some outstanding issues related to core indicators and alignment with the results framework and monitoring and evaluation remain, changes to disbursement schedule, etc. . *Please be advised that the findings of the AFB Secretariat's review of the funding proposal(s) do not reflect, indicate, or prejudge the outcome of the reaccreditation process currently underway. The Implementing Entity (IE) shall acknowledge that the funding proposal will not be approved by the Board if the IE's accreditation has expired, and reaccreditation has not been achieved at the time of the Board's decision. Notwithstanding this potential risk, the IE has elected to proceed with the development of the funding proposal.*
Date:	13 August 2025

Review Criteria	**Questions**	**First Technical Review Comments** 21st May 2025	**Second Technical Review Comments (24 June 2025)**	**Third Technical Review Comments (16 July 2025)**	**Fourth Technical Review Comments (13 August 2025)**	**NIE Answer**
Country Eligibility	1. Is the country party to the Kyoto Protocol and/or	**Yes.**	-	-	-	

	the Paris Agreement?					
	2. Is the country a developing country particularly vulnerable to the adverse effects of climate change?	**Yes.** Kenya's vulnerability to climate change is characterized by increasing temperatures, changing rainfall patterns, and increased frequency in extreme weather events, particularly droughts and floods. More recently, the country has seen a recurring and worsening cycle of water scarcity (drought) and excess (flooding), combined with the limited climate resilience of water sector institutions.	-	-		
Project Eligibility	1. Has the designated government authority for the Adaptation Fund endorsed the project/programme ?	**Yes.** As per the endorsement letter dated March 21, 2025.	-	-	-	
	2. Does the length of the proposal amount to no more than One hundred (100) pages for the fully-developed project document, and one hundred	**Yes.** Page Number is 197 with both within 100 pages.	-	-	-	

	(100) pages for its annexes?					
	3. Does the project / programme support concrete adaptation actions to assist the country in addressing adaptive capacity to the adverse effects of climate change and build in climate resilience?	**Yes.** **However additional information is required.** The project document includes a set of activities addressing the adaptation needs as described in the project justification as well a detailed theory of change (Annex 1). However, please address the followings: **CR1:** The project has identified 6 barriers in addressing climate resilience in the water sector specifically. However, only 5 of the 6 barriers are being addressed in the proposed adaptation measures. Please update the document to address the barrier related to "limited adoption of climate-adaptive behaviors". For example, under activity 2.4.3 and Output 3.4, the identified barriers should be better outlined in the adaptive actions since they are	**CR1: Cleared** As per revised activities 1.4.9; 2.4.3, 2.4.4; 3.4.1;3.4.2; and 3.4.4. **CAR1: Cleared** Additional information provided and budget added under output 1.3, 2.1, 2.2 and 5.2 with a total budget of over US$11.2 million. **CR2: Not Cleared** Thank you for the rephrased output 1.3. However, in addition to the proposed outputs 2.2 and 1.3, please include a standalone section on the community ownership as part of overall project sustainability and wider consultation.	**CR2: Cleared** Additional information added under Section II.J.1 at page 60 to address project sustainability and wider consultation	-	

		essentially integrated into other components of the project. **CAR1:** The proposed activities under "Climate-resilient groundwater infrastructure" seem to be the main infrastructure under this project. However, the proposed budget of $3,750,000 seems low compared to the project size. Please confirm and explain the budget assigned to this main infrastructure component. **CR2:** The proposed activities under output 2.2 "Output 2.2: Community-validated climate resilient water infrastructure developed and or rehabilitated for food security" is very relevant and fully aligned with AF approach of country and community ownership. However, please explain why this approach is only proposed for this output 2.2 and not applicable				

		to the entire project activities.				
	4. Does the project / programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Yes.** **However additional information is required.** **CAR2:** It is not clear how many beneficiaries this project covers in total. There are many indications of beneficiaries in the document without clear aggregated number. Please provide an aggregated number of beneficiaries with an indication of gender and distribution of benefits to vulnerable communities, households, and individuals. **CAR3:** The project document in its section B outlines the benefits all three areas (economic, social and environmental) including tentative impacts on marginalized and vulnerable groups. However, please update the document to:	**CAR 2: Not cleared** The integrated approach and overlapping targets is noted. However, Please estimate an overall total number of beneficiaries targeted by the project with avoided double counting and overlaps. Such overall figure is needed for the AF aggregated portfolio monitoring. **CAR3: Cleared** As per revised section II.B. **CAR4: Cleared** As per revised section II.A.1 (for	**CAR2: Cleared** Table 3 under Section II.C.1, page 44 updated with total number of beneficiaries	-	

		- strengthen the economic and social benefits such as increased income, job creation, market access, assets, etc. with indicative figures (targets and baseline); - provide tentative figures for benefits related to marginalized and vulnerable groups including women and youth. **CAR4:** Under output 1.2, 1.3 and 2.1, please explain briefly how the risk of maladaptation is being addressed and any mitigation measures in particular related to build infrastructures and NBS. **CAR5:** The proposal does not include a Gender Assessment and Action Plan. Please provide it as	output 1.2 and 1.3) and to II.A.2 under output 2.1. **CAR5: Cleared** Gender assessment and action plan included as annex 5 and described under section II.H.			

		part of FP submission requirement.				
	5. Is the project / programme cost effective?	**Yes.** **However additional information is required.** The project document provides under section C a clear demonstration of the cost effectiveness of each activity including (i) comparison with alternative options and (ii) a cost comparison between different interventions considered. **CR3:** Please specifically indicate the cost effectiveness for components 3-5 as was indicated for components 1 and 2.	**CR3: Cleared** As per revised section II.C	**-**	**-**	
	6. Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development plans, poverty reduction strategies, national communications	**Yes.** **However additional information is required.** As described under section D, the project document demonstrates the alignment with national strategies including among others Kenya Vision 2030, the 2022-2027 Bottom-up		**-**	**-**	

	and adaptation programs of action and other relevant instruments?	Economic Transformation Agenda (BETA), the National Water and Sanitation Investment program (NAWASIP) Framework 2023 – 2030, National Irrigation Sector Investment Plan (NISIP) and Kenya's National Adaptation Plan (NAP, 2015-2030). **CAR6:** However, 1. Please update the section D to specifically outline how the proposed activities are aligned/contribute to the Kenya NDCs as well as any relevant initiatives under the Paris Agreement. 2. Please also update the section to indicate how Component is aligned with the national systemic observations network for	**CAR6.1: Cleared** Additional information added on alignment to both NDC 2020-2030 and the newly submitted NDC 2030-2035 **CAR 6.2: Cleared** As per revised section I.D.			

		Hydromet if at all.				
	7. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?	**Unsure.** The project document listed the relevant national technical standards. **CAR7**: However, 1. please include a paragraph or table indicating whether a license or authorization is required for the proposed infrastructures as well the water use under the proposed water use activities as well the NBS related outputs. 2. Please indicate how the project will meet the relevant standards as this is not indicated in the section.	**CAR7: Not cleared** A new Table 5 (and not table 4) is included with relevant standards. However, there seems to be more than one table 4. Please check the list of tables and annex for numbering issues.	**CAR7: Cleared** All tables have been updated with correct numbering.	-	
	8. Is there duplication of project / programme with other funding sources?	**No.** The Part II, Section F and Annex 10 provide a list of projects and	-	-	-	

		initiatives that may complement or avoid duplication with the proposed activities.				
	9. Does the project / programme have a learning and knowledge management component to capture and feedback lessons?	**Yes.** **However additional information is required.** **CR4:** Although the document includes a section (G) on learning and knowledge management as well as a knowledge management plan in Annex 11, it is not clear how the KM activities are being included in any of the project components. Please include the proposed KM activities with costing in the project results framework as well a detailed budgeting. **CR5:** Please strengthen how the project will capture and disseminate lessons as part of the KM either through new component or new set of activities.	**CR4: Cleared** As per revised section II.A.4 and output 4.4. **CR5: Cleared** As per the information presented in Part II, Section G. pages 62-63.	-	-	
	10. Has a consultative process taken place, and has it	**Yes.**		-	-	

	involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**However additional information is required.** The consultative process seems to be done adequately as described in section H and annex 12. **CAR8:** However, at Part II, Section H, 1. Please confirm and document any consultation taking place with marginalized and vulnerable groups as it does not appear clearly in all relevant sections and Annex 12. 2. Please present gender disaggregated information for the consultations, particularly those at the community level.	**CAR8.1: Cleared** As per revised section II.H. **CAR 8.2: Cleared** As per revised section II.H.2 and Annex 12.			
	11. Is the requested financing justified on the basis of full	**Yes.** **However additional information is required.**		**-**		

	cost of adaptation reasoning?	The document explains the baseline scenario and the added value of AF funding. However, please: **CAR9:** At Part II Section I, please indicate if the AF resources will be the only resources used to implement the project, and that in so doing it will be able to effectively deliver on its intended outcomes. **CAR10:** While the proposal has attempted to provide added value of the AF funding for the components, it is important to highlight the specific added value of AF funding for the specific investments (infrastructures and soft activities) addressing the adaptation needs in the water sector. Please update Table 5 with more specific information.	**CAR9: Cleared** As per revised Part II Section I **CAR 10: Cleared** As per amendment to the table included Part II Section (currently labeled table 6.)			
	12. Is the project / program aligned with AF's results framework?	**Yes.** **However, additional information is required.**		**CAR 13 NEW:** In the "Grant amount (USD)" column, please	**CAR13: Cleared**	

		In Part 1 Section B, the project document identifies alignment with outcomes 2, 4, 5, 6 and 7 of the AF results frameworks. However, Part III Section D requires significant strengthening as follows. **CAR11:** At Part III Section D: 1. please provide preliminary figures for the baseline, even though these will be updated during the first 2 months of project implementation through "A comprehensive baseline assessment being conducted during the first two months of the project." 2. Please include the core impact indicator tables identifying the core impact	**CAR 11.1: Cleared** Baseline data now included to the extent possible. **CAR11.2: Cleared** Two core impact indicators added in provided template table under section III.E. **CAR11.3: Cleared** Checked and modified Please see "III.E. Results framework" added rows in the beginning to reflect AF feedback. **CAR11.4: Cleared** This has been checked and modified.	kindly provide the financial figures without rounding them up (e.g., 952,000 instead of 0.952 M), ensuring that the total equals the project activity costs (i.e., USD 16,870,484). **CAR14 NEW: :** In the lower section of the table (Project Outcome(s)/Fund output): i) for each "Project Outcome indicator" listed, select only the most relevant corresponding SRF Fund Output (as opposed as multiple ones) and enter it in the "Fund Output" column; ii) choose only the most relevant SRF Fund	As per revised Table in section III.F **CAR 14: Not Cleared** Please ensure that all Fund Outcomes associated with the listed Fund outputs in the lower section of the table are reflected in the upper section of the table. Additionally, the grants amounts in the top part of the table should be the same as the total grant amount in the bott	**CAR14** Checked and corrected. All relevant AF outcomes reflected in upper table and corresponding AF outputs + indicators included in bottom table. Ensured matching budgets between relevant AF outcomes and outputs.

		indicators that are relevant for this proposal. The template to utilize for these ***separate*** tables are available at Methodologies for reporting Adaptation Fund core impact indicators (**For fully-developed proposals**) (78 kB, DOC) 3. Please include in the first row of the results framework table captured the overall project objective, the overall # of project beneficiaries disaggregated by gender and youth composition, the overall project indicator and the means of verification for	**CAR12.1: Cleared** As per revised Table under section III.F. **CAR12.2: Cleared** **CAR12.3: Cleared** **CAR12.4: Cleared**	Output Indicator for each Fund Output and enter it in the "Fund Output Indicator" column; and iii) input the grant amount for each SRF Fund Output selected in the “Grant Amount (USD)” column, again ensuring that the total equals the project activity cost of USD 16,870,484.		

		those. After this the component specific information can follow in the remaining rows. 4. Please use the exact phrasing for AF Fund Outcomes, AF Fund Outputs, AF Fund output indicators and AF Fund Outcome indicators. For example, on 4.2 the correct indicator should be “4.2. Physical infrastructure improved to withstand climate change and variability induced stress” **CAR12:** 1. Please amend the Table F to present each of the Fund’s outcome indicators with a specific grant amount. Currently,				

		multiple fund's outcome indicators are lumped together under a single line of grant amount. 2. Please correct the table format and ensure that the Fund outcome indicator is in the 4th Column, this will allow for the grant amount per outcome indicator to be properly aligned in 5th column. 3. Please use AF outcome indicators matched to the AF outcomes. For example, the outcome 2 indicator is "2.1. Capacity of staff to respond to, and mitigate impacts of, climate- related events from targeted institutions increased".				

		4. Please correct Fund outcome 2. There is no AF Fund outcome 2.1.				
	13. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	**Yes.** **However, amendment is required.** The proposal details well the sustainability approach proposed for each of the proposed outcomes and components, as outlined under section J and Annex 14. **CAR13:** However, the proposal does not include any information on how the services and infrastructure will be sustained. Although it highlights government ownership but no specific mention of how this will translate into continuity of the project after the close of the project. Please strengthen this part.	**CAR13: Not cleared** The revised section II.J is appreciated. However, the sustainability section is still too broad and does not provide a rationale for the proposed approaches for each component. 1. For example, under component 1, please specify the targeted amount under the proposed pro-poor tariffs to fully cover operation	**CAR13: Cleared** Additional information corrected under section II.J to address sustainability approach (pro-poor tariff scheme) and inclusive water management committees.	-	

			and maintenance costs. 2. Under component 2, please specify the composition and role of members under the proposed inclusive water management committees.			
	14. Does the project / programme provide an overview of environmental and social impacts / risks identified, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Yes.** However, amendment is required. At Section K, the proposal provides an overview of its compliance with AF ESP and GP. The project does not provide a single overall risk category but rather (A, B and C), it additionally identifies categories for different activities with a detailed listing of those at Annex 3. **CAR14:**	**CAR14: Not cleared Additional clarification required.** While the overall project is categorized B, the document indicated that the activity "Waste segregation, recycling & disposal infrastructure" is screened as category A. I. Please clarify how this activity does not	**CAR14.I: Cleared** Additional information under sections II.K and III.C to justify project categorization B. **CAR14: Cleared** I. The document explicitly classifies	**CAR1 (NEW):** At Part II section K, please remove the X marking no further assessment needed on ESPs 1, 4 and 6 in compliance with AF policy as these will always apply.	CAR 1: X marking removed from 1, 4 and 6 in Table 8 and described how compliance to AF ESP during implementation will be maintained. Updated Annex 3 accordingly.

		1. *Please indicate the overall risk category for the project.* 2. *At table 6 u*nder ESP 1; Compliance with Law and ESP 4 Human rights please include a statement under column 3 that will demonstrate continuous monitoring to ensure that compliance is maintained throughout project implementation . 3. *At table 6 in column 3 please also include the risk levels low, medium or high for each of the 15ESP principles.* 4. *At Table 6 in column 2, please use a check mark to indicate if further compliance is*	impact the overall project categorization. II. In addition, considering this project is at FP stage, a full ESMP is required for this component in line with the AF ESP.	Activity 5.2.3 as USP and further assessment to be conducted during project design. A preliminary ESIA and ESMP added under Annex 15. II. For activity 5.2.1 on MRF, which is category B and not an USP, the ESMP is available in		

		required and move the text currently contained there to column 3. **CAR15:** Under Annex 3, please amend the section on AF principles screening and indicate in a table format the compliance with AF 15 principles, the potential impact and risk level (low, medium or high) as well as the potential impact with indication whether further assessment and management is required for compliance. **CR6:** For activities under the component "Enhanced water quality through climate resilient waste management" for which a category A has been assessed (ref. Table 7), please provide a comprehensive ESIAs as well a full screening against AF ESP including mitigation measures. **CAR16:** Please confirm that the project does	**CAR15: Not cleared** Please see above CAR14 and provide further details for activity classified under Category A. **CR6: Not cleared** Since Activity 5.2.2 is not yet completely designed (exact location(s) and designs for the waste disposal facilities have not yet been identified /developed), this falls under the USP category as per AF ESP. Please provide further details and comply with AF ESP in relation to USP, ref. the Adaptation	Annex 3. **CAR 15: Cleared** Annex 3 has been updated accordingly **CR6: Cleared** The activities 5.2.3 "Enhanced water quality through climate resilient waste management" is now classified as USP and details on compliance with ESP and GP addressed following the Adaptation Fund's 2021 Updated Guidance on Unidentified Sub-Projects (USPs) in Annex 15 and added to II.A.5 II.B.5; II.C.1; II.E.1; II.I; II.K; III.C and III.A.4. Additional budget (12,000 USD) added to		

		not include any USP. Refer to Table 7 which states that "Conduct activity-specific ESIAs and develop mitigation measures for the Unidentified Sub-Projects once designs have been prepared". Please refer to the AF guidance on USPs and address appropriately within the proposal document. Guidance Document for Project/Programme with Unidentified Sub-Projects **CR7:** Please refer to **CAR5** on the need for a Gender Assessment and action plan.	Fund's 2021 Updated Guidance on Unidentified Sub-Projects (USPs). Guidance Document for Project/Programme with Unidentified Sub-Projects **CAR16: Not cleared.** See above CR6. **CR7: Cleared.** Gender assessment and action plan included as annex 5 and described under section II.H.	activity (combined with 5.2.2.) for required site specific ESIA and ESMP development by independent professionals. **CAR16: Cleared as per above** The project now includes USP and necessary actions taken to comply with AF policy on USP (ref. CR6 and CAR15).		
Resource Availability	1. Is the requested project / programme funding within the cap of the country?	**Yes.**	-	-	-	
	2. Is the Implementing Entity Management Fee at or below 8.5 per cent of the total project/programme budget before the fee?	**No.** **CAR17:** Currently the IE fees ate at 9.5% of the total project cost and should be reduced to 8.5%. Please amend.	**CAR 17: Cleared.**	**-**	**-**	

	3. Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme budget (including the fee)?	**No.** **CAR18:** Currently the EC costs are at 10.3% of the total project costs and should be reduce to 9.5%	**CAR18: Cleared.** As per amendment to EC costs.	-	**CR18(re-opened):** In the detailed budget under project execution costs please remove the 9.5% next to WFP as EC are also going to the other EEs.	**CR18** removed 9.5% from text
Eligibility of IE	1. Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?	**Yes.** However, NEMA is currently under reaccreditation. Please be advised that the findings of the AFB Secretariat's review of the funding proposal(s) do not reflect, indicate, or prejudge the outcome of the reaccreditation process currently underway. The Implementing Entity (IE) shall acknowledge that the funding proposal will not be approved by the Board if the IE's accreditation has expired, and reaccreditation has not been achieved at the time of the Board's decision. Notwithstanding this potential risk, the IE has elected to proceed	Please be advised that the findings of the AFB Secretariat's review of the funding proposal(s) do not reflect, indicate, or prejudge the outcome of the reaccreditation process currently underway. The Implementing Entity (IE) shall acknowledge that the funding proposal will not be approved by the Board if the IE's accreditation has expired, and reaccreditation has not been achieved at the time of the Board's decision. Notwithstanding this potential risk, the IE has elected to proceed with the	NEMA is in contact with the Adaptation Fund Board and Accreditation Panel to address the two remaining issues pertaining to its re-accreditation.	-	

		with the development of the funding proposal.	development of the funding proposal.			
Implementation Arrangements	1. Is there adequate arrangement for project / programme management, in compliance with the Gender Policy of the Fund?	**No.** Although information is provided at Part III A, additional information is required to ensure the arrangements are adequate. **CAR19:** Please update the document to include gender-responsive elements under the implementation arrangements. **CR8:** Please include a final layer in Figure 18: Project implementation organogram to demonstrate the local/community level engagements.	**CAR19: Cleared** **CR8: Cleared**	**-**	**CAR2 (NEW):** Please also list NEMA as an EE on the proposal cover page as NEMA is the executing entity for component 5.	**CAR2** NEMA added as EE on cover page
	2. Are there measures for financial and project/programme risk management?	**Yes.** However, amendment is required. Please see **CAR14,** above.	-	-	-	
	3. Are there measures in place for the management of environmental and	**Yes.** **However, improvements are needed.**	**CR16: Not cleared.** CR8 and CAR14, CAR15, CAR16 and CR6.	**CR16: Cleared** See above CR8, CAR14, CAR15, CAR16 and CR6.	**-**	

	social risks, in line with the Environmental and Social Policy and Gender Policy of the Fund?	Please address **CR8** and **CAR14, CAR15, CAR16** and **CR6.** Under section 14 above before completing this section in next resubmission. *(*For support on assessing proposal compliance with ESP and GP, you may consider using this – Guidance document for Environment and Social Policy (English, French and Spanish)				
	4. Is a budget on the Implementing Entity Management Fee use included?	**Yes.** **However, amendment is required.** **CAR 20:** Please include a breakdown of the Implementing entity fees.	**CAR20: Cleared** As per breakdown of implementing entity fees entity fees at Part III G-detailed budget.	**-**	**-**	
	5. Is an explanation and a breakdown of the execution costs included?	**No.** **CAR21:** 1. Please revise the proposal to include a table with breakdown of the execution costs included, including ensuring that	**CAR21: Cleared** As per breakdown of implementing entity fees entity fees at Part III G-detailed budget	**-**	**-**	

		the EC fees to NEMA is only 1.5% of the budget for component 5.				
	6. Is a detailed budget including budget notes included?	**Yes.** **However, amendment is required.** **CAR22:** **1.** Please ensure that the budget notes provide sufficient details. For example, for workshops how many, # of persons targeted, across, which communities etc. For dams, how many, where. Please convert the unit column in the budget to provide these descriptions. The current column named descriptions contains the project activities. **2.** Please ensure that only 1.5%	**CAR22.1: Cleared** As per amendment at Part III G- detailed budget. **CAR22.2: Cleared** As per amendment at Part III G- detailed budget.	-	-	

		of the Component 5 value is allocated to NEMA as they are indicated in the detailed budget to execute component 5.				
	7. Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund?	**Yes.**	-	-	**CAR3 (NEW):** The proposed budget allocates a total of USD 180,000 for the Mid-Term Meeting, Final Evaluation and baseline assessment. This represents 0.9 % of the total project cost. Kindly revise these figures in all relevant sections of the proposal to ensure that evaluation costs (i.e., baseline data report, MTR and Final Evaluation) are between 1 to 2% of the total project cost, which is the recommended range for projects of this size (see table 3 in https://www.adapt	**CAR3:** added 30k USD to Baseline assessment and added 40k to Terminal evaluative. This brings the total to 250,000 which is 1.25% of the total budget. Overall budget adjusted accordingly

					ation-fund.org/wp-content/uploads/2023/10/AFB.EFC_.32.7_Evaluation-Policy-Budget-Implication_clean.pdf).https://www.adaptation-fund.org/wp-content/uploads/2023/10/AFB.EFC_.32.7_Evaluation-Policy-Budget-Implication_clean.pdf). **CAR4 (NEW):** Reference to the Project Completion Summary (mandatory reporting requirement - see https://www.adaptation-fund.org/projects-programmes/project-performance/) is missing from Part III.D. Please kindly add it.	**CAR4:** Project Completion Summary now mentioned and added under "Final Report and Project Completion Summary" in Section III.D Table 11.
	8. Does the M&E Framework include a break-	**Yes. However, amendment is required.**	**CR9: Cleared**	-	-	

	down of how implementing entity IE fees will be utilized in the supervision of the M&E function?	The proposal includes a M&E framework as contained in Part III section D. **CR9:** 1. *Please include financial reports and audits in the M&E budget.*	As per amendment to M&E Table on page 94.			
	9. Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework?	**Yes. However, amendment is required.** Please refer to **CAR11** and **CAR12** and make amendments as required. **CAR23:** The current results framework doesn't include clearly at least the core impact indicator "Number of beneficiaries including estimations for direct and indirect beneficiaries. Please revise and clarify also which second AF core indicator is included in related to targeted areas identified in AF results framework, namely (1) Early Warning System; (2) Assets Produced, developed; Improved, or Strengthened; (3)	**CAR23: Cleared** Two (2) core impact indicators added in requested format under section III.E	CAR 15 NEW: Considering the proposed interventions, please kindly add a Core Indicator table "Natural Assets Protected or Rehabilitated" to Part III.E. The template is available on p.14 of the document "Methodologies for reporting Adaptation Fund core impact indicators". Kindly ensure that "Baseline" and "Target at project approval" columns are duly completed, and that the	**CR15: Cleared.** The document is now revised and includes Core Indicator table for "Natural Assets Protected or Rehabilitated" added to section III.E **CAR5 (NEW):** Please rename the "Impact" to "Project Objective" in the results framework to align with the terminology used by the Adaptation Fund, in line with the OECD definitions. **CR1 (NEW):** Please ensure a consistent use of "Number", "No" or "#" throughout the	**CAR5:** renamed Impact to project objective **CR1:** ensured consistent use of # throughout the Results framework

		Increased income, or avoided decrease in income or (4) Natural Assets Protected or Rehabilitated.		figures provided in the tables align with those included in the project results framework.	project results framework. **(CAR5 NEW):** Some of the indicators listed in the "Objective" (current labeled "Impact") section of the results framework may not capture the overall results that the project interventions are expected to achieve. For instance, it only includes the number of people benefiting from climate resilience waste management (target of 22,407 individuals), although the project intends to benefit directly more than 350,000 individuals, as stated in the core indicator table. As a result, please kindly revise the indicators listed in the project objective section of the results	**CAR5:** Revised indicators under Project Objective to be of a higher level to capture full result of each project component. Used Core AF indicators where possible (EWS).

					framework to ensure that they capture the overall results that the project interventions are expected to achieve. AF core indicators may be considered to be used as objective indicators. **CR2 (NEW):** The project results framework includes a relatively high number of proposed indicators (63 in total), which may result in resources-intensive monitoring efforts during implementation to ensure adequate measurement and tracking of progress against each target. Please confirm that adequate resources (both financial and staffing) have been allocated to support effective monitoring of all	**CR2:** Number of indicators reduced to 52 and removed some of the indicators that would be resource intensive by focusing on critical indicators that measure progress and achievements of key components of the project. The allocated resources will be adequate to monitor the 52 indicators that were kept

					indicators during implementation. Alternatively, consider streamlining the results framework by reducing the number of indicators, if necessary.	
	10. Is a disbursement schedule with time-bound milestones included?	**No.** **CAR24:** Please include a detailed disbursement schedule that includes time-bound milestones relative to project inception and the annual reporting requirement. Please utilize the template available at • *Methodologies for reporting Adaptation Fund core impact indicators (**For fully-developed proposals**) (78 kB, DOC)*	**CAR24: Cleared** Disbursement schedule now added under section III.H	**-**	**CAR24 (re-opened_:** Please replace "Two year after project start" with Year 2**.**	**CAR 24:** This has been changed as requested

ADAPTATION FUND

FULLY DEVELOPED PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme:	**AWARE**: Adaptation for Water Access and Resilience in Ewaso Nyiro River Basin
Country:	Kenya
Thematic Focal Area:	Water, Ecosystem Restoration, Food Security, Early Warning Systems,
Type of Implementing Entity:	National Implementing Entity
Implementing Entity: (NEMA)	**National Environment Management Authority**
Executing Entities:	United Nations Children's Fund (UNICEF), World Food Programme (WFP), National Environment Management Authority (NEMA)
Amount of Financing Requested:	20 million USD

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Letter of Endorsement (LOE) Signed: Yes ☒ No ☐

NOTE: LOEs should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page: https://www.adaptation-fund.org/apply-funding/designated-authorities

Stage of Submission:

☒ This proposal has been submitted before including at a different stage (concept, fully-developed proposal)

☐ This is the first submission ever of the proposal at any stage

In case of a resubmission, please indicate the last submission date: ~~7/7/2025~~8/7/2025

Please note that fully-developed proposal documents should not exceed 100 pages for the main document, and 100 pages for the annexes.

Content

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A Project/Programme Background and Context:

Kenya, despite contributing less than 0.1% of global greenhouse gas emissions, is severely affected by climate change. Rising temperatures, erratic rainfall, and frequent droughts and floods threaten its economy, environment, and especially its children. The country's water sector struggles with limited resilience due to weak infrastructure and institutional capacity, while many communities rely on climate-sensitive livelihoods like livestock.

The ~~—~~Adaptation for Water Access and Resilience in Ewaso Nyiro River Basin (AWARE) program aims to support communities in the Ewaso Nyiro River Basin-70% of which lies in Kenya's arid north-by improving water access and resilience. These areas face acute water scarcity and climate shocks that endanger food systems, biodiversity, and child nutrition. Ensuring sustainable water access is vital for the health and well-being of women, adolescents, and children.

A.1 Socio-economic context

The target counties of Marsabit, Garissa, Wajir, and Mandera, all in Northeastern Kenya, face significant socio-economic challenges, including high poverty rates, limited infrastructure, and inadequate access to basic services. Approximately 70% of residents live in poverty, with socio-economic indicators like female literacy rates at 41%, substantially below the national average of 89%[1]. To address historical marginalization, local leaders have advocated for a comprehensive development plan focusing on critical sectors such as education, healthcare, water, security, and infrastructure[2]. Additionally, climate change has prompted a shift in traditional livelihoods, with herders increasingly adopting camels over cows due to their resilience in arid conditions[3]. These developments highlight the region's ongoing efforts to overcome socio-economic hurdles and adapt to environmental challenges. According to the

[1] World Bank Group. (2018, May 9). Boosting prosperity, improving equity in north and north eastern Kenya. World Bank. https://www.worldbank.org/en/news/feature/2018/05/08/boosting-prosperity-improving-equity-in-north-and-north-eastern-kenya

[2] KNA. (2024, October 14). North Eastern leaders decry decades of marginalization – Kenya News Agency. https://www.kenyanews.go.ke/north-eastern-leaders-decry-decades-of-marginalization/

[3] Hochet-Bodin, N. (2024, July 1). Camels replace cows in Kenya due to climate change. Le Monde.fr. https://www.lemonde.fr/en/environment/article/2024/06/16/camels-replace-cows-in-kenya-due-to-climate-change_6674901_114.html

Kenya Demographic Health Survey 2022, Marsabit County was rated third highest for teenage pregnancy (age 15–19) in the country at 29%. Despite this, the reporting of Gender Based Violence (GBV) in Marsabit remains low. In 2022, Kenya's national GBV helpline, Health Assistance Kenya, only recorded 16 cases.

Ewaso Nyiro River Basin context

The Ewaso Nyiro River Basin, a critical resource for pastoralist and agro-pastoralist communities, is increasingly affected by climate change, with recurring droughts, floods, and environmental degradation. The project focuses on Garissa, Marsabit, Wajir, and Mandera counties (see Figures 1 and 2), where vulnerable groups—especially women, children, youth, and persons with disabilities—face heightened risks. Climate shocks in these areas lead to malnutrition, school dropouts, gender-based violence, water-borne diseases, and intercommunal conflict.

The basin faces multiple threats, including over-abstraction, pollution, deforestation, and soil erosion, which intensify water scarcity and flooding. In the arid and semi-arid lands, prolonged droughts are a major driver of food insecurity. Between 2021 and 2023, 4.4 million people were severely food insecure, and nearly one million children were at risk of acute malnutrition. This was followed by widespread flash floods.

According to the Children's Climate and Disaster Risk Index (CCRI-DRM), children in Mandera, Wajir, Marsabit, and Garissa are at particularly high risk from climate hazards. The 2022 Demographic and Health Survey (DHS) shows low access to safe water in these counties: 41.3% in Marsabit, 52.9% in Wajir, and 54% in Mandera. Garissa and Isiolo perform slightly better at 70.8% and 72.1%, respectively.

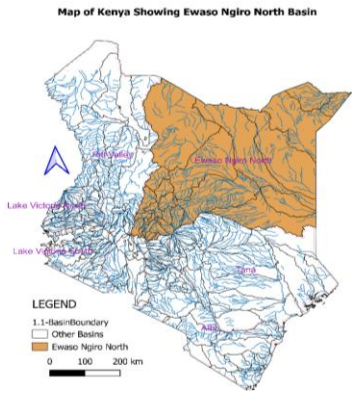

Figure 1: Map of Kenya showing Ewaso Nyiro Basin

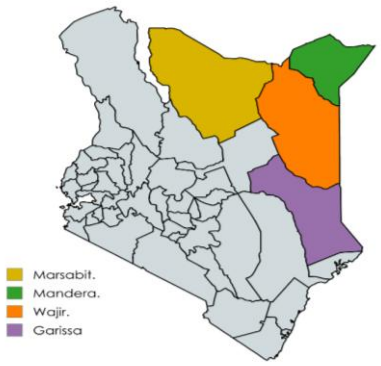

Figure 2: Map of Kenya showing target counties

A.2. Climate, Water, and Gender Inequality

Climate change and disasters deepen existing gender inequalities, disproportionately affecting women and girls. They face greater health risks, reduced access to essential services, and increased economic insecurity. Disasters lower women's life expectancy more than men's and increase their exposure to gender-based violence.
Women's dependence on natural resources like water and firewood, combined with limited access to land, credit, and technology, makes them especially vulnerable. In rural Kenya, women spend hours daily collecting water, limiting time for education and income-generating activities. Water scarcity also raises the risk of violence and worsens poverty.
Despite constitutional commitments to gender equality, social norms and limited representation continue to restrict women's decision-making and access to resources. In Northern Kenya, girls face high school dropout rates due to household responsibilities, and women are excluded from water management roles, reducing their income opportunities.
A 2020 UNICEF and IFRC study found that gender integration in disaster risk management varies across Eastern and Southern Africa. Stronger frameworks include community input, dedicated resources, trained personnel, and the use of disaggregated data to address gender and GBV concerns effectively.

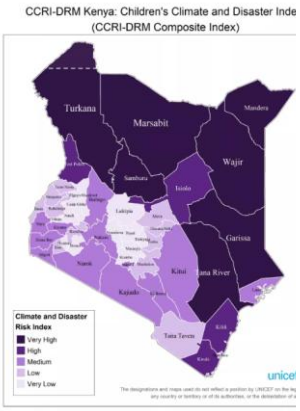

Figure 3: Children's Climate and Disaster Risk Model Kenya

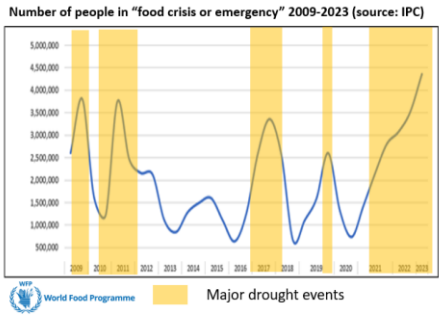

Figure 4: Number of People in "food Crisis or emergency 2009-2023

A.3. Climate change

Kenya's climate varies significantly throughout the year across different regions.. Broadly, the country is divided into two main climatic zones, namely the arid and semi-arid region and the highland region[4]. In addition to the influence of terrain, altitude and water bodies, several other climate drivers affect weather patterns throughout the year. These

[4] Richardson, K., Calow, R., Pichon, F., New, S. and Osborne, R., (2022) *Climate risk report for the East Africa region.* Met Office, ODI, FCDO: UK.

include the Intertropical Convergence Zone (the low-pressure belt that drives the wet and dry seasons), the Indian Ocean Dipole (sea surface temperature variations affecting rainfall in East Africa) and the El Niño Southern Oscillation (sea surface temperature variation with global effects).[5]

Historically, Kenya's weather has been characterized by the cycle of dry conditions followed by two rainy seasons: the long **rainy season** from March to May (MAM) and the short rainy season from October to December (OND). However, in the recent years, rainfall patterns have become increasingly variable..[6] In particular, the long rainy season has experienced a decline in rainfall amount due to late onset and early cessation[7], while the short rainy season has become longer and wetter[8]. Both seasons, have exhibited significant temporal and spatial variability.

The monetised losses incurred as a result of climate related shocks is approximately 10% of the Country's GDP. The primary driver of losses among exposed sectors stems from the decelerated economic growth in industries heavily reliant on the water sector. These include agriculture, energy, health, trade, the blue economy, and others. The sluggish recovery of these sectors following climate change-induced shocks can be attributed not only to limitations in the water sector's capacity to respond but also to the ripple effects of such vulnerabilities.

While rainfall in East Africa has been below average in the last five years, extreme rainfall events have become more frequent and intense. During the 2019-2023 drought, rainfall was well below average across the region. However, the 2023 long rains that followed brought one and a half times as much rain in northern Kenya compared to the average for the last 40 years. Beyond these, however, drought conditions are also persisting for longer and becoming more intense. The impacts of intermittent **drought and flooding** have had devastating impacts on people, animals and livelihoods.[9] In 2024, the extensive and excessive rainfall throughout the country caused 708 households to be displaced in Merti South and North in Isiolo county after the Ewaso Nyiro River broke its banks, leaving a trail of destruction on nearby schools, businesses and critical health and sanitation facilities[10].

Future projections for rainfall in Kenya differ between the two climate zones. In the arid and semi-arid region, there is an expectation that **average annual precipitation** will increase due to climate change, primarily during the short rains. With regards to the highland region, there is more uncertainty, but most models also project an increase. For western Kenya, the models suggest that the short rains may get more rainfall. In general, however, it is expected that rainfall amounts will vary more from year to years, making weather conditions more unpredictable. It is also expected that extreme rainfall will become more intense in the highland region in the future, and flood risk in Lake Victoria will most likely increase.

[5] Kenya Meteorology Department (2024) *State of the Climate Kenya 2023* https://meteo.go.ke/sites/default/files/downloads/SoC%20Kenya%202023_1.pdf
[6] Kenya Meteorology Department (2024) *State of the Climate Kenya 2023* https://meteo.go.ke/sites/default/files/downloads/SoC%20Kenya%202023_1.pdf
[7] Richardson, K., Calow, R., Pichon, F., New, S. and Osborne, R., (2022) *Climate risk report for the East Africa region.* Met Office, ODI, FCDO: UK.
[8] Government of Kenya (2023). *National Climate Change Action Plan (Kenya) 2023-2027*. Ministry of Environment, Climate Change and Forestry, Nairobi, Kenya.
[9] Government of Kenya (2023). *National Climate Change Action Plan (Kenya) 2023-2027*. Ministry of Environment, Climate Change and Forestry, Nairobi, Kenya.
[10] Families displaced as Ewaso Nyiro River bursts its banks. (2024, April 29). The Star. https://www.the-star.co.ke/news/2024-04-29-families-displaced-as-ewaso-nyiro-river-bursts-its-banks

Temperatures in Kenya have noticeably increased in the last 45 years. Analysis of temperature data from 1979 to 2023 show an **increase in average maximum temperatures** from 29 C to 30.5 C.[11] In Kenya's highland regions, the frequency and intensity of hot extremes are projected to increase, increasing the risk of heatwaves.
Mean annual temperatures have increased by 1 C since 1960.[12] There are differences in warming between different parts of the country, with higher temperatures in some ASAL counties and lower temperatures in the coastal region. Temperatures have increased by more than 1.5 C in Baringo, Turkana, West Pokot, Elgeyo Marakwet, Narok, and Laikipia in the last fifty years.[13] There are high levels of confidence that the mean annual temperature will keep increasing by an additional 1-3.5 C by the 2050s.[14] It is expected that temperatures will increase across all months of the year.

A.4. Climate-resilient (ground)water access context

By the year 2030, it is estimated that water demand will increase in all catchment areas, because of population growth leading to more demands in agriculture and domestic use and exacerbated by the effects of climate change. In Ewaso Nyiro North Basin, water stress is projected to increase to 95% (National Water Master Plan 2030).

Kenya's water sector faces major problems due to climate change and water management issues. Rising temperatures, lower rates of rainfall, and increasing evaporation are reducing water availability. At the same time, weak compliance with regulations are depleting groundwater and lowering water quality. These issues are worsening as the growing population demands more water.[15] In recent years, Kenya has experienced prolonged dry spells, leading to depleted water sources, dried-up rivers, and lowered groundwater levels. The situation is exacerbated by limited knowledge of the resource, inadequate water infrastructure and management systems, making it difficult for many Kenyans to access clean and reliable water supplies.[16]

Water scarcity and drought in Kenya have become increasingly severe due to climate change. According to the CCRI-DRM, over 9.2 million children are exposed to drought[17]. The ASAL regions are particularly vulnerable, with recurring droughts affecting water availability for both human consumption and agriculture. The CCRI-DRM notes very high-water scarcity scores across multiple Kenyan counties, including risk scores of over 9 (out of 10) for Marsabit, Mandera, Wajir, and Garissa. A survey conducted among youth in these counties showed that youth are very concerned about the impact of climate change on their communities, with 100% of respondents from Marsabit and 91% from Wajir being very concerned[18]. The 2020-2023 drought exemplified the lack of resilience of the WASH sector. At that time, more than 5 million people in the ASALs could not access safe water.

[11] Kenya Meteorology Department (2024) *State of the Climate Kenya 2023* *https://meteo.go.ke/sites/default/files/downloads/SoC%20Kenya%202023_1.pdf*
[12] The Red Cross Red Crescent Climate Centre (2021) *Country-level Climate Fact Sheet – Kenya.* https://www.climatecentre.org/wp-content/uploads/RCCC-ICRC-Country-profiles-Kenya.pdf
[13] Government of Kenya (2023). *National Climate Change Action Plan (Kenya) 2023-2027.* Ministry of Environment, Climate Change and Forestry, Nairobi, Kenya.
[14] Richardson, K., Calow, R., Pichon, F., New, S. and Osborne, R., (2022) *Climate risk report for the East Africa region*. Met Office, ODI, FCDO: UK.
[15] Ministry of Water, Sanitation and Irrigation. *Climate Action in the Water Sector in Kenya - Sector Roadmap.* 2022
[16] ReliefWeb. *Kenya: Drought - 2014-2024.* 2024, January 3. https://reliefweb.int/disaster/dr-2014-000131-ken
[17] UNICEF, *The Kenya Subnational Children Climate Risk Index-Disaster Risk Model (CCRI-DRM): Providing communities with information on climate risks.* (2024) Retrieved from https://www.unicef.org/kenya/kenya-subnational-children-climate-risk-index-disaster-risk-model-ccri-drm
[18] U-Report Yunitok Kenya. (Dec. 2024). https://yunitok.in/opinion/4011/

Insufficient WASH infrastructure remains a significant issue in Kenya. According to UNICEF and WHO Joint Monitoring Programme data, only 70% of Kenyans have access to basic drinking water services, 54% have access to basic sanitation services, and 38% have access to basic hygiene services.[19] While progress has been made, there are disparities between urban and rural areas, with rural populations generally having lower access rates. Furthermore, in the ASAL counties, only 24% of the population is served by **regulated water providers**; the rest are entirely unserved or depend on unreliable community-managed sources that dry up seasonally. In Marsabit, Mandera, Wajir, and Garissa over 420 villages and some large towns are dependent on emergency water trucking by government and humanitarian partners during the dry seasons, with many households spending up to 25% of their disposable income on water.

As access to water diminishes and poverty levels escalate, people resort to using unsafe water sources. This shift increases the risk of waterborne diseases, leading to elevated morbidity, malnutrition and mortality rates, particularly among children.[20] Children are more susceptible to waterborne diseases than adults due to underdeveloped immune systems and higher water intake relative to body weight. Limited access to clean water and sanitation, coupled with malnutrition, further increases the vulnerability of children to these diseases. In addition, children may have to travel longer distances to collect water, reducing time for school and play.[21] The lack of climate resilient water supplies in ASAL regions creates an increased burden on women and girls, who are often responsible for household water collection, and creates a barrier to economic development, optimal child-care and feeding practices that ensure sustainable development.

Changes in weather patterns also cause impact to infrastructure, including WASH services. A REACH assessment done in 2024 found that WASH is the most affected sector during floods, particularly as communities affected by floods often already have limited access to WASH facilities and were reliant on open water sources. Once floods hit and the limited infrastructure is damaged, families are forced to resort to unsafe water sources and sanitation practices, leading to increased likelihood of waterborne disease, including cholera[22] with profound negative impact on health and nutrition status, particularly of children under-fives years of age and women including adolescent girls.

Flooding also leads to stagnant water, providing breeding grounds for vectors.[23] The increased incidence of vector-borne and waterborne diseases puts children at higher risk of illness, potentially impacting their long-term health and development.

Reduced water availability intensifies competition between communities, impacting inter-communal tension as well as agricultural productivity and livelihoods. Competition for water resources can lead to conflicts. Deaths from water related conflicts in Kenya have risen from 200 yearly in 2009 to 1200 in 2023, and conflicts that were previously limited to rural pastoralist communities have now also spread to informal settlements in urban areas

[19] WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene. *Estimates on the use of water, sanitation and hygiene in Kenya*. 2022 https://washdata.org/data/household#!/ken
[20] Kirira, P., Oyatsi, F., Waudo, A., & Mbugua, S. *Improving Access to Safe Water in Rural Schools of Kenya: Qualitative Multisectoral Insights*. 2023. Cureus, 15(12), e50269. https://doi.org/10.7759/cureus.50269
[21] UNICEF, *Analysis of the CCRI for Least Developed Countrie*s. New York: United Nations Children's Fund UNICEF, 2023.
[22] IMPACT Initiatives, *Climate shocks continue to hit Kenya* (2024) Retrieved from https://www.impact-initiatives.org/what-we-do/news/climate-shocks-continue-to-hit-kenya/
[23] Ministry of Water, Sanitation and Irrigation. *Climate Action in the Water Sector in Kenya - Sector Roadmap.* 2022

because of the failed rainy seasons.[24] This puts children at risk of physical harm, as well as at risk of displacement.

Groundwater emerges as the most suitable source for sustainable water security in ASALs, as it is more resilient to droughts than surface water and very limited surface water resources in the ASALs. Climate change, combined with a growing population and extensive farming and livestock practices, has led to a decline in surface water availability, making it critical to develop and managed groundwater resources to address water insecurity in the ASALs. However, significant knowledge gaps persist regarding the country's groundwater resources and their sustainability, resulting in poor drilling success rates and limited access to quality water. These gaps hinder effective exploration, exploitation, and management of groundwater. Additionally, many water supply systems still rely on fossil fuel-powered generators and, when necessary, reverse osmosis for water treatment, raising production costs and contributing to higher carbon emissions.

Nature-based groundwater recharge has proven to be an effective solution for addressing water scarcity in northeastern Kenya's arid and semi-arid regions. Groundwater recharge can mitigate declining borehole water levels during the dry season, increase yields and reduce salinity overtime particularly in areas in close proximity to both perennial and ephemeral rivers within the different sub drainage basins. By leveraging natural processes such as reforestation, wetland restoration, and sand dam construction, these interventions help replenish depleted aquifers, mitigate drought effects, and support both human livelihoods and biodiversity. A notable success is the widespread adoption of sand dams, particularly in Wajir County, where they capture seasonal rainwater, reduce evaporation, and provide communities with reliable water for domestic and agricultural use.

Communal behavioral practices can influence the quality of groundwater. Building toilets near riverine, over-extraction due to lack of water-sharing agreements between communities and households. In North-Eastern Kenya, water is considered a communal resources hence negative collective management practices that strain groundwater resources. Some communities regard some groundwater sources such as spring a sacred source and may benefit from community preventions approaches and less pollution compared to other sources. Due to psychological distance, some communities collectively belief that groundwater are always abundant and will be and always available resources leading them to continue to have limited knowledge on groundwater resources and disregard community-led initiative to learn how to protect and conserve groundwater. Using social and behavioral changes (SBC) localized strategies and approaches, communities can attain higher awareness and likely adopt sustainable ground-water practices and utilization.

A.5. Water access for pastoral and agro-pastoral livelihoods context

Kenya's Arid and Semi-Arid Lands (ASALs) face escalating climate-related challenges that threaten water security, livelihoods, and food systems. These regions, covering 89% of the country's landmass and supporting 70% of its livestock and 90% of its wildlife, are increasingly affected by erratic rainfall patterns, recurrent droughts, and floods. Water scarcity remains a critical issue, with prolonged dry spells depleting surface and groundwater sources while intense rainfall events lead to destructive flooding and soil erosion. Poor water governance, over-abstraction, and weak infrastructure maintenance

[24] Mutua, Bb, *Failed rains spark Kenya's water wars.* (2024) Fair Planet. Retrieved from https://www.fairplanet.org/dossier/water-2/failed-rains-spark-kenyas-water-wars/

further exacerbate these challenges, limiting access to safe and reliable water for drinking, livestock, and food production.

Pastoral and agro-pastoral livelihoods depend heavily on water availability, yet the increasing frequency of droughts has led to widespread loss of livestock and reduced agricultural productivity. The degradation of rangelands due to overgrazing and unsustainable land management practices has further strained water resources. Disrupted herding patterns and competition over scarce pasture and water have intensified conflicts among communities, undermining social cohesion and resilience. In many areas, groundwater is the primary water source, but its overuse, coupled with limited recharge due to reduced rainfall, is leading to long-term depletion, making pastoralists and agro-pastoralists increasingly vulnerable.

Food insecurity continues to rise as declining agricultural yields and livestock losses push households into deeper poverty. The recent drought (2020–2022) left one million people facing acute food insecurity by mid-2024[25], with counties in the Ewaso Nyiro River Basin-Mandera, Wajir, Marsabit, Isiolo, Garissa -among the worst affected. Many households have resorted to negative coping mechanisms, such as selling livestock and assets, reducing meal portions, and prioritizing livestock water needs over household consumption. These practices, along with poor dietary diversity and limited access to clean water, contribute to worsening malnutrition. Currently, two in ten children under five are wasted and stunted, while over 75% of children aged 6–23 months are not receiving a minimum acceptable diet[26].

Women in pastoral communities bear the heaviest burden, trekking long distances to fetch water, which reduces the time available for childcare and food preparation. Inadequate sanitation and hygiene practices, driven by water shortages, increase the risk of waterborne diseases, further weakening community health and nutrition. The reliance on traditional pastoral practices, such as overstocking livestock and prioritizing livestock water needs, exacerbates pressure on already fragile water resources. Resistance to alternative water conservation methods and limited awareness of sustainable water management further hinder adaptation efforts.

Climate projections indicate that Kenya will experience a 1.4°C temperature rise by 2030, with ASAL counties expected to face more extreme heat and prolonged dry spells. Rainfall variability will continue to pose challenges, leading to increased reliance on groundwater sources, which are already under pressure. Drought cycles, which previously occurred every 5–10 years, are now happening every 2–3 years, accelerating land degradation and resource depletion. The World Bank warns that declining water availability will further reduce agricultural productivity and livestock numbers, while indirect climate impacts, such as increased soil erosion, pest infestations, and wildlife migration, will compound the crisis.

Without urgent intervention, the worsening water crisis in pastoral and agro-pastoral communities will continue to undermine livelihoods, food security, and health. Addressing these challenges requires a comprehensive approach that strengthens water governance, promotes sustainable land and water management, and enhances climate-resilient livelihoods. Improved access to water through efficient irrigation systems, water harvesting technologies, and groundwater recharge initiatives is essential to sustaining pastoral and agro-pastoral livelihoods in the face of climate change.

[25] Kenya NDMA: Long Rains Food Security Assessment Report, July 2024 https://ndma.go.ke/12636-2/#:~:text=2024%20Long%20Rains%20Food%20and%20Nutrition%20Security%20Assessment%20Report,-Published%20On%20%2D%20August&text=The%20onset%20of%20the%20March,earlier%2Dthan%2Dnormal%20onset.

[26] Integrated Phase Classification for Acute Malnutrition Report, July 2024

A.6. Early warning and anticipatory action context

Over the past few decades, the ASAL of Kenya have become increasingly vulnerable to climate variability and extreme weather events including prolonged droughts, erratic rainfall, and floods. These climate-induced hazards threaten livelihoods, food security, water availability, and biodiversity while exacerbating environmental degradation, poverty, socio-economic instability, and resource conflicts that disproportionately affect pastoralist and agro-pastoralist communities specifically women, youth and children. During the recent drought of 2020-2023, Kenya experienced five consecutive below-average rainy seasons, leaving an estimated 6.4 million people in need of humanitarian assistance and causing approximately 2.5 million livestock deaths in pastoral areas[27]. Strengthening early warning and anticipatory action (AA) mechanisms in ASAL Kenya is essential to transitioning from reactive climate risk management to proactive risk reduction.

AA in Kenya faces systemic challenges, including inadequate financing, lack adequate and accessible flood early warning systems, limited human resources capacities, limited use of weather, climate, and vulnerability data, and weak multiagency coordination. A lack of awareness and capacity for effectively using early warning systems at county and community levels exacerbates these issues, hindering the timely implementation of preventative measures and actions. In the ASALs, communities have long-held traditional ways influenced by cultural beliefs of predicting and responding to shocks as part of early warning system and there has been limited integration of this ways into Early warning and anticipatory action context modern EWS. Moreover, the weak integration of scientific forecasting with indigenous knowledge, inadequate dissemination channels, and limited institutional coordination hinder proactive response measures.

During the recent drought the government of Kenya and development partners such as Kenya Red Cross and affiliate bodies developed an Early Action Protocol (EAP)[28] to guide the timely and effective implementation of early actions. WFP together with the county governments of Marsabit and Wajir recently developed an Anticipatory Action Plan (AAP) for Marsabit and Wajir counties for OND 2024 season. Although the AAP was preapproved to access funding if activation was reached, the triggers and thresholds were not reached despite communities facing climate change impacts. This was due to the inherent challenges in the development of AA triggers and thresholds, that lacked the integration of vulnerability data. Additionally, the Kenya Meteorological Department has highlighted several ongoing challenges. For instance, the low predictability of the (March-April-May) MAM season which limits the accuracy of early warning forecasts during this critical period, lack access to sub-seasonal data from key global modeling centers, which constrains its ability to produce detailed SPI forecasts. Furthermore, the absence of a comprehensive impact database makes it difficult to align forecasts with real-world socio-economic drought impacts and produce impact-based forecasting[29]. This makes it challenging to develop effective AAPs.

[27] *United Nations and partners call for $472.6 million to respond in 2023 as the drought in Kenya deepens*. (2023.). Kenya. https://kenya.un.org/en/208262-united-nations-and-partners-call-4726-million-respond-2023-drought-kenya-deepens

[28] Kenya: Drought - Early Action Protocol Summary https://reliefweb.int/report/kenya/kenya-drought-early-action-protocol-summary-eap2022ke02

[29] Workshop Report: Developing an Action Plan for the Kenya Drought Watch System and Reviewing Triggers and Thresholds for Drought Anticipatory Action. Accelerating Impacts of CGIAR Climate Research for Africa (AICCRA). https://cgspace.cgiar.org/server/api/core/bitstreams/8d8c9703-f0c8-4c25-be32-6bfbe4d6d5b9/content

There is also a lack of real-time flood forecasting. However, there are free and easy to use online flood models available such as the Google flood hub, which can be leveraged by the county government to send flood warning up to 7 days in advance based on the predictions of the Google flood hub. The Google flood hub also can identify historic flood areas on a high resolution which will be used to identify locations at risk for better targeting[30].

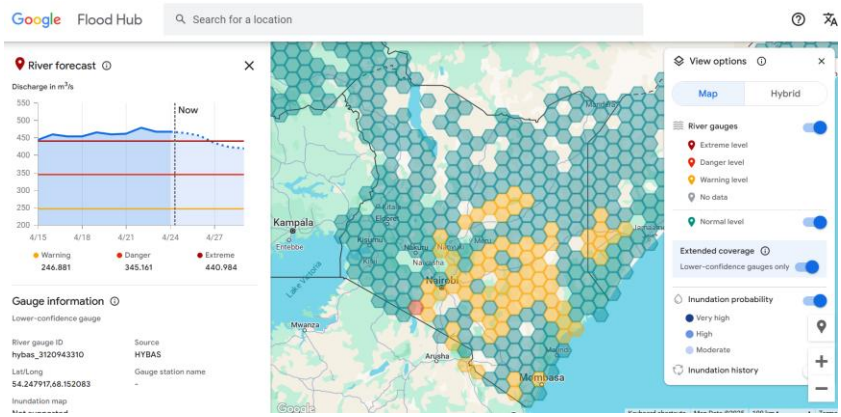

Figure 5: Google Flood Hub snapshot

A.7. Climate change adaptation policy and coordination context

Kenya has shown strong climate leadership through the Climate Change Act (2016, revised 2023), which mandates Climate Change Units (CCUs) across government levels to integrate climate action into development plans. The National Climate Change Action Plan (NCCAP) III (2023–2027) outlines priorities for both mitigation and adaptation.

Despite progress, challenges remain. Coordination among stakeholders is weak, and many sectors lack detailed climate risk assessments. County-level CCUs often lack the capacity to lead effective adaptation[31]. Youth and women—though central to climate resilience—are underrepresented in decision-making. NCCAP Priority 8 calls for greater youth engagement and capacity-building for climate project development.

Kenya's National Adaptation Plan (NAP) also needs updating to reflect current climate data and align with the upcoming 2025 Nationally Determined Contributions (NDCs). Stronger, inclusive adaptation planning is essential to manage growing climate risks.

Knowledge management (KM) is another gap. The Climate Change Directorate's Knowledge Platform remains underutilized due to capacity issues. Broader KM challenges include poor data collection, limited infrastructure, and difficulty reaching rural communities. Strengthening KM systems to combine scientific and local knowledge will improve decision-making and resilience, especially for vulnerable populations.

[30] https://sites.research.google/floods/l/0/0/3

[31] International Monetary Fund. Fiscal Affairs Dept. (2024). Kenya: Technical Assistance Report-Climate module of the Public Investment Management Assessment. IMF eLibrary. https://doi.org/10.5089/9798400268342.019.A001

A.8 Waste management context

The arid counties of Wajir and Marsabit, in North Eastern Kenya face significant waste management challenges besides the recurring extreme droughts and floods. Moyale and Marsabit towns in Marsabit county with an urban population of 52,388 and 39,730 respectively, lack adequate waste collection systems and disposal infrastructure. Wajir town which has a high water table and whose urban population relies on shallow wells, posing a high contamination risk, equally has one of the highest and fast-growing urban population currently estimated at 101,365. The general mode of waste disposal in these urban spaces in the Ewaso Nyiro catchment is by open dumping and burning. The waste disposal site in Wajir town has been linked to the contamination of water aquifers serving the urban population. The towns of Moyale and Marsabit have no legal waste management (dumping) sites at all, leading to illegal dumping and scattering of waste, causing blockades on the drainage systems in the urban areas and causing water pollution and flooding. As the population continues to grow[32] an increase in solid waste generation has been witnessed, straining already insufficient waste management systems besides contributing to environmental pollution and posing public health risks[33] through water contamination, depriving the urban population clean drinking water and damage to infrastructure due to flooding as a result of blocked drainage systems . Conversely, during droughts, the lack of water for sanitation and hygiene intensifies reliance on unsafe hygiene practices, increasing vulnerability to disease outbreaks.

Materials Recovery Facilities (MRFs) offer an adaptive solution by improving waste segregation and reducing the volume of unmanaged waste, which in turn helps maintain cleaner urban environments and enhances the resilience of public health systems and infrastructure. The National Environment Management Authority (NEMA), under the framework of the Sustainable Waste Management Act, 2022, has prioritized the promotion of MRFs across counties as part of a decentralized and climate-smart waste management system. Through technical support, policy enforcement, and pilot projects, NEMA is facilitating the integration of MRFs into county waste plans, while also supporting public awareness and source segregation efforts. These initiatives contribute not only to improved waste recovery and circular economy outcomes but also to enhanced adaptive capacity, particularly in climate-vulnerable urban areas.

Water quality monitoring for timely detection of contaminants and the implementation of corrective measures can greatly complement adaptation efforts. The absence of systematic monitoring programs allows pollutants from waste to compromise the drinking water sources, posing health risks to the local population. Implementing regular water quality assessments is essential to safeguard public health and ensure the sustainability of water resources in the face of environmental and climatic challenges.

B. Project/Programme Objectives:

Considering the context and problems outlined above, the AWARE program has the objective to make *Vulnerable communities in EWASO NYIRO RIVER BASIN experience*

[32] Kenya National Bureau of Statistics & The National Treasury and Planning. (2022). Kenya National Bureau of Statistics. https://www.knbs.or.ke/wp-content/uploads/2023/09/2019-Kenya-population-and-Housing-Census-Analytical-Report-on-Population-Dynamics.pdf

[33] UNICEF Kenya. (2023). *UNICEF Kenya Consolidated Emergency Report 2022*. https://open.unicef.org/sites/transparency/files/2023-05/Kenya CER 2022.pdf

improved well-being, water access, food security, and reduced vulnerability to climate change and climate-induced shocks, contributing to sustainable development and climate resilience.

The program is structured in five distinct components:

1. **Climate resilient water access for human and livestock consumption:** Sustainable groundwater development and water conservation measures to reduce vulnerability of communities to climate induced disasters (mainly drought and floods) through provision of climate resilient water access infrastructure as well as surface water run-off retention and recharge structures including supporting continuous professional development.

   Aligned to AF outcomes:
   Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses.
   Outcome 4: Increased adaptive capacity within relevant development and natural resource sectors.
   Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress.

2. **Ecosystem restoration and climate resilient livelihoods for food and nutrition security:** Sustainable and diversified agro-pastoral and pastoral livelihoods for improved food and nutrition security supported by development and management of climate resilient water assets and ecosystem restoration.

   Aligned to AF outcomes:

   Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level
   Outcome 4: Increased adaptive capacity within relevant development and natural resource sectors.
   Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress.
   Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas.

3. **Enhanced early warning systems and anticipatory action:** Reduced vulnerability of communities to floods and droughts by providing an effective flood and drought risk assessment, monitoring and early warning system, increased capacity and knowledge base, and inclusive communication strategy.

   Aligned to AF outcomes:

   Outcome 1: Reduced exposure at national level to climate-related hazards and threats.
   Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level.

4. **Systems strengthening for enhanced and inclusive climate adaptation coordination and knowledge management:** The Ministry of Environment, Ministry of Water, and County Climate Units will be supported to improve inclusive coordination, update the National Adaptation plan, and enhance knowledge management for climate

adaptation. All with a strong focus on youth and women participation.

Aligned to AF outcomes:

Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses.
Outcome 7: Improved policies and regulations that promote and enforce resilience measures

5. **Enhanced water quality through climate resilient waste management:** Community and institutional capacity to safely manage waste and monitor water quality is strengthened, preventing waste ending in the environment during heavy rainfall causing water pollution, disease and flooding.

Aligned to AF outcomes:

Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses.
Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress.

Adaptation zones

The project will establish adaptation zones where the five components will largely converge in common geographic areas in all the sub drainage basins and build on the existing climate-resilient impact hubs identified by the County Governments of Marsabit, Wajir, Mandera, and Garissa. The hubs are catalyzing investments in climate adapted livelihoods using a multi-sectoral and system approach to bring long-lasting change to agro-pastoral and pastoral communities and build their capacities to manage shocks and stressors. These will be overlayed with watershed/sub catchment maps to identify "adaptation zones", where progress will be accelerated to show impact and create multiplier effects. A special focus will be on the Lorian Swamp wetland areas, a fertile plain at the border of Garissa and Wajir county where the Ewaso Nyiro River drains into.

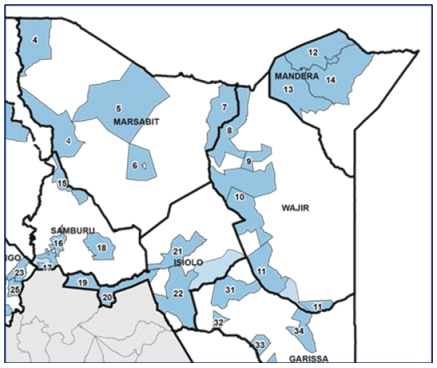

Figure 7: County climate resilience hubs

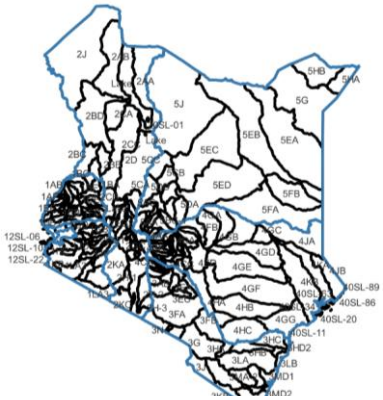

Figure 6: River subcatchments in Kenya

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C. Project/Programme Components and Financing:

Table 1: Project Components and Financing

Project/Programme Components	Expected Outcomes	Expected Concrete Outputs	Amount (US$)
1. Climate-resilient Water Access for Human and livestock Consumption	OUTCOME 1: By 2029, increased numbers of people are benefiting from climate-resilient water systems in targeted communities within the Ewaso Nyiro North River Basin (ENRB)	Output 1.1: Enhanced capacity of Water Resource Management Institutions and professionals for sustainable groundwater development and management in ENRB Output 1.2 Improved rain/floodwater harnessing for Managed Aquifer Recharge (MAR) and Nature-based Solution (NbS) Output 1.3: Community validated climate-resilient groundwater infrastructure developed and in operation in target communities within ENRB counties Output 1.4: Strengthened financial management capacity of Water Services for sustainable water service delivery in the context of climate change	9,~~.~~377,000~~M~~
2. Ecosystem restoration and climate resilient livelihoods for food and nutrition security	OUTCOME 2: By 2029, communities in targeted ENRB locations have established and sustained climate-resilient and diversified livelihoods supported by functional water infrastructure and resilient and productive ecosystems	Output 2.1: Prioritized rangeland resources including land are brought under restoration, safeguarded and sustainably managed for improved climate change resilience Output 2.2: Community-validated climate resilient water infrastructure developed and or rehabilitated for food security Output 2.3: Climate-smart agriculture and nature-based enterprises promoted through inclusive value chains for climate-resilient livelihoods	5,500,000~~5.5M~~

		Output 2.4: Improved household access to nutritious and diversified diets, contributing to enhanced livelihood resilience	
3. Anticipatory action	OUTCOME 3: By 2029, communities in targeted ENRB locations benefit from having an enhanced early warning system	Output 3.1: Flood EWS accuracy improved by incorporating more data using existing open source flood models Output 3.2: Improved Anticipatory Action triggers defined in updated plans, integrating (child) vulnerability in target counties and nationally Output 3.3: County budgeting process for Anticipatory Action strengthened Output 3.4: Early Warning Communication systems improved to effectively reach last-mile communities	800,000~~k~~
4. Systems strengthening for enhanced and inclusive climate adaptation coordination and knowledge management	OUTCOME 4: By 2029, the Ministries of Environment and Water and County Climate Units in targeted ENRB counties adopt an enhanced coordination and governance framework.	Output 4.1: Enhanced capacity of the Ministry of Water and County Climate Unites in targeted ENRB Counties for inclusive and participatory climate adaptation planning and coordination in the water sector. Output 4.2: National Adaptation Plan (NAP) and key elements of National Environment Action Plan (NEAP) updated through an inclusive and participatory process incorporating feedback from key stakeholders, including youth and ENRB County Representatives Output 4.3: Increased capacity of youth in targeted ENRB counties to meaningfully participate in climate adaptation governance and action Output 4.4: A functional and regularly updated climate change and adaptation knowledge	693,484~~694k~~

		platform established and used by the Ministries, County Climate Units, Youth, and other stakeholders in targeted ENRB counties	
5. Enhanced water quality through climate resilient waste management	OUTCOME 5: By 2029, an increased number of people in targeted ENRB communities benefit from safe climate-resilient waste management and water quality practices in communities	Output 5.1: Enhanced technical capacity of relevant institutions in targeted ENRB Counties for water quality monitoring and enforcement related to waste management. Output 5.2: Increased access to climate-resilient waste management infrastructure Output 5.3: Improved knowledge and adoption of safe and climate-resilient waste management practices and the importance of water quality monitoring within communities and institutions Output 5.4: Strengthened organizational capacity of county environmental committees in ENRB Counties to develop, implement, and monitor policies and actions addressing waste-related water pollution.	500,000~~500k~~
Project/Programme Execution cost			1,562,696~~1.56M~~
Total Project/Programme Cost			18,433,180~~18.43M~~
Project/Programme Cycle Management Fee charged by the Implementing Entity			1,566,820~~1.57M~~
Amount of Financing Requested			20,000,000~~M~~

C.1 Projected Calendar:

While Table 2 indicates the key dates of the project, Annex 2 contains a quarterly workplan.

Table 2: Project calendar

Milestones	Expected Dates
Start of Project/Programme Implementation	January 2026
Mid-term Review meeting	June 2027
Project/Programme Closing	January 2029

Terminal Evaluation	June 2029

C.2 Beneficiary estimates

The total (aggregated) number of project beneficiaries is 358,925 People living in the 4 target ASAL counties of Kenya., Beneficiaries per component are displayed in Table 3. Beneficiaries per output can be found in Annex 9.

Table 3: Beneficiary estimates

Component	(Beneficiary) Indicator	Target
Climate-resilient Water Access for Human and livestock Consumption	*Number of people reached with at least Basic Water that is safe and available when needed*	282,000
Ecosystem restoration and climate resilient livelihoods for food and nutrition security	*Number of people benefitting from investments in ecosystem restoration and climate-resilient livelihoods supported by public and private resources*	153,850
Enhanced early warning systems and anticipatory action	*NA*	NA
Systems strengthening for enhanced and inclusive climate adaptation coordination and knowledge management	*NA*	NA
Enhanced water quality through climate resilient waste management	*Number of people benefiting from climate resilient waste management infrastructure* *Number of people with increased awareness of sustainable waste management*	22,407 90,000
Total (Aggregated) Number of Beneficiaries **1*		**358,925**

**1* Calculated by including all direct beneficiaries from Component "Climate-resilient water access for human and livestock consumption" (282,000) and half of the beneficiaries from Component "Ecosystem restoration and climate resilient livelihoods for food and nutrition security" (76,925 out of 153,850), avoiding double-counting.

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Project components

The proposed project targets two specific impacts of climate change and the associated risks affecting the already vulnerable population in the Ewaso Nyiro North River Basin: (1) The rising frequency and intensity of droughts, which challenge the lack of resilience of the water sector, prevent continuous and safe water supply, pose public health risks, and undermine

livelihoods; (2) Increasingly unpredictable and intense rainfall, which leads to flooding, damages fragile water infrastructure, causes water pollution through waste, and devastates livelihoods.

This recurring and worsening cycle of water scarcity (drought) and excess (flooding), combined with the limited climate resilience of water sector institutions-due to capacity and knowledge gaps in implementing climate-resilient interventions-and fragile infrastructure, along with a vulnerable population dominantly reliant on livestock and rainfed crop production, highlights a clear need for climate change adaptation, *especially in the water sector*. However, the following barriers exist:

1. Capacity and infrastructure gaps in knowledge, exploration, exploitation, and sustainable management of groundwater created critical service gaps especially for the most vulnerable groups including minorities, women, people with disabilities and others.
2. Water scarcity and inadequate water assets and their maintenance, unsustainable land use practices that lead to reduced productivity and limited access to markets. This also limited access to water resources to marginalized and vulnerable groups.
3. Systemic challenges in identifying and assessing risk, anticipatory action and early warning systems, including inadequate financing, limited understanding, use and transmission of weather, climate, and vulnerability data, and weak coordination
4. Limited coordination, insufficient involvement of youth, women and other vulnerable groups perspectives, inadequate focus on behavior change, and lack of access to finance in climate adaptation governance and knowledge management efforts.
5. Inadequate waste management, combined with insufficient water quality monitoring, resulting in water contamination and disease outbreaks during floods, as well as an increased risk of salinity and fluoride contamination in drinking water during droughts.
6. High population vulnerability and limited adoption of climate-adaptive behaviors. Recognizing that reducing vulnerability is the foundation of adaptation.

To address these barriers, the program will therefore deploy a combination of 5 climate adaptation measures (components) to empower local communities (focusing on vulnerable and marginalized groups like women, people with disabilities and minorities), managers and policymakers at the county and national levels to adapt to the above-outlined climate change challenges, namely:

(i) Developing capacity to enhance knowledge and sustainable management of groundwater resources, including water quality, and establishing infrastructure to ensure climate-resilient access for human and livestock consumption.

(ii) Integrated water and land management solutions that support development and or rehabilitation of water infrastructure and rangeland restoration for improved climate-resilient crop and livestock livelihoods and reduced population vulnerabilities.

(iii) Establish and strengthen climate risk information for water related hazards, to strengthen EWS and Anticipatory Action as well as communication of alerts and other climate data related information appropriate for local community context

(iv) Strengthening the system for climate change adaptation, knowledge management, coordination and policies with emphasis on the inclusion of women, youth and children.

(v) Improving waste management and water quality monitoring, to prevent

contamination of (drinking) water and other environmental resources during floods and drought.

To address the barrier "High population vulnerability and limited adoption of climate-adaptive behaviors which cross sectoral across the above five climate adaptation measures the project will mainstream relevant social and behavioral change interventions through community mobilization and engagement across all the five components of the project and project outputs in all the components have specific activities targeted for addressing the barriers on awareness and practices.

Ultimately, this combination will result in a population of the ENRB that has year-round climate resilient water access, diversified livelihoods and diets less susceptible to climate change, and is better and timely informed on climate change and related hazards, prompting timely anticipatory action supported by climate adaptive behavior and early warning systems. This will significantly reduce their vulnerability and strongly support the community, and the sectors they rely on, in climate adaptation.

Project AWARE will have a gender transformative approach to ensure that women are engaged as active and effective agents and promoters of climate change adaptation and mitigation. Women and girls should not only be considered victims of climate change but also as agents of change. To promote gender equality and women's empowerment throughout the process, women will be involved in decision-making for climate action. This will ensure the integration of their knowledge and experiences regarding climate change. This enriches the discourse with diverse perspectives and talents.

Each project component is designed through inclusive and participatory processes that prioritize the voices and needs of local communities. Community ownership is embedded across the project lifecycle, from consultation and planning to implementation and governance, ensuring that interventions deliver sustained climate resilient outcomes beyond the project duration. See section II.J.1 Ensuring community ownership for project sustainability for details.

The interventions and their outputs are described in more detail below.

A.1. Climate resilient water access for human and livestock use

The project component is aligned to the Kenya sessional paper No. 1 of 2021 on National Water Policy, National Adaptation Plan 2015 to 2030 and the National Water sector Investment programme (NAWASIP) 2023 – 2030; to improve the adaptive capacity of vulnerable communities particularly women, children, youth and disabled persons for sustainable access to climate resilient safe water services for enhanced public health, education and welfare and be more resilient to climate induced emergencies.

This will be achieved by strengthening the human resources capacity for sustainable groundwater development and management, improving seasonal run-off water conservation and groundwater recharge including nature-based solutions, establishing climate resilient groundwater services and infrastructure, and strengthening the technical and management capacity of Water Service Providers.

Output 1.1: Strengthened Human Resources capacity for sustainable and climate resilient Groundwater development and Management in ENRB.

This output aims to build the capacity of sector professionals working in the four target counties to effectively plan, manage, and monitor groundwater resources in the face of climate change. It focuses on professional development through technical skills training programs, peer learning, mentoring and coaching to support the sustainable development and management of groundwater in the region.

- **Activity 1.1.1** Develop and implement training program on climate change & hydrological analysis in partnership with Hydrological Society of Kenya (HSK) and the Hydrologists Registration Board and establish structure for Continuous Professional Development (CPD) in HSK.
- **Activity 1.1.2** Develop and implement training program on hydrogeological analysis & best practices with GSK and establish structure for CPD in Geological Society of Kenya (GSK)
- **Activity 1.1.3** Establish structure for CPD and training program of drillers including on design, construction & operation of climate resilient borehole water supply systems for graduate engineers

Output 1.2 Improved rain/floodwater harnessing for Managed Aquifer Recharge (MAR) and Nature-based Solution (NbS)

The output will strengthen the management of seasonal rainfall run-off to enhance groundwater recharge and retention, improve water availability during the dry season from ephemeral rivers, enhance reliability and water quality of existing boreholes including reduced salinity levels. This is done through the construction of sand dams and reverse wells.

- **Activity 1.2.1** Feasibility study to identify locations for construction of water conservation (sand dams) and Managed aquifer structures (Reverse wells) in priority sub drainage basins, site and design.
- **Activity 1.2.2** Construct sand dams and /or sub surface dams and provide solarized water abstraction equipment and community water points.
- **Activity 1.2.3** Construct water filtration and reverse wells for managed aquifer recharge to increase yields and /or reduce salinity of existing boreholes.

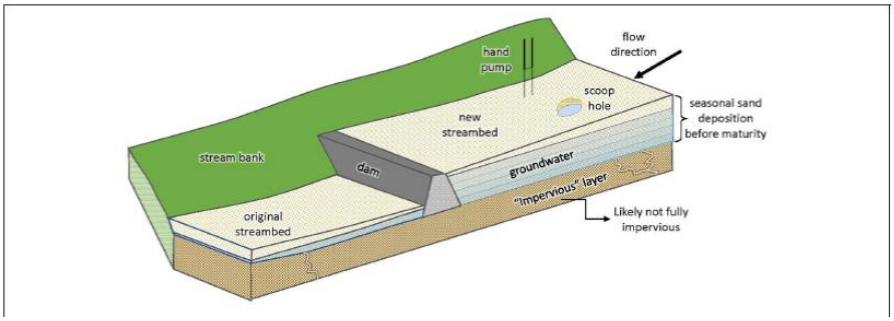


Figure 8: Sand dam schematic showing seasonal sand deposition before maturity and two common abstraction methods (Esma and Merwade, 2020)

Site selection criteria - Sand dam sites were proposed by County government officials and overlayed with WFP hubs and groundwater suitability maps to identify high demand locations with potential for sand dams. Sites with existing scoop holes where people traditionally obtain water but do not provide year-round water availability, will be selected for technical feasibility assessment and design of the structures. The geo-locations for the proposed sites are indicated in Annex 6.

Preventing maladaptation -To prevent maladaptation in sand dam interventions, the project will be informed by detailed hydrological, geological, and socio-environmental assessments

to ensure site suitability and long-term sustainability. These analyses will guide the design and placement of sand dams to optimize water retention while minimizing risks such as sedimentation, downstream water scarcity, or ecological disruption. Climate risks—such as prolonged droughts or intense rainfall—will be factored into dam sizing, spillway design, and catchment management strategies.

To ensure adaptive performance, sand dam operations will be monitored in collaboration with local water user associations and county authorities. This includes tracking sediment accumulation rates, assessing seasonal recharge and abstraction patterns, and evaluating downstream flow impacts. Vegetation cover and land use in the catchment will also be monitored to prevent erosion and maintain infiltration capacity. Regular water quality testing will help detect contamination risks and inform the need for additional protective measures. These safeguards will ensure that sand dams enhance water security without creating new vulnerabilities or undermining ecosystem resilience.

Output 1.3: Community validated climate-resilient groundwater infrastructure developed and in operation in target communities within 4 target Counties.

This output focuses on enhancing access to reliable and sustainable groundwater services in 4 target counties in Ewaso Nyiro basin. By constructing new infrastructure, upgrading existing infrastructure, adopting green energy solutions, and utilizing innovative technologies, the project will ensure communities, schools, and healthcare facilities have access to climate-resilient (ground)water systems. This component will target Leave No One Behind (LNOB) groups comprising of marginalized minority groups, women, people with disabilities and other vulnerable groups. The location of the water infrastructure will be selected in discussion with the community members.

- **Activity 1.3.1** Drill and equip new boreholes for climate resilient community water supplies including solarization, hydrogeological and geophysical surveys.
- **Activity 1.3.2** Upgrading of existing borehole systems to be climate resilient for communities in water scarce locations including solarization
- **Activity 1.3.3** Provision of climate resilient water supply connection to schools
- **Activity 1.3.4** Provision of climate resilient water supply connection to healthcare facilities
- **Activity 1.3.5** Upgrading of Shallow Wells to renewable energy Pumped Systems
- **Activity 1.3.6** Construction of multi-village water supply scheme including hydrogeological & geophysical survey

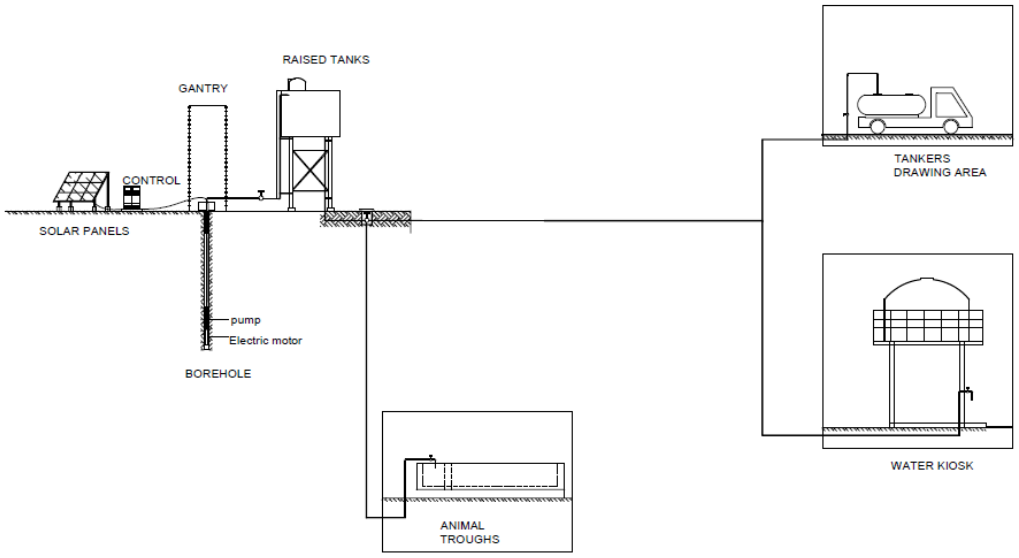


Figure 9: Schematic of solarized borehole system including animal trough, water kiosk and tanker drawing area.

Site selection criteria -UNICEF has implemented an innovative groundwater suitability mapping (Figure 9) combining remote sensing, weighted GIS overlay analysis, hydrogeological assessment and geophysical surveying, that has shown potential to significantly increase ground water drilling success rates. Groundwater suitability maps produced under this program for the targeted counties were overlayed with the list of villages prone to seasonal water trucking that was shared by the county governments and further overlayed with WFP hubs to identify the potential new borehole drilling sites in high demand areas. Hydrogeological and geophysical surveys will be undertaken to site the actual drilling location of the new boreholes. In addition to the technical feasibility of the sites the project will also prioritize locations with high community vulnerabilities to ensure the project is focusing on addressing issues to LNOB groups. The approximate geo-locations for the proposed sites are indicated in Annex 6.

Preventing maladaptation -To prevent maladaptation, the project and intervention sites will be grounded on detailed hydrological, hydrogeological and contextual analysis to determine opportunities and risks for climate action and propose mitigation measures to inform climate adaptive design of the new or rehabilitated infrastructure and NBS. Through the water supply scheme operators and the county governments the performance of the investments will be monitored to ensure compliance to the proposed mitigation measures including monitoring water abstraction does not exceed the pumping hours or pump discharges approved by the Water Resources Authority, water levels are assessed overtime and Low Water Level controls are adjusted to avoid excessive drawdowns, flood protection measures are working and corrective measures needed are restored, and water quality would be assessed seasonally to check if mitigation measures are working and whether additional protection is required.

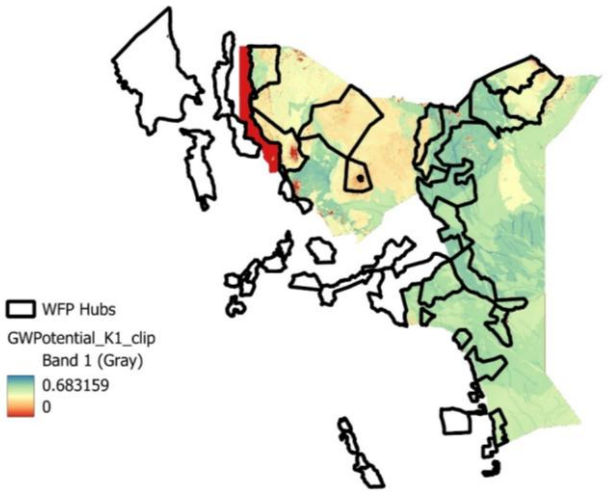


Figure 10: Groundwater potential and County resilience hubs in target counties

Output 1.4: Strengthened financial management capacity of Water Services for sustainable water service delivery in the context of climate change.

This output focuses on improving the capacity, financial sustainability, and management of water services in 4 target counties. By building technical skills, promoting innovative financing models, and enhancing governance structures, the project aims to ensure the delivery of equitable and sustainable water services, with a focus on LNOB groups**.** The project will support affordability analysis, establish a lifeline tariff and pro-poor rates and mandatory criteria for inclusion of marginalized women in the planning, implementation and management of the water infrastructure. The output (through activity 1.4.9) will also strongly involve the community including women and people with disabilities and ensure they are aware of the water governance structures that support them but are also accountable to the community as end users. By putting feedback loops in place, the community can report misuse or poor service by the water point management.

- **Activity 1.4.1** Train young people from target counties on sustainable climate resilient water supply operation and maintenance which includes training, coaching / mentoring and follow up - at Kenya Water Institute and provide basic tools
- **Activity 1.4.2** Build capacity of County water departments and Water Service Providers (WSPs) on climate resilient planning, design, O&M, water safety planning, Water Quality monitoring & last-mile connectivity to LNOB groups.
- **Activity 1.4.3** Establish & operationalize professional O&M model in all rural areas
- **Activity 1.4.4** Technical support to WSPs to develop sustainable tariff for full O&M cost recovery by ensuring affordability for LNOB groups
- **Activity 1.4.5** WSPs supported to increase metering ratio to reduce Non Revenue Water and appropriate technology adopted to support data management, leakage detection and service monitoring
- **Activity 1.4.6** Build capacity of WSPs to enforce water resources management rules
- **Activity 1.4.7** Train Board of directors, water committees /municipal boards on water governance

- **Activity 1.4.8** Support WSPs develop & implement pro-poor policies
- **Activity 1.4.9** Sensitization of community on County Water Governance, their water rights, WUA accountability, importance of payment for water, and feedback loops to regulator/oversight.

A.2 Ecosystem restoration and climate resilient livelihoods for food and nutrition security

The objective of this component is to support sustainable and diversified community livelihoods, improve food and nutrition security, and enhance climate resilience through the development and management of climate-resilient water infrastructure and resources and the protection, restoration and better management of natural ecosystems.

The component will address rangeland degradation, low investment in restoration, and challenges in governance and coordination. Restoration and sustainable management will adopt a catchment approach, guided by community priorities and detailed assessments. Integrated water and land management will enhance water infiltration, soil moisture retention, and aquifer recharge through in-situ and stormwater harvesting.

Key restoration interventions will include assisted natural regeneration, rangeland reseeding, fodder planting, soil and water conservation structures, Farmer Managed Natural Regeneration (FMNR), and managing invasive species. Improved coordination strengthened inclusive rangeland management committees where vulnerable groups including women and minorities are well represented, and grazing management plans will be developed to support restoration efforts.

Restoration will also be linked to nature-based enterprises such as fodder production, grass seed banking, beekeeping, and sustainable gums and resin production to ensure sustainability by providing climate-resilient livelihood options by prioritizing LNOB and other vulnerable groups in the community. These efforts will increase ecosystem species richness and productivity while improving soil fertility, water regulation, and resilience to climate shocks like floods and droughts.

The component will further enhance the resilience and economic stability of communities especially for women and other vulnerable groups by promoting sustainable, climate-resilient livelihood strategies, improving water access, supporting climate-smart agriculture, and fostering nature-based enterprises for livelihood diversification and ecosystem restoration. Additionally, it aims to enhance children, adolescents and women access to and utilization of nutritious and diversified diets for optimal growth and development by creating optimal food access and healthy practices.

Overview of Outputs and Activities

Output 2.1: Prioritized rangeland resources including land are brought under restoration, safeguarded and sustainably managed for improved climate change resilience

Using a multi-sectoral and multi-stakeholder approach, this output will focus on working with communities to identify and map out degraded areas, design and implement ecosystem restoration interventions that contribute to larger landscape level restoration and rehabilitation.

- **Activity 2.1.1**: Conduct participatory detailed assessments of land and water ecosystems to determine degradation levels, determine restoration opportunities and design restoration plans
- **Activity 2.1.2**: Implementation of ecosystem restoration through structural interventions including earthworks for soil and water conservation, erosion control structures, access

control structures. The interventions will include but will not be limited to check dams, gabions, terraces, bunds, ripraps, stone lines, grazing corridors these structures will reduce runoff, increase water infiltration and improve soil moisture.

- **Activity 2.1.3:** Implementation of ecosystem restoration through biological interventions including but not limited to: shelterbelts, pasture reseeding units/ grass seedbanks, enclosures for managed natural regeneration, vetiver hedge grows for soil reinforcement, bio-swales and contour grass strips. These infrastructure will support slope stabilization, soil anchoring and hydrological regulation.
- **Activity 2.1.4:** Formation and strengthening of inclusive relevant natural resource management groups such Rangeland management Committees (RMCs) and Water Resources Users; Associations (WRUAs) for improved rangeland and watershed management and governance for sustainability with proper representation of women, minorities and other LNOB groups
- **Activity 2.1.5**: Pollution control and sustainable land use – promoting sustainable agricultural practices, promoting integrated pest management, developing and enforcing guidelines to prevent encroachment and unsustainable practices
- **Activity 2.1.6**: Implement land and water ecosystem protection strategies, including small-scale flood control measures and implement nature-based approaches such as safeguarding riverbanks. Retaining and gabion walls, riparian buffer strips, vegetated terraces and reforestation of catchments as appropriate are the range of structural and non-structural interventions to be implemented.

To mitigate against the risk of maladaptation, the activities under this output area will leverage rigorous inclusive and participatory planning and implementation where local communities will be involved to ensure that the recommended interventions align with local needs, priorities and ensure that they are socially and culturally appropriate. The assessments to be conducted in Activity 2.1.1 will provide the requisite ecological baselines and land use patterns to provide an understanding of how interventions may impact ecosystem services over time. As part of activity implementation, training/demonstration on establishment and maintenance of the infrastructure will be done to ensure that communities are able to sustain the activities over time, even past the project's end. Revegetation will focus on appropriate native plant and tree species that provide multiple ecosystem services and that are adapted to local conditions. At the same time invasive and exotic vegetation will be avoided. Activity 2.1.4 will focus on strengthening governance around rangeland and water resources. The proposed governance structures will contribute to sustainable natural resource use.

Output 2.2: Community-validated climate resilient water infrastructure developed and or rehabilitated for food security.

This output will focus on enhancing water availability and access to address the challenges of water scarcity, erratic rainfall, prolonged droughts and impoverishment of livelihoods. Emphasis will be on stormwater/floodwater harvesting, storage and distribution for irrigation. Further, the strengthening of water infrastructure management systems and frameworks will improve the adaptive capacity of the target vulnerable communities, support livelihoods mainly for women and youth and build climate resilience.

- **Activity 2.2.1**: Conduct multi-stakeholder (national, county and community level) mapping and consultation for the development and/or rehabilitation of water infrastructure for productive use (including water pans).
- **Activity 2.2.2**: Development and/or rehabilitation of community-validated climate resilient and sustainable water infrastructure including stormwater harvesting and storage for irrigation. Efficient irrigation technologies that optimize water use to deliver more yields per unit of water used and that employ renewable energy for pumping.

- **Activity 2.2.3**: Formation and strengthening of inclusive water management community groups with proper representation of women, minorities and other LNOB groups for improved water management, including training of Irrigation Water Users' Associations on irrigation system management, on-farm water management and environmental issues in irrigation development and operation.

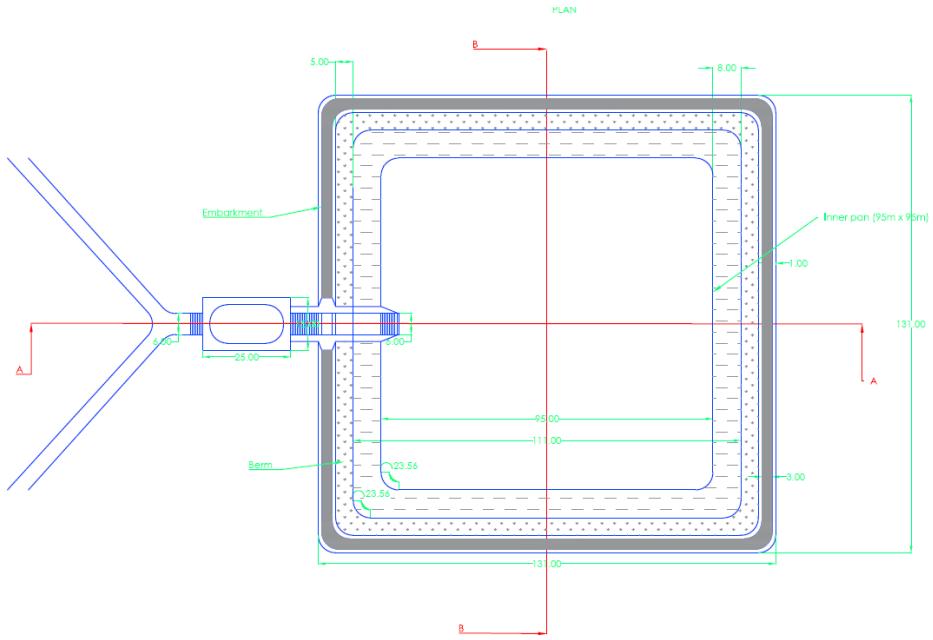


Figure 11: Water pan technical drawing (top view)

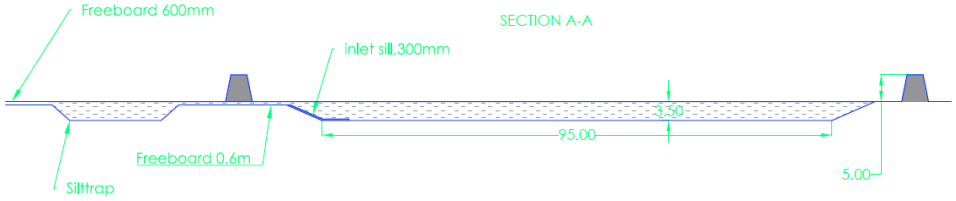


Figure 12: Water pan technical drawing (side view)

Output 2.3: Climate-smart agriculture and nature-based enterprises promoted through inclusive value chains for climate resilient livelihoods

This output prioritizes investments in climate-resilient livelihoods focusing on women and youth including promoting climate-smart practices tailored to the ASALs, utilization of sustainable

indigenous knowledge related to cultivating nutritious and drought-tolerant crops, in addition to supporting generation of alternative income opportunities from nature-based enterprises linked to the Outcome on building ecosystem resilience. The interventions will also build the skills and knowledge of men, women and youth in targeted households and communities within the Climate Resilient Food Systems Hubs and will also leverage access to timely climate information.

- **Activity 2.3.1**: Capacity strengthening to promote cultivation of nutrition-sensitive and drought-tolerant/climate adapted crops and livestock targeting smallholder farmers.
- **Activity 2.3.2**: Capacity strengthening of smallholder farmers to transition to climate-smart practices such as crop rotation, conservation tillage, cover cropping, agroforestry to enhance productivity of croplands.
- **Activity 2.3.3**: Support development of nature-based enterprises run by women and youth such as beekeeping, fodder production, grass seed production and gums and resins and provide targeted support such as private sector and market linkages.
- **Activity 2.3.4**: Support vulnerable community groups to access financial inclusion to enhance their social and economic adaptive capacities

Output 2.4: Improved household access to nutritious and diversified diets, contributing to enhanced livelihood resilience .

This output will focus on ensuring that improved climate resilient livelihoods deliver sustainable, nutritious and diversified diets. The focus is on optimizing the livelihoods investments by promoting household consumption of the nutrition-sensitive crops to increase the food and nutrition security of targeted populations. It will emphasize protecting and promoting sustainable diets and practices in the face of predicted adverse impacts of climate change to support optimal growth and development. This intervention brings social gains alongside the proposed economic and environmental benefits. Improved sustainable diverse diets, and the resulting improved health and wellbeing of populations, will make targeted populations more resilient to climate hazards and the longer term climate effects.

- **Activity 2.4.1** integrate climate resilient water access as key pillar of improving nutrition outcome in existing guidelines feeding of young children, food for school age children and maternal nutrition.
- **Activity.2.4.2** Engage with research institutions and local private sector partners to develop and test environmentally friendly low-cost value addition processing of agricultural and livestock outputs into nutrient dense food products.
- **Activity 2.4.3** Capacity strengthening of health facility and community health workers to promote the climate resilient, nutritious livelihood production and to support targeted communities to modify their behaviors, adopting practices that increase their ability to adapt to climate impacts.
- **Activity 2.4.4**: Utilize existing community-based platforms to build awareness and modify behaviours to prioritize household consumption of a portion of the nutrition-and climate-sensitive livelihoods production.
- **Activity 2.4.5**: Capacity building on food storage, processing and meal preparation of introduced nutritious agro-livelihoods in order to build household food and nutrition security for improved climate resilience.

A.3 Enhanced early warning systems and anticipatory action

This outcome focuses on building climate resilience by strengthening early warning systems (EWS) and anticipatory action mechanisms. It includes activities that enhance flood risk assessment, integrate advanced climate risk prediction, and empower communities and institutions with climate services and early action capabilities. Special effort is made to ensure that early warning system speak to the community needs and mechanisms, and integrate traditional knowledge. By leveraging innovative technologies, capacity-building initiatives, and

localized approaches, the project aligns with the Adaptation Fund Results Framework to reduce climate vulnerability and improve adaptive capacity.

Output 3.1: Flood EWS accuracy improved by incorporating more data using existing open source flood models

This output strives to integrate Google's existing and free-to-use flood models, both real-time and historic, into county and community early warning systems. Google Flood Hub gives flood warnings up to seven days in advance and indicates different danger levels. It has been used in humanitarian operations before[34].

- **Activity 3.1.1:** Validate Google Flood hub inundation history maps for target counties with community and county stakeholders
- **Activity 3.1.2** Train county WRA and County KMD on usage of Google Flood Hub EWS and integration in existing communication structures

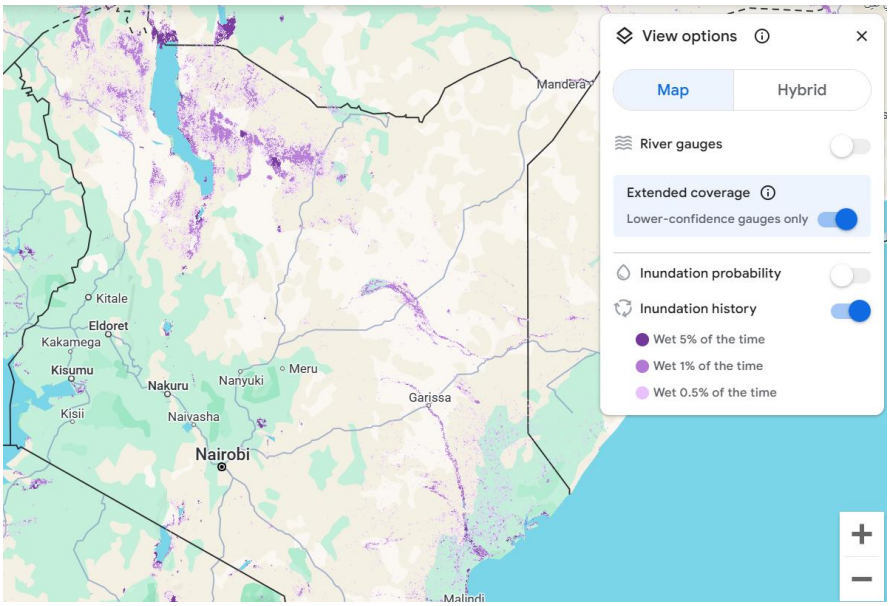


Figure 13: Inundation History from Google Flood Hub

[34] https://blog.google/technology/ai/advanced-flood-hub-features-for-aid-organizations-and-governments/

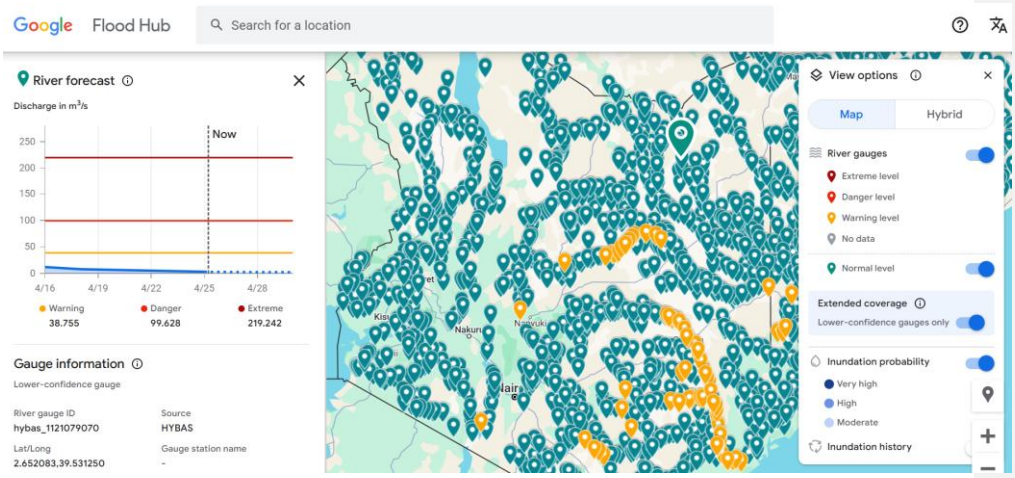


Figure 14: Flood forecast from Google Flood Hub

Output 3.2: Improved Anticipatory Action triggers defined in updated plans, integrating (child) vulnerability in target counties and nationally

This output focuses on improving Anticipatory Action (AA) triggers by integrating child vulnerability index into both national and county-level systems. The AA roadmap emphasizes the need for harmonized trigger development, yet current triggers are often based solely on scientific or meteorological thresholds that may not fully reflect the lived realities and vulnerabilities on the ground-especially those affecting women and children. To address this gap, this output supports the integration of the Children Climate Disaster Risk Model (CCDRM) into Kenya Meteorological Department's seasonal forecasts (Activity 3.2.1), ensuring that child-centered risk factors are considered in early warning systems. Additionally, it supports a review and improvement of AA triggers in county Anticipatory Action Plans, incorporating vulnerability data-such as that regularly collected by the National Drought Management Authority (NDMA)-to ensure that decisions to act are grounded in both meteorological science and social risk realities (Activity 3.2.2). This approach enhances the precision and relevance of early actions, ensuring they are timely and targeted to those most at risk.

- **Activity 3.2.1** Integrate the Children Climate Disaster Risk Model (CCDRM) into the national seasonal forecasts issued by Kenya Meteorological Department
- **Activity 3.2.2** Review and improve triggers and thresholds for AA in county Anticipatory Action Plans and integrate (child) vulnerability data

Output 3.3: County budgeting process for Anticipatory Action strengthened

Output 3.3 aims to strengthen the county budgeting process for Anticipatory Action (AA), recognizing that early action is only effective if counties allocate their own resources to support it. Currently, AA implementation in Kenya is heavily reliant on development partner funding, which raises concerns about sustainability and government ownership. Without dedicated county budget lines, even the best-designed AA plans risk remain unimplemented when disaster strikes. This output will support counties in meeting the national guideline of allocating at least 2% of their development budgets to disaster risk management and anticipatory action (Activity 3.3.1), while also improving transparency and reporting. UNICEF brings a strong track

record in supporting county budgeting processes, positioning it well to assist counties in institutionalizing AA within their public finance systems for long-term impact.

- **Activity 3.3.1** Assist counties in allocating and reporting a minimum of 2% of the development budget to DRM/AA

Output 3.4: Early Warning Communication systems improved to effectively reach last-mile communities

Output 3.4 focuses on improving Early Warning Systems (EWS) to effectively reach and resonate with last-mile communities, recognizing that the value of early warnings lies not only in their accuracy but also in community trust and understanding. In many areas, traditional forecasting practices-such as interpreting goat intestines-still hold more sway than scientific predictions, and even one inaccurate forecast can cause communities to lose faith in formal EWS altogether. There is a critical need to help communities understand that while scientific predictions are based on the best available data, they are not infallible-uncertainty is part of any forecasting system. This output uses a human-centered design (HCD) approach to understand local beliefs, behaviors, and trust dynamics around early warnings (Activity 3.4.1), and will develop culturally relevant and localized social and behavior change (SBC) materials to improve communication through radio, Community Health Promotors (CHPs), and other familiar platforms (Activity 3.4.2). By training CHPs, radio stations, and community mobilizers to communicate not just the warnings but also the science behind them and the importance of acting despite uncertainty (Activities 3.4.3 and 3.4.4), this output aims to foster a more realistic, informed, and resilient relationship between communities and early warning information.

- **Activity 3.4.1** Conduct community HCD immersion session on EWS to understand local EW uptake and understanding
- **Activity 3.4.2** Develop contextualized SBC Early Warning communication materials for radio, Community Health Promotors (CHPs) and other platforms in local languages
- **Activity 3.4.3** Train radio stations and CHPs on translation and communication of timely early warnings of flooding to community
- **Activity 3.4.4** Train community health promotors and workforce and community social mobilizers on early warning communication and utilization/AA

A.4 System strengthening for enhanced climate adaptation coordination

This component focuses on improving institutional coordination, technical capacity, and knowledge-sharing mechanisms to support climate adaptation in the water sector and beyond.

Output 4.1: Enhanced capacity of the Ministry of Water and County Climate Units in targeted 4 Counties for inclusive and participatory climate adaptation planning and coordination in the water sector.

This output enhances coordination and builds technical capacity for water sector professionals and stakeholders to address vulnerabilities and risks effectively.

- **Activity 4.1.1**: Provide technical capacity building for water sector professionals and stakeholders to enhance climate adaptation coordination.
- **Activity 4.1.2**: Strengthen the capacity of County Climate Change Units (CCUs) in targeted counties for effective coordination of water sector activities.

Output 4.2: National Adaptation Plan (NAP) updated through an inclusive and participatory process incorporating feedback from key stakeholders, including women, youth and 4 target County Representatives

This output will support the update of the National Adaptation Plan (NAP). Kenya's current NAP runs from 2015-2030 and is therefore coming to an end. It is therefore necessary to update the NAP, taking into account the latest climatic data and predictions and gained knowledge on climate adaptation.

- **Activity 4.2.1** Update Kenya's National Adaptation Plan
- **Activity 4.2.2** Conduct consultation workshops including women and youth group consultations to inform NAP

Output 4.3: Increased capacity of youth in targeted 4 counties to meaningfully participate in climate adaptation governance and action

This output empowers youth to play a critical role in climate adaptation efforts by equipping them with the skills and support needed to develop and implement impactful projects, this has already been successfully done for two regions in Kenya under leadership of the MECCF. It also supports young people to participate in land restoration activities, as a part of UNICEFs global GreenRising initiative.

- **Activity 4.3.1**: Train youth on developing bankable climate change project proposals to engage them in climate action initiatives.
- **Activity 4.3.2** Engage 1,000 young people in UNICEFs GreenRising through land restoration of 100 ha

Output 4.4: A functional and regularly updated climate change adaptation knowledge platform established and used by the Ministries, County Climate Units, Youth, and other stakeholders in targeted 4 counties

Output 4.4 aims to establish a functional and regularly updated climate change and adaptation knowledge platform that empowers Ministries, County Climate Units (CCUs), youth, and other stakeholders in targeted 4 counties to make informed, timely, and inclusive decisions. This decentralized system bridges national policy with local action by structuring and standardizing climate data, enhancing accessibility through tools like HackMD, Power BI, and SMS/USSD dashboards, and capturing local and indigenous knowledge through participatory approaches. It also strengthens visibility and voice for youth, women, and marginalized groups through storytelling and co-authored county briefs. The platform supports national planning cycles such as NCCAP III, the NAP, and NDCs by providing real-time, structured evidence for reporting and adaptation strategy refinement. With robust feedback loops, capacity building, and policy integration, this system ensures that knowledge generation is continuous, locally owned, and actionable at every level.

Furthermore, a dedicated, collaborative "Lessons Learned" repository will be maintained for the AWARE project using a cloud-based Markdown platform (e.g., HackMD). This repository is organized around the five core components of the Adaptation Fund proposal, with each element subdivided into its respective outputs and activities. Under each activity, contributors record three categories of information: (1) "What Worked Well," detailing successful approaches and best practices; (2) "Challenges," documenting obstacles and bottlenecks encountered in real time; and (3) "Recommendations," offering actionable guidance for subsequent phases or replication. An additional "Cross-Cutting Lessons" section captures themes that span multiple components—such as data interoperability, community engagement, or gender inclusion—while optional annexes provide space

for performance indicators, a stakeholder contact list, and visual or technical reference materials. By using a consistent template (i.e., tagging each entry with the contributor's name and date), the repository ensures that institutional memory is captured systematically and remains searchable throughout the project's implementation.

The process is designed as a live, iterative exercise in continuous improvement. As each output is rolled out—whether organizing county-level trainings, constructing pilot sand dams, or installing flood-monitoring equipment—team members log concise observations directly beneath the corresponding activity heading. Contributors use simple, time-stamped entries so that "lessons learned" emerge organically during fieldwork, rather than only being recalled at the end of a project cycle. Quarterly review sessions ensure early challenges are addressed promptly and recommendations are updated as new information becomes available. Upon project completion, the entire repository can be exported in Markdown, PDF, or HTML format and integrated into the final knowledge management archive, providing a fully documented blueprint of what worked, what did not, and why. This approach guarantees that real-time insights inform adaptive management, strengthen accountability, and lay a clear foundation for scaling up or replicating AWARE interventions in other river basins.

- **Activity 4.4.1**: Conduct a blended training program (1 physical and 2 virtual sessions) for County Climate Units and Component Knowledge Management Focal Points on the structured collection and dissemination of success stories, lessons learned, best practices, and implementation insights in climate adaptation projects.
- **Activity 4.4.2**: Template and Taxonomy Development
- **Activity 4.4.3:** Use of Online Software (HackMD, Power BI, system support)
- **Activity 4.4.4:** Story Dissemination & Communication Training including production of human-interest stories, filed notes, case studies, press releases and other knowledge and communication products
- **Activity 4.4.5:** Centralized KM Management (QA, dashboard integration, oversight)

A.5 Climate resilient Waste management for water quality

This outcome focuses on the strengthening of sustainable waste management practices to enhance climate resilience through mitigating the impacts of flooding and drought on water systems. Proper waste management reduces water contamination risks during floods, which can introduce pollutants into water sources, and during droughts, which exacerbate water scarcity and concentrate existing pollutants. By establishing climate-resilient waste management infrastructure, promoting circular economy practices, and strengthening water quality monitoring systems, this outcome ensures that communities and ecosystems are better equipped to adapt to the impacts of climate change. These interventions align with climate adaptation goals to protect water resources, enhance water quality, and ensure sustainable resource management under changing climatic conditions.

Output 5.1: Enhanced technical capacity of relevant institutions in targeted ENRB Counties for water quality monitoring and enforcement related to waste management.

This output focuses on strengthening institutional capacity for pollution monitoring and sustainable waste management, particularly in the context of climate-related events such as floods. Flooding significantly increases the risk of contamination in domestic water sources due to surface runoff, highlighting the need for rapid, field-based water quality assessments. To address this, NEMA staff will undergo a 5-day training and be equipped with portable water quality monitoring kits to enhance real-time pollution surveillance during emergencies. Additionally, a training module on sustainable waste management and compliance with the Sustainable Waste Management Act will be developed, forming the basis for a 2-day training targeting county government staff, waste handlers, CBOs, and contractors. Together, these

activities aim to build a more responsive and compliant environmental management system capable of reducing pollution risks and improving public health outcomes.

- **Activity 5.1.1:** Strengthen institutional capacity to monitor pollution levels in domestic water sources, especially during flood events when surface runoff can introduce contaminants into water systems.
- **Activity 5.1.2:** Procure portable water quality monitoring kits
- **Activity 5.**1.3: Develop training module on sustainable waste management and compliance with the sustainable waste management act
- **Activity 5.1.4:** Train government staff and waste handlers (County govt, CBO, contractors) sustainable waste management and compliance with the sustainable waste management act

Output 5.2: Increased access to climate-resilient waste management infrastructure

This output focuses on increasing access to climate-resilient waste management infrastructure in Marsabit Town, where unmanaged waste frequently blocks drainage channels, worsening the impact of floods and posing a serious threat to water quality. During heavy rains, solid waste washed into open drains and waterways contributes to urban flooding and the contamination of domestic water sources, while in dry periods, poor waste disposal exacerbates health risks. To address this, the project will establish Material Recovery Facilities (MRFs) to foster circular waste management and reduce the volume of waste reaching drainage systems. In addition, a climate-resilient waste management site will be developed in compliance with all 10 criteria of the Sustainable Waste Management Act, including secure fencing, leachate and fire control systems, controlled tipping, and proper licensing. This infrastructure will improve waste handling, protect vital water systems, and serve as a replicable model for resilient urban waste management in arid regions.

- **Activity 5.2.1:** Establish Material Recovery Facilities (MRFs) to foster circularity in waste management, reducing waste that could clog drainage systems during floods and worsen flood impacts.
- **Activity 5.2.2:** Develop design for climate resilient waste management site adhering to all 10 criteria of the sustainable waste management act
- **Activity 5.2.3:** Construct climate resilient waste management site (USP)

Unidentified Sub Project Activity 5.2.3

Activity 5.2.3, which involves constructing a climate-resilient waste management facility near Marsabit town, is included as an Unidentified Sub-Project (USP) due to the need for detailed design and site selection based on technical, environmental, and social assessments. This approach allows the project to first develop a robust and context-appropriate design under activity 5.2.2, ensuring alignment with climate risks, community needs, and national regulations. Despite being a USP, safeguards compliance is ensured through a preliminary ESIA and ESMP, which will be updated based on the final design, site-specific data, and inclusive stakeholder and community consultations. The USP follows a defined timeline and adaptive management process, in full alignment with the Adaptation Fund's Updated Guidance on USPs (2021). More detailed information on the USP justification, environmental and social management, monitoring, and safeguards arrangements is provided in Annex 15.

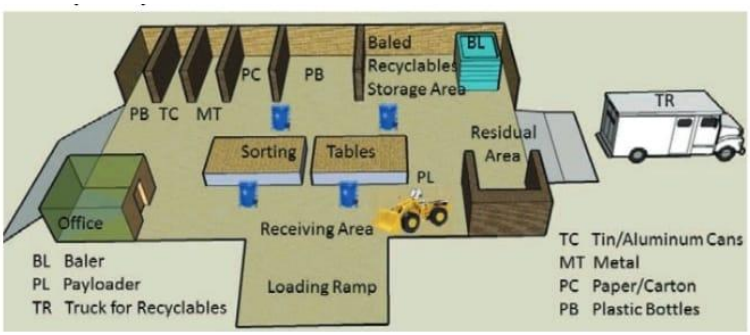


Diagram of Manual MRF

Figure 15: Diagram of Material Recovery Facility (MRF)

Output 5.3: Improved knowledge and adoption of safe and climate-resilient waste management practices and the importance of water quality monitoring within communities and institutions

Output 5.3 focuses on improving knowledge and encouraging the adoption of safe, climate-resilient waste management practices in 150 villages, empowering communities to better manage waste and safeguard water resources. By raising awareness on the critical link between waste disposal and water quality, the project will promote behaviors that mitigate the impacts of floods and droughts on water systems. Through community education campaigns, residents will be taught the importance of waste segregation at source, recycling, and reuse, while also understanding how improper waste management exacerbates flooding and worsens water scarcity during droughts. This effort will build local adaptive capacity, reduce environmental pollution, and improve community resilience to climate impacts.

- **Activity 5.3.1:** Conduct community education campaigns on the importance of waste segregation at source, recycling, and reuse, emphasizing how improper waste disposal worsens flooding and reduces water availability during droughts.

Output 5.4: County Environment Committees Revamped to Address Waste-Related Pollution

Output 5.4 aims to revamp and strengthen County Environment Committees in Marsabit and Wajir to play a more active and informed role in tackling waste-related water pollution, which poses a growing risk during both floods and droughts. In these counties, limited waste oversight has contributed to clogged drainage systems, contaminated water sources, and heightened vulnerability during climate shocks. Through targeted capacity building, the committees will be better equipped to identify sources of pollution, enforce relevant regulations, and coordinate actions to mitigate flood-induced contamination and protect scarce water resources during drought periods. By reinforcing local environmental governance, this output ensures that waste management challenges are addressed more proactively, with community-driven solutions aligned to climate resilience and water safety goals.

- **Activity 5.4.1:** Strengthen the capacity of County Environment Committees including enhancing representation of women, youth and other vulnerable groups to identify and address waste-related water pollution, focusing on mitigating flood-induced contamination and safeguarding water resources during droughts.

B. Program economic, social and environmental benefits

The proposed project offers an integrated package of climate adaptation interventions tailored for communities in Kenya's arid and semi-arid lands (ASALs), prioritizing economic efficiency, social inclusion, environmental sustainability, and gender responsiveness.

In alignment with the Adaptation Fund's 15 Environmental and Social Policy (ESP) principles and Kenya's National Environmental and Social Safeguards Policy, all project components and outputs were systematically screened for potential environmental and social risks. This process was carried out through extensive stakeholder consultations and on ground assessments. Following this, a comprehensive Environmental and Social Impact Assessment (ESIA) was conducted (see Section II.K), which informed the project's risk categorization and a detailed mapping of compliance across all 15 ESP principles (see Section II.E). The findings directly informed the development of a context-specific Environmental and Social Management Plan (ESMP) (Annex 3).

Overall, Project AWARE demonstrates strong coherence with the Adaptation Fund's ESP framework. All proposed activities-including climate-resilient water systems, rangeland management, groundwater recharge through nature based solutions, and sustainable waste infrastructure-integrate key safeguards on environmental integrity, human rights, and social equity. The project explicitly embeds core ESP principles such as access and equity, gender equality, protection of natural habitats, pollution prevention, and public health. Potential risks-such as those related to proper waste management-have been identified and are being addressed through inclusive planning and robust screening tools.

As detailed further in Section II.H, the proposal was shaped through a participatory, multi-level consultation process involving stakeholders at both national and county levels. Community-level engagements-particularly with women and marginalized groups-were intentionally designed to ensure safe spaces for open dialogue. These consultations have ensured that the project is responsive to both national and sub-national priorities, while directly reflecting the needs, knowledge, and aspirations of vulnerable populations, especially women.

Detailed number of beneficiaries and economic benefits per output are described in Annex 9 and summarized below. Economic, Social and Environmental Benefits by Component are described in Annex 7.

B.1 Economic benefits

It is known that improved water supply and sanitation and water resources management boosts countries' economic growth and contributes greatly to poverty reduction. A Stockholm International Water Institute (SIWI) report[35] shows that among the world's poor countries, those with access to improved water and sanitation services experience greater economic growth. Poor countries with improved access to clean water and sanitation services enjoyed annual average growth of 3.7%. Poor countries with the same per capita income but without improved access had an average annual per capita GDP growth of only 0.1%. The report further outlines how economic benefits from investments in the WASH sector range from 3 – 34 USD per 1 dollar invested. Part of this is manifested through the time people (usually women and children) spend on water collection. By increasing water

[35] Stockholm International Water Institute (SIWI). (2005). *Making water a part of economic development: The economic benefits of improved water management and services*. Stockholm International Water Institute. Retrieved from https://siwi.org/wp-content/uploads/2015/03/csd_making_water_part_of_economic_development_2005-3.pdf

access, collection time will be reduced, saving time for other economic activities and schooling and thus increasing disposable income.

Investing in ecosystem restoration in the rangelands and farmlands generates various immediate and economic benefits, making it a cost-effective strategy to enhance agricultural productivity, improve rural livelihoods and reduce risks. According to IFAD[36], estimates show that each 1 USD invested in restoration generates up to USD 30 in economic returns. Additionally, enhancing healthy soils has the potential to offset between 5 to 20% of global emissions while boosting food security. Specifically, healthy ecosystems reduce vulnerability to droughts, floods and other climate-related disruptions, ensuring stable food production and increased availability of forage and fodder results in healthier and productive livestock. Resilient ecosystems buffer against extreme weather events, reducing the economic burden of recovery efforts and enhance the capacity of water assets/infrastructure to attain their intended investment outcomes.

Diversified income streams through nature-based enterprises such as fodder, gums and resins, grass seed, among others present opportunities for communities to improve their livelihoods. Diversified income streams through nature-based enterprises such as fodder, gums and resins, grass seed, among others present opportunities for communities to improve their livelihoods.
Communities targeted by the project currently do not have efficient and structured systems of engaging in these enterprises to improve their livelihoods, including proper tools and equipment. Estimates indicate that a well-managed community group managing a 10-acre piece of land can earn about USD1,050 per season, with the possibility of about two harvests per year. For hay production, one acre of land in the ASALs can yield an average of 120 standard bales of hay. With two harvests annually, a 10-acre enclosure managed by a community group could earn about USD 7,200 annually. For gums and resins, there is potential for individual collectors to obtain about USD 580 per year, with higher incomes when individual collectors form aggregator groups. Key aspects that the project will support the communities with to contribute to such incomes or higher include training on best practices in management, harvesting, provision of market linkages and aggregation, provision of start-up kits that include relevant tools and equipment and anchoring the practices on sustainable land management.

Deliberate targeting for marginalized women and youth will be key in ensuring that these groups are prioritized for the interventions and support through this proposed project. Beneficiary targeting will focus on ensuring that 56% of the beneficiaries are women, with 17% of them being youth.

Well-coordinated anticipatory action (AA) has been shown to deliver significant economic benefits by reducing disaster-related losses before they occur. According to global evidence, every $1 invested in anticipatory action can yield between $3 and $15 in avoided disaster losses, depending on the hazard, context, and the timeliness of the intervention[37]. These savings stem from reduced emergency response costs, lower damage to infrastructure and livelihoods, and faster recovery times. By acting before predictable hazards like droughts or floods strike-such as by pre-positioning resources, securing water supplies, or supporting at-risk households-AA not only protects lives and assets but also strengthens long-term resilience, particularly for vulnerable groups like women, children,

[36] https://www.ifad.org/en/w/news/cop16-with-investment-small-scale-farmers-can-restore-lands-and-deliver-significant-food-security-climate-and-economic-benefits#:~:text=Estimates%20show%20that%20the%20benefits,emissions%20while%20boosting%20food%20security

[37] Kenya National Technical Working Group on Anticipatory Action. (2024). Kenya Anticipatory Action Roadmap 2024 - 2029. Nairobi. https://www.icpac.net/documents/923/Kenya-Anticipatory-Action-Roadmap-2024-to-2029.pdf

and persons with disabilities. The cost-effectiveness of AA makes it a compelling strategy for climate adaptation and disaster risk reduction, especially in fragile and hazard-prone regions such as Kenya's arid and semi-arid lands.

B.2 Social benefits

Improved access to water in North Eastern Kenya brings major social and economic benefits. It reduces waterborne diseases, improves hygiene, and frees up time—especially for women and children—to pursue education and income-generating activities. Clean water also supports agriculture and livestock, boosting local economies and food security. Socially, it empowers women, promotes gender equality, and reduces conflicts over scarce resources. Reliable water access strengthens community resilience to climate change by supporting drought preparedness and sustainable livelihoods.
By integrating water access with climate adaptation—like food diversification and nutrition education—communities become more self-sufficient and better equipped to face environmental challenges. This leads to lasting improvements in health, nutrition, and economic stability.

B.3 Environmental benefits

To ensure environmental sustainability and prevent groundwater sources from getting depleted, this program will invest in strengthening groundwater monitoring. The investments in sub-catchment management plans (SCMPs) will also ensure sustainable (ground)water management.

Restoring arable and pastureland is critical to food security; thus, transforming food systems from a primary cause of degradation into a solution for ecosystem recovery. Sustainable agricultural practices such as diversified cropping, regenerative farming and integrated pest management can enhance soil health, improve water retention and increase carbon sequestration. These practices will enhance the resilience of ecosystems, enabling them to support the communities highly dependent on them as a source of livelihood.

Increased vegetation cover in the rangelands will reduce soil erosion and enhance rangeland health. Restored ecosystems also improve the natural water cycle, replenishing aquifers and promoting sustainable land management.

B.4 Vulnerability and Beneficiaries Analysis

Figure 15 illustrates the cyclical nature of droughts and floods in Kenya, with severe events occurring approximately every two years and affecting millions of people. As outlined in Section I.A, these climate hazards are projected to intensify in frequency and severity under future climate change scenarios. A summary of the key climate risks and underlying vulnerabilities in the project's target areas is provided in Annex 8.

Figure 16 includes a series of risk maps generated from Kenya's Children's Climate and Disaster Risk Model. These maps highlight the high levels of vulnerability in the target counties-Marsabit, Wajir, Mandera, and Garissa:

- The left map shows that all four counties fall within the highest composite risk category for climate and other hazards.
- The middle map highlights that three of the four counties rank in the highest

category of child vulnerability, indicating that critical systems-such as water supply, nutrition, and health-are fragile and ill-equipped to withstand climate shocks.

- The right map confirms that these counties also face extreme water scarcity, further compounding their vulnerability.

These data-driven insights confirm that the project is focused on the most climate-vulnerable populations, particularly children and women, in regions where exposure to hazards intersects with deep systemic weaknesses.

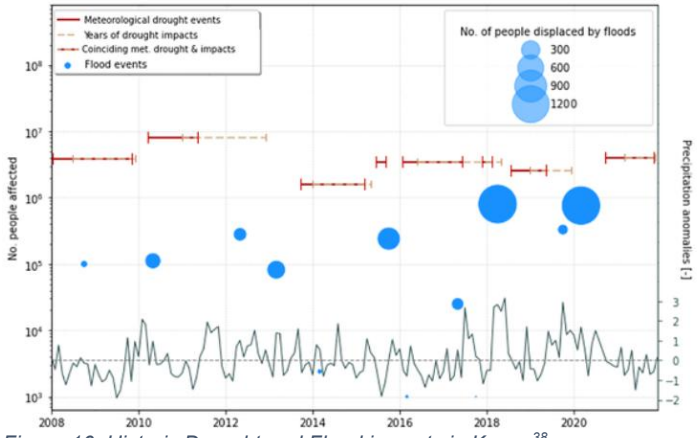
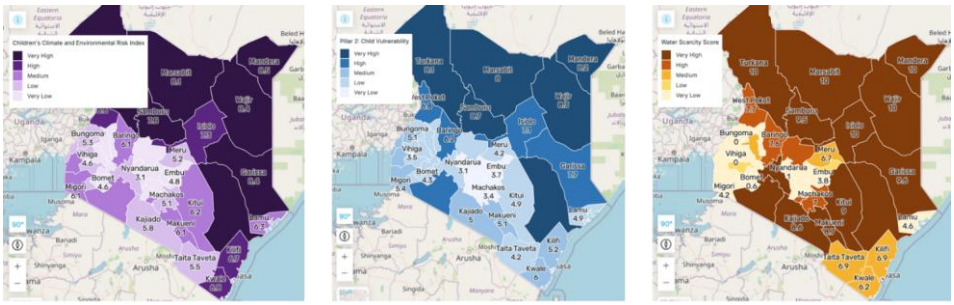


Figure 16: Historic Drought and Flood impacts in Kenya[38]



Composite risk index per county in Kenya

Composite child vulnerability in Kenya per county

Exposure to water scarcity in Kenya per county

Figure 17: Composite risk indices from CCDRM

B.5 Economic, social and Environmental benefits of USP

Adopting the Unidentified Sub-Project (USP) approach for the waste management facility (activity 5.2.3) allows for better-informed and context-specific decisions that enhance long-term sustainability. Environmentally, it

[38] Caught Between Extremes: Understanding Human-Water Interactions During Drought-To-Flood Events in the Horn of Africa - Scientific Figure on ResearchGate. Available from: https://www.researchgate.net/figure/Drought-and-flood-events-and-impact-timeline-for-Kenya-a-and-Ethiopia-b-The-time_fig2_363239374 [accessed 24 Apr 2025]

enables proper site selection based on flood risk, soil conditions, and proximity to sensitive ecosystems, avoiding maladaptive outcomes. Socially, it creates space for meaningful engagement with local communities and vulnerable groups, improving ownership, inclusion, and social acceptance. Economically, the phased approach prevents premature investments in unsuitable locations and supports more efficient use of resources. Further detail on these benefits is provided in Annex 15.

C. Cost effectiveness

The proposed project is designed to be both cost-effective and sustainable. By leveraging existing infrastructure and frameworks established by the government and UN agencies, the project minimizes the need for new administrative and operational structures, ensuring that implementation costs are kept low. Additionally, the project will require minimal extra staffing, primarily focused on enhancing the capacity of current staff through targeted training, which further reduces operational costs.

Investing in climate adaptation, particularly in improving water access, livelihoods, and early warning systems, has been proven to be cost-effective over time. For instance, improving water infrastructure such as rainwater harvesting systems, boreholes, and groundwater management helps mitigate the impact of droughts and floods. This reduces the need for expensive emergency relief and reconstruction efforts following climate events. The integration of early warning systems (EWS) will also allow communities to anticipate and prepare for climate shocks, thereby minimizing the economic impact of these events. Reports by international organizations such as the World Bank indicate that investing in water infrastructure significantly lowers long-term costs compared to emergency responses, as it fosters greater resilience against climate change-induced water scarcity[39].

Further, the proposed approach will also systematically address root causes of gendered vulnerabilities and inequalities that contribute to communities not being able to achieve optimal use of natural resources in a sustainable and resilient manner.

C.1 Comparison with Alternative Options

To demonstrate cost effectiveness of the infrastructure interventions the project evaluated multiple options feasible in the target areas and identified the most cost effective and technically feasible options. For component 1, Table 4 contains an analysis of different options for water systems in the target counties, and related reach and costs.

The decision to focus on boreholes and sand dams in this project was based on a combination of cost-effectiveness, long-term sustainability, and feasibility and suitability in the local context. Compared to other water supply options like reverse osmosis (RO) systems and water trucking, boreholes and sand dams offer a much more reliable and affordable solution for rural and semi-arid communities.

Boreholes, especially those powered by solar pumps, have a moderate capital cost at 75,000 USD Their annual operation and maintenance (O&M) costs are relatively low-between $500 and $1,500- and they can serve approximately 2,000 people. With a lifespan of 10 to 20 years, boreholes are a practical and resilient option, particularly in areas with accessible groundwater. The use of solar power also reduces dependency on fossil fuels and lowers running costs, making boreholes more sustainable over time.

[39] World Bank Group. (2023, November 17). Climate Action Key to Kenya's Upper-Middle-Income Country Aspirations. World Bank. https://www.worldbank.org/en/news/press-release/2023/11/17/climate-action-key-to-kenya-s-afe-1123-upper-middle-income-country-aspirations

The project will also identify locations for strategic boreholes for multi village schemes, connecting multiple villages in a radius of 3-5 km. With an average cost of 200,000 USD, the multi-village water schemes can reach an average of 6,000 people with safe water, bringing a good cost/beneficiary ratio.

Sand dams, on the other hand, are even more cost-effective. With a capital cost of $40,000 and extremely low annual O&M costs of just $250 to $500, sand dams provide water at a cost of just $0.1 to $0.5 per cubic meter-far cheaper than other systems. They also have a long lifespan of 20 to 30 years and support approximately 1,000 people per dam. Sand dams not only supply water but also recharge groundwater, improve soil moisture, and help restore local ecosystems, making them a highly climate-resilient solution. Their construction and maintenance can also be managed by local communities, increasing ownership and long-term sustainability. Sand dams will be preferred options in locations where borehole water have high salinity, availability of seasonal rivers, availability of sand and feasibility of the location to anchor the sand dam in the bed rock in a reasonable depth

In contrast, reverse osmosis (RO) systems are significantly more expensive and technically complex. They require a high initial investment-typically $150,000 to $200,000-and annual O&M costs can reach $20,000 to $50,000. The cost of water production ranges between $1.00 and $3.00 per cubic meter, which is 20 to 100 times higher than sand dams. RO systems also have shorter lifespans (7 to 15 years) and are less suitable for community-based management due to the technical expertise required for maintenance. Furthermore, RO systems produce a large volume of brine-a highly concentrated waste stream that must be carefully managed. If not handled properly, this waste can contaminate soil and water sources, creating additional environmental concerns.

Water trucking, which is the main water supply method for the target villages during the dry seasons is also not a viable long-term solution. While it requires lower capital investment, the cost per cubic meter is extremely high-between $10 and $50-and the approach is logistically complex and only suitable for short-term emergency response. It is not scalable or sustainable for providing daily household water needs. Besides, the trucks are usually diesel powered and emit significant amounts of greenhouse gases.
Ultimately, the project prioritized boreholes, multi-village water schemes, and sand dams because they provide a reliable, cost-effective, and community-driven solutions that aligns with climate resilience goals. They ensure that large numbers of people can access safe water over the long term without incurring the financial and environmental costs associated with RO systems or water trucking.

Table 4: Cost comparison between different interventions considered for component 1

Water System	**Capital Cost (USD)**	**Estimated O&M Cost (USD/year)**	**Cost per m³ (USD)**	**Number of Beneficiaries**	**Lifespan (Years)**
New Borehole (solar-powered pump)	$75,000	$500 – $1,500	$0.50 – $1.50	2,000	10 – 20
Sand Dam	$40,000	$250 – $500	$0.1 – $0.5	1,000	20 – 30
Multi village water schemes	$200,000	$1,000-$3,000	$0.50 – $2.00	6,000	15-25 years
Water Trucking	N/A (operational only)	$10 – $50 per m³	$10 – $50	Variable (emergency use)	N/A
Reverse Osmosis (Medium Commercial,	$150.000 - $200,000[40]	$20,000 – $50,000	$1.00 – $3.00	1,000 – 5,000	7 – 15

large scale)					

Under **Component 2**, the project's approach offers a strategy, focusing on an integrated approach for long-term community empowerment, food security, enhanced land productivity and economic development. The project appreciates the interconnectedness of livelihoods in the ASALs where most inhabitants combine livestock keeping, crop production and trade, and as such, taking this into consideration contributes to building the communities' resilience to climate change related shocks. An integrated approach presents the opportunity to reach a larger beneficiary base, achieve sustained impact and enhance scalability of interventions.

The purpose is to provide a basis for growth to address root causes and build the resilience of communities and natural ecosystems to climate variability and other shocks. With the primary goal of strengthening the resilience and sustainability of food systems in the ASALs, the project thus is focusing on empowering vulnerable communities including agro-pastoralists and pastoralists.

Enhanced access to reliable water as a factor of production, improved land productivity, and increased access to markets, through stronger value chains (including nature-based enterprises), linkages with the private sector and improved access to finance, will increase the opportunities for livelihood adaptation, will raise incomes and asset ownership amongst pastoralist and agro-pastoralist communities, and will enable and sustain ecosystem restoration activities. Restoration of rangeland landscapes will increase overall productivity and reduce climate risks by improving the overall supply of fodder, water and other critical productive inputs. The outcomes will include increased food and water security and greater income security.

For **component 3,** the project utilizes free open-source technology (Google flood hub), saving significant costs otherwise incurred on the development of a flood model and the continuous staff necessary to operate it. It is worth mentioning that the free Google Flood hub outperforms state of the art flood models[41]. By further partnering with existing radio channels, no new and expensive communication networks will need to be set up. Similarly, working with existing Community Health Promotors and strengthening their capacity, does not necessitate the recruitment of additional staff. Lastly, by further investing in county government capacity and budget allocation towards Anticipatory Action and DRM, sustainability of interventions is ensured.

Component 4, focused on system strengthening for enhanced climate adaptation coordination in the ENRB, represents a cost-effective investment when compared to the alternative of fragmented, one-off capacity-building initiatives or siloed adaptation planning at national and county levels. The allocation is strategically spread across four outputs-each targeting systemic levers such as technical skills, institutional coordination, youth engagement, and knowledge platforms. Instead of duplicating efforts across counties or sectors, this component bundles high-impact interventions like annual County Climate Change Unit (CCU) meetings and sector-wide National Adaptation Plan (NAP) consultations to create synergy and institutional ownership. For instance, Output 4.1 supports both training and coordination across multiple counties, offering a scalable and consistent model that builds institutional memory over time-far more efficient than stand-alone technical assistance missions which often lack continuity. Moreover, Output 4.4's focus on building and maintaining a centralized knowledge management platform significantly reduces long-term transaction costs and duplication of data and training efforts. In contrast, developing and maintaining separate systems for each stakeholder group would require substantially more resources without ensuring interoperability or shared learning. The platform consolidates tools, templates, and oversight mechanisms to ensure real-time data usage and cross-county collaboration. By combining capacity building with operational tools, the platform enhances transparency and coordination while minimizing the cost of future program rollouts-making this integrated, participatory approach a cost-effective and scalable model for climate adaptation governance in Kenya.

The proposed interventions under **Component 5** are highly cost-effective for several reasons. Firstly, they emphasize nature-based and decentralized waste management solutions that are significantly less capital-

[41] Nearing, G., Cohen, D., Dube, V. *et al.* Global prediction of extreme floods in ungauged watersheds. *Nature* **627**, 559–563 (2024). https://doi.org/10.1038/s41586-024-07145-1

intensive than conventional methods such as large-scale incineration plants. Incineration, while technologically viable, does not promote circular economy principles and often requires complex operations, higher energy inputs, and presents environmental and health risks, especially when not optimally managed.
In contrast, the proposed climate-resilient waste management infrastructure-such as Material Recovery Facilities (MRFs), segregation and recycling infrastructure-are low-tech, scalable, and well-suited to the capacities and resources of the implementing counties. These options are more adaptive to local contexts and easier to operate and maintain by communities, reducing long-term operation and maintenance costs.

Additionally, these interventions have multiple co-benefits that further enhance cost-effectiveness:

- Employment creation along the waste management value chain, including collection, sorting, recycling, composting, and retail of recovered materials.
- Community ownership and acceptability, which minimizes resistance and maximizes long-term sustainability of interventions.
- Protection of water sources from pollution during flood and drought events, thereby reducing downstream costs related to water

Applying the USP approach to the proposed climate-resilient waste management site in Marsabit (activity 5.2.3) ensures that funds are only committed once the design is finalized and the site is confirmed to meet environmental, social, and technical requirements. This avoids premature spending on land acquisition, construction, or mitigation measures that may later prove unsuitable or require redesign. By aligning investments with actual needs and risks, the USP approach reduces inefficiencies, improves value for money, and supports responsible use of project resources.

C.2. The Cost of Inaction

The cost of inaction on climate resilience and water scarcity in Kenya especially in the ASAL regions is profound, particularly in light of the severe economic and social impacts of the recent droughts and floods. The drought from 2020 to 2022 was the worst in four decades, affecting over 4.2 million people and resulting in the death of approximately 2.5 million livestock[42]. This situation contributed to widespread food insecurity, with around 3.5 million people facing crisis or emergency levels of food scarcity.

In addition to drought impacts, flooding has exacerbated the humanitarian crisis. In early 2024, heavy rains resulted in catastrophic flooding that affected over 238,763 households, displacing more than 117,336 households and causing at least 478 fatalities. The floods destroyed approximately 92,256 acres of farmland and led to significant infrastructure damage, including the destruction of roads and water sources[43]. This compounded the challenges faced by communities already struggling from the effects of prolonged droughts, as many were still recovering from previous losses when the floods struck.

The recurring nature of these climate-related disasters creates long-term fiscal liabilities. Overall, Kenya's updated Nationally Determined Contribution (NDC) (2020) estimates that between 2010 and 2020, adverse climate change-related events led to annual socioeconomic losses of 3–5 percent of total gross domestic product (GDP). Without addressing water scarcity and enhancing climate resilience through proactive investments, Kenya will remain trapped in a cycle of vulnerability marked by repeated humanitarian crises, escalating poverty rates, and significant economic losses that undermine national recovery efforts and long-term sustainability.

[42] Kenya 2022 Drought Response in Review - Kenya. (2023, February 23). ReliefWeb. https://reliefweb.int/report/kenya/kenya-2022-drought-response-review
[43] Kenya | Floods - 6 month Operation Update (31/10/2024) - Kenya. (2024, October 31). ReliefWeb. https://reliefweb.int/report/kenya/kenya-floods-6-month-operation-update-mdrke058-31102024

Furthermore, Kenya loses about 6.9% of GDP due to hunger and undernutrition[44], with malnutrition contributing 24% to child poverty. Despite this, counties allocate only 0.9% of their budgets to interventions that address nutrition security. This proposal aims to integrate climate, food and nutrition interventions, implement anticipatory mechanisms, and promote sustained behaviour change, contributing for the reduction of the USD 38.3 billion predicted lifetime losses to the Kenyan GDP due to undernutrition.[45]

D. Project alignment with national or sub-national sustainable development strategies

The project directly contributes to Kenya Vision 2030 aims to transform Kenya into a newly industrializing, middle-income country providing a high quality of life to all its citizens by 2030 in a clean and secure environment. The implementation of the Kenya Vision 2030 happens through Medium Term Plans (MTPs). The **MTPIV 2023-2027**, mentions drought and climate change as the top two challenges for its implementation[46]. The 5 pillars of the MTPIV (Agriculture, Micro Small and Medium Enterprise Economy; Housing and Settlement; Healthcare; and Digital Superhighway and Creative Economy), all rely strongly on the reliable availability of water access. Investments proposed in this project will directly contribute to MTPIV by providing climate resilient, professionally managed water systems by prioritizing community engagement and ensuring the meaningful participation of women and youth.

Access to water at community level will also further advance the 2022-2027 **Bottom-up Economic Transformation Agenda (BETA).** Here, the Sector has been identified as a key BETA enabler. The key objectives are to intensify the provision of water infrastructure by strengthening of community structures in the participatory management of freshwater, coastal and marine resources and ecosystems and to enhance resilience, mitigation and adaptation to climate change[47]. As regards water for livelihoods, the focus on sustainable crop and livestock production and adoption of solar-powered irrigation infrastructure supports the BETA's key enablers, such as environment and climate change and aligns with the agriculture and food security pillar which is a key priority sector.

National Water and Sanitation Investment program (NAWASIP) Framework 2023 – 2030 developed in 2022 with available budget of USD 4.9 Billion and financing gap of USD6 Billion, NAWASIP has national targets to reach 100% water coverage in both urban and rural areas, 40% sewerage coverage, 60% non-sewered urban sanitation and 100% of reasonable sanitation in the rural areas by 2030 through four result areas of urban water supply, rural water supply, urban sanitation and rural sanitation. The proposed project will directly contribute to urban and rural water supply and urban sanitation result areas through planned interventions under component 1 and 5.

National Irrigation Sector Investment Plan (NISIP) launched in March 2025 provides a strategic blueprint for Government and private investments in the form of five complementary development pathways including expanded farmer-led irrigation development, high performing public schemes,

[44] GoK. COHA (2019). *Social and economic impact of child undernutrition in Kenya*. https://www.nutritionhealth.or.ke/wp-content/uploads/COHA_Infographics/COHA%20-%20Kenya%20Report%20-%20November%202019.pdf

[45] Atieno, S. (2019, May 3). *Science Africa*. Retrieved March 7, 2025, from https://news.scienceafrica.co.ke/nutrition-kenya-needs-to-increase-investment/

[46] The National Treasury and Economic Planning State Department for Economic Planning, KEY HIGHLIGHTS OF THE FOURTH MEDIUM TERMPLAN (MTP IV) 2023 – 2027 Highlights of MTP-IV

[47] Parliamentary Budget Office, Masinde, M., Nyaga, R., & Makara, L. (2023). Budget Watch for FY 2023/24 and the medium term: Operationalizing the Bottom-up Economic Transformation Agenda. In Budget Watch for FY 2023/24 and the Medium Term (No. 16) [Report]. Parliamentary Budget Office. http://www.parliament.go.ke/sites/default/files/2023-09/Budget%20Watch%202023_0.pdf (p. 28)

enabled corporate agribusiness, revitalized irrigation in ASALs and maximized community scheme benefits. The proposed project will directly contribute to revitalized irrigation in ASALs and maximized community scheme benefits by supporting food and fodder production in vulnerable pastoralist communities and enhancing community-based irrigation.

Kenya's National Adaptation Plan (NAP, 2015-2030) has made water and sanitation one of its priorities. The proposed project will directly contribute for the below sub actions of the NAP:

- Enhance capacity of institutions and bodies responsible for water and sanitation on climate change impacts and the water sector.
- Promote awareness on climate change impacts and the water sector including promoting public awareness on water conservation (recycling, wastewater management) and efficient water use.
- Mainstream disaster risk reduction measures in the water sector planning and service delivery, particularly in vulnerable, high risk regions.
- Promote the use of efficient irrigation systems.
- Enhance collaboration of trans boundary water resource management.
- Strengthen water resource monitoring and assessment for early warning and planning.
- Promote technologies that enhance water resource efficiency.

National Climate Change Action Plan (NCCAP, 2023-2027), acknowledging the uniquely vulnerable role of Leaving-No-One-Behind (LNOB) groups to the effects of climate change including effects on water, NCCAP has made youth and children one of its eight priority actions. The proposed project directly aligns to NCCAP Priority 1 (DRM), Priority 2 (Food & Nutrition Security), Priority 3 (Water, Fisheries, and the Blue Economy) and Priority 5 (Health, Sanitation and Human Settlements)

The proposed project is well aligned with Kenya's Updated **First Nationally Determined Contribution** (2020–2030), which prioritizes building climate resilience in critical sectors including water, agriculture, and disaster risk management. As implemented through the National Climate Change Action Plan (NCCAP), the NDC emphasizes decentralization and participatory planning, which the project mirrors through its anchoring in County Climate Change Action Plans (CCCAPs) developed from community-level risk assessments. All four target counties have prioritized water sector resilience in their CCCAPs, particularly in response to recurring droughts - the region's most severe climate hazard. Project activities such as the development of climate-resilient water infrastructure, managed aquifer recharge, nature-based solutions for catchment protection, and strengthening water governance and institutions directly respond to these local priorities. The project also contributes to the updated NDC's goals by promoting ecosystem restoration, improving food and nutrition security through climate-smart agriculture, enhancing early warning systems, and embedding inclusive, gender-responsive climate governance frameworks.

Kenya's **Second Nationally Determined Contribution** (2031–2035) builds upon the updated first NDC by increasing ambition and explicitly targeting a 35% reduction in greenhouse gas emissions by 2035 relative to the business-as-usual scenario, while deepening adaptation efforts. The proposed project advances several priority adaptation actions identified in the second NDC, including P1 (drought risk management), P4 (climate-smart agriculture), P7 (ecosystem restoration), P14 (climate-resilient water access), and P16 (climate-health linkages). It also supports systemic enablers like data and knowledge management, enhanced anticipatory action, and inclusive climate governance. In particular, the integration of health, water, and food systems under a resilience lens - along with strong youth and gender participation - directly contributes to Kenya's just transition goals. Moreover, the project's focus on institutional capacity-building, digital knowledge platforms, and integration with national systems such as the Kenya Climate Change Knowledge Portal (KCCKP) reinforces the enabling conditions necessary for long-term climate action under the 2031–2035 NDC framework.

The proposed project also aligns with the **African Union (AU) agenda 2063**, which emphasizes that

Africa shall have equitable and sustainable use and management of water resources for socio-economic development, regional cooperation, and the environment.

The proposed project is well-aligned with the **Kenya Climate Smart Agriculture Strategy and Implementation Framework (2017)** which has four objectives; enhance adaptive capacity and resilience of farmers, pastoralists and fisher-folk to advance impacts of climate change, develop mechanisms that minimize greenhouse gas emissions from agricultural production systems and create an enabling regulatory and institution framework and address cross-cutting issues that affect climate smart agricultural production.

Furthermore, to enhance future disaster response, urgent legislative and infrastructural improvements are advocated, including the passage of the **National Disaster Management Bill.** The project aims to develop and disseminate risk maps to define the floodplains, and the risks associated with having any type of activity within their geographical extent for the communities and to help local and national governmental agencies to prepare legislation and plans that ensure that these locations are not inhabited.

The Government of Kenya sessional paper No 01 of 2021 on national water policy promotes an inclusive and integrated approach to the management of water resources by ensuring measures are put in place for water resources management planning; water quality management; catchment protection and conservation; the development and application of appropriate technology; and the monitoring and information systems as well as to promote sustainable utilization of water resources. The national water policy has also developed a policy statement and policy directions on mainstreaming climate change and gender equality. The national water and sanitation services strategy 2019–2030 has clearly assessed climate risks and identified clear strategies for mitigation and adaptation including adoption of green technologies such as solar, wind, biogas and geothermal as well improving efficiency to contribute to the reduction of negative climate change effects by 2025. The national water services regulatory board has developed guidelines for utilities and county water departments for disaster prevention and management such as the disaster management plan which is a requirement for licensing of utilities.

Component 3 of the AWARE project, which focuses on enhancing early warning systems and anticipatory action, is closely aligned with Kenya's national **Hydromet priorities**. This component will contribute directly to strengthening the collection, dissemination, and use of hydrometeorological and climate data through support to existing national and sub-national forecasting systems. Specifically, the project builds on current initiatives by the Kenya Meteorological Department (KMD) and the Water Resources Authority (WRA) to enhance data sharing and forecasting capacities at the county and community levels. For example, Output 3.1 aims to improve flood early warning system accuracy by incorporating more data, including from open-source flood models and local streamflow observations, which complements national efforts to strengthen hazard monitoring and forecasting systems as outlined in **Kenya's 2024–2029 Anticipatory Action Roadmap.**

Additionally, the project promotes integration of impact-based forecasting and vulnerability data into anticipatory action triggers (Output 3.2), which aligns with ongoing national strategies to move towards a multi-hazard early warning approach. The anticipated use of tools such as Google Flood Hub and real-time weather and flow data from KMD and WRA directly supports Kenya's national objective of expanding and improving systemic observations and climate services. In doing so, the project strengthens the linkage between climate data producers and users, particularly in underserved and high-risk ASAL counties like Marsabit, Wajir, Mandera, and Garissa.

E. Project compliance with relevant national technical standards

Project AWARE (Adaptation for Water Access and Resilience in the Ewaso Nyiro River Basin) has been designed to fully comply with relevant national technical regulations and environmental laws, as well as the Environmental and Social Policy (ESP) of the Adaptation Fund.

A comprehensive environmental and social screening process has been completed in line with national requirements and the Adaptation Fund's ESP. Based on this process, activities have been categorized according to potential risk, and appropriate mitigation and monitoring measures are being integrated into project design.

E.1 Compliance with National Technical Standards

- **Environmental Management and Coordination Act (EMCA, 1999, Cap 387):** The project aligns with the provisions of EMCA, which provides the legal framework for environmental protection and sustainable resource use in Kenya. All activities with potential environmental or social impacts, such as water infrastructure and land restoration, are subject to screening under this Act.
- **Environmental (Impact Assessment and Audit) Regulations, 2003 (Revised 2019):** The project follows these regulations for the categorization of activities and the development of Environmental and Social Management Plans (ESMPs) for all interventions deemed Category A or B. These ESMPs guide mitigation measures, institutional responsibilities, and environmental monitoring.
- **Water Act, 2016:** All project activities related to groundwater abstraction, recharge, and water infrastructure development comply with the Water Act. This ensures legal water use, sustainable aquifer management, and equitable access in accordance with national water governance standards.
- **Water Harvesting and Storage Regulations (2021):** The design and implementation of managed aquifer recharge (MAR) systems, shallow wells, water pans, and other storage infrastructure are in line with these regulations, supporting safe, regulated, and climate-resilient water access.
- **National Climate Change Action Plan (NCCAP 2023–2027):** The project contributes directly to NCCAP objectives under water resource management, disaster risk reduction, and climate-resilient livelihoods, aligning with Kenya's Nationally Determined Contributions (NDCs) and broader national climate resilience agenda.

The AWARE project will adhere to all relevant national technical standards as stipulated by Kenyan law, particularly those governing water infrastructure development, environmental protection, and the use of nature-based solutions (NbS). A summary table below outlines the applicable licenses and authorizations required for key infrastructure and water-related activities:

Table 5: Project alignment with relevant national standards

Project Output / Activity	License or Authorization Required	Issuing Authority
Drilling and equipping of boreholes	Water abstraction permit; drilling permit	Water Resources Authority (WRA)
Construction of water pans, sand dams, and recharge structures	Water use permit; construction permit; EIA license (if applicable)	WRA; County Governments; NEMA

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Installation of solar pumping systems	Compliance with Kenya Bureau of Standards (KEBS) electrical codes	KEBS; County Energy Departments
Construction of Material Recovery Facilities (MRFs)	Development approval; solid waste management license	NEMA; County Environmental Committees
Wastewater and water quality monitoring systems	Environmental Monitoring Plan approval	NEMA; Ministry of Water and Sanitation

To ensure full compliance, the project has put in place a robust mechanism to obtain all necessary authorizations and implement activities in line with national standards and environmental regulations. This integrated compliance approach ensures that the AWARE project not only meets the national technical and legal standards but also strengthens institutional accountability and environmental safeguards at the county and community levels.

To ensure compliance with these standards, the project will:

1. **Undertake site specific Environmental and Social Impact Assessments (ESIAs)** or screenings in line with the Environmental Management and Coordination Act (EMCA 1999, revised 2015) and the AF ESP, and obtain clearance from the National Environment Management Authority (NEMA) where required.
2. **Apply for all relevant water abstraction and infrastructure permits** from the Water Resources Authority (WRA), including site-specific hydrogeological reports for borehole drilling, groundwater use, and surface water impoundment.
3. **Ensure that all project designs meet Kenyan codes and standards**, including technical specifications from the Ministry of Water, KEBS (water quality), and county-level building and engineering regulations, as well as geological and environmental considerations.
4. **Collaborate with county governments** and line ministries during project planning, especially for interventions involving land use change or ecosystem restoration, to obtain necessary approvals.
5. **Ensure adherence to the Adaptation Fund's Environmental and Social Policy**, including compliance with the 15 ESP principles, through the Environmental and Social Management Framework (ESMF) and related tools outlined in Annex 3.

Despite being an Unidentified Sub-Project (USP), Activity 5.2.3, the climate-resilient waste management site near Marsabit town, will guarantee full compliance with all relevant technical standards. Through activity 5.2.2, the project will finalize a detailed, site-specific design that meets **Kenya's Sustainable Waste Management Act** criteria and incorporates best practices for flood resilience, pollution control, and safety. This approach ensures that the facility will be technically sound, climate-adapted, and fully aligned with the Adaptation Fund's Environmental and Social Policy, securing both regulatory compliance and long-term sustainability. This is further detailed in Annex 15.

E.2 Alignment with the Adaptation Fund Environmental and Social Policy (ESP)

The project is fully compliant with the Adaptation Fund's ESP, including:

- **Risk Screening and Categorization:** All activities have been screened for environmental and social risks in accordance with the ESP's 15 principles. Where necessary, ESMPs have been developed to ensure that identified risks are managed responsibly.

- **Gender Equality and Social Inclusion:** The project applies a gender-responsive approach, ensuring that women, youth, and marginalized groups are actively engaged in planning, decision-making, and benefit-sharing. Special attention is given to water access, time burdens, and livelihood diversification for women.
- **Stakeholder Engagement and FPIC:** Meaningful consultations have been conducted with local communities and stakeholders, respecting Free, Prior, and Informed Consent (FPIC) principles, especially in areas with Indigenous communities.
- **Grievance Redress Mechanism (GRM):** A multi-level GRM has been developed to allow communities and stakeholders to raise concerns during implementation. The GRM will be accessible, culturally appropriate, and gender-sensitive.
- **Environmental and Social Management Measures:** ESMPs and other safeguard tools have been developed for relevant activities to ensure continued compliance with both national regulations and the Adaptation Fund's ESP. These will be monitored throughout implementation.

F. Project complementarity to existing similar projects

The AWARE project, will complement the below initiatives by expanding the reach to more beneficiaries and taking forward best practices and lessons learned:

Horn of Africa Groundwater for Resilience (Hoagw4r) Program - The Ministry of Water, Sanitation and Irrigation is implementing the Horn of Africa Groundwater for Resilience (Hoagw4r) Program. This program's objective is to increase sustainable access and management of groundwater in the Horn of Africa borderlands (Wajir, Garissa, Turkana, Marsabit and Mandera Counties). Through the Program, 400 boreholes will be drilled and/ or rehabilitated with the associated distribution networks, 50 exploratory wells, Managed Aquifer Recharge and restoration of Groundwater Catchment Areas and capacity building of Water Resources Users Associations (WRUAs).

Kenya Water, Sanitation and Hygiene Programme (K-WASH) – The World Bank Funded K-WASH programme support the Government's objective under NAWASIP to accelerate the achievement of universal access to safe water supply and improved sanitation services in Kenya's 47 counties by 2030 in an affordable, equitable, and sustainable manner to address the dual challenge of increasing and sustaining access to improved rural water services and rural sanitation challenges, improving the governance, accountability, operational efficiency, and financial performance of WSPs, and improve coordination, and strengthen sector monitoring and reporting to ensure that sustainable rural WSS are provided.

The Financing Locally-Led Climate Action (FLLoCA) program, supported by the Government of Kenya and the World Bank, focuses on empowering local communities to implement climate resilience projects, including water-related initiatives. In northeastern Kenya, FLLoCA has facilitated the rehabilitation of boreholes, installation of solar-powered water systems, and development of water harvesting and distribution infrastructure. These projects aim to enhance water access and management, thereby improving livelihoods and food security in the region[48].

More Water More Life initiative – UNICEF is currently implementing a sustainable groundwater innovation project dubbed "More Water More Life initiative" in the Arid and Semi-Arid Land (ASAL) counties of Turkana, Samburu, Marsabit, Mandera, Wajir and Garissa counties to build resilience of communities to droughts and floods that are exacerbated by the effects of climate change by applying

[48] Financing Locally Led Climate Action (FLLOCA) program: Multi-Sectoral team conducts feasibility study and community engagement. (n.d.). County Government of Mandera. https://mandera.go.ke/financing-locally-led-climate-action-flloca-program-multi-sectoral-team-conducts-feasibility-study-and-community-engagement/

a combination of technical-scientific desk study methods and field validation for mapping underground water resources which enables accessing the far-flung areas that were hard to reach using the conventional survey methods to increase the drilling success rate and consequently enhance sustainable and climate-resilient water services serving multiple villages in water scarce locations.

Strengthen Community Resilience in Turkana County through Improved Water Management- This KOICA funded, and UNICEF implemented WASH programme started in 2019 and will continue to 2027. The project includes construction of solar powered water supply facilities, sand dams and sanitation and hygiene interventions for communities and institutions. The AWARE program will further benefit from the successes and lessons learned from this project in a climatically similar setting.

Climate Resilient Food Systems (CRFS) - The programme will further complement and scale up ongoing interventions especially within the Climate Resilient Food Systems (CRFS) Programme under implementation by WFP and related to strengthening the resilience of communities within the ASALs. The CRFS Programme is being implemented in 10 ASAL counties (Samburu, Isiolo, Wajir, Marsabit, Garissa, Tana River, Mandera, Makueni, Baringo and Turkana), targeting 885,000 beneficiaries (51% of whom will be women), over a 4-year period. The implementation is based on a hub model which is an area-based approach consisting of a well-defined geographic area or network within a county where to layer, integrate and sequence climate-resilient investments in terms of integrated water solutions, ecosystem restoration, climate risk management, anticipatory actions, alternative livelihood options, climate-smart agro-pastoral and pastoral practices, value chain and market opportunities while nutrition and gender actions are key crosscutting consideration during implementation. In fragile areas such as the ASALs, the hubs aim at optimizing investments and maximizing results and impacts to progressively build community and ecosystem resilience.

Furthermore, the project will benefit from the results and the related experiences and lessons learned from UNESCO past activities in assessing the 2024 Nairobi floods and in piloting the CDI (Capacitive De-Ionization) technology in Naivasha for groundwater desalination as well those of the project “Enhancing Flood Resilience in Kenya”, which is under implementation at the lower Tana river basin.

A detailed analysis of the mentioned projects and project AWAREs complementarity can be found in Annex 10.

G. Learning and knowledge management

The Government of Kenya will lead the knowledge management (KM) function for climate adaptation, leveraging existing structures to ensure effective coordination and dissemination. Through the AWARE project, KM will be strengthened to ensure timely, structured, and accessible climate information reaches policymakers, local communities, and key actors at national and county levels. All knowledge products developed under AWARE will be made publicly available through national and global platforms, enabling replication of successful interventions across climate-affected regions of Kenya. Below are the Key learning and KM activities planned by the project:

Kenya Climate Change Knowledge Portal (KCCKP)
Led by the Climate Change Directorate (CCD), KCCKP serves as Kenya’s central climate knowledge hub. However, operational capacity constraints have limited its full utilization. AWARE will support CCD through:

- Technical Assistance: Enhancing portal functionality and integrating structured data.
- Capacity Building: Training CCD staff in knowledge management practices and digital tools.
- Stakeholder Engagement: Facilitating partnerships to improve data quality and flow from diverse actors.

Collaboration with the Maarifa Centre The Maarifa Centre, hosted by the Council of Governors

(CoG), facilitates county-level knowledge exchange. AWARE will reinforce this by:

- Content Integration: Aligning adaptation content with county governance priorities.
- Capacity Strengthening: Training county officers in climate resilience knowledge management.
- Data Sharing: Supporting interoperability with national systems and enhancing county reporting quality.

Partnership with UNESCO's IHP-WINS

Kenya's water and climate data landscape remains fragmented across institutions. AWARE will support integration with UNESCO's IHP-WINS platform, which will serve as a centralized repository for water-related data. Key contributions include:

- Data Aggregation: Integrating datasets on groundwater, floods, and climate impacts.
- Visualization Tools: Offering interactive maps and dashboards for analysis and communication.
- Collaborative Knowledge Sharing: Ensuring open access for researchers, policy actors, and communities.

Expanded KM Activities Under AWARE

To operationalize the above platforms and commitments, AWARE will implement the following cross-cutting KM modules:

1. Information Collection & Structuring Training: Three annual training cycles will equip County Climate Change Units (CCUs), youth mentors, and stakeholders with standardized data collection skills using tools like KoBoToolbox and HackMD. These trainings will also cover interpretation and post-training mentorship to ensure local knowledge is effectively captured and structured.
2. Template and Taxonomy Development: A one-time co-design process will produce harmonized templates and data taxonomies for consistent climate reporting across counties. This includes expert consultation, county validation workshops, and translation into accessible, user-friendly formats, all aligned with HackMD structures.
3. Use of Online Software: The project will cover annual licensing, hosting, and technical support costs for digital tools including HackMD, Power BI, RapidPro, and KoBoToolbox. These tools will enable real-time collaboration, automated data flows, and low-bandwidth accessibility for mobile users.
4. Story Dissemination and Communication Training: AWARE will promote narrative-based knowledge sharing by training CCUs and youth on how to develop and disseminate local adaptation stories in multimedia formats. Outputs-ranging from radio spots to WhatsApp micro-videos-will strengthen local engagement and cross-county learning.
5. Centralized KM Management: The project will support the quality assurance, version control, and structured publication of county-sourced content. Cleaned and standardized data will feed into dashboards, mobile alerts, and web platforms, ensuring actionable insights are available to diverse users across Kenya.

The full knowledge management plan is in Annex 11

H. Consultative process

The consultative process, involving high-level leadership from ministries, UNICEF, development partners, UN agencies, and Relevant County Government departments, was held at both the national and sub-national levels. It engaged key stakeholders in water and climate change initiatives across various sectors. Community consultations were also conducted in all 4 target counties in carefully selected locations to ensure diversified geographic and demographic coverage of the consultations including covering the views of minorities, vulnerable groups, women and youth. A separate gender assessment was also conducted in line with the AF gender policy.

H.1 Government stakeholders

At the National level, the main goals were to validate objectives, gather feedback, and explore collaboration opportunities. Key objectives included co-creating the Theory of Change and Integrated Results Framework to align with existing and pipeline government and development partner's programmes and projects and avoid duplication of efforts, establishing governance structures, and aligning climate finance streams. The process also aimed to define agency roles for the Adaptation Fund proposal, present the concept to NEMA and MoWSI for feedback, and discuss budget alignment with environmental priorities. Additionally, bilateral meetings were held to explore government support and partnerships, while the AF Proposal was introduced to WATSAN DPG members.

At the County level, the main objectives of the consultations were to discuss relevance of proposed project components, identify priority areas and get technical input for the proposed interventions. The consultations were held both physically and virtually, with teams from UNICEF, WFP, and NEMA participating actively. Stakeholders identified key challenges, such as inadequate water infrastructure, delays in early warning systems, and limited resources for disaster response. They recommended solutions such as solar-powered water systems, nature-based solutions, and better coordination for disaster management. Emphasis was placed on the need for community involvement, particularly in youth and women's participation in climate action. The consultations also highlighted the importance of strengthening local capacity in climate adaptation and water management, improving coordination among stakeholders, and ensuring that interventions are sustainable and inclusive. The proposed interventions align with the county's existing climate change strategies and will be anchored in existing structures, such as the County Climate Change Committees and Ward-level climate planning committees. The feedback from these consultations helped to ensure that the project meets the needs of the communities and is feasible for successful implementation.

H.2 Community consultations

Community consultations were held in seventeen communities across the targeted areas in the four counties to inform the design of the proposed interventions. These consultations were conducted with the aim of understanding communities' experiences with water access, the effects of climate change, and local resource management practices. Additionally, they provided a platform to gather feedback on the proposed interventions, identify community-driven priorities, and validate the challenges already documented, while ensuring that the solutions remain inclusive, sustainable, and community-owned.

The process engaged a wide spectrum of community members, including elders, women, youth, community health promoters, , representatives from local water user committees, climate change and land committees, and village administrators. Particular attention was given to identifying and engaging marginalized and vulnerable groups such as women, youth, the elderly, persons with disabilities, representatives from minority groups and pastoralists communities. To ensure inclusivity, separate focus group discussions were conducted specifically for women and youth, creating a safe space for these often-underrepresented groups to speak candidly about their unique needs and vulnerabilities. This approach enabled a more deeper understanding of the differentiated impacts of water scarcity and climate change. It also helped identify ways in which women could be more meaningfully involved in the implementation and governance of water-related interventions. In regions experiencing high levels of migration-such as areas along the Liboi-Somalia border and parts of Wajir-internally displaced persons (IDPs) were also consulted, contributing their perspectives on cross-border water conflict, displacement, and seasonal movement. --

The discussions surfaced several key concerns. Communities consistently expressed that water insecurity remains a pressing issue, particularly during the dry season. Many depend on a single water source-often a water pan or borehole-that is frequently overstretched by the demands of both human

and livestock use. Diminishing water volumes, rising salinity levels, and aging or broken infrastructure were commonly cited problems. In these forums, women spoke strongly in favor of being actively involved in the planning and management of water points, as well as in income-generating activities like farming. Youth also demonstrated enthusiasm for taking part in managing water kiosks and adopting climate-smart agriculture initiatives.

Importantly, several communities proposed alternative or additional interventions not initially included as interventions in their area. These included the construction of sand dams, the protection and rehabilitation of dry riverbeds (laggas), and the fencing of water pans to protect them from overuse and contamination. In response, the proposal was adaptively revised to incorporate these suggestions. Requests for solarizing boreholes, separating water access points for people and livestock, and improving fencing around existing infrastructure were also prominently featured in the feedback.

Ultimately, the consultations affirmed the relevance of the planned activities while also offering critical insights that enriched the proposal.

Gender disaggregated data was collected during the community consultations to ensure meaningful participation of both women and men. Across the 8 sub counties, a total of 331 individuals participated in consultation activities. Of these, approximately 42% (138) were women and 58% (193) were men. In all locations, separate women's FGDs where cultural or social norms limited their participation in mixed gatherings and also to ensure that gender specific needs and perspectives were captured. Female facilitators were also involved to create comfortable spaces for expression.

A summary of consultation sessions, including gender disaggregation and representation of vulnerable groups, is detailed in Annex 12.

H.3 Gender assessment

Kenya has made significant progress in establishing a normative and legislative environment that recognizes Gender Equality as a critical factor in climate adaptation, with policies like the Climate Change Act (2016) and the National Climate Change Action Plan embedding gender inclusivity. However, among other constraints, challenges remain in implementation at county levels due to socio-cultural norms and resource limitations. The gender analysis employed secondary documents reviews on four counties of Garissa, Marsabit, Wajir and Mandera. The secondary data was complimented by qualitative methods, including key informant interviews (11 KII, 3W 8M), focus group discussions (8 FGDs with 8 participant each 32M, 32W), and participatory exercises on select two counties of Garissa and Marsabit. Data collection focused on four core pillars: Institutional Arrangements, Leadership and Participation, Access to Resources, and Social Norms.

Pillar 1: Institutional Arrangements: Counties have advanced gender-responsive climate adaptation by enacting gender-inclusive legislation, such as Garissa's gender-responsive budgeting amendments, and through programs like FLLoCA that condition funding on gender mainstreaming. All the four counties of Garissa, Marsabit, Wajir and Mandera have enacted the County Climate Change Action Plan (CCAP) with affirmative action policies, including the two-thirds gender rule which ensure women's and marginalized groups' representation in decision-making. However, challenges remain due to limited capacity in gender departments and uneven enforcement of these measures across counties.

Pillar 2: Leadership and Participation: Women play crucial roles in managing household water and early warning systems, yet their public participation remains limited due to cultural stigma and patriarchal norms. NGO-led livelihood initiatives empower women and youth financially, strengthening their influence. While formal gender quotas create entry points for women and People with disability in decision-making bodies, meaningful participation is often constrained by social norms.

Pillar 3: Access to Resources: Community water committees and climate adaptation projects have

improved equitable resource management, though barriers such as unequal access to technology, financial resources, and education persist. Women's involvement in environmental stewardship is recognized at the local level, yet scaling their participation in technical roles requires targeted capacity building.
Pillar 4: Social Norms, Beliefs, and Perceptions: Entrenched patriarchal norms and cultural beliefs continue to marginalize women, children, and persons with disabilities, affecting their access to education, health services, and decision-making in climate adaptation efforts. Addressing these social barriers is essential for sustainable, inclusive climate resilience strategies.

Based on field consultations and literature review, a comprehensive Gender Action Plan has been developed. It outlines specific gender actions, corresponding indicators, and how these contribute to measurable achievements in gender equality and social inclusion across all project components. In each AWARE project component, gender actions are paired with specific indicators to track progress and lead to concrete gender achievements. In Climate-Resilient Water Access, actions focus on addressing the unequal burden of water scarcity on women, with indicators tracking women's access and participation-leading to reduced drudgery and improved water equity. For Water Access for Climate-Resilient Livelihoods, gender actions ensure women and marginalized groups receive leadership roles and training, with indicators measuring their participation and livelihood gains, resulting in stronger economic empowerment and voice in resource management. In Early Warning Systems & Anticipatory Action, inclusive risk assessments and communication strategies are tracked through disaggregated participation data, enabling timely, equitable disaster responses that reduce vulnerability. Through Systems Strengthening & Climate Governance, institutional reforms and capacity building are measured by the number of GESI-responsive policies and diverse representation in governance platforms, leading to more inclusive and responsive adaptation systems. Lastly, in Waste Management & Water Quality, gender-responsive training and infrastructure are tracked via disaggregated participation and infrastructure use indicators, resulting in safer, more inclusive environmental practices and leadership in waste governance.

In conclusion, the situational analysis highlights notable progress and ongoing challenges in gender equity within climate resilience efforts in targeted counties. Women play key leadership roles in traditionally gendered domains like water collection, household management, and community early warning dissemination, reflecting growing recognition of their contributions. Access to land, water, and adaptation resources remains heavily gendered and controlled by men, with insecurity and gender-based violence further restricting women's safe participation. Deep-rooted social norms continue to limit women's and persons with disabilities' participation in broader decision-making spaces, where men still dominate key decisions on livestock, mobility, and formal responses. While policies and capacity-building efforts have increased women's representation, cultural stigma and logistical challenges, especially for marginalized groups, restrict meaningful involvement.

I. Justification for funding

Although the project will complement other funding interventions in the area, the activities and outputs targeted by this project will be fully funded by the Adaptation Fund. The Adaption Fund project components are designed in such a way that they have catalytic effect for scaling up by the government and other development partners by demonstrating integrated water supply project for multiple use (domestic consumption, livestock and small scale irrigation) in ASAL regions, demonstrating nature based solutions and enhancing the capacity of the national and county institutions for strengthening early warning systems by linking seasonal forecast with exposure and hydrological data for timely anticipatory actions. The knowledge management plan for this project will have a wider impact on the overall water sector knowledge in the ASAL regions by documenting the lessons of the project, improving KM institutions and creating real-time low-cost information management systems which are all critical components for addressing the adaptation need of the communities and

institutions.

Table 6: Justification for funding

Project/Programme Components	Baseline (without project)	Adaptation impact with project)	Evidence base
Component 1: Climate-resilient Water Access for Human and livestock Consumption	Water access in the ENRB is generally low and a large part of the population rely on surface water, which dry up seasonally and even more during worsening droughts people are either dependent on water trucking or displace to other locations. This is mainly due to poor sustainable infrastructure development and limited institutional capacity in the target areas. Floods also severely impact water access, destroying infrastructure and contaminating water sources, leading to cholera and other water borne diseases.	Through investments in groundwater resource assessment, institutional strengthening, Nature based water ground water recharge and retention and infrastructure development for sustainable and flood-resilient water access, communities in the target 4 counties will have reliable, year-round access to improved water sources - even during climate shocks. A strong focus on building government capacity will ensure the long-term sustainability of these improvements. This component of the project will also have a wider impact for the water sector by establishing knowledge and demonstrating new approaches for ASAL regions including Nature based water recharge facilities, sand dams and deep groundwater aquifers as Adaptation solutions than the traditional services focusing on shallow and medium depth boreholes	Existing UNICEF and government projects in target locations and other locations with similar environment including in Turkana and Samburu have proven to create enhanced resilience of communities in ASAL counties due to deep groundwater access and construction of sand dams. This is a common practice in many drought prone countries and often the most feasible cost-effective solution.
Component 2: Ecosystem restoration and climate resilient livelihoods for food and nutrition security	The middle and lower parts of the Ewaso Nyiro basin, primarily ASALs, face severe degradation due to overgrazing, poor land use and water-related conflicts. Declining productivity of land leads to food insecurity and economic hardship, particularly for women and youth. Financial constraints prevent investment in sustainable land management.	Integrated approaches that address water availability, ecosystem restoration by the project will enhance agricultural productivity for food and nutrition security. Climate smart agriculture practices and in-situ water harvesting practices will reduce yield losses and enhance soil moisture retention significantly, therefore extend cropping seasons and reduce yield losses. Further, supporting food production and establishment of nature-based enterprises that are primarily led by women and youth presents opportunity for livelihood improvement. This component will have a greater contribution for the irrigation sector in the ASAL regions by introducing alternative livelihood for pastoral communities that can be replicated in other communities	Every USD invested in restoration can generate up to USD 30 in economic benefits. Integrated ecosystem restoration interventions improve land productivity and food security in ASALs, with estimates of 79% increased agricultural productivity49 Nature-based enterprises contribute to diversified incomes, with income increases of 30-60% among women and youth groups according to NDMA50.
Component 3: Enhanced early warning systems and anticipatory action	Kenya is experiencing a cycle of droughts followed by flooding events, that result to avoidable high losses and damages in the region. Climate Change has a documented effect on changing	With investments in understanding and assessing the risk from floods and droughts; in establishing EWS and in capacitating decision makers and technical staff and in raising the awareness of the communities; and in providing them with tools to	EWS have been utilized extensively in Southern African countries resulting in reducing the vulnerability of the communities and enhancing their resilience.

49 **World Resources Institute (WRI).** (2020). *The Economic Case for Nature: A Global Earth-Economy Model to Assess Development Policy Pathways*. Washington, DC: WRI.
50 **National Drought Management Authority (NDMA).** (2022). *ASAL Livelihoods Diversification and Nature-Based Enterprises: Impact Briefs from Turkana and Marsabit*. Nairobi: NDMA.

	the rainfall patterns both in a spatial and temporal manner. Information on climate services (rainfall) does not reach the communities on the ground in a context sensitive way. There are no Early Warning Systems in place to provide Government and communities alike with enough time to minimize the effects of the weather extremes, especially floods. Furthermore, there is no capacity to understand, anticipate, plan for and respond effectively to future drought and floods events. Therefore, the vicious cycle of extreme weather events followed by heavy losses of lives and livelihoods and damages to property, potential harvests and income will continue to exist.	understand, plan, anticipate and respond to heavy rainfalls and long droughts, the vicious cycle will be broken and the resilience of both the communities and government to climate change effects will be enhanced. This component will have a wider contribution on existing early warning systems dominated by seasonal forecast by providing targeted risk information by integrating the seasonal forecast with exposure to hazard and hydrological data for early warning and anticipatory action	
Component 4: Systems strengthening for enhanced and inclusive climate adaptation coordination and knowledge management	Kenya's climate adaptation efforts face challenges due to weak coordination across sectors, limited county-level capacity, and incomplete vulnerability assessments. Fragmented initiatives undermine effectiveness. Youth and women are underrepresented in governance. The National Adaptation Plan (NAP) is outdated and not aligned to the 2025 NDCs. Knowledge management systems are underdeveloped.	Enhanced coordination and technical capacity in the water sector and strengthened County Climate Change Units (CCUs) will improve localized adaptation efforts. Updating the National Adaptation Plan (NAP) with current climate data will ensure that policies address emerging risks. Youth training and mentorship will foster innovative climate action, while an improved CCD Knowledge Platform will enhance knowledge-sharing and evidence-based decision-making. These efforts will lead to more effective, inclusive, and well-coordinated climate adaptation in Kenya.	Evidence from Kenya's County Climate Change Fund (CCCF) shows that strong county institutions improve adaptation outcomes. UNFCCC findings confirm updated NAPs better align with NDCs. Youth programs like the Africa Youth Climate Hub show trained youth drive innovation. Knowledge platforms globally improve coordination and decision-making.
Component 5: Waste management	Major urban centers within the Ewaso Nyiro Water Basin are facing increasing microbial and chemical contamination due to inadequate waste management and related infrastructure. If unaddressed, this will drive up water treatment costs and increase mortality among vulnerable populations.	Enhanced water quality monitoring, investment in appropriate waste management infrastructure, strengthened public awareness, and institutional capacity-building will significantly improve resilience in the domestic water sector and serve as a model decentralized and low cost waste management solution for replication in small and medium size towns across the region. Although Activity 5.2.3 is designated as an Unidentified Sub-Project (USP), there is minimal uncertainty regarding its anticipated adaptation impact. Provided that the design and site selection are conducted with due diligence, as ensured through the USP process, the expected impact will align with the projections outlined above.	Studies in Kenya (e.g., Water Services Regulatory Board reports) show that water quality monitoring and better waste management reduce contamination levels and treatment costs. WHO evidence links improved WASH infrastructure to lower disease burden and mortality. Institutional strengthening consistently correlates with more sustainable water management outcomes.

J. Sustainability of the project outcomes

The sustainability strategy of the project outcomes is summarized below, while the sustainability for each output is described in Annex 13.

J.1 Ensuring Community Ownership for Project Sustainability

The project recognizes that achieving long-term climate resilience outcomes requires meaningful and sustained community ownership. This principle is embedded throughout the project lifecycle, from initial consultations through implementation and governance structures.

Extensive consultations were conducted with 331 participants across seventeen communities in the four target counties, ensuring diverse representation, including women, youth, elders, community leaders and representatives (see II.H.2). These participatory processes validated community priorities and led to the revision of initially planned interventions. Activities such as the rehabilitation of dry riverbeds, solarization of boreholes, and fencing of water pans were incorporated from local input, affirming that the project is grounded in local realities and designed through a bottom-up approach.

The environmental and social screening process, aligned with the Adaptation Fund's Environmental and Social Policy (see II.K.), further reinforces community ownership as both a design requirement and a risk mitigation strategy. The project's low to medium risk ratings under key principles –*Access and Equity, Marginalized and Vulnerable Groups, Gender Equality and Women's Empowerment* – reflect deliberate efforts to ensure that interventions are equitable and community centered. Risks, such as the potential exclusion of vulnerable populations and ineffective participatory planning, are addressed through gender-responsive design, continuous community monitoring, and Environmental and Social Management Plans (Annex 3) and the Gender Assessment and Action Plan (Annex 5), which institutionalize local participation in risk mitigation and adaptive management.

To reinforce ownership and sustainability, the project embeds inclusive governance structures and decision-making platforms at every level of implementation. As detailed in the Project Implementation Arrangements (III.A.1), the Project Steering Committee includes representation from each target county, ensuring community voices inform strategic decisions. There are also numerous feedback loops in place for the community (see Figure 18). Key project outputs such as nature based ground water recharge facilities and construction of sand dams (output 1.2) climate-resilient groundwater infrastructure (Output 1.3) and climate-resilient water infrastructure for food security (Output 2.2) are designed through community validation. The formation and strengthening of water management community groups (Activity 2.2.3) with equitable participation of women, minorities, and other LNOB groups, establishes an institutional foundation for sustained operation and maintenance of infrastructure and resources. This approach will also be taken for the waste infrastructure under Component 5. Furthermore, a robust Grievance Redress Mechanism (Annex 4) ensures that all community members can raise concerns or provide feedback through accessible, culturally appropriate channels. This enhances transparency, accountability, and community trust throughout the implementation process.

Through these comprehensive approaches to community ownership, the project ensures that communities are not just beneficiaries but active partners in building their climate resilience, crucial for achieving sustainable outcomes beyond the project lifecycle.

J.2 Ensuring Government Ownership and Stakeholder Engagement

The sustainability of project outcomes also relies on strong government ownership and coordinated stakeholder engagement. The project recognizes that long-term functionality and sustained delivery of water supply services depends on clear commitment of government at national and local level and its accountability to consumers on the availability and quality of services provided. To foster accountability, the project anticipates investments in policy, legislation, institutional and co-ordination structures, and technical capacity to anchor the accountability of service performance and reinforce delivery systems. The project has also outlined clear roles and responsibilities of the Government and other partners that promotes accountability, prevents duplication of effort, and ensures that resources are used effectively to deliver the set targets.

All relevant stakeholders have been engaged in the planning and decision-making process from the outset,

making sure their needs related to project activities are understood and that they are able to meaningfully participate in the project activities (see Section II.H). All intended beneficiaries of the project outputs including government entities, private sector actors, communities, and small-scale farmers have demonstrated a clear understanding of the project objectives and expressed strong willingness to contribute in every possible way. They have already started supporting the project by identifying potential sources of data, information, and other relevant inputs. It is envisioned that through continued stakeholder engagement and consultations, including dedicated inception and closing meetings, beneficiaries will remain closely involved throughout project implementation.

J.3 Sustainability of infrastructure and services

For Component 1, the project will implement sustainable management models for new and rehabilitated water infrastructure. These models will apply pro-poor tariffs to fully cover operation and maintenance costs and will be tailored to each area in collaboration with county governments. Options include extending public rural utilities, strengthening community-based management through Technical Service Providers, and engaging Private Operators for complex systems. Oversight by the national water regulator and counties will ensure service quality and operational efficiency.

Pro-poor tariffs

Kenya's water sector regulator, the Water Services Regulatory Board (WASREB), requires pro-poor tariff designs that balance affordability and cost recovery. This means that all Water Service Provider (WSP) tariff structures must include a subsidized "lifeline" or social block for basic use for individual connections, low kiosk prices, and targeted cross-subsidies. These tariff structures ensure poor households can access a minimum water quantity at a low rate of 50 to 70% of the average tariff, while higher-use or non-residential customers pay more to ensure operation and maintenance (O&M) costs are fully covered. Two pro-poor tariff models will be applied in the project counties where poorer households receive subsidized water of Kes 50/m³ (USD 0.39/m³) for domestic use as illustrated in Table 7 below:

Table 7: Pro poor tariffs in water access

Lifeline (social) tariff for individual connection	Water Kiosk tariff
This is a low-priced first block of water for individual household connections. The first 1–6 m³ of monthly domestic consumption will be priced at a discount (often 50–70% of the average tariff) as per the WASREB guidelines. This block may in some instances even be priced below the utility's unit cost, subsidized by higher blocks or other users. In practice this means a poor family using only the lifeline quantity pays a much lower tariff. In effect, the purpose of lifeline pricing is to guarantee a minimum bill that most households can afford, advancing equity and the human-right to water while still retaining a structured tariff for cost recovery.	In Arid and Semi-Arid (ASAL) counties and informal settlements, many low-income households rely on water kiosks or standpipes rather than household connections. WASREB mandates that kiosk water be sold at a uniform rate "not higher than the lifeline block" and with only a modest operator margin. In practice, kiosk tariffs vary by utility and technology. The effect is that the water kiosk remains cheap or moderate for the user without individual connection to access a lifeline tariff. In policy terms, subsidized kiosks extend service to the very poor. They are often solar-powered or community-run; setting their price low (and roughly aligned with the social block) is crucial for affordability in ASALs.

The lifeline and kiosk tariff models are funded through cross-subsidy within the tariff structure. The national regulatory guidelines encourage utilities to balance affordability and financial sustainability by charging higher rates to larger and non-domestic users, effectively subsidizing low-income customers. For example, in GAWASCO's tariff case above, industrial/government users and large-volume domestic users pay much higher rates (up to Ksh 220/m³ for >300 m³) than the lifeline block. Multi-dwelling units or institutional users pay a flat Ksh 120–180/m³, significantly above the lowest domestic block. These higher rates generate extra revenue. This means that wealthier and high-use customers are charged the full cost of supply, and

those extra revenues cross-subsidize the pro-poor rates. This mechanism ensures that low-income households (lifeline and kiosk users) effectively pay far less than cost of supply, without the utility losing ground financially.

It's important to point out that the pro-poor tariffs are designed within an overall cost-recovery framework. All WSPs are required to recover their operations and maintenance costs at minimum, even as they extend service equitably. Recent tariff study for GAWASCO supported by UNCEF shows that, after implementing the proposed lifeline and kiosk rates and with improved efficiency, the utility will achieve 100% O&M cost coverage.

In summary, project AWARE implementation will apply Kenya's pro-poor tariff design – lifeline blocks, subsidized kiosks and intra-category cross-subsidies – which embeds social equity into pricing in the project counties in the ASALs where incomes are low. Solarization of the boreholes and application of digital technologies at Kiosks will further contribute to reduced O&M costs. By explicitly lowering the cost of basic consumption for the poor (and ensuring kiosk water is affordable), the proposed pro-poor tariff models help extend safe water to marginalized communities without collapsing utility finances. The case of GAWASCO shows that, with appropriate cross-subsidies, a utility in the project areas can raise sufficient revenue for sustainable operations while retaining a deeply concessional rate for the poorest customers.

Under Component 2, the project will establish inclusive water management committees to govern infrastructure supporting climate-resilient livelihoods. These committees will receive targeted training in climate-resilient operations, on-farm water management, fee collection, and conflict resolution. This approach ensures local ownership, accountability, and long-term functionality of the infrastructure. To ensure sustainable and community-led management of irrigation systems, inclusive water management committees will be established, comprised of community members actively involved in irrigation. These committees will be responsible for overseeing the operation, maintenance, and governance of the irrigation infrastructure.

Each committee will include between seven and fifteen elected leaders tasked with enforcing rules and regulations and monitoring the implementation of scheme activities. Emphasis will be placed on inclusive representation, with specific guidance provided during committee formation to ensure the participation of youth, women, and marginalized groups in leadership roles. The committee's executive body—comprising a chairperson, vice chairperson, secretary, vice secretary, and treasurer—will provide strategic oversight, leadership, and decision-making. To promote wider participation and distribute responsibilities, additional members will lead sub-committees focusing on critical functions such as financial management, dispute resolution, operations and maintenance, health, safety and environment, and system monitoring. Further sub-committees may be formed based on emerging needs of the irrigation system.

For Nature-based Solutions, a participatory approach will guide siting and implementation. Communities will be involved in decision-making and receive hands-on training during construction and maintenance. Practices such as desiltation, replanting, and gabion upkeep will be emphasized, along with the use of context-specific maintenance checklists to promote ecosystem resilience and sustainable resource use.

For Component 3, the integration of Google's open-source flood model into county-level early warning systems is designed for sustainability by aligning with existing institutional mandates and workflows within the Kenya Meteorological Department (KMD), which is already responsible for national and subnational forecasts. This reduces the risk of duplication and ensures that capacity built during the project is retained in government systems. County-led anticipatory action plans will be embedded in County Integrated Development Plans (CIDPs) and Annual Development Plans (ADPs), allowing for future financing through county budgets. Embedding child-sensitive thresholds in these plans reflects Kenya's existing social protection and early action frameworks, allowing for integration rather than requiring new systems. Training local broadcasters and early warning actors ensures that communication is tailored to local languages and trusted information channels, a known barrier in past flood responses. This approach increases both the

reach and the credibility of early warnings, making uptake more likely and system functionality more sustainable.

For Component 4, the project's sustainability strategy builds on the reality that fragmented and externally driven planning processes have often failed to be adopted at scale. By anchoring coordination mechanisms in the existing County Climate Change Units (CCUs), which are already mandated under Kenya's Climate Change Act, the project leverages a legally recognized structure that counties are responsible for staffing and resourcing. This reduces long-term dependency on project-based structures.

Updating the National Adaptation Plan (NAP) through participatory and data-driven processes, aligned with Kenya's NDC revision, ensures that the NAP remains relevant and has institutional traction at the national level. Engaging youth and county stakeholders in the update process ensures that the resulting NAP is politically owned and socially responsive, increasing the likelihood of implementation. Hosting the improved CCD Knowledge Platform within an existing public institution (e.g. the Climate Change Directorate or KMD) minimizes hosting costs and ensures long-term access. Unlike prior platforms that focused on uploading documents, this platform will be designed as a decision-support tool co-created with end users, increasing its utility and sustained use.

For Component 5, the project will support the construction of waste management infrastructure in partnership with county government (Marsabit), who hold the constitutional mandate for solid waste management service delivery. Sustainability will be ensured by aligning the infrastructure with county plans and national standards under the Environmental Management and Coordination Act (EMCA), with regulatory oversight provided by the National Environment Management Authority (NEMA), which is mandated to oversee waste management across Kenya. Where appropriate, infrastructure operations will be managed under Public-Private Partnership (PPP) arrangements, enabling counties to leverage private sector expertise while retaining public oversight. Operation and maintenance (O&M) cost recovery is considered feasible through a combination of affordable user fees, revenue from recyclable materials, and county subsidies. This blended approach reflects the current realities in many counties, where full cost recovery from users alone is not viable, but partial contributions can support sustainability when complemented by public financing. The project will work with county governments to define service models that are context-specific and financially realistic. Local community groups, particularly youth and women already active in the waste value chain, will be engaged to strengthen service uptake and promote job creation. Maintenance responsibilities will be formally assigned through agreements with the counties, supported by practical training and user-friendly O&M tools to ensure continued functionality beyond the project period.

J.4 Institutional and Human Resource Capacity building and awareness raising

The results of the project will be rendered sustainable through the capacity building components, which includes engagement on institutional and human resource capacity, and service improvements, focusing on improving service providers capacity to operate and maintain water points. This includes technical and managerial capacity, where the governmental officials (who will be involved in all processes) will acquire skills in data identification, collection and analysis, development and operation of the various tools developed. Furthermore, the project will deliver community customized information using innovative, context specific tools, in local languages that will offer an interactive approach and benefit them. This will increase their buy-in and ownership from the community side and therefore the sustainability of the results.

J.5 Technical and Environmental factors

Technical elements of sustainability, mostly related to infrastructure and data availability includes using appropriate locally adaptable technologies, ensuring risk assessments are conducted and structural designs adjusted to adapt to or mitigate these risks. The AWARE project is designed in such a way that up-to-date scientific approaches for ground water suitability maps, geophysical studies conducted for village level or multi-village water infrastructures planned for the project. In addition to ensure sustainability

of the project environmental impacts of project activities well established mitigation measures will be implemented throughout project implementation. This includes understanding of the nature of the watershed, seasonal water variability, water quality, water use and options for diversification, opportunity to implement nature-based ground water recharge solutions to improve water quality and quantity available for human and livestock consumption. The project will also enhance water supply efficiency through improving resilience of the infrastructure, addressing Non-Revenue Water (NRW), harnessing smart meter and other technology to optimize supply services, including utilizing green energy solutions. The investments in rangeland and catchment conservation, based on Nature based Solution (NbS) approaches, are expected to enhance ecosystem services thereby protecting and enhancing water sources, reducing pollution and treatment costs.

J.6 Access to knowledge management components

To ensure sustainability, the AWARE project will strengthen and embed climate adaptation knowledge management (KM) within existing national and county systems. Led by the Government of Kenya, AWARE will build long-term capacity in institutions like the Kenya Climate Change Knowledge Portal (KCCKP) and the Maarifa Centre by providing technical support, training, and tools for structured data management and open access dissemination. Integration with UNESCO's IHP-WINS platform will further centralize water-related data, enabling continuous collaborative knowledge sharing. Through standardized training, development of harmonized reporting templates, digital infrastructure support, and centralized KM management, AWARE will leave behind durable systems that allow policymakers, communities, and researchers to access and use climate information well beyond the project's lifetime. The project's results will be disseminated through the media outlets of the Agencies involved such as web sites, social media accounts etc., and aforementioned through consultations where local media (both press and social media) will be invited to cover.

K. Environmental and social impacts and risks

A comprehensive Environmental and Social Screening has been conducted for Project AWARE, in line with Kenyan legal requirements and the Adaptation Fund Environmental and Social Policy (ESP). The project is fully aligned with all 15 ESP principles. The table below provides an overview of which principles require no further action and which necessitate additional assessment or mitigation during implementation.

Building on this initial screening, a detailed Environmental and Social Impact Assessment (ESIA) was carried out for all project components, using standard assessment procedures. This analysis—summarized in Section III.C and detailed in Annex 3—forms the basis for the project's overall Environmental and Social Risk classification.

Building upon the initial Environmental and Social (E&S) screening against the Environmental and Social Policy (ESP) principles and national E&S impact assessment criteria, all project activities have been thoroughly analysed for potential adverse environmental and social impacts using the standard E&S assessment procedure and the project categorized as 'B'. This categorization is set as the majority of proposed activities (64%) fall under Category C, indicating minimal or no environmental and social risk and consisting mainly of capacity-building interventions. Approximately 34% of activities are classified as Category B, involving moderate risks related to infrastructure development. These risks are expected to be site-specific, limited in scale, reversible, and manageable through the implementation of Environmental and Social Management Plans (ESMPs). Only one activity—construction of climate-resilient waste management sites under Activity 5.2.3—is classified as Category A, due to potentially significant E&S risks typically associated with solid waste disposal infrastructure. However, as this is an isolated case and the vast majority of activities (98%) fall under Categories B and C, the overall project classification as Category B is appropriate and justified.

It is acknowledged that the inclusion of activity 5.2.3 as an USP means that part of the project risks are not fully known at this stage. However the preliminary ESIA and ESMP developed for activity 5.3.2 as described in section III.C and Annex 3 (including a screening against all 15 ESP criteria), combined with the USP justification and Compliance plan in Annex 15, will guarantee full compliance with the AF ESP, the GP and the AF guidance on USP.

Annex 3 presents a summary of the ESIA findings, including risk assessments against each of the 15 ESP principles and relevant national/sub-national environmental regulations. It also includes the ESMPs developed for the moderate- and high-risk activities under Components 1, 2, and 5. These ESMPs will guide the implementation of mitigation measures throughout the project lifecycle.

Table 8: Environmental and Social Risks of the project

Checklist of environmental and social principles	**No further assessment required for compliance**	**Potential impacts and risks – further assessment and management required for compliance**
Compliance with the Law	~~X~~	Low risk. Full compliance with all applicable Kenyan laws will be ensured, including EMCA 1999, Sustainable Waste Management Act 2022, Water Act (2016), and Water Harvesting Regulations (2021), land tenure and land use regulations, and public health laws. All required EIA licenses will be secured prior to construction and operation. Continuous legal compliance monitoring will be maintained through Project Management Team oversight. ~~Low risk.~~ ~~The project adheres to all applicable Kenyan laws, including EMCA (1999), Water Act (2016), and Water Harvesting Regulations (2021).~~ ~~No further assessment required for compliance as this is already integrated in project design. Site specific ESIAs will be part of the project design reports and the project activities will obtain all necessary permits described in section II.E~~ ~~Continuous monitoring of project activities will be undertaken to ensure continued compliance with the applicable laws throughout project implementation~~
Access and Equity	X	Low risk. The project promotes inclusive access to water and climate adaptation in underserved counties (Wajir, Mandera, Marsabit, Garissa). Equitable access is embedded in the approach Monitoring needed to ensure infrastructure siting does not unintentionally exclude some populations.
Marginalized and Vulnerable Groups	X	Low to medium risk Project activities prioritize pastoralists, women, and children. Design integrates inclusive livelihoods and water access (Output 2.4) Risks of exclusion if participatory planning is not well implemented, which is mitigated through the already developed Environmental Social Management Plans described in Annex 3. There's need for continued monitoring of inclusion effectiveness.
Human Rights	~~X~~	Low risk. The Project Supports rights to safe water, climate resilience, and food

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		security through adaptation services. Risk of indirect impacts on rights to a clean environment, health, water, and sanitation if waste site management is not properly controlled. Potential livelihood impacts for waste workers and communities near sites. The ESIA of the USP (ref. Annex 15) will therefore explicitly identify and assess human rights risks and propose mitigation. The grievance redress mechanism will be rights-based and accessible to all stakeholders. Periodic monitoring of project activities will be undertaken to ensure continued compliance with, and promote the provisions of the Universal Declaration of Human Rights~~The Project Supports rights to safe water, climate resilience, and food security through adaptation services.~~ ~~The existing safeguards are adequate~~ ~~Continuous monitoring of project activities will be undertaken to ensure continued compliance with, and promote the provisions of the Universal Declaration of Human Rights~~
Gender Equality and Women's Empowerment	X	Low to medium risk. The Project Ensures women's participation in planning and implementation, particularly in Components 1, 2 and 4. A separate gender action plan has developed which is available through annex 5. Gender-sensitive indicators and outreach will be needed to track actual participation and benefit sharing.
Core Labour Rights		Medium risk. Labor standards are applied in water infrastructure projects under Component 1,2 and 5. Construction works may pose safety risks or labor grievances if contractors do not adhere to standards. Compliance will be achieved through contractual enforcement and checked through regular audits. This is further described in the Environmental and Social Management Plans in annex 3.
Indigenous Peoples		Medium risk. The Project will engage Indigenous communities in climate adaptation planning. Site-level FPIC and culturally sensitive planning is needed This is further described in the Environmental and Social Management plans in annex 3.
Involuntary Resettlement	X.	Low risk. Project avoids displacement and land-use conflicts, especially in rangeland restoration (Output 2.1). Site-specific screening will be conducted to confirm land tenure and voluntary participation and prevent resettlement.
Protection of Natural Habitats	X	Low risk. Restoration and protection are core objectives of the Project The Project uses nature-based solutions like MAR to enhance ecosystems (Output 1.2). Requires ESIA for MAR sites located near wetlands or fragile ecosystems.
Conservation of Biological Diversity	X	Low Risk. The Project promotes rangeland biodiversity through sustainable grazing and reseeding (Output 2.1). Screening required to avoid activity overlap with ecologically sensitive or protected areas.

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Climate Change	X.	Low risk. The Project enhances community resilience via early warning systems and flood protection (Component 3). Infrastructure in flood-prone areas must be designed to withstand extreme events.
Pollution Prevention and Resource Efficiency		Medium risk. The Project supports county-level waste management and pollution control (Output 5.4). MRFs and waste sites must be managed to avoid leachate, air pollution, and contamination. Proper design and monitoring of MRF and waste sites' operations needed. A preliminary ESIA and an environmental and social management plan has been developed for the waste site which is described in annex 3.
Public Health		Medium risk. The Project reduces climate-related disease risks through clean water access, enhanced nutrition, and waste management infrastructure (Component 5). Waste sites and water infrastructure must be designed to avoid contamination and vector breeding. Health outcomes to be monitored, especially neighboring waste management infrastructure sites A preliminary ESIA and an environmental and social management plan has been developed for the waste site which is described in annex 3.
Physical and Cultural Heritage	X.	Low risk. The Project respects Indigenous water knowledge and protects significant water sites. Integrated traditional knowledge in EWS. Further community consultations needed to confirm there are no inadvertent impacts on heritage resources. Chance-Find Procedures to be implemented on civil works
Lands and Soil Conservation	X	Low risk. Soil conservation is embedded in Project activities Rangeland interventions improve soil health and reduce erosion (Output 2.1). Potential short-term erosion during site preparation; managed through ESMPs and local restoration plans.

PART III: IMPLEMENTATION ARRANGEMENTS

A.1 Project implementation arrangements.

The following mechanisms for project execution, coordination, oversight and transfer of funds have been agreed between the National Designated Authority, the NIE (NEMA), the executing entities (UNICEF and WFP) as well as other key stakeholders at the national and county level.

A.1.1. National Implementing Entity (NIE, NEMA)

As NIE, NEMA will oversee project implementation through the NIE secretariat with the support from NEMA technical departments including Waste Management Directorate, Environmental

Planning and Research Department, and Environmental Education and Awareness Unit, Environmental Programmes and Partnerships. The NIE will ensure timely delivery, financial compliance, adherence to the gender action plan and the environmental and social safeguard management plan.

NEMA will enter into an Agreement of Cooperation (AoC) with each executing entity (UNICEF and WFP), to execute the activities that will lead to the described outputs. An AoC is a formal legal mechanism that creates accountability, manages fund-flow, and ensures that Executing Entities deliver their activities in accordance with the project budget, workplan, and in compliance with the project's Environmental and Social Management and the Gender Action Plan.

Having unique expertise and a clear legal mandate for waste management in Kenya, the National Environment Management Authority (NEMA) will also serve as an Executing Entity for Component 5. NEMA's extensive experience in regulating, coordinating, and enforcing waste management practices across the country positions it well to lead the implementation of activities under this component. In addition, NEMA has established offices in all four target counties, which will enable efficient coordination, local oversight, and closer engagement with county governments and community stakeholders. Its role will include ensuring compliance with national policies, promoting sustainable waste management solutions, and supporting the development of scalable, locally adapted interventions.

A1.2. Project Management Team (PMT)

The PMT will be comprised of a Project Manager, Finance Officer, M&E Officer, GESI Officer, Environmental and Social Safeguards Officer, and Communications Officer, all of whom will be appointed in compliance with NEMA's HR rules and regulations. The PMT will also include the Chief of WASH of UNICEF Kenya and the WFP Head of Climate, Resilience and Food Systems. The PMT will be led by the Project Manager who will report to the NIE. The PMT will be responsible for managing project activities and ensuring compliance with all commitments contained in the project document, particularly the project's Environmental and Social Management and the Gender Action Plans (which ensures compliance with the 15 principles of the Adaptation Fund Environmental and Social Policy and the Gender Policy of the Adaptation Fund). The PMT will also take the lead in monitoring activities implemented through regular visits to the field sites in the counties of Marsabit, Wajir, Garissa and Mandera.

The PMT's major functions include:

- Strategic planning and budgeting, management, and coordination
- Ensuring smooth implementation of activities and commitments in the Results Framework by Executing Entities
- Monitoring and reviewing delivery against milestones and financial progress
- Consolidating physical/technical and financial progress reports for submission to NIE and the Adaptation Fund Board
- Reviewing and keeping track of portfolio-level risks
- Providing technical support on project results monitoring and safeguards compliance to Executing Entities
- Managing knowledge of the overall project

As representative of the NIE (NEMA) of the Adaptation Fund, the PMT will be involved in periodic monitoring (on-site and off-site) of the project. The periodicity and structure of monitoring are as follows:

- On-site detailed monitoring of field activities will be conducted on a quarterly basis

- Quarterly report submission formats will be designed for submission by Executing Entities for desk appraisal of progress
- Progress reporting will be done to the Adaptation Fund Board (AFB) biannually or as advised by the AF.

A Project Steering Committee will be constituted to provide strategic guidance on the overall implementation and achievement of the project outcomes. The Project Manager will act as Secretary to the PSC. The composition of the PSC will be as follows:

1. Principal Secretary of State Department for Environment and Climate Change, MECCF & AF NDA (Chair) or a nominee
2. Principal Secretary of State Department of Water and Sanitation, MOWSI, or a nominee
3. Director General NEMA, or a nominee
4. CEC Water for Garissa County
5. CEC Water for Mandera County
6. CEC Water for Wajir County
7. CEC Water for Marsabit County
8. UNICEF Deputy Representative
9. WFP Deputy Representative
10. Project Manager (PM) – AWARE (Member/Secretary)

The membership structure ensures representation from the four target counties through their Chief executive officers for Water (CECs) and senior level representation of two relevant ministries of Environment, Climate Change and Forestry and Ministry of Water, Sanitation and Irrigation, and the programme heads of the two executing agencies. The PSC's primary responsibilities will be to provide strategic guidance on the implementation and progress against the workplan and oversee compliance with the project's Environmental and Social Management and the Gender Action Plans. The governance structure of the project is presented in Figure 18.

In this regard, the PSC will:

- Review and endorse the project inception report
- Review project activity status reports to ensure activities are implemented as planned and expected outcomes are achieved
- Support the PMT to maintain complementarity between the proposed project and key planned and ongoing initiatives in the Ewaso Nyiro Basin such as:
    - Financing Locally led Climate Adaptation (FLOCA, World Bank)
    - The Horn of Africa- Groundwater for Resilience Project (HoAGW4R)
- Ensure the minimum quorum of the Steering Committee, which will be the Chair or Co-Chair and two members

The PSC will meet at project inception, and at yearly intervals throughout the project implementation, and if needed on an exceptional basis. In such cases, the Chair, in consultation with the PMT, will convene special meetings to address urgent matters.

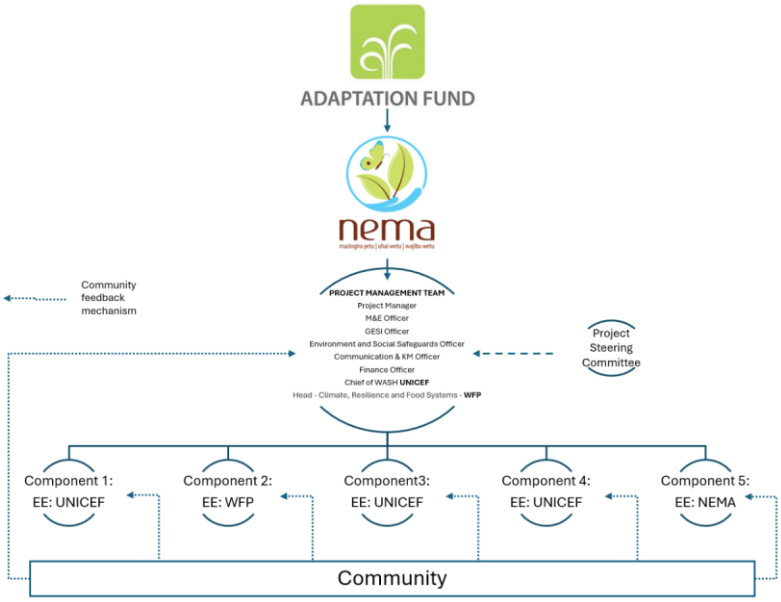

Figure 18: Project implementation organogram

A.2. Roles and Responsibilities of the Executing Entities

UNICEF will be the executing entity for components 1, 3, and 4 in coordination with relevant national and county government departments. UNICEF will be using existing technical and operation teams in Nairobi and Garissa offices. UNICEF has over 200 multisectoral staff across Kenya. The main team members leading the execution of the components will be the UNICEF WASH and Climate team, together with the Nutrition team, the Social and Behavior Change (SBC) team, the gender specialist, as well as the Planning, Monitoring and Evaluation team.

UNICEF as a lead for the Joint programme for Water of the United Nation Agencies in Kenya it will leverage on the expertise of the other 11 agencies who are members of the joint programme for the execution of the three components including UNESCO for the ground water studies and nature based solution intervention, UN Women for gender actions and other entities as required. For construction works UNICEF will hire the services of engineering firm and the construction companies and vendors for the direct execution of the works and services through the UNICEF supply section. Procurement Services are activities undertaken by UNICEF on behalf of eligible partners for the purchase of supplies, equipment, and services. UNICEF is permitted under UNICEF Financial Regulation 5.2 and Financial Rules 105.5 to 105.8, to make arrangements with eligible partners to undertake Procurement Services where such materials and services are required for purposes related to UNICEF activities and consistent with the aims and policies of UNICEF.

WFP will implement Component 2 on ecosystem restoration and climate resilient livelihoods and will leverage existing strategic and technical expertise and support from its current structures of operation. The Country office will provide coordination and overall technical oversight for the development and

execution of the project interventions. WFP's field level presence is enabled and supported by field offices whose key responsibility is to coordinate the implementation of activities, jointly implement projects with the County Governments and conduct community engagement. The project will adopt the Climate Resilient Food Systems Hub model as the implementation mechanism at the county level. WFP will continue to collaborate with national and county governments to achieve national and county-level goals related to food security and climate resilience, thus, engagement with relevant government agencies and departments will be done throughout project implementation.

Acknowledging the importance of collaboration across multiple sectors, the project will prioritize strategic partnerships, especially with the private sector to strengthen resilience in addition to provision of opportunities for livelihood improvement. Special focus will be placed on reaching vulnerable groups, youth and women.

NEMA will be the executing entity for Component 5 on waste management. NEMA will leverage its institutional presence in the four target counties of Garissa, Tana River, Mandera, and Wajir where it maintains fully operational county offices. These offices will provide local oversight, coordination, and technical support throughout the implementation of waste management interventions. NEMA will lead the design and implementation of climate-resilient waste management infrastructure in close coordination with county governments. The execution will be led by NEMA's national team, including specialists from its Waste Management Directorate, Environmental Planning and Research Department, and Environmental Education and Awareness Unit, who will work closely with the county-level teams.

While NEMA will not directly manage waste collection or disposal services under this component, it will contract engineering firms and construction companies for the development of solid waste infrastructure. All procurement will follow Kenya's Public Procurement and Asset Disposal Act and NEMA's internal procurement procedures to ensure transparency, value for money, and adherence to environmental and safety standards.

Executing Entities will:

- Ensure the work is executed and results delivered in accordance with the project document
- Maintain competent technical staff for project implementation.
- Be required to collect, maintain, and furnish specific information for the purpose of monitoring the impact of various project measures to determine the delivery of specified results.
- Coordinate the implementation of project activities within their respective project sites.
- Ensure effective and timely implementation of the project activities.
- Ensure effective, efficient, and economic utilization of resources.
- Prepare and submit physical/technical and financial progress reports to PMT.
- Liaise with the NIE/PMT on projects implementation.
- Manage and mitigate project level risks

A.3 Implementation Arrangement Alignment with Adaptation Fund Gender Policy and Environmental Social Policy

The implementation arrangements will be in full compliance with the Adaptation Fund Gender Policy. The project will always consult with stakeholders in a gender responsive and gender equal way. The project will actively support the increased participation of women as important stakeholders and will guarantee the inclusion of their needs, concerns and abilities in project planning, implementation and monitoring and evaluation. The project will follow concrete principles on gender-responsive participation and consultation as detailed in Annex 5.

Building on the participatory approach used during project design, the project will maintain strong community engagement throughout implementation to ensure relevance, ownership, and sustainability.

As outlined in the project organogram (Figure 18), community feedback mechanisms will be established at multiple levels, as detailed in the Grievance Redress Mechanism (Annex 4), to promote transparency and accountability. Feedback received through the GRM will be systematically reviewed and discussed during each Project Management Team meeting and continuously addressed by the executing entities to ensure timely resolution and adaptive management. Community-based structures—such as Water Resource Users Associations (WRUAs) and Water User Associations—will play a central role in local monitoring, reporting, and grievance management, ensuring that interventions are grounded in local realities. Communities will also be actively involved in the identification of exact intervention sites, leveraging their knowledge to guide context-appropriate decisions. Furthermore, feedback will be continuously sought to refine implementation, and Early Warning System (EWS) messaging will be co-designed with communities using Human-Centered Design (HCD) approaches. This will ensure that alerts are locally relevant, trusted, and actionable, ultimately enhancing the effectiveness and inclusivity of climate adaptation efforts.

A.4. Monitoring and Evaluation (M&E) Plan

The project's Monitoring and Evaluation (M&E) Plan is designed to ensure evidence-based implementation, transparency, and continuous learning. It aligns with the Adaptation Fund Results Framework and UNICEF's results-based management approach, integrating both quantitative and qualitative methods with a strong emphasis on gender responsiveness and adaptive management. This is described in more detail in Section III.D.

A.4.1. Baseline Assessment

A comprehensive baseline assessment will be conducted during the first two months of the project. It will establish initial values for all indicators in the results framework, combining quantitative data with qualitative insights from communities and key stakeholders. Special attention will be given to gender dynamics. Key elements will include examining the distribution of benefits between genders, assessing the inclusivity of interventions, and identifying gender-specific constraints or advantages. These findings, guided by the project's Gender Action Plan, will provide a foundation for targeting activities and tracking equitable progress throughout implementation.

A.4.2. Project Monitoring Reports (PMRs)

Project Monitoring Reports will be produced quarterly by the Project Management Team (PMT), with contributions from implementing partners. These reports will cover output and outcome indicators, financial progress, implementation risks, grievance redress updates, and safeguards monitoring. An online M&E dashboard will support real-time tracking and facilitate quick decision-making. The reports will also flag challenges and recommend corrective actions where needed. To ensure accountability, an Action Tracker will be maintained and updated prior to each Project Steering Committee (PSC) meeting to document follow-up on recommendations and promote adaptive management.

In addition, annual Project Performance Reports (PPRs) will be submitted to the Adaptation Fund Secretariat. These reports will summarize progress on all core indicators, financial expenditures, challenges faced, and lessons learned. They ensure compliance with the Fund's reporting requirements and help guide strategic adjustments during implementation.

A.4.3. Midterm Meeting

A dedicated midterm reflection meeting will be held with the PSC and key partners to deliberate on progress agree on strategic course corrections. The Gender Action Plan will also be reviewed and updated based on emerging evidence and community feedback.

A.4.4. Terminal Evaluation

A final independent terminal evaluation will be undertaken in the final year of the project. It will assess the project's overall impact, sustainability, effectiveness, and gender-responsiveness. The evaluation will revisit baseline indicators to assess change, conduct stakeholder consultations, and document key lessons learned. Findings will help determine the project's contribution to long-term community resilience and climate adaptation. A Final Dissemination Workshop will be held to share results, celebrate achievements, and explore opportunities for scale-up or replication, ensuring learning is widely shared across institutions and regions.

Together, these tools-baseline assessment, project monitoring reports, midterm meeting, and terminal evaluation-form the backbone of a robust M&E system. By embedding continuous learning and gender responsiveness into each stage, the project will remain adaptive, inclusive, and accountable to its stakeholders.

B. financial and project risk management.

In the face of escalating climate variability and its profound impact on the arid and semi-arid regions of Kenya, the counties of Mandera, Marsabit, Wajir, and Garissa stand at the frontline of vulnerability. These counties grapple with recurrent droughts, erratic rainfall patterns, and resource scarcity that threaten livelihoods, food security, and community resilience. Addressing these challenges demands a multi-stakeholder, adaptive, and risk-conscious approach to financial and project management.

This interagency adaptation fund proposal collaboratively spearheaded by NEMA, UNICEF, WFP and Government of Kenya (GoK), aims to establish a robust framework for mitigating financial and operational risks while maximizing the impact of climate resilience projects. By leveraging the unique strengths of each partner, we seek to ensure resource optimization, transparency, and sustainability in delivering targeted interventions to the most vulnerable communities.

Our proposed framework prioritizes proactive risk identification and mitigation strategies, fostering accountability in fund utilization and resilience-building initiatives. Through adaptive financial planning, continuous monitoring, and effective stakeholder engagement, this project intends to address not only current vulnerabilities but also the systemic risks that undermine long-term community stability. The collaboration seeks to align with the goals of Kenya's National Adaptation Plan, ensuring that Mandera, Marsabit, Wajir, and Garissa progress toward climate resilience in an equitable, inclusive, and risk-informed manner.

The detailed risks and mitigation matrix is in Annex 14.

C. Measures for environmental and social management

Project AWARE (Adaptation for Water Access and Resilience in Ewaso Nyiro River Basin) embraces a robust Environmental and Social Risk Management (ESRM) framework guided by the Adaptation Fund's Environmental and Social Policy (ESP), and the Kenyan National legal Framework. The project aims to enhance climate resilience in four ASAL counties—Wajir, Mandera, Marsabit, and Garissa, while ensuring that environmental integrity and social inclusion are safeguarded throughout implementation.

The project commits to complying with both the Adaptation Fund's Environmental and Social Policy (ESP) and Kenyan national and sub-national environmental regulations. Accordingly, an Environmental and Social Compliance Plan has been prepared following a systematic compliance assessment

approach. An Environmental and Social Management Plan (ESMP) has also been developed for project activities.

All proposed activities have undergone environmental and social screening, categorization, and risk assessment to identify potential adverse impacts and define appropriate mitigation measures. This risk management framework ensures alignment with Kenya's environmental regulations and international standards, enabling sustainable implementation and adaptive environmental governance.

The project was screened against the 15 principles of the Adaptation Fund ESP and Kenyan national environmental legislation, key of which is the Environmental Management and Coordination Act (EMCA) 1999, as amended in 2015, and its subsidiary legislation. Each activity was assessed for potential environmental and social risks and categorized in accordance with Legal Notice No 31 of April 2019 on the EMCA, as follows:

- **Category A:** High-risk, potentially irreversible impacts (one identified).
- **Category B:** Medium risk, site-specific and reversible with mitigation.
- **Category C:** Low risk, minimal or no adverse environmental/social impacts.

The overall Environmental and Social (E&S) Risk Rating for the project is Category B. The reasoning behind this is that, most of the planned activities (64%) across the five components are classified as Category C, indicating low or negligible risk, and primarily involve capacity-building initiatives. Approximately 34% fall under Category B, representing moderate risk activities, mainly involving infrastructure works with environmental and social risks that are expected to be site-specific, limited in scale, reversible, and manageable through the application of Environmental and Social Management Plans (ESMPs). Only one activity -construction of climate-resilient waste management sites under Activity 5.2.3- is classified as Category A, due to potentially significant E&S risks typically associated with solid waste disposal infrastructure. However, as this is an isolated case and the vast majority of activities fall under Categories B and C, the overall project classification as Category B is appropriate and justified.

All Category A and B activities will require environmental and social assessments, the implementation of appropriate mitigation measures, and meaningful community engagement to identify, prevent or reduce adverse impacts.

C.1. E&S Impact Assessment and Risk Management for Project Activities

An Environmental and Social Impact Assessment (ESIA) has been conducted to broadly identify potential impacts, assess their significance, and propose appropriate mitigation measures that can be implemented on the subprojects proposed under Project AWARE. The measures will be further refined once detailed designs have been developed for the subprojects.

Executing Entities (EEs) under Project AWARE will be responsible for the development of the subprojects, implementation of mitigation measures and the Environmental and Social Management Plan (ESMP), with overall guidance and oversight from NEMA.

In alignment with the Adaptation Fund's Environmental and Social Policy (ESP) and the Kenyan National Legal Environmental and Social requirements, the following Environmental and Social Impact Assessment (ESIA) process will be applied on subprojects under Project AWARE, beyond this initial impact assessment:

1. **Screening:** Preliminary assessments will be conducted to determine the need for a full ESIA, identify potential environmental and social risks, and assess whether further studies are required.
2. **Scoping:** For activities requiring a full ESIA, the scope of assessment will be defined, identifying data needs and relevant methods, with emphasis on potential impacts to vulnerable and

marginalized populations.

3. **Impact Prediction and Evaluation:** A detailed analysis will be carried out to predict and evaluate the magnitude and significance of anticipated impacts, supported by expert input and participatory stakeholder engagement, especially with Indigenous Peoples and other at-risk groups.
4. **Mitigation:** Practical, context-sensitive mitigation measures will be developed following the mitigation hierarchy to avoid, minimize, or offset identified negative impacts.
5. **ESMP Implementation and Monitoring**: A comprehensive ESMP will be developed and implemented, detailing roles and responsibilities, allocated resources, timelines, and reporting protocols. Monitoring indicators will be clearly defined to assess the effectiveness of mitigation measures throughout the project cycle.

In compliance with the Adaptation Fund's requirements for subprojects, a Grievance Redress Mechanism (GRM) has been established (Annex 4), which will ensure that all project-affected persons have accessible, transparent, and responsive channels to raise concerns.

For the USP Unidentified Sub-Project (USP), several proactive steps have been taken to reduce uncertainty and risks. A preliminary Environmental and Social Impact Assessment (ESIA), including screening against all 15 ESP principles, and an Environmental and Social Management Plan (ESMP) have been prepared based on indicative designs and contextual data (see Annex 3). With the approximate location already known, close to Marsabit known, the ESIA addresses key environmental and social risks, and the waste management site is included in the project's gender analysis and action plan (Annex 5). These documents provide a solid basis for full safeguards compliance once the final design and site are confirmed. The activity is classified as Category A for environmental and social risk, requiring strict safeguards and mitigation. Treating it as a USP enables detailed, site-specific assessments to ensure full compliance with the Adaptation Fund's ESP. The preliminary ESIA and ESMP will be updated based on the final waste site design and location, and the location specific stakeholder and community consultations. This is all described in more detail in the USP Justification and Compliance plan in Annex 15.

C.2. Environmental and Social Compliance Plan

Project AWARE aligns with the Adaptation Fund's Environmental and Social Policy (ESP). To support this alignment, the Environmental and Social Compliance Plan (ESCP), detailed in Table 9, sets out specific actions to ensure all project activities adhere to the ESP requirements.

[9]

Table 10: Environmental and Social Compliance Plan

Project/Programme Component	Proposed Risk Category	Mitigation Measures
Overall Project	B	Actively involve beneficiary communities in planning, implementation, and monitoring of activities to enhance local ownership and sustainability. Ensure consistent adherence to ESP principles, particularly for triggered risks, and regularly monitor and report compliance to allow for timely corrective actions. Ensure compliance with national and local environmental and social regulations, including securing all necessary NEMA approvals Conduct site-specific ESIAs and develop mitigation measures and Environmental and Social Management Plans (ESMPs) for all infrastructure works (sub-projects)
Climate-resilient Water Access for	B	Conduct site-specific Environmental and Social Impact Assessments (ESIAs) and prepare comprehensive Project

Human and Livestock Consumption		Reports (CPRs) for all sub-projects for approval by NEMA To ensure climate-resilient water access, groundwater abstraction should be guided by hydrogeological assessments, regulated abstraction, and community-based water use planning. This approach prevents aquifer depletion, and Integrate Nature-based Solutions (NbS) to minimize disruption.
Ecosystem restoration and climate resilient livelihoods for food and nutrition security	C	Use participatory land-use planning, Apply climate-smart agricultural techniques Monitor water usage, and Promote community-led environmental management.
Enhanced Early Warning Systems and Anticipatory Action	C	Ensure data privacy and inclusivity in community engagement, and Provide training on risk communication and decision-making.
Systems Strengthening for Adaptation Coordination and Knowledge Management (KM)	C	Promote inclusive stakeholder engagement, Ensure gender balance, and Enhance access to knowledge for vulnerable groups.
Enhanced Water Quality through Climate Resilient Waste Management	B	Material Recovery Facilities (MRFs) Conduct ESIAs for MRFs and prepare comprehensive Project Reports (CPRs) for all sub-projects for approval by NEMA Promote circular economy approaches to waste management, Establish waste segregation systems, and Provide education and enforcement capacity at county level.
	A	Climate resilient waste management site It is acknowledged that the inclusion of activity 5.2.3 as an USP means that part of the project risks are not fully known at this stage. However the preliminary ESIA and ESMP developed for activity 5.3.2 as described in section III.C and Annex 3 (including a screening against all 15 ESP criteria), detailed in the USP Justification and Compliance plan in Annex 15, will guarantee full compliance with the AF ESP, the GP and the AF guidance on USP. In summary during USP development and implementation, the EE (NEMA) will: - conduct full ESIA study and prepare Study Reports with ESMPs for the waste management infrastructure based on the new design, the determined location, and the planned extensive location specific community consultations. - Establish and implement a management and monitoring plan to mitigate pollution risks such as leachate, emissions, and noise. - Promote circular economy approaches to waste management, - Establish waste segregation systems, and

		- Provide education and enforcement capacity at county level

C.3. Environmental and Social Management Arrangements

The implementation of the Environmental and Social Management Plan (ESMP) will be integrated into the overall Project AWARE management structure to ensure effective environmental and social risk mitigation throughout the project lifecycle.
NEMA will be responsible for overall coordination and oversight of ESMP implementation, although Executing Entities will be responsible for on-ground implementation, monitoring, and reporting on the ESMP. This includes integrating ESMP measures into project planning, budgeting, procurement, and execution.

Environmental and Social Safeguards Officers will be appointed at national, county and sub-project levels to lead day-to-day implementation of the ESMP. They will monitor compliance, ensure timely reporting, and provide guidance on mitigation measures.
Contractors and Service Providers will be required to adhere to the ESMP provisions during project implementation. Compliance will be included in contractual agreements, with performance monitored regularly.

The National Environment Management Authority (NEMA) will provide regulatory oversight, including review and approval of Environmental and Social Impact Assessments (ESIAs) and associated site-specific ESMPs, where applicable.
The County Governments of Wajir, Mandera, Marsabit, and Garissa will support community engagement, local monitoring, and alignment with county-level environmental regulations and development priorities.

Regular monitoring will be conducted to track the implementation of mitigation measures, with results reported in quarterly and annual project reports. Independent audits and evaluations may be undertaken to assess performance and ensure compliance.
The proposed mitigation measures are mostly preventive in nature (i.e., focused on avoidance and minimization), and may not require a separate budget to implement. However, a few may have cost implications, and these have been factored in in the budget for activities under each Project component.

A capacity building plan on E&S and gender compliance will be developed and implemented for all project implementation teams. Initial capacity building will be conducted during the inception phase, before construction begins. Additionally, capacity building on ESMP implementation, monitoring and reporting will be carried out as necessary throughout the project. Technical experts will be enlisted as necessary to conduct the capacity building sessions.
The Environmental and Social Management Arrangements for the Unidentified Sub-Project (USP) under activity 5.2.3 will follow the same robust safeguards framework applied across Project AWARE. This includes the use of a preliminary ESIA and ESMP already developed for the Marsabit area, to be updated once the final site and design are confirmed. The project will apply an adaptive management approach, ensuring compliance with the Adaptation Fund's Environmental and Social Policy and Gender Policy through ongoing risk assessment, community engagement, and monitoring. For full details, including the preliminary ESMP, site selection criteria, and safeguard milestones, refer to Annex 15.

C.4. Environmental and Social Monitoring and Evaluation Arrangements

- Monitoring arrangements will track the effectiveness of mitigation actions and collect results for

reporting to the Adaptation Fund via annual, mid-term, and terminal reports.

- Monitoring will ensure timely implementation of E&S actions and assess whether interventions are adequately mitigating risks/impacts or if adjustments are needed.
- Annual reports will detail the status of compliance and management plan implementation and outline any corrective actions if necessary.
- The Project Manager will hold direct monitoring, oversight, and compliance responsibilities. Any adjustments to project activities will be accompanied by corresponding updates to monitoring indicators.
- Gender-specific and disaggregated indicators and targets have been developed and are detailed in the Results Framework (Section III/E).

The project employs a multi-tiered risk management system, comprising:

- A structured, multi-level environmental and social risk management system has been established for all Category A and B interventions (such as sand dams, boreholes, Material Recovery Facilities, and waste disposal sites).
- It includes detailed mitigation measures, timelines, responsible parties, and cost estimates.
- Integrated into contractor bid documents and supervision protocols.
- Continuous and inclusive consultation with communities, especially Indigenous Peoples and pastoralist groups.
- County-level Water Resource User Associations (WRUAs), CBOs, and women/youth groups participate in planning and implementation.
- NEMA (as the implementing entity) is responsible for overall ESS compliance and coordination.
- County Governments and local WASH stakeholders lead field implementation and regulatory alignment.
- Consultants and Supervising Engineers will oversee ESMP implementation and compliance monitoring.
- Community-based structures (e.g., WRUAs, Water Management Committees) are key to local monitoring, reporting, and grievance management.

For the Unidentified Sub Project in Activity 5.3.2 (more detailed in Annex 15):

- A preliminary ESIA and ESMP have been developed for the USP based on the likely location and activity profile (see Annex 3). These will be updated once the final design and site are confirmed to ensure continued alignment with the Adaptation Fund's Environmental and Social Policy (ESP) and Gender Policy.
- Monitoring will track ESMP implementation, stakeholder engagement, grievance resolution, and risk mitigation effectiveness, with progress reported in the Project Performance Reports (PPRs) and evaluated in the terminal evaluation.

Responsibility for environmental and social monitoring, oversight, and compliance lies with NEMA, as both the National Implementing Entity (NIE) and Executing Entity (EE) for this USP. NEMA will coordinate with consultants and local actors to ensure timely updates and full safeguards compliance.

D. Monitoring and Evaluation arrangements and budgeted M&E plan

The Monitoring and Evaluation (M&E) Plan for this project is designed to track progress, ensure accountability, and support adaptive management throughout its lifecycle. It aims to provide timely and accurate data that enables decision-makers to respond to emerging challenges and optimize project activities. By aligning with the Adaptation Fund Results Framework and UNICEF's results-based management principles, the plan incorporates both quantitative and qualitative methods, ensuring that gender considerations are integrated into all monitoring activities. The M&E system will be robust and participatory, drawing on input from stakeholders, particularly women and marginalized groups, to ensure that the project remains responsive to community needs and priorities.

Key to the M&E approach are four critical tools: the **baseline assessment**, **project monitoring reports**, and **terminal evaluation**. Each tool will provide essential insights into the project's performance and its contribution to climate adaptation outcomes, while also enabling the incorporation of lessons learned into future programming. The integration of gender-sensitive indicators and the commitment to adaptive management will ensure that the project not only meets its targets but also delivers equitable benefits across all communities. Together, these tools will guide the project towards its objectives while fostering transparency, accountability, and continuous learning.

Table 11: Budgeted M&E plan

M&E Requirement	Description	Responsibility	Budget (USD)	Timeframe
Inception Workshop	Convene an inception workshop to align stakeholders, validate the work plan, confirm implementation arrangements, review M&E strategy, and discuss risk mitigation and stakeholder engagement approaches. It will also initiate coordination mechanisms and ensure common understanding among implementing partners and government agencies.	EEs to be coordinated by PMU	40,000	Month 1
Baseline Assessment	The baseline report will document the findings of the initial assessment, providing a comprehensive overview of the project's starting conditions. It will include quantitative baseline data aligned with the results framework, as well as qualitative insights on community perceptions of climate change, adaptive capacity, and gender-specific impacts. Key elements of the gender assessment will include examining the distribution of project benefits among different genders, assessing the inclusivity of project interventions, and identifying gender-specific challenges or advantages as set by the gender action plan of the project. This will ensure that the project continues to be sensitive to gender dynamics, promotes equitable outcomes, and contributes to positive social change. The findings from the gender assessment will inform project adjustments, improving effectiveness, and fostering a more inclusive and gender-responsive approach for the rest of the project lifecycle.	EEs to be coordinated by PMU	~~70~~100,000	Month 1–4
Project	Track inputs, outputs, and outcomes in real-time through an adaptive management	M&E Specialist;		Quarterly &

Performance Monitoring	framework. Use an online M&E dashboard and periodic field monitoring visits to assess performance indicators and flag issues for timely resolution.	PMU; through relevant EEs	30,000	Annually
Gender Action Plan Implementation Monitoring	Monitor the implementation of the Gender Action Plan (already developed during proposal phase). Ensure that gender-responsive activities are executed, tracked, and reported through disaggregated indicators. Regularly collect sex-disaggregated data and ensure women's participation in all project activities. Continuous attention will be paid to seeking feedback from women participants to further refine and improve the Gender Action Plan as necessary.	Project M&E Specialist; Gender Specialist	40,000	Midterm and at the end of the project
Environmental & Social (E&S) Safeguards Monitoring	Monitor environmental and social risks outlined in the project's risk screening. Track mitigation actions, conduct field inspections, and ensure grievance redress mechanisms are functional. Include periodic compliance reviews to ensure adherence to the ESMP and safeguard policy. Ensure USP development and implementation adheres to the USP justification and compliance plan described in Annex 15.	Environmental and Social Safeguards Officer PMT, M&E Specialist; PMU; through relevant EEs	420,000	Quarterly
Grievance Redress Monitoring	Monitor grievances received through established channels and the resolution status. Analyze trends and recommend programmatic or operational changes.	Environmental and Social Safeguards Officer ;M&E Specialist; PMU; through relevant EEs	210,000	Quarterly; Ongoing
Project Steering Committee (PSC) Meetings	Hold regular PSC meetings to review project progress, financial and technical reports, and make strategic decisions. Document decisions and follow up using an action tracker. Ensure participation from national, county, and community representatives.	Executing Entity; PSC Secretariat	75,000	Annually
Action Tracker	Maintain an updated action tracker tool to document PSC and monitoring recommendations, assigned responsibilities, and deadlines. This will support accountability and timely follow-up during implementation. The action tracker will be updated prior to each PSC meeting.	M&E Specialist; PMU; through relevant EEs	10,000	Updated before each PSC meeting
AF Project Performance Report (PPR)	Submit annual reports to the Adaptation Fund Secretariat covering progress against indicators, implementation challenges, and financial expenditure. Use this to maintain compliance with AF reporting obligations and inform adaptive management decisions. This report will also contain progress on the USP and compliance with the ESP and GP as further described in Annex 15.	NIE supported by EEs	-	Annually
Midterm Meeting	Hold a midterm meeting with stakeholders, including the Project Steering Committee (PSC), to review the progress, discuss challenges, and adjust project strategies or interventions as necessary. This meeting will be a critical checkpoint for adaptive management and will ensure that gender considerations, project progress, and lessons learned are appropriately addressed.	NIE, EEs, PSC; Implementing Partners	30,000	Midpoint (Year 2)
Impact Monitoring	Periodically assess long-term adaptation results, including reduced vulnerability and increased adaptive capacity of communities. Use mixed-method approaches (surveys, FGDs, participatory evaluations) and assess outcome-level indicators in line with the AF Results Framework.	M&E Specialist; PMU; supported by relevant EEs	40,000	Annual & End of Project

Terminal Evaluation	Conduct an independent, comprehensive terminal evaluation to assess the project's overall effectiveness, impact, and sustainability. This evaluation will review all project activities, including gender equality outcomes, environmental impacts, and social benefits. It will analyze the extent to which the project achieved its stated objectives, as well as the long-term sustainability of the outcomes. Stakeholder consultations, including from local communities, implementing partners, and government bodies, will be integral to this process. The evaluation will document lessons learned, best practices, and provide actionable recommendations for scaling, replication, or future interventions. It will also include an assessment of the financial efficiency and alignment with the Adaptation Fund Results Framework. Following the AF updated USP Guidance, the terminal evaluation will also will evaluate the extent to which the ESMP has been applied to the USPs during implementation of the project and the effectiveness of the process. It will review the extent to which safeguards measures have been integrated in the project/programme ESMP following USP identification, and if this was done comprehensively.	Independent Evaluator; M&E Officer	128,000	Final 6 months of project
Final Report and Project Completion Summary	Compile a comprehensive final report covering the entire project lifecycle. This report will include all findings from the evaluations, lessons learned, challenges, successes, and recommendations for future projects. It will also summarize financial and administrative aspects and ensure alignment with project goals and the AF Results Framework. This will also include the Project Completion Summary, summarizing the projects overall achievements as per decisions B.16/21 and B.18/29, the Adaptation Fund Board	~~Executing Entity~~NIE supported by EEs; M&E Specialist	10,000	Final 6 months of project
Final Dissemination Workshop	Organize a final dissemination workshop to present key findings, lessons learned, and recommendations to stakeholders, including government bodies, implementing partners, and local communities. This workshop will facilitate knowledge sharing and discuss strategies for scaling up or replicating successful activities.	~~Executing Entity; Implementing Partners~~NIE supported be EEs; M&E Officer	30,000	Final 6 months of project
Knowledge Management & Learning	Document lessons learned, success stories, and case studies. Facilitate learning exchanges between counties and thematic working groups. Capture learning in annual reports and CCD knowledge platforms.	KM Officer; M&E Unit	Included	Annually; End of Project
Financial Reports	Prepare annual financial reports detailing expenditures and fund utilization for transparency and compliance.	Financial Officer; PMU	Included	Annually
Financial Audits	Conduct an independent annual audit to verify compliance with Adaptation Fund financial management standards.	External Auditor; Financial Management Team	45,000	Annually
		Total	63520,000	USD

E. Results framework

Overall project objective / Impact	
Vulnerable communities in EWASO NYIRO RIVER BASIN experience improved well-being, water access, food security, and reduced vulnerability to climate change and climate-induced shocks, contributing to sustainable development and climate resilience	
Beneficiaries	
Total direct beneficiaries supported by the project **1*	358,925
Female direct beneficiaries	180,539
Youth (age 15 – 24) direct beneficiaries	72,466

**1* Calculated by including all direct beneficiaries from Component "Climate-resilient water access for human and livestock consumption" (282,000) and half of the beneficiaries from Component "Ecosystem restoration and climate resilient livelihoods for food and nutrition security" (76,925 out of 153,850), avoiding double-counting.

Adaptation Fund Core Impact Indicator "Number of Beneficiaries"				
Date of Report	10th June 2025			
Project Title	AWARE: Adaptation for Water Access and Resilience in Ewaso Nyiro River Basin			
Country	Kenya			
Implementing Agency	National Environment Management Authority			
Project Duration	January 2026 – January 2029			
	Baseline *(absolute number)*	Target at project approval *(absolute number)*	Adjusted target first year of implementation *(absolute number)*	Actual at completion[7] *(absolute number)*
Direct beneficiaries supported by the project	0	358,925	-	-
Female direct beneficiaries	0	180,539	-	-
Youth direct beneficiaries	0	72,466	-	-
Indirect beneficiaries supported by the project	0	2,949,858 (population of 4 target counties)	-	-
Female indirect beneficiaries	0	1,483,778	-	-
Youth indirect beneficiaries	0	595,576	-	-

Adaptation Fund Core Impact Indicator "Early Warning Systems"				
Date of Report	10th June 2025			
Project Title	AWARE: Adaptation for Water Access and Resilience in Ewaso Nyiro River Basin			
Country	Kenya			
Implementing Agency	National Environment Management Authority			
Project Duration	January 2026 – January 2029			
	Baseline	Target at project approval	Adjusted target first year of implementation	Actual at completion
Adopted Early Warning Systems *(Category targeted – 1, 2, 3, 4; and absolute number)* *(1) risk knowledge,* *(2) monitoring and warning service,* *(3) dissemination and communication,* *(4) response capability.* *(report for each project component)*	0	4	-	-
Hazard *(select from the list on page 2)* *(report for each project component)*	Droughts	Floods & droughts	-	-
Geographical coverage *(km2)* *(report for each project component)*	0	Total coverage - Marsabit (66,923 km2), Wajir (55,840km2), Mandera (25797km2), Garissa (44753km2)	-	-
Number of municipalities *(number)* *(report for each project component)*	0	24 sub-counties	-	-

Adaptation Fund Core Impact Indicator "Natural Assets Protected or Rehabilitated"				
Date of Report				
Project Title	Adaptation for Water Access and Resilience in Ewaso Nyiro River Basin (AWARE)			
Country	Kenya			
Implementing Agency	National Environment Management Authority (NEMA)			
Project Duration	3 years			
	Baseline	**Target at project approval**	**Adjusted target first year of implementation**	**Actual at completion**
Natural Asset or Ecosystem Rangeland ecosystems in target arid counties of Marsabit, Mandera,	550 ha	4,800 ha	To be filled during baseline survey	To be filled at project closure

Wajir and Garissa				
Change in State Increased vegetation cover, soil stability and forage availability observed in treated areas	>60% bare ground, compacted and crusted soils Limited soil organic matter Dominance of unpalatable and invasive plant species	>50% ground cover Improved soil structure Return of key forage species	To be filled during baseline survey	To be filled at project closure
Total number of natural assets or ecosystems protected/rehabilitated	4 rangeland blocks* partially functional **Rangeland blocks referring to distinct spatial units of rangelands within the project area that are geographically bound and with similar vegetation* types, *degradation levels*	11 rangeland zones/blocks (with integrated restoration interventions)	To be filled during baseline	To be filled at project closure

Intended Results	Indicators / Measures	Means of Verification	Baseline Values	Final Targets
~~Impact~~Project Objective: Vulnerable communities in EWASO NYIRO RIVER BASIN experience improved well-being, water access, food security, and reduced vulnerability to climate change and climate-induced shocks, contributing to sustainable development and climate resilience.	% of households with at least basic water access in target counties~~(nationally) (distributed by male and female headed households)~~ ~~% of people accessing climate resilient water services~~	DHS data~~, Baseline assessment and terminal evaluation~~,JMP~~, Baseline assessment and terminal evaluation~~	54.7%~~62.90%~~0	~~63.5%~~282,00059.7%
	% of target households engaged in new diversified livelihoods reporting sustained income generation from these activities	Baseline assessment and terminal evaluation	TBD	TBD
	Adopted Early Warning Systems (AF Core impact indicator) (Category targeted – 1, 2, 3, 4; and absolute number) (1) risk knowledge, (2) monitoring and warning service, (3) dissemination and communication, (4) response capability, ~~% of targeted households reporting understanding of and trust in the early warning system (distributed by male and female headed households)~~	Baseline assessment and terminal evaluation ~~Baseline assessment and terminal evaluation~~	0 ~~TBD~~	4 ~~20% increase~~
	~~Number of~~# ~~of new or updated climate adaptation knowledge products, policies, or guidelines developed and institutionalized by the~~ Ministry of Environment, Climate Change, and Forestry has functional ~~knowledgeg~~knowledge management	Systems and Physical document	no	yes

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	platform and an updated National Adaptation Plan~~y~~ ~~National Adaptation Plans developed~~			
	~~Number of~~% of population in targeted towns covered by sustainable waste collection systems ~~benefitingfrom infrastructure and/or awareness creation interventions~~	Census, Baseline assessment and terminal evaluation	~~0~~11.6%	~~22,407~~90, 50%
~~OUTCOME 1: By 2029, increased numbers of people are benefiting from climate-resilient water systems in targeted communities within the Ewaso Nyiro North River Basin (ENRB)~~	~~No. of people using climate resilient water sources~~	~~Baseline assessment and terminal evaluation~~	~~0~~	~~282,000~~
OUTCOME 1: By 2029, increased numbers of people are benefiting from climate-resilient water systems in targeted communities within the Ewaso Nyiro North River Basin (ENRB)	# of people benefiting from climate resilient water ~~access systems constructed or rehabilitated~~facilities through project AWARE interventions	Baseline assessment and terminal evaluation ~~Visits, construction completion reports~~	0	138282,000
	% change in Non-Revenue Water (NRW) for targeted utilities	WASREB impact report	55.70%	~~5% reduction~~47%
Output 1.1: Enhanced capacity of Water Resource Management Institutions and professionals for sustainable groundwater development and management in ENRB	# of professionals from Water Resource Management Institutions trained in sustainable groundwater development and management	Training reports, attendance sheets	0	200
Output 1.2 Improved rain/floodwater harnessing for Managed Aquifer Recharge (MAR) and Nature-based Solution (NbS)	# of Managed Aquifer Recharge sites constructed	Visits, reports	0	48
Output 1.3: Community-validated Climate-resilient groundwater infrastructure developed and in operation in target communities within ENRB counties	# of new climate-resilient groundwater access systems constructed in target communities	Visits, construction completion reports	0	60
	# of existing groundwater access systems in target communities rehabilitated or upgraded with climate-resilient features	Visits, construction completion reports	0	40
Output 1.4: Strengthened financial management capacity of Water Services for sustainable water service delivery in the context of climate change	# of staff from County Government & Water Service Providers trained in climate-sensitive financial planning, budgeting, and resource mobilization	Training reports, attendance sheets	0	130
	# young people in rural areas trained on sustainable climate resilient water supply operation and maintenance	Training reports, attendance sheets	0	100
OUTCOME 2: By 2029, communities in targeted ENRB locations have established and sustained climate-resilient and diversified livelihoods supported by functional water infrastructure	~~# of water infrastructure developed, rehabilitated and maintained by target communities~~Climate adaptation ~~benefit Score~~, # of people benefiting from improved water sources for food security	Baseline assessment and terminal evaluation ~~Project completion reports; Satellite imagery~~Baseline and ~~Annual Outcome;~~	TBD~~030.70~~%	~~11≥ baseline value for medium and high categories~~126,000

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and resilient and productive ecosystems		Monitoring report		
	# of people benefiting from adoption of complementary livelihood options or climate smart and regenerative agriculture~~Climate Resilience Score~~	Baseline assessment and terminal evaluation ~~Baseline and Annual Outcome; Monitoring report~~	TBD~~16.80%~~	36,850 ~~-~~
	% of households reporting increased consumption of locally produced nutritious foods ~~Area of degraded land brought under restoration~~	County Nutrition Policies& Strategies; Baseline assessment and terminal evaluation~~Programme reports; Satellite imagery~~	16.80%~~550 ha~~	40%~~4,800 ha~~
	Area of degraded land brought under restoration~~% of households reporting increased consumption of locally produced nutritious foods~~	Programme reports; Satellite imagery~~County Nutrition Policies& Strategies; Baseline assessment and terminal evaluation~~	550 ha~~16.80%~~	4,800 ha~~40%~~
Output 2.1: Prioritized rangeland resources including land are brought under restoration, safeguarded and sustainably managed for improved climate change resilience	# of assets built, restored or maintained by target households and communities, by type and unit of measure~~Hectares of land rehabilitated and restored~~	Field monitoring & mapping Satellite imagery~~Programme reports; Satellite imagery~~	28~~550 ha~~	1100~~4,800 ha~~
	~~Number #~~ of rangeland management plans developed or updated by communities and /or local institutions, incorporating sustainable land management practices	Programme reports	0	11
Output 2.2: Community-validated climate resilient water infrastructure developed and or rehabilitated for food security	~~Number #~~ of water infrastructure developed, rehabilitated and maintained by target communities	Project completion reports; Satellite imagery	0	20
	~~Number #~~ of water management committees established and/or strengthened	Programme documents	0	11
Output 2.3: Climate-smart agriculture and nature-based enterprises promoted through inclusive value chains for climate resilient livelihoods	~~Number #~~ of people benefitting from sustainable agricultural practices such as climate smart and regenerative agriculture	Farmer surveys	6,110	8,800
	~~Number #~~ of people benefiting from adoption of complementary livelihood options (fodder production, beekeeping, gums and resins etc.)	Programme documents	0	14,050
Output 2.4: Improved household access to nutritious and diversified diets, contributing to enhanced livelihood resilience	# of Health Care Workers (HCWs) and Community Health Volunteers (CHVs) trained to promote climate resilient, nutritious livelihood production and related behaviour change~~ % of households reporting increased consumption of locally produced nutritious foods~~	Programme documents~~County Nutrition Policies& Strategies; Baseline assessment and terminal evaluation~~	~~16.80%~~0	~~40%~~420
	# of household reached with awareness and capacity building on food storage and processing	Programme documents	0	360

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	activities to increase climate resilient food security and nutrition			
OUTCOME 3: By 2029, communities in targeted ENRB locations benefit from having an enhanced early warning system	# of counties benefiting from improved flood and drought early warning system~~community-based communication channels identified and utilized for last-mile dissemination~~• ~~% of targeted households reporting understanding of and trust in the early warning system~~	Baseline assessment and terminal evaluation	0~~TBD~~	4~~TBD~~
	~~# of staffs in local~~KMD, NDMA and WRA at National and county level ~~institutions trained and~~ have enhanced capacity to issue timely flood and drought early warnings	KMD early warnings, NDMA early warning bulletins	no~~0~~	~~20~~ yes
Output 3.1: Flood EWS accuracy improved by incorporating more data using existing open source flood models	~~•~~ Existence of clearly defined and disseminated operational guidelines and Standard Operating Procedures (SOPs) for the flood EWS, outlining roles, responsibilities, data flow, and alert dissemination mechanisms	Physical document	0	4
	~~•~~ # of county officials trained on the updated flood EWS	Training reports, attendance sheets	0	20
Output 3.2: Improved Anticipatory Action triggers defined in updated plans, integrating (child) vulnerability in target counties and nationally	~~•~~ # of anticipatory action plans (AAPs) developed for flood risks in targeted counties, outlining triggers that integrate vulnerability measurements	physical document	0	4
	~~•~~ integrated CCDRM and seasonal forecast being published twice a year	KMD seasonal forecasts		2
Output 3.3: County budgeting process for Anticipatory Action strengthened	~~•~~ # of evidence-based advocacy pieces generated to influence DRM resource allocation in programme-based budget	Physical document	0	5 (Budget brief for Water Sector; 4 county DRM-specific presentations)
Output 3.4: Early Warning Communication systems improved to effectively reach last-mile communities	~~•~~ # of tailored climate service products and EWS messages developed and disseminated in accessible formats and languages for different vulnerable groups	Messaging matrix document report, radio feedback reports, copies of radio spots	0	4
OUTCOME 4: By 2029, the Ministries of Environment and Water and County Climate Units in targeted ENRB counties adopt an enhanced coordination and governance framework.	Functional and regularly updated climate change and adaptation knowledge platform established~~# of sectoral stakeholders engaged in NAP including vulnerable groups, women and children.~~	~~Minutes of meetings, attendance sheets~~Web platform	~~0~~no	~~360~~yes
	# of national adaptation plans updated~~# of staff from the Ministry of Water, WRA, county Water department, and targeted County Climate Units trained in inclusive and participatory climate adaptation planning and coordination processes relevant to the water sector~~	physical document~~Training reports, attendance sheets~~	~~0~~0	~~1~~80
Output 4.1: Enhanced capacity of the Ministry of Water and County Climate Unites in targeted ENRB Counties for inclusive and participatory climate adaptation planning and coordination in the	# of staff from the Ministry of Water, WRA, county Water department, and targeted County Climate Units trained in inclusive and participatory climate adaptation planning and coordination processes relevant to the water sector	Training reports, attendance sheets	0	80

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water sector.				
Output 4.2: National Adaptation Plan (NAP) and key elements of National Environment Action Plan (NEAP) updated through an inclusive and participatory process incorporating feedback from key stakeholders, including youth and ENRB County Representatives	Existence of a Monitoring and Evaluation (M&E) framework for the updated NAP with clearly defined indicators and reporting mechanisms.~~• Number of national adaptation plans updated~~	physical document~~physical document~~	0~~0~~	1~~1~~
	# of sectoral stakeholders engaged in NAP including vulnerable groups, women and children	Minutes of meetings, attendance sheets	0	360
Output 4.3: Increased capacity of youth in targeted ENRB counties to meaningfully participate in climate adaptation governance and action	~~•~~ # of youth trained in climate change adaptation and the development of bankable projects	Training reports, attendance sheets	0	60
	~~•~~ # of youth representatives actively participating in climate adaptation policy processes	Training reports, attendance sheets	0	30
Output 4.4: A functional and regularly updated climate change and adaptation knowledge platform established and used by the Ministries, County Climate Units, Youth, and other stakeholders in targeted ENRB counties	~~• Number #~~ of users actively accessing and using KM platforms (HackMD, Power BI, IHP-WINS)	• System admin logs • Platform usage statistics • User access reports		12 trained and active users across county and national levels
	~~• Number #~~ of local climate adaptation stories shared in multimedia formats via appropriate dissemination channels	• Story repository (e.g., IHP-WINS, WhatsApp archives) • Radio airing records • Community feedback		≥12 county-level stories collected and disseminated via IHP-WINS, radio, YouTube, WhatsApp, or posters
OUTCOME 5: By 2029, an increased number of people in targeted ENRB communities benefit from safe climate-resilient waste management and water quality practices in communities	~~# of climate-resilient waste sites developed, including Material Recovery Facilities.~~ # of people benefiting from climate resilient waste management services	Baseline assessment and terminal evaluation	0	22,407~~3~~
	# of staff in targeted institutions trained on safe and climate-resilient waste management protocols and/or water quality monitoring	Baseline assessment and terminal evaluation	0	135
	# of community members reached through education and awareness campaigns on safe and climate-resilient waste management practices and the link to water quality	Programme reports	0	90,000
Output 5.1: Enhanced technical capacity of relevant institutions in targeted ENRB Counties for water quality monitoring and enforcement related to waste management.	~~•~~ # of NEMA officials trained in basic water quality monitoring techniques	Training reports, attendance sheets	0	15
	~~•~~ # of counties with established mechanisms for regular water quality monitoring		0	4
Output 5.2: Increased access to climate-resilient waste management infrastructure	~~•~~ # of climate-resilient waste sites developed, including Material Recovery Facilities.	Visits, construction completion reports	0~~0~~	3
Output 5.3: Improved knowledge and adoption of safe and climate-resilient waste management practices and the importance of	~~•~~ # of ~~community members reached through~~villages reached with education and awareness ~~campaigns~~ raising sessions on safe and climate-resilient waste management practices and the link to water quality	Programme reports	0	150~~90,000~~

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water quality monitoring within communities and institutions				
Output 5.4: Strengthened organizational capacity of county environmental committees in ENRB Counties to develop, implement, and monitor policies and actions addressing waste-related water pollution.	# of targeted counties with established and functional environmental committees	Programme reports, Baseline assessment and terminal evaluation	0	2
	# of members of County Environmental Committees (CECs) trained in policy development, implementation, and monitoring related to waste management and water pollution	Training reports, attendance sheets	0	60

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F. Project alignment with Results Framework of the Adaptation Fund

Project Objective(s)	Project Objective Indicator(s)	Fund Outcome (s)	Fund Outcome Indicator(s)	Grant Amount (USD)
Objective: Vulnerable communities in EWASO NYIRO RIVER BASIN experience improved well-being, water access, food security, and reduced vulnerability to climate change and climate-induced shocks, contributing to sustainable development and climate resilience.	% of households with at least basic water access in target counties	Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	8,425,000
			4.1. Responsiveness of development sector services to evolving needs from changing and variable climate	952,000
	% of target households engaged in new diversified livelihoods reporting sustained income generation from these activities	Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure access to livelihood assets	2,200,000
			6.2. Percentage of targeted population with sustained climate-resilient alternative livelihoods	1,375,000
		Outcome 5: Increased ecosystem resilience in response to climate change and variabilityinduced stress	5. Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress	1,925,000
	Adopted Early Warning Systems (AF Core impact indicator) (Category targeted – 1, 2, 3, 4; and absolute number) (1) risk knowledge, (2) monitoring and warning service, (3) dissemination and	Outcome 1: Reduced exposure to climate-related hazards and threats	1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis	480,000
		Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	320,000

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	communication, (4) response capability.			
	# Ministry of Environment, Climate Change, and Forestry has functional knowledge management platform and an updated National Adaptation Plan	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses	293,484
		Outcome 7: Improved policies and regulations that promote and enforce resilience measures	7. Climate change priorities are integrated into national development strategy	400,000
	% of population in targeted towns covered by sustainable waste collection systems	Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	319,000
			4.1. Responsiveness of development sector services to evolving needs from changing and variable climate	106,000
		Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses	75,000
Project Outcome(s)	**Project Outcome Indicator(s)**	**Fund Output (s)**	**Fund Output Indicator(s)**	**Grant Amount (USD)**
OUTCOME 1: By 2029, increased numbers of people are benefiting from climate-resilient water systems in targeted communities within the Ewaso Nyiro North River Basin (ENRB)	# of people benefiting from climate resilient water facilities through project AWARE interventions	Output 4: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by sector and scale)	8,425,000
			4.1.1. No. and type of development sector services modified to respond to new conditions resulting from climate variability and change (by sector and scale)	270,000
	% change in Non-Revenue Water (NRW) for targeted utilities	Output 4: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	4.1.1. No. and type of development sector services modified to respond to new conditions resulting from climate variability and change (by sector and scale)	682,000
OUTCOME 2: By 2029, communities in targeted ENRB locations have	# of people benefiting from improved water sources for food security	Output 6: Targeted individual and community livelihood strategies strengthened in	6.1.1. No. and type of adaptation assets (tangible and intangible) created or	2,200,000

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established and sustained climate-resilient and diversified livelihoods supported by functional water infrastructure and resilient and productive ecosystems		relation to climate change impacts, including variability	strengthened in support of individual or community livelihood strategies	
	# of people benefiting from adoption of complementary livelihood options or climate smart and regenerative agriculture	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.2.1. Type of income sources for households generated under climate change scenario	825,000
	% of households reporting increased consumption of locally produced nutritious foods	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1. No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies	550,000
	Area of degraded land brought under restoration	Output 5: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	5.1. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)	1,925,000
OUTCOME 3: By 2029, communities in targeted ENRB locations benefit from having an enhanced early warning system	# of counties benefiting from improved flood and drought early warning system	Output 1.1: Risk and vulnerability assessments conducted and updated	1.2 No. of early warning systems (by scale) and no. of beneficiaries covered	480,000
	KMD, NDMA and WRA at National and county level have enhanced capacity to issue timely flood and drought early warnings	Output 2.1: Strengthened capacity of national and sub-national centres and networks to respond rapidly to extreme weather events	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events (by gender)	320,000
OUTCOME 4: By 2029, the Ministries of Environment and Water and County Climate Units in targeted ENRB counties adopt an enhanced coordination and governance framework.	Functional and regularly updated climate change and adaptation knowledge platform established	Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.2.2 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	293,484
	# of national adaptation plans updated	Output 7: Improved integration of climate-resilience strategies into country development plans	7.1. No. of policies introduced or adjusted to address climate change risks (by sector)	400,000
OUTCOME 5: By 2029, an increased number of people in targeted ENRB communities benefit from safe climate-resilient	# of people benefiting from climate resilient waste management services	Output 4: Vulnerable development sector services and infrastructure assets strengthened in response to	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by sector and scale)	319,000

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waste management and water quality practices in communities		climate change impacts, including variability			
	# of staff in targeted institutions trained on safe and climate-resilient waste management protocols and/or water quality monitoring	Output 4: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	4.1.1. No. and type of development sector services modified to respond to new conditions resulting from climate variability and change (by sector and scale)	106,000	
	# of community members reached through education and awareness campaigns on safe and climate-resilient waste management practices and the link to water quality	Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.2.1 No. of technical committees/associations formed to ensure transfer of knowledge	75,000	

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Project Objective(s)	Project Objective Indicator(s)	Fund Outcome (s)	Fund Outcome Indicator(s)	Grant Amount (USD)
Impact: Vulnerable communities in EWASO NYIRO RIVER BASIN experience improved well-being, water access, food security, and reduced vulnerability to climate change and climate-induced shocks, contributing to sustainable development and climate resilience.	% households with at least basic water access (nationally)	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	952,000
		Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	8,425,000
	% of target households engaged in new diversified livelihoods reporting sustained income generation from these activities	Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure access to livelihood assets	4,125,000
			6.2. Percentage of targeted population with sustained climate-resilient alternative	1,375,000

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			livelihoods	
	% of targeted households reporting understanding of and trust in the early warning system	Outcome 1: Reduced exposure to climate-related hazards and threats	1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis	800,000
	Number of National Adaptation Plans developed	Outcome 7: Improved policies and regulations that promote and enforce resilience measures	7. Climate change priorities are integrated into national development strategy	693,484
	Number of people benefiting from climate resilient waste management	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	181,000
		Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	319,000
Project Outcome(s)	**Project Outcome Indicator(s)**	**Fund Output (s)**	**Fund Output Indicator(s)**	**Grant Amount (USD)**
OUTCOME 1: By 2029, increased numbers of people are benefiting from climate-resilient water systems in targeted communities within the Ewaso Nyiro North River Basin (ENRB)	# of climate resilient groundwater access systems constructed or rehabilitated	Output 4: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	4.1.1. No. and type of development sector services modified to respond to new conditions resulting from climate variability and change (by sector and scale)	6,265,000
	# of professionals from Water Institutions trained in climate change, sustainable groundwater development and management	Output 2.1: Strengthened capacity of national and sub-national centres and networks to respond rapidly to extreme weather events	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events (by gender)	952,000
	# of Managed Aquifer Recharge sites constructed	Output 5: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	5.1. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)	2,160,000
OUTCOME 2: By 2029,	Number of water	Output 6: Targeted	6.1.1. No. and type of	

communities in targeted ENRB locations have established and sustained climate resilient and diversified livelihoods supported by functional water infrastructure and resilient and productive ecosystems	infrastructure developed, rehabilitated and maintained by target communities	individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies	2,200,000	
	Number of people benefiting from adoption of complementary livelihood options or climate smart and regenerative agriculture	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.2.1. Type of income sources for households generated under climate change scenario	1,375,000	
	Area of degraded land brought under restoration	Output 5: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	5.1. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)	1,925,000	
OUTCOME 3: By 2029, communities in targeted ENRB locations benefit from having an enhanced early warning system	% of targeted households reporting understanding of and trust in the early warning system	Output 1.1: Risk and vulnerability assessments conducted and updated	1.2 No. of early warning systems (by scale) and no. of beneficiaries covered	300,000	
	# of staffs in local institutions trained and enhanced capacity to issue timely flood and drought early warnings	Output 2.1: Strengthened capacity of national and sub-national centres and networks to respond rapidly to extreme weather events	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate related events (by gender)	500,000	
OUTCOME 4: By 2029, the Ministries of Environment and Water and County Climate Units in targeted ENRB counties adopt an enhanced coordination and governance framework.	# of sectoral stakeholders engaged in NAP including vulnerable groups, women and children.	Output 7: Improved integration of climate-resilience strategies into country development plans	7.1. No. of policies introduced or adjusted to address climate change risks (by sector)	493,484	
	# of staff from the Ministry of Water, WRA, county Water department, and targeted County Climate Units trained in inclusive and participatory climate adaptation planning and coordination processes relevant to the water sector	Output 2.1: Strengthened capacity of national and sub-national centres and networks to respond rapidly to extreme weather events	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate related events (by gender)	200,000	
OUTCOME 5: By 2029, an increased number of people in targeted ENRB communities benefit from safe climate-resilient waste	# of climate-resilient waste sites developed, including Material Recovery Facilities.	Output 4: Vulnerable development sector services and infrastructure assets strengthened in response to climate change	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and	319,000	

~~management and water quality practices in communities~~		~~impacts, including variability~~	~~change (by sector and scale)~~		
	~~# of staff in targeted institutions trained on safe and climate-resilient waste management protocols and/or water quality monitoring~~	~~Output 2.1: Strengthened capacity of national and sub-national centres and networks to respond rapidly to extreme weather events~~	~~2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events (by gender)~~	~~181,000~~	

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G. Detailed budget

Act.	Description	Estimated Budget (USD)	Budget notes	EE
Component 1: Climate resilient water access for human and livestock use		9,377,000		UNICEF
Output 1.1: Enhanced capacity of Water Resource Management Institutions and professionals for sustainable groundwater development and management in ENRB		270,000		UNICEF
1.1.1	Develop and implement training program on climate change & hydrological analysis in partnership with Hydrological Society of Kenya (HSK) and the Hydrologists Registration Board and establish structure for Continuous Professional Development (CPD) in HSK.	90,000	Budget includes costs for subject matter specialists and trainings targeting 450 hydrologists and water engineers from national (WRA and MoWSI) and county governments water services departments. Implementation will be through the professional societies.	UNICEF
1.1.2	Develop and implement training program on hydrogeological analysis & best practices with GSK and establish structure for CPD in Geological Society of Kenya (GSK)	90,000	Budget includes costs for subject matter specialist and trainings for 450 hydrogeologists from national (WRA&MoWSI) and county government water services department and the private sector (consultancy firms). Implementation will be through UNESCO and professional societies.	UNICEF
1.1.3	Establish structure for CPD and training program of drillers including on design, construction & operation of climate resilient borehole water supply systems for graduate engineers	90,000	Budget includes costs for subject matter specialist and trainings for 450 water engineers and drillers from national (WRA& MoWSI) and county government water services department and the private sector (drilling companies and consultancy firms). Implementation will be done through the MoWSI and the water industry association.	UNICEF
Output 1.2 Improved rain/floodwater harnessing for Managed Aquifer Recharge (MAR) and Nature-based Solution (NbS)		2,160,000		UNICEF
1.2.1	Feasibility study to identify locations for construction of water conservation (sand dams) and Managed aquifer structures (Reverse wells) in priority sub drainage basins, site and design.	240,000	Feasibility studies will be conducted in each of the priority sub drainage basins applying landscape approach to 3R (recharge, retention and reuse) assessment to site and design sand dams and managed aquifer recharge structures. Total of 8 studies and design report will be developed.	UNICEF
1.2.2	Construct sand dams and /or sub surface dams and provide solarized water abstraction equipment and community water points.	1,600,000	This includes construction and equipping of 40 sand dams of varying dimensions as identified in the feasibility study and	UNICEF

			distribute across the 4 counties and aligned with WFP resilience hubs	
1.2.3	Construct water filtration and reverse wells for managed aquifer recharge to increase yields and /or reduce salinity of existing boreholes.	320,000	This will include construction and equipping of 8 water filtration and reverse wells for managed aquifer recharge of existing boreholes to improve yield and water quality.	UNICEF
Output 1.3: Community-validated Climate-resilient groundwater infrastructure developed and in operation in target communities within ENRB counties		6,265,000		UNICEF
1.3.1	Drill and equip new boreholes for climate resilient community water supplies including solarization - standard wells <300m including hydrogeological and geophysical survey	4,125,000	This will include construction and equipping of 56 new boreholes including doing the necessary geohydrological surveys. Equipping includes the solarization, livestock trough construction and water kiosk.	UNICEF
1.3.2	Upgrading of existing borehole systems to be climate resilient for communities in water scarce locations focusing on LNOB groups including solarization	860,000	This will include rehabilitating and upgrading of 41 existing boreholes including deepening the borehole to more resilient depth. Equipping includes the solarization, livestock trough construction and water kiosk.	UNICEF
1.3.3	Provision of climate resilient water supply connection to schools	200,000	This will include piping, and installation of water tanks as well as handwashing points at 40 schools	UNICEF
1.3.4	Provision of climate resilient water supply connection to Healthcare facilities	200,000	This will include piping, and installation of water tanks as well as handwashing points at 40 healthcare facilities	UNICEF
1.3.5	Upgrading of Shallow Wells to green energy Pumped Systems	80,000	This will include rehabilitating and upgrading of 10 existing wells Equipping includes the solarization, livestock trough construction and water kiosk.	UNICEF
1.3.6	Construction of multi-village water supply scheme including hydrogeological & geophysical survey	800,000	This includes piping to water kiosks in 4 villages within a radios of 3-5km from the water point. These schemes will be constructed in 4 locations.	UNICEF
Output 1.4: Strengthened financial management capacity of Water Services for sustainable water service delivery in the context of climate change		682,000		UNICEF
1.4.1	Train young people in rural areas on sustainable climate resilient water supply operation and maintenance - 3 months (training, coaching / mentoring and follow up - at Kenya Water Institute and provide basic tools	100,000	Budget includes costs for subject matter specialists to conduct training needs assessment and formulate training modules, delivery of training at the learning institutions and accommodation of trainees as well as field follow up for coaching and mentoring. UNICEF has developed LTA (Long Term Agreement) with Kenya Water Institute.	UNICEF
1.4.2	Build capacity of County water departments and Water Service Providers on climate resilient planning, design, O&M, water safety planning, WQ monitoring & last-mile connectivity to LNOB groups	31,000	Budget includes costs for subject matter specialists and trainings. The training will be onsite at the respective county governments. Subject specialists will be from MoWSI, the Kenya School of Government, the national Water regulator (WASREB) and UNICEF	UNICEF
1.4.3	Establish & operationalize professional O&M model in all rural areas	40,000	Budget includes costs for subject matter specialist to assess and design model, dissemination and technical backstopping. The activity will be implemented through to institutional contractors.	UNICEF
1.4.4	Technical support to WSPs to develop sustainable tariff for full O&M cost recovery by ensuring affordability for LNOB groups	140,000	Budget includes costs for subject matter specialist for socio-economic survey, technical assessments and consultations to develop regular tariff proposal for approval by the regulator	UNICEF
1.4.5	WSPs supported to increase metering ratio to reduce Non Revenue Water and Internet of Things technology adopted to support data management, leakage detection and service monitoring	70,000	Budget includes costs for water meters and equipment, subject matter specialist follow ups and consultations	UNICEF

1.4.6	Build capacity of WSPs to enforce water resources management rules	35,000	Budget includes costs for subject matter specialist, technical support to the utilities and orientation meetings	UNICEF
1.4.7	Train Board of directors, water committees /municipal boards on water governance	35,000	Budget includes costs for subject matter specialist and on site trainings at respective utilities	UNICEF
1.4.8	Support WSPs develop & implement pro-poor policies	35,000	Budget includes costs for subject matter specialist, technical support to utilities and consultation meetings	UNICEF
1.4.9	Sensitization of community on County Water Governance, their water rights, WUA accountability, importance of payment for water, and feedback loops to regulator/oversight.	196,000	Budget includes costs for subject matter specialist and for community engagement sessions	UNICEF
Component 2: Ecosystem restoration and climate resilient livelihoods for food and nutrition security		5,500,000		WFP
Output 2.1: Prioritized rangeland resources including land are brought under restoration, safeguarded and sustainably managed for improved climate change resilience		1,925,000		WFP
2.1.1	Conduct participatory detailed assessments of land and water ecosystems to determine degradation levels, determine restoration opportunities and design restoration plans	220,000	Resources to be used in detailed assessments-fieldwork related costs, travel, laboratory tests. A total of 11 assessments will be conducted, targeting a total of 80 representatives from relevant national and county government departments representatives, partners from research and academia, community natural resource management groups, community leaders and members and NGOs working within the hubs	WFP
2.1.2	Implementation of ecosystem restoration through structural interventions including earthworks for soil and water conservation, erosion control structures, access control structures (check dams, terraces, contour bunds, negarims, gabions, riprap, grazing corridors)	907,500	Budget includes costs for demonstration of restoration approaches, purchase/hire of equipment and tools for restoration and maintenance of structures	WFP
2.1.3	Implementation of ecosystem restoration through biological (revegetation, reseeding, reforestation, agroforestry) restoration interventions (bio-swales, riparian buffers, vetiver hedge grows, shelterbelts, enclosures, reseeding units/grass seedbanks)	214,500	Budget includes costs for procurement of appropriate seeds, seedlings, tools and equipment	WFP
2.1.4	Formation and strengthening of relevant natural resource management groups (NRM) such as Rangeland Management Committees (RMCs) and Water Resource Users' Associations (WRUAs) for improved rangeland and watershed management and governance for sustainability	203,500	Costs include training, travel, venue hire, meals for participants and facilitators. A total of 11 trainings will be done, each targeting a total of 50 participants representing leaders from select NRM groups	WFP
2.1.5	Pollution control and sustainable land use - promoting sustainable agricultural practices, promoting integrated pest management, developing and enforcing guidelines to prevent encroachment and unsustainable activities	236,000	Costs include training, travel, venue hire, meals for participants and facilitators. A total of eight (8) training of trainers each targeting 120 representatives from smallholder farmer groups and community NRM groups.	WFP
2.1.6	Implement land and water ecosystem protection strategies, including small-scale flood control measures and implement nature-based approaches such as safeguarding riverbanks (Retaining walls, riprap, riparian buffers strips, vegetated terraces)	143,500	Costs include purchase of tools and equipment, seedlings and training on maintenance of structures	WFP
Output 2.2: Community-validated climate resilient water infrastructure developed and or rehabilitated for food security		2,200,000		WFP
2.2.1	Conduct multi-stakeholder (national, county and community level) mapping and consultation for the development and/or rehabilitation	143,000	Costs include travel and site visits. A total of 11 multi-stakeholder consultations targeting participation of 60	WFP

	of water infrastructure for productive use.		government representatives, community leaders and members	
2.2.2	Development and/or rehabilitation of community-validated climate resilient and sustainable water infrastructure including stormwater harvesting and storage and groundwater for small-scale irrigation. Efficient irrigation technologies that optimize water use to deliver more yields per unit of water used and that employ renewable energy for pumping will be adopted.	1,870,000	Costs include feasibility, ESIA, construction and/or rehabilitation. A total of 20 water pans will be rehabilitated in the sites determined/selected under Activity 2.2.1. Each water pan will support approximately 1,050 households and supporting cropping of 5 to 10 acres for 3 months	WFP
2.2.3	Formation and strengthening of relevant water management community groups for improved water management, including training of Irrigation Water Users' Associations on irrigation system management, on-farm water management and environmental issues in irrigation development and operation.	187,000	Costs include training, travel, venue hire, meals for participants and facilitators. A total of 11 trainings will be done, each targeting a total of 80 representatives from target community groups.	WFP
Output 2.3: Climate-smart agriculture and nature-based enterprises promoted through inclusive value chains for climate resilient livelihoods		825,000		WFP
2.3.1	Capacity strengthening to promote cultivation of nutrition-sensitive and drought-tolerant/climate adapted crops and livestock targeting smallholder farmers.	198,000	Costs include training, travel, venue hire, meals for participants and facilitators. A total of 11 training/demonstration sessions each targeting at least 400 smallholder farmers within the farms supported by the project.	WFP
2.3.2	Capacity strengthening of smallholder farmers to transition to climate-smart practices such as crop rotation, conservation tillage, cover cropping, agroforestry to enhance productivity of croplands	203,500	Costs include training, travel, venue hire, meals for participants and facilitators. A total of 11 training/demonstration sessions each targeting at least 400 smallholder farmers within the farms supported by the project.	WFP
2.3.3	Support development of nature-based enterprises run by women and youth such as beekeeping, fodder production, grass seed production and gums and resins and provide targeted support such as private sector and market linkages.	258,500	Costs include purchase of start up kits for selected enterprises and preliminary training. Targeting a variety of nature-based enterprises to support approximately 14,050 individuals adopt complementary livelihoods	WFP
2.3.4	Support community to access financial inclusion to enhance their social and economic adaptive capacities	165,000	Costs include training, travel, venue hire, meals for participants and facilitators. A total of 22 trainings to support formation of village saving and loan associations (VSLA). The trainings will target a total of 5,000 individuals over the project life time.	WFP
Output 2.4: Improved household access to nutritious and diversified diets, contributing to enhanced livelihood resilience		550,000		UNICEF
2.4.1	Integrate climate resilient water access as key pillar of improving nutrition outcome in existing guidelines feeding of young children, food for school age children and maternal nutrition.	40,000	Cost to support policy engagements (workshops and travel) to influence integration of water resilient in Key nutrition policies under review by supporting at least 5 county officials to engage and integrate climate water resilient access in Nutrition policies and strategies under review within the project period	UNICEF
2.4.2	Engage with research institutions and local private sector partners to develop and test environmentally friendly low-cost value addition processing of agricultural and livestock outputs into nutrient dense food products.	70,000	cost for one consultancy for all the 4 counties	UNICEF
2.4.3	Capacity strengthening of health facility and community health workers to promote the climate resilient, nutritious livelihood production and to support targeted communities to modify their behaviors, adopting practices that increase their ability to adapt to	160,000	Cost includes training at least 25 HCW per county and at least 80 CHVs per county, venue hire, meals for participants, Travel and coordination	UNICEF

	climate impacts			
2.4.4	Utilize existing community-based platforms to build awareness and modify behaviours to prioritize household consumption of a portion of the nutrition-and climate-sensitive livelihoods production.	160,000	Cost to support at least 6 community engagements Targeting 60 HHs per Community Unit	UNICEF
2.4.5	Capacity building on food storage, processing and meal preparation of introduced nutritious agri-livelihoods in order to build household food and nutrition security for improved climate resilience.	120,000	Cost to support at least 6 community engagements Targeting 60 HHs per Community Unit	UNICEF
Component 3: Enhanced early warning systems and anticipatory action		800,000		UNICEF
Output 3.1: Flood EWS accuracy improved by incorporating more data using existing open source flood models		100,000		UNICEF
3.1.1	Validate Google Flood hub inundation history maps for target counties with community and county stakeholders	60,000	Budget includes costs for subject matter specialist and workshop for approx. 40 community members and county officials for the 4 target counties	UNICEF
3.1.2	Train county WRA and County KMD on usage of Google Flood Hub EWS and integration in existing communication structures	40,000	Budget includes costs for subject matter specialist and workshop for approx. 20 people in the 4 target counties	UNICEF
Output 3.2: Improved Anticipatory Action triggers defined in updated plans, integrating (child) vulnerability in target counties and nationally		320,000		UNICEF
3.2.1	Integrate the Children Climate Disaster Risk Model (CCDRM) into the national seasonal forecasts issued by Kenya Meteorological Department	120,000	Budget includes costs for subject matter specialist and co-creation and validation workshops each with approx. 30 people	UNICEF
3.2.2	Review and improve triggers and thresholds for AA in county Anticipatory Action Plans and integrate (child) vulnerability data	200,000	Budget includes costs for subject matter specialist and 2 workshops (8 total) with 25 participants for each of the 4 target counties	WFP
Output 3.3: County budgeting process for Anticipatory Action strengthened		80,000		UNICEF
3.3.1	Assist counties in allocating and reporting a minimum of 2% of the development budget to DRM/AA	80,000	Budget includes costs for subject matter specialist and workshops with county executive members and county assembly members for the 4 target counties	UNICEF
Output 3.4: Early Warning Communication systems improved to effectively reach last-mile communities		300,000		
3.4.1	Conduct community HCD immersion session on EWS to understand local EW uptake and understanding	80,000	Budget includes costs for subject matter specialist and HCD research for 4 counties. 30 Community Own Resource Persons CORPS, e.g. Faith Leaders, Traditional Birth Attendants) per county participate in at-least 1 Climate HCD Session	UNICEF
3.4.2	Develop contextualized SBC Early Warning communication materials for radio, Community Health Promotors (CHPs) and other platforms in local languages	60,000	Budget includes costs for subject matter specialist and development of the communication package including pre-testing for 4 counties. 150 CHPs per county to participate in pre-testing and use of EWC materials	UNICEF
3.4.3	Train radio stations and CHPs on translation and communication of timely early warnings of flooding to community	90,000	Budget includes costs for subject matter specialist and trainings for 60 media personnel and 300 chps	UNICEF
3.4.4.	Train community health promotors and workforce and community social mobilizers on early warning communication and utilization/AA	70,000	Budget includes costs for subject matter specialist and trainings for 300 CHPs, 20 trainer of trainers and 120 CORPS	UNICEF
Component 4: System strengthening for enhanced climate adaptation coordination		693,484		UNICEF
Output 4.1: Enhanced capacity of the Ministry of Water and County Climate Unites in targeted ENRB Counties for inclusive and participatory climate adaptation planning and coordination in the water sector.		100,000		UNICEF
4.1.1	Provide technical capacity building for water sector professionals	40,000	Budget includes costs for subject matter specialist and	UNICEF

	and stakeholders to enhance climate adaptation coordination.		trainings, 4 trainings for approximately 10 people	
4.1.2	Strengthen the capacity of County Climate Change Units (CCUs) in targeted counties for effective coordination of water sector activities.	60,000	Budget includes costs for subject matter specialist and facilitation for yearly workshops (12 total) for each of the 4 counties with around 15 participants each.	UNICEF
Output 4.2: National Adaptation Plan (NAP) and key elements of National Environment Action Plan (NEAP) updated through an inclusive and participatory process incorporating feedback from key stakeholders, including youth and ENRB County Representatives		200,000		UNICEF
4.2.1	Update Kenya's National Adaptation Plan	80,000	Budget includes consultancy fee to write and compile information for the NAP	UNICEF
4.2.2	Conduct sectoral workshops to inform NAP including youth and women	120,000	Costs to facilitate 6 sectoral workshops each engaging approx. 30 people	UNICEF
Output 4.3: Increased capacity of youth in targeted ENRB counties to meaningfully participate in climate adaptation governance and action		100,000		UNICEF
4.3.1	Train youth on developing bankable climate change project proposals to engage them in climate action initiatives.	35,200	Costs to facilitate 1 week workshop for 60 youth and MECCF participation	UNICEF
4.3.2	Engage 1,000 young people in UNICEFs GreenRising through land restoration of 100 ha	64,800	train approx. 100 young people as trainer of trainers on land restoration methods and let the 100 engage 1000 other young people to participate in land restoration efforts. Cost will further include procurement of land restoration equipment and materials.	UNICEF
Output 4.4: A functional and regularly updated climate change and adaptation knowledge platform established and used by the Ministries, County Climate Units, Youth, and other stakeholders in targeted ENRB counties		293,484		UNICEF
4.4.1	Conduct a blended training program (1 physical and 2 virtual sessions) for County Climate Units and Component Knowledge Management Focal Points on the structured collection and dissemination of success stories, lessons learned, best practices, and implementation insights in climate adaptation projects.	102,884	Covers participant support, logistics, training materials, and facilitation for the first year (physical), years 2 & 3 (virtual) are covered partly by 4.4.5. Facilitation fee for on ground story collection. Per diem, transport, logistics, materials are one off only for the first year physical training.	UNICEF
4.4.2	Template and Taxonomy Development	7,000	Includes co-design of shared templates, expert validation, translation, and integration into HackMD	UNICEF
4.4.3	Use of Online Software (HackMD, Power BI, system support)	18,600	Covers licensing, hosting, and part-time technical admin support; Assumption that RapidPro and KoBo are cost-free via UNICEF	UNICEF
4.4.4	Story Dissemination & Communication Training	45,000	Training CCUs and youth on content packaging (radio, poster, WhatsApp); includes facilitation and basic tools	UNICEF
4.4.5	Centralized KM Management (QA, dashboard integration, oversight)	120,000	Ensures data quality, structured publishing, and integration into IHP-WINS, SMS, and WhatsApp systems	UNICEF
Component 5: Climate resilient Waste management for water quality		500,000		NEMA
Output 5.1: Enhanced technical capacity of relevant institutions in targeted ENRB Counties for water quality monitoring and enforcement related to waste management.		66,000		NEMA
5.1.1	Strengthen institutional capacity to monitor pollution levels in domestic water sources, especially during flood events when surface runoff can introduce contaminants into water systems.	15,000	Cost for 5 day training of 15 NEMA staff	NEMA
5.1.2	Procure portable water quality monitoring kits	25,000	Cost for 10 monitoring kits	NEMA
5.1.3	Develop training module on sustainable waste management and compliance with the sustainable waste management act	20,000	Consultancy to develop module	NEMA

5.1.4	Train government staff and waste handlers (County govt, CBO, contractors) sustainable waste management and compliance with the sustainable waste management act	6,000	2 day training for 30 people	NEMA
Output 5.2: Increased access to climate-resilient waste management infrastructure		319,000		NEMA
5.2.1	Establish Material Recovery Facilities (MRFs) to foster circularity in waste management, reducing waste that could clog drainage systems during floods and worsen flood impacts.	48,000	Construction of 2 MRF sites in Marsabit and Wajir	NEMA
5.2.2	Develop design for climate resilient waste management site adhering to all 10 criteria of the sustainable waste management act	20,000	Recruit engineering firm to develop a design for a climate resilient waste facility around Marsabit.	NEMA
5.2.3	Construct climate resilient waste management site (USP)	251,000	Construction of one waste management site in Marsabit. Budget includes costs for site specific ESIA and ESMP as activity 5.2.3 is an USP	NEMA
Output 5.3: Improved knowledge and adoption of safe and climate-resilient waste management practices and the importance of water quality monitoring within communities and institutions		75,000		NEMA
5.3.1	Conduct community education campaigns on the importance of waste segregation at source, recycling, and reuse, emphasizing how improper waste disposal worsens flooding and reduces water availability during droughts.	75,000	Facilitation of trainings of 150 communities and travel cost of NEMA staff conducting training	NEMA
Output 5.4: Strengthened organizational capacity of county environmental committees in ENRB Counties to develop, implement, and monitor policies and actions addressing waste-related water pollution.		40,000		NEMA
5.4.1	Strengthen the capacity of County Environment Committees to identify and address waste-related water pollution, focusing on mitigating flood-induced contamination and safeguarding water resources during droughts.	40,000	2 trainings for 30 people each	NEMA
Activities total cost		16,870,484		
Project execution cost		1,562,696	pro ratio to partners	pro ratio to partners
Project execution cost UNICEF		1,065,946		
	Staff - Project Manager	200,000		
	Staff - Project Support (communication, logistics, admin)	100,000		
	Travel Related to Project execution	80,000		
	Office facilities, equipment	124,922		
	EE overhead costs	561,024		
Project execution cost WFP ~~(9.5%)~~		489,250		
	Staff - Programme Policy Officer	194,741		
	Staff - Project field support	134,613		
	Travel related to project execution	108,000		
	Office facilities, equipment and communications	51,896		
Project execution cost NEMA (1.5%)		7,500		
	On site management and oversight	7500		
Total Project costs		18,433,180		
Project Cycle Management Fee (8.5%)		1,566,820	Incl. M&E Plan	NEMA
	Monitoring and Evaluation budget	~~6352~~0,000		
	Project implementation monitoring	~~710~~0,000		

	2 per year plannning and progress meetings	75,000		
	Project Knowledge management and learning	31,813738,462		
	Purchase of 32 Motor vehicles	150,000223,269		
	Utility Bills	6,000		
	Office day to day running costs	12,000		
	Office Equipment and Furniture	12,000		
	Communication costs	15,000		
	Community level meetings	9,000		
	Staff- Project Manager	132,390		
	Staff - Project Support (Communication, logistic, Admin)	109,127		
	Staff - Project Finance	102,435		
	Staff - Communication, M & E and GESI	102,435		
	Project financial audit and compliance	16,500		
	Travel related to project execution (RBM, Action Tracker and Financial review)	93,120		
Total amount of financing requested		20,000,000		

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H. Disbursement schedule

Project period: 1 January 2025 until 31 December 2027.

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Table 12: Project disbursement schedule

	Upon signature of Agreement	~~One year after project start~~Year 1	~~Two year after project start~~Year 2	Total (USD)
Scheduled date	1 Jan 2026	1 Jan 2027	1 Jan 2028	
Project funds (USD)	6,438,69889	7,540,599	4,453,883	18,433,180
Implementing entity fees (USD)	547,289	640,951	378,580	1,566,820
Total (USD)	6,985,98778	8,181,550	4,832,463	20,000,000

[1] The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government[2]

Endorsement letter is in Annex 16

Dr. Eng. Festus K. Ng'eno, MIEK, CBS *Principal Secretary,* *State Department For Environment & Climate Change* *Ministry of Environment, Climate Change & Forestry*	Date*: 21 March 2025*

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

B. Implementing Entity certification

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (Kenya Vision 2030, Kenya NDC 2020, Kenya National Climate Change Action Plan 2023-2027 and the National Adaptation Plan 2015-2030) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.

MAMO BORU MAMO

Name & Signature

Mamo Boru Mamo, EBS
Director General NEMA
Implementing Entity Coordinator

Date: 05/05/2025	Tel. and email: dgnema@nema.go.ke Tel: +254 725746493

Project Contact Person:
Jusper M. Omwenga, PhD
Principal Environmental Planning and Climate Change Scientist
National Environment Management Authority

Tel. And Email:
Email: jomwenga75@gmail.com;jomwenga@nema.go.ke
Tel: +254 721473901; +254 735396670

[6] Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities

Annex 16: Endorsement letter of NDA

REPUBLIC OF KENYA

MINISTRY OF ENVIRONMENT, CLIMATE CHANGE & FORESTRY
State Department for Environment & Climate Change
Office of the Principal Secretary

Telegrams: "NATURE", Nairobi
Telephone: 254-20- 2730808/9
Fax: 254-20- 2734722
Email : psoffice@environment.go.ke

SHA BUILDING
RAGATI ROAD
P. O. BOX 30126-00100
NAIROBI

When replying, please quote:

MEF/EMC/I/I

21st March, 2025

The Adaptation Fund Board
C/O Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

RE: ENDORSEMENT FOR PROJECT AWARE: ADAPTATION FOR WATER ACCESS AND RESILIENCE IN EWASO NYIRO RIVER BASIN, KENYA

In my capacity as Designated Authority for the Adaptation Fund in Kenya, I confirm that the above National Project Proposal is in accordance with the Government's National Priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in the country.

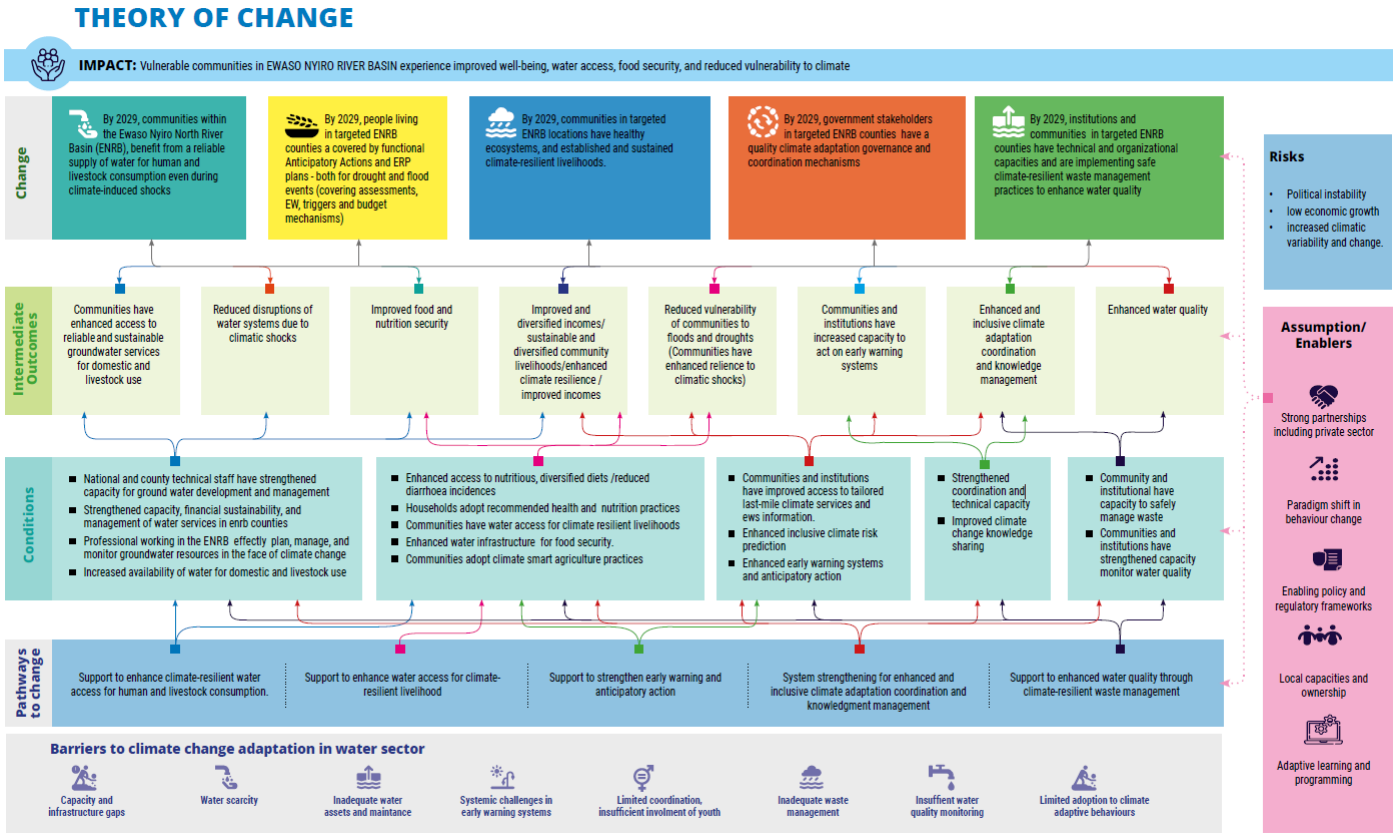
Accordingly, I am pleased to endorse the above Project Proposal with support from the Adaptation Fund. If approved, the Project/programme will be implemented by the National Environment Management Authority (NEMA) and executed by the United Nations Children's Fund (UNICEF) and the World Food Programme (WFP).

PRINCIPAL SECRETARY
STATE DEPARTMENT FOR ENVIRONMENT
& CLIMATE CHANGE
P. O. Box 30126 - 00100,
NAIROBI

Dr. Eng. Festus K. Ng'eno, MIEK, CBS
PRINCIPAL SECRETARY

ANNEXES

Annex 1 Theory of Change



Annex 2: Workplan

		2026				2027				2028			
Act.	**Description**	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Component 1: Climate resilient water access for human and livestock use													
Output 1.1: Enhanced capacity of Water Resource Management Institutions and professionals for sustainable groundwater development and management in ENRB													
1.1.1	Develop and implement training program on climate change & hydrological analysis in partnership with Hydrological Society of Kenya (HSK) and the Hydrologists Registration Board and establish structure for Continuous Professional Development (CPD) in HSK.												
1.1.2	Develop and implement training program on hydrogeological analysis & best practices with GSK and establish structure for CPD in Geological Society of Kenya (GSK)												
1.1.3	Establish structure for CPD and training program of drillers including on design, construction & operation of climate resilient borehole water supply systems for graduate engineers												
Output 1.2 Improved rain/floodwater harnessing for Managed Aquifer Recharge (MAR) and Nature-based Solution (NbS)													
1.2.1	Feasibility study to identify locations for construction of water conservation (sand dams) and Managed aquifer structures (Reverse wells) in priority sub drainage basins, site and design.												
1.2.2	Construct sand dams and /or sub surface dams and provide solarized water abstraction equipment and community water points.												
1.2.3	Construct water filtration and reverse wells for managed aquifer recharge to increase yields and /or reduce salinity of existing boreholes.												
Output 1.3: Community validated Climate-resilient groundwater infrastructure developed and in operation in target communities within ENRB counties													
1.3.1	Drill and equip new boreholes for climate resilient community water supplies including solarization - standard wells <300m including hydrogeological and geophysical survey												
1.3.2	Upgrading of existing borehole systems to be climate resilient for communities in water scarce locations focusing on LNOB groups including solarization												
1.3.3	Provision of climate resilient water supply connection to schools												
1.3.4	Provision of climate resilient water supply connection to Healthcare facilities												
1.3.5	Upgrading of Shallow Wells to green energy Pumped Systems												
1.3.6	Construction of multi-village water supply scheme including hydrogeological & geophysical survey												
Output 1.4: Strengthened financial management capacity of Water Services for sustainable water service delivery in the context of climate change													
1.4.1	Train young people in rural areas on sustainable climate resilient water supply operation and maintenance - 6 months (training, coaching / mentoring and follow up - at Kenya Water Institute and provide basic tools												
1.4.2	Build capacity of County water departments and Water Service Providers on climate resilient planning, design, O&M, water safety planning, WQ monitoring & last-mile connectivity to LNOB groups												
1.4.3	Establish & operationalize professional O&M model in all rural areas												
1.4.4	Technical support to WSPs to develop sustainable tariff for full O&M												

	cost recovery by ensuring affordability for LNOB groups												
1.4.5	WSPs supported to increase metering ratio to reduce Non Revenue Water and Internet of Things technology adopted to support data management, leakage detection and service monitoring												
1.4.6	Build capacity of WSPs to enforce water resources management rules												
1.4.7	Train Board of directors, water committees /municipal boards on water governance												
1.4.8	Support WSPs develop & implement pro-poor policies												
1.4.9	Sensitization of community on County Water Governance, their water rights, WUA accountability, importance of payment for water, and feedback loops to regulator/oversight.												
Component 2: Ecosystem restoration and climate resilient livelihoods for food and nutrition security													
Output 2.1: Prioritized rangeland resources including land are brought under restoration, safeguarded and sustainably managed for improved climate change resilience													
2.1.1	Conduct participatory detailed assessments of land and water ecosystems to determine degradation levels, determine restoration opportunities and design restoration plans												
2.1.2	Implementation of ecosystem restoration through structural interventions including earthworks for soil and water conservation, erosion control structures, access control structures												
2.1.3	Implementation of ecosystem restoration through biological (revegetation, reseeding, reforestation, agroforestry) restoration interventions												
2.1.4	Formation and strengthening of relevant natural resource management groups such as Rangeland Management Committees (RMCs) and Water Resource Users' Associations (WRUAs) for improved rangeland and watershed management and governance for sustainability												
2.1.5	Pollution control and sustainable land use - promoting sustainable agricultural practices, promoting integrated pest management, developing and enforcing guidelines to prevent encroachment and unsustainable activities												
2.1.6	Implement land and water ecosystem protection strategies, including small-scale flood control measures and implement nature-based approaches such as safeguarding riverbanks												
Output 2.2: Community-validated climate resilient water infrastructure developed and or rehabilitated for food security													
2.2.1	Conduct multi-stakeholder (national, county and community level) mapping and consultation for the development and/or rehabilitation of water infrastructure for productive use.												
2.2.2	Development and/or rehabilitation of community-validated climate resilient and sustainable water infrastructure including stormwater harvesting and storage and groundwater for small-scale irrigation. Efficient irrigation technologies that optimize water use to deliver more yields per unit of water used and that employ renewable energy for pumping will be adopted.												
2.2.3	Formation and strengthening of relevant water management community groups for improved water management, including training of Irrigation Water Users' Associations on irrigation system												

	management, on-farm water management and environmental issues in irrigation development and operation.													
Output 2.3: Climate-smart agriculture and nature-based enterprises promoted through inclusive value chains for climate resilient livelihoods														
2.3.1	Capacity strengthening to promote cultivation of nutrition-sensitive and drought-tolerant/climate adapted crops and livestock targeting smallholder farmers.													
2.3.2	Capacity strengthening of smallholder farmers to transition to climate-smart practices such as crop rotation, conservation tillage, cover cropping, agroforestry to enhance productivity of croplands													
2.3.3	Support development of nature-based enterprises run by women and youth such as beekeeping, fodder production, grass seed production and gums and resins and provide targeted support such as private sector and market linkages.													
2.3.4	Support community to access financial inclusion to enhance their social and economic adaptive capacities													
Output 2.4: Improved household access to nutritious and diversified diets, contributing to enhanced livelihood resilience														
2.4.1	Integrate climate resilient water access as key pillar of improving nutrition outcome in existing guidelines feeding of young children, food for school age children and maternal nutrition.													
2.4.2	Engage with research institutions and local private sector partners to develop and test environmentally friendly low-cost value addition processing of agricultural and livestock outputs into nutrient dense food products.													
2.4.3	Capacity strengthening of health facility and community health workers to promote the climate resilient, nutritious livelihood production and to support targeted communities to modify their behaviors, adopting practices that increase their ability to adapt to climate impacts													
2.4.4	Utilize existing community-based platforms to build awareness and modify behaviours to prioritize household consumption of a portion of the nutrition-and climate-sensitive livelihoods production.													
2.4.5	Capacity building on food storage, processing and meal preparation of introduced nutritious agri-livelihoods in order to build household food and nutrition security for improved climate resilience.													
Component 3: Enhanced early warning systems and anticipatory action														
Output 3.1: Flood EWS accuracy improved by incorporating more data using existing open source flood models														
3.1.1	Validate Google Flood hub inundation history maps for target counties with community and county stakeholders													
3.1.2	Train county WRA and County KMD on usage of Google Flood Hub EWS and integration in existing communication structures													
Output 3.2: Improved Anticipatory Action triggers defined in updated plans, integrating (child) vulnerability in target counties and nationally														
3.2.1	Integrate the Children Climate Disaster Risk Model (CCDRM) into the national seasonal forecasts issued by Kenya Meteorological Department													
3.2.2	Review and improve triggers and thresholds for AA in county Anticipatory Action Plans and integrate (child) vulnerability data													
Output 3.3: County budgeting process for Anticipatory Action strengthened														
3.3.1	Assist counties in allocating and reporting a minimum of 2% of the													

	development budget to DRM/AA												
Output 3.4: Early Warning Communication systems improved to effectively reach last-mile communities													
3.4.1	Conduct community HCD immersion session on EWS to understand local EW uptake and understanding												
3.4.2	Develop contextualized SBC Early Warning communication materials for radio, Community Health Promotors (CHPs) and other platforms in local languages												
3.4.3	Train radio stations and CHPs on translation and communication of timely early warnings of flooding to community												
3.4.4.	Train community health promotors and workforce and community social mobilizers on early warning communication and utilization/AA												
Component 4: System strengthening for enhanced climate adaptation coordination													
Output 4.1: Enhanced capacity of the Ministry of Water and County Climate Unites in targeted ENRB Counties for inclusive and participatory climate adaptation planning and coordination in the water sector.													
4.1.1	Provide technical capacity building for water sector professionals and stakeholders to enhance climate adaptation coordination.												
4.1.2	Strengthen the capacity of County Climate Change Units (CCUs) in targeted counties for effective coordination of water sector activities.												
Output 4.2: National Adaptation Plan (NAP) and key elements of National Environment Action Plan (NEAP) updated through an inclusive and participatory process incorporating feedback from key stakeholders, including youth and ENRB County Representatives													
4.2.1	Update Kenya's National Adaptation Plan												
4.2.2	Conduct sectoral workshops to inform NAP including youth and women												
Output 4.3: Increased capacity of youth in targeted ENRB counties to meaningfully participate in climate adaptation governance and action													
4.3.1	Train youth on developing bankable climate change project proposals to engage them in climate action initiatives.												
4.3.2	Engage 1,000 young people in UNICEFs GreenRising through land restoration of 100 ha												
Output 4.4: A functional and regularly updated climate change and adaptation knowledge platform established and used by the Ministries, County Climate Units, Youth, and other stakeholders in targeted ENRB counties													
4.4.1	Information Collection & Structuring Training (1 physical, 2 virtual sessions)												
4.4.2	Template and Taxonomy Development												
4.4.3	Use of Online Software (HackMD, Power BI, system support)												
4.4.4	Story Dissemination & Communication Training												
4.4.5	Centralized KM Management (QA, dashboard integration, oversight)												
Component 5: Climate resilient Waste management for water quality													
Output 5.1: Enhanced technical capacity of relevant institutions in targeted ENRB Counties for water quality monitoring and enforcement related to waste management.													
5.1.1	Strengthen institutional capacity to monitor pollution levels in domestic water sources, especially during flood events when surface runoff can introduce contaminants into water systems.												
5.1.2	Procure portable water quality monitoring kits												
5.1.3	Develop training module on sustainable waste management and compliance with the sustainable waste management act												
5.1.4	Train government staff and waste handlers (County govt, CBO, contractors) sustainable waste management and compliance with the sustainable waste management act												

Output 5.2: Increased access to climate-resilient waste management infrastructure															
5.2.1	Establish Material Recovery Facilities (MRFs) to foster circularity in waste management, reducing waste that could clog drainage systems during floods and worsen flood impacts.														
5.2.2	Develop design for climate resilient waste management site adhering to all 10 criteria of the sustainable waste management act														
5.2.3	Construct climate resilient waste management site (USP)														
Output 5.3: Improved knowledge and adoption of safe and climate-resilient waste management practices and the importance of water quality monitoring within communities and institutions															
5.3.1	Conduct community education campaigns on the importance of waste segregation at source, recycling, and reuse, emphasizing how improper waste disposal worsens flooding and reduces water availability during droughts.														
Output 5.4: Strengthened organizational capacity of county environmental committees in ENRB Counties to develop, implement, and monitor policies and actions addressing waste-related water pollution.															
5.4.1	Strengthen the capacity of County Environment Committees to identify and address waste-related water pollution, focusing on mitigating flood-induced contamination and safeguarding water resources during droughts.														

Annex 3 E&S Impact analysis and Management Planning

Project AWARE demonstrates strong alignment with the Adaptation Fund Environmental and Social Policy (ESP) principles. All planned activities—including climate-resilient water access, nature-based flood control, and waste management infrastructure—embed environmental sustainability, social inclusion, and human rights safeguards.

Key ESP principles such as access and equity, gender equality, natural habitat protection, pollution prevention, and public health are clearly integrated. Potential risks related to cultural heritage are acknowledged and manageable through participatory planning and screening tools.

Overall, the project upholds the ESP framework by promoting inclusive, climate-resilient development while ensuring compliance with national laws and international safeguards.

Screening and Categorization

The Project AWARE activities have been screened against Kenyan national environmental legal framework and the Adaptation Fund ESP criteria to ensure alignment with legal and policy frameworks. The screening process assesses risks related to water infrastructure, land use, waste management, and social impacts on vulnerable communities.

The Adaptation Fund ESP requires no significant or unjustified adverse environmental or social impacts and ccompliance with 15 principles including biodiversity conservation, climate change, human rights, gender equity, vulnerable groups, involuntary resettlement, pollution prevention, etc.

A screening against all 15 AF ES principles is presented in Table 13:

Table 13: Project screening against all 15 ESP criteria

Checklist of environmental and social principles	Further assessment required for compliance?	Potential Impact and Risk Level	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law	~~No~~Yes	Low	~~The project adheres to all applicable Kenyan laws, including EMCA (1999), Water Act (2016), and Water Harvesting Regulations (2021).~~ ~~No further assessment required for compliance as this is already integrated in project design. ESIAs will be part of the project design reports~~ ~~Periodic monitoring of project activities will be undertaken to ensure continued compliance with the applicable laws throughout project implementation.~~ Full compliance with all applicable Kenyan laws will be ensured, including EMCA 1999, Sustainable Waste Management Act 2022, Water Act (2016), and Water Harvesting Regulations (2021), land tenure and land use regulations, and public health laws. All required EIA licenses will be secured prior to construction and operation. Continuous legal compliance monitoring will be maintained through Project Management Team oversight.
Access and Equity	No	Low	The project promotes inclusive access to water and climate adaptation in underserved counties (Wajir, Mandera, Marsabit, Garissa). Equitable access is embedded in the approach Monitoring needed to ensure infrastructure siting does not unintentionally exclude some populations.
Marginalized and Vulnerable Groups	No	Low to Medium	Project activities prioritize pastoralists, women, and children. Design integrates inclusive livelihoods and water access (Output 2.4)

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Checklist of environmental and social principles	Further assessment required for compliance?	Potential Impact and Risk Level	Potential impacts and risks – further assessment and management required for compliance
			Risks of exclusion if participatory planning is not well implemented. There's need for continued monitoring of inclusion effectiveness.
Human Rights	~~No~~Yes	Low	The Project Supports rights to safe water, climate resilience, and food security through adaptation services. Risk of indirect impacts on rights to a clean environment, health, water, and sanitation if waste site management is not properly controlled. Potential livelihood impacts for waste workers and communities near sites. ESIA of the USP will therefore explicitly identify and assess human rights risks and propose mitigation. The grievance redress mechanism will be rights-based and accessible to all stakeholders. ~~The existing safeguards are adequate~~ Periodic monitoring of project activities will be undertaken to ensure continued compliance with, and promote the provisions of the Universal Declaration of Human Rights
Gender Equality and Women's Empowerment	No	Low to Medium	The Project Ensures women's participation in planning and implementation, particularly in Components 1, 2 and 4. Gender-sensitive indicators and outreach will be needed to track actual participation and benefit sharing. Gender outcomes to be tracked through M&E
Core Labour Rights	Yes	Medium	Labor standards are applied in water infrastructure projects under Component 1,2 and 5. Construction works may pose safety risks or labor grievances if contractors do not adhere to standards. Compliance will be achieved through contractual enforcement and checked through regular audits.
Indigenous Peoples	Yes	Medium	The Project will engage Indigenous communities in climate adaptation planning. Site-level FPIC and culturally sensitive planning is needed Further engagement and ESMP measures may be required in areas with distinct Indigenous communities.
Involuntary Resettlement	No	Low	Project avoids displacement and land-use conflicts, especially in rangeland restoration (Output 2.1). Site-specific screening will be conducted to confirm land tenure and voluntary participation and prevent resettlement.
Protection of Natural Habitats	No	Low	Restoration and protection are core objectives of the Project The Project uses nature-based solutions like MAR to enhance ecosystems (Output 1.2). Requires ESIA for MAR sites located near wetlands or fragile ecosystems.

Checklist of environmental and social principles	Further assessment required for compliance?	Potential Impact and Risk Level	Potential impacts and risks – further assessment and management required for compliance
Conservation of Biological Diversity	No	Low	The Project promotes rangeland biodiversity through sustainable grazing and reseeding (Output 2.1). Screening required to avoid activity overlap with ecologically sensitive or protected areas.
Climate Change	No	Low	The Project enhances community resilience via early warning systems and flood protection (Component 3). Infrastructure in flood-prone areas must be designed to withstand extreme events.
Pollution Prevention and Resource Efficiency	Yes	Medium	The Project supports county-level waste management and pollution control (Output 5.4). MRFs and waste sites must be managed to avoid leachate, air pollution, and contamination. Proper design and monitoring of MRF and waste sites' operations needed. A preliminary ESIA and an environmental and social management plan has been developed for the waste site which is described below.
Public Health	Yes	Medium	The Project reduces climate-related disease risks through clean water access, enhanced nutrition, and waste management infrastructure (Component 5). Waste sites and water infrastructure must be designed to avoid contamination and vector breeding. Health outcomes to be monitored, especially neighboring waste management infrastructure sites. A preliminary ESIA and an environmental and social management plan has been developed for the waste site which is described below.
Physical and Cultural Heritage	No	Low	The Project respects Indigenous water knowledge and protects significant water sites. Integrated traditional knowledge in EWS. Further community consultations needed to confirm there are no inadvertent impacts on heritage resources. Chance-Find Procedures to be implemented on civil works
Lands and Soil Conservation	No	Low	Soil conservation is embedded in Project activities Rangeland interventions improve soil health and reduce erosion (Output 2.1). Potential short-term erosion during site preparation; managed through ESMPs and local restoration plans.

Risk Classification of Project AWARE

Project AWARE activities are classified under one of the following categories in accordance with ESP requirements:

- **Category A**: High-risk projects with potential irreversible adverse impacts.
- **Category B**: Medium-risk projects requiring mitigation measures.
- **Category C**: Low-risk projects with minimal environmental or social impacts.

According to Kenya's national requirements, projects are ranked as high, medium, or low risk guided by Legal Notice No. 31 and 32 of April 2019 on the Environmental Management and Coordination Act (EMCA), Cap 387. These notices outline the Environmental (Impact Assessment and Audit) Regulations, 2003 (amended in 2019), which provide the criteria for screening and classifying projects based on their potential environmental and social impacts.

To screen and categorize these activities under Kenya's national requirements and the Adaptation Fund's Environmental and Social Policy (ESP), an assessment has been undertaken both on the type and scale of environmental and social risks, including impacts on biodiversity, communities, vulnerable groups, and ecosystems. The categorization has been summarized in the Table below.

Table 14: Categorization of project risks

	Activity	Likely Impacts/Risks	Category (AF)	Rationale
I	Construction of sand dams and subsurface dams	Alteration of hydrology, potential community disputes over water access, land use change	B	Site-specific, reversible. Manageable with ESMP. Might need screening for ecosystem/biodiversity impacts.
II	Construction of water filtration & reverse wells (Managed Aquifer Recharge - MAR)	Risk of groundwater contamination, drilling-related impacts, energy use	B	Risks are technical and manageable with proper design. Nature-based MAR lowers risk.
III	Drill new boreholes for community supply	Over-abstraction of aquifers, drilling waste, conflict over siting	B	Medium-scale risk, manageable through hydrogeological studies and community engagement.
IV	Upgrade shallow wells to green energy pumping	Minimal –mainly positive climate and efficiency impact	C	No significant negative impacts; aligns with ESP principles.
V	Ecosystem restoration (soil, water, fodder, rangelands)	Temporary land use changes, minor biodiversity disturbance	C	Generally positive, though land tenure and stakeholder agreements must be managed.
VI	Small-scale flood control and riverbank safeguarding (NbS)	Temporary disruption during works, possible changes in water flow	B	Mostly positive and reversible; minor site-specific risks.
VII	Stormwater harvesting/storage for small-scale irrigation	Siltation, design failures, land ownership conflicts	B	Localized risks; requires technical safeguards and community agreements.
VIII	Rehabilitation/development of water infrastructure	Potential land acquisition, short-term construction impact	B	Rehabilitations usually lower-risk; new infrastructure needs E&S screening.
IX	Establishment of Material Recovery Facilities (MRFs)	Odor, waste handling, risk of pollution if mismanaged	B	Requires siting screening, community consultation, environmental management measures
X	Waste segregation, recycling & disposal infrastructure	Leachate, odor, public exposure, hazardous materials	A	Waste disposal sites are provided for in the 2nd Schedule of the EMCA, 1999; the sites have potential for significant long-term impacts

Environmental and Social Impact Assessment

The Environmental and Social Impact Assessment (ESIA) for this project adopts an integrated methodology that aligns with both Kenya's national regulatory framework, particularly the Environmental Management and Coordination Act (EMCA) and its subsidiary legislation (Legal Notices 31 and 32 of April 2019), and the Adaptation Fund's Environmental and Social Policy (ESP). The assessment process began with a dual screening exercise to determine the project's risk categorization under both systems, ensuring that the higher risk rating informed the depth of subsequent analysis. A unified Terms of Reference (ToR) guided data collection and stakeholder engagement, incorporating national requirements for baseline biophysical and socio-economic assessments alongside the Adaptation Fund's 15 safeguard principles. The assessment included detailed analyses on impacts to biodiversity, land use, water resources, and air quality, while also addressing human rights, gender equity, indigenous peoples, labor conditions, and cultural heritage. Stakeholder consultations were structured to meet both national public participation standards and the Adaptation Fund's Free, Prior and Informed Consent (FPIC) obligations. The resulting Environmental and Social Management Plan (ESMP) integrates mitigation, monitoring, and reporting measures that satisfy both regulatory regimes, thereby enabling a streamlined approval process and ensuring robust environmental and social safeguards throughout the project lifecycle.

The following are findings of the ESIA conducted for the project against 15 ESP principles:

Findings of the ESIA for Project AWARE Against the 15 ESP Principles

1. Compliance with the Law: All project activities comply with Kenya's legal and regulatory framework, including but not limited to:

- The Environmental Management and Coordination Act (EMCA), 1999 , and its subsidiary legislation.
- The Water Act, 2016 and its subsidiary legislation.
- The Occupational Safety and Health Act (2007) and its subsidiary legislation; and
- The Public Health Act,.

All proposed infrastructure works will undergo site-specific ESIA in accordance with national legislation before construction to ensure environmental and social sustainability, and legal compliance. Environmental and Social Management Plans (ESMPs) will be developed to guide construction and operational compliance with health, safety, and environmental standards.

2. Access and Equity: Aligned with Article 43 of the Constitution, the project ensures inclusive access to climate-resilient services and infrastructure, especially for underserved communities in the following ways:

    - Output 2.4 targets vulnerable households with nutrition-sensitive agriculture and diversified livelihood support.
    - Output 1.2 ensures equitable water access through nature-based recharge systems benefiting both upstream and downstream users.
    - Community validation workshops will guide siting and benefit-sharing for Outputs like 1.3, 2.1, and 5.3, ensuring no group is excluded.

3. Marginalized and Vulnerable Groups: Guided by Article 56 of the Constitution, the project integrates affirmative action for marginalized groups, including women, children, Indigenous communities, and persons with disabilities in the following ways:

    - Through participatory planning and inclusive governance structures, vulnerable voices shape the design and delivery of interventions under Outputs 2.4 (nutrition), 4.2 (climate-smart extension services), and 5.1 (awareness campaigns).
    - Engagements are tailored for ASAL counties, with special focus on pastoralist populations.

4. Human Rights: Project AWARE upholds fundamental human rights by ensuring dignity, participation, transparency, and accountability in all processes.

    - Free, Prior and Informed Consent (FPIC) will be applied in communities with Indigenous populations, especially in Marsabit and Wajir.
    - Output 1.1 builds local capacities in water governance, empowering rights holders and increasing community control over natural resource management.

5. Gender Equity and Women's Empowerment: Gender-responsive design is embedded in project planning, with gender-disaggregated data informing interventions.

    - Output 2.4 and 4.3 enhance women's access to financial services, extension support, and leadership in local committees.
    - Monitoring indicators will track women's participation in key areas such as climate adaptation planning, agri-enterprises, and waste value chains (Output 5.3).

6. Core Labour Rights: The project guarantees compliance with national labour standards and ILO core conventions in the following ways:

    - All contractors under Outputs 1.3, 2.2, and 5.2 will be contractually bound to uphold fair wages, safe working conditions, freedom of association, and anti-discrimination measures.
    - The project will also promote local hiring and training, especially among youth and women.

7. Indigenous Peoples: Where Indigenous communities (e.g., pastoralist and nomadic groups) are present, the project ensures their full participation in the following ways:

    - FPIC processes will be followed for activities in sensitive areas under Outputs 1.2 (nature-based recharge), 2.1 (rangeland restoration), and 2.2 (climate-smart water infrastructure).
    - Traditional knowledge will be respected and integrated into nature-based solutions and resource management strategies.

8. Involuntary Resettlement: The project is designed to avoid physical and economic displacement.

    - For Outputs 1.3 and 2.2, infrastructure siting will undergo community validation and environmental screening to minimize resettlement risks.

9. Protection of Natural Habitats: Project AWARE seeks to protect and rehabilitate critical ecosystems through:

    - Output 2.1 leads efforts to restore rangelands using participatory and climate-resilient methods, avoiding further degradation.
    - Site screening processes will ensure that no activity negatively affects ecologically sensitive zones or wildlife corridors.

10. Conservation of Biological Diversity: Biodiversity is promoted through integrated land use practices and agroecological methods.

    - Output 2.3 supports climate-smart agriculture and crop diversification that reduce reliance on harmful land use practices.
    - Restoration activities will increase habitat cover and enhance ecosystem services in degraded areas.

11. Climate Change: All components are designed to improve climate resilience and reduce vulnerability through the following:

    - Output 3.1 enables early action through the development of localized anticipatory action plans and community early warning systems.
    - Outputs 1.2 and 2.2 introduce nature-based infrastructure that reduces climate risks while enhancing carbon sequestration and water security.

12. Pollution Prevention and Resource Efficiency: The project promotes circular economy principles and efficient resource use in the following ways:

    - Outputs 5.2 and 5.3 focus on the establishment and operation of Material Recovery Facilities (MRFs), enhancing waste segregation, recycling, and reuse.
    - These activities reduce environmental pollution and improve community awareness on waste minimization and sanitation.

13. Public Health: Improved water and sanitation infrastructure will enhance community health outcomes.

    - Outputs 1.3 and 2.2 ensure access to clean water, reducing waterborne diseases.
    - Waste management interventions (Output 5.2) contribute to vector control and cleaner environments, especially in densely populated or flood-prone areas such as Mandera Town, Garissa Municipality, and the Dadaab refugee settlement, where unmanaged waste can attract disease-carrying vectors like mosquitoes and rodents.

14. Physical and Cultural Heritage: The project respects and safeguards sites of cultural significance through:

    - Site-specific screening and chance find procedures will be implemented prior to any infrastructure development.
    - Consultations under Outputs 1.3 and 2.2 will include questions on cultural sites to ensure avoidance or protection during design.

15. Lands and Soil Conservation: Sustainable land management is a core pillar of Project AWARE, and is advanced through:

    - Output 2.1 focuses on rangeland restoration and regenerative grazing practices that enhance soil health and reduce erosion.
    - Infrastructure works will incorporate erosion control measures (e.g., bunds, gabions) and support long-term soil conservation through training and monitoring.

Alignment of Activity 5.2.3 with Adaptation Fund Environmental and Social Policy (ESP) Principles

Activity 5.2.3 involves the development of climate-resilient waste sites, and given its scope and potential impacts, it is classified as Category A under the 2nd Schedule of EMCA 1999 (Amended 2015), warranting full ESIA and rigorous Environmental and Social Risk Management.

Given that activity 5.2.3 is included as USP, and the exact design and exact location are not yet known, the ESIA and ESMP presented for this activity in this annex is preliminary and will be updated as per the process and timeline described in the USP Justification and Compliance Plan (Annex 15).

Table 10 below presents the activity's alignment with the 15 principles of the Adaptation Fund's ESP and the respective risk levels:

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Table 16: Summary Table of Alignment and Risk Levels

Principle	Further assessment required for compliance?	Risk Level	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law	YesNo	Low	Full compliance with all applicable Kenyan laws, including EMCA 1999, Sustainable Waste Management Act 2022, land tenure and land use regulations, and public health laws. All required EIA licenses will be secured prior to construction and operation. Continuous legal compliance monitoring will be maintained through Project Management Team oversight and independent audits.
Access and Equity	NoYes	Moderate	Potential risks of inequitable access to waste services or exclusion of marginalized communities during site planning and service delivery. Risk of disproportionate burden on vulnerable populations (e.g., informal settlements near sites). Further assessment required during ESIA and stakeholder consultations to ensure inclusive service design and equitable benefit distribution. Grievance redress mechanisms must be accessible to all affected groups.
Marginalized and Vulnerable Groups	NoYes	Moderate	Risk of adverse differentiated impacts on vulnerable groups, including informal waste workers, women, youth, elderly, and Indigenous Peoples (if present). Further assessment required to identify specific needs, risks, and mitigation strategies through ESIA, FPIC (if applicable), and participatory engagement. Targeted livelihood support, benefit-sharing schemes, and health and safety protections must be designed and implemented.
Human Rights	YesYes	Low	Risk of indirect impacts on rights to a clean environment, health, water, and sanitation if waste site management is not properly controlled. Potential livelihood impacts for waste workers and communities near sites. ESIA must explicitly identify and assess human rights risks and propose mitigation. The grievance redress mechanism must be rights-based and accessible to all stakeholders.
Gender Equality	NoYes	Moderate	Risk of reinforcing existing gender disparities in access to employment and decision-making in waste management. Risk of gender-based violence (GBV) or unsafe working conditions for women at sites. Gender analysis required to inform ESIA and project design. Gender-responsive employment, capacity building, and GBV prevention measures must be implemented.

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Principle	Further assessment required for compliance?	Risk Level	Potential impacts and risks – further assessment and management required for compliance
Core Labour Rights	YesNo	Low	No significant risks if compliance with Kenyan labour law and ILO standards is ensured. Continuous monitoring and enforcement of labour standards will be required, especially regarding employment of informal waste workers or sub-contracted labour.
Indigenous Peoples	YesYes (if IPs are present)	High (if IPs are present)	Risk of impacts on Indigenous land, cultural heritage, and ecosystem services if sites are located near Indigenous territories. FPIC must be conducted where relevant. Full partnership with Indigenous communities required to avoid, minimize, and mitigate impacts. Cultural heritage protection, benefit-sharing, and co-management models should be explored where appropriate.
Involuntary Resettlement	No No	Low	There will be no involuntary resettlement under this project. All efforts will be made to prevent physical and/or economic displacement by ensuring that site acquisition and buffer zones do not impact households, businesses, or land users. In cases where displacement risks are identified, project design will be adjusted to eliminate the need for resettlement.
Natural Habitats	No Yes	Moderate	Potential risks to sensitive natural habitats if sites are poorly located. Loss of habitat connectivity, biodiversity, or ecosystem services possible. Screening and ESIA must ensure that sites avoid critical natural habitats and protected areas. Appropriate buffers, habitat protection, and site restoration measures must be integrated into project design.
Biological Diversity	NoYes	Moderate	Risks of localized impacts on flora and fauna during construction and operation (e.g., habitat loss, pollution, disturbance). ESIA must assess biodiversity risks and propose mitigation. Regular biodiversity monitoring should be incorporated into Environmental and Social Management and Monitoring Plan (ESMMP).
Climate Change	NoNo	Positive impact	Activity is designed to contribute to climate adaptation and promote circular economy outcomes. No additional risks identified; however, ESIA should verify that all site designs avoid maladaptive practices (e.g., methane leakage) and are resilient to climate variability.
Pollution Prevention	YesNo	Positive impact	Pollution prevention is a core component of the project. However, ESIA and ESMMP must ensure robust design and operational controls for leachate, air emissions, stormwater, odours, and solid waste handling. Emergency response plans should be developed to address potential pollution incidents.
Public Health	YesYes	Low	Potential public health risks include vector-borne diseases, odours, air pollution, accidents, and impacts on informal waste pickers. ESIA must assess these risks and ensure mitigation is embedded in site design and operations. Health and safety training for workers and nearby communities required. Community health monitoring should be included in ESMMP.
Physical and Cultural Heritage	NoYes	Low	Risk of accidental disturbance of physical or cultural heritage during site preparation or construction. Cultural heritage impact assessment required during ESIA. Chance-find procedures must be included in construction contracts and operational protocols. Engagement with local cultural leaders is recommended where culturally significant sites are present.

Principle	Further assessment required for compliance?	Risk Level	Potential impacts and risks – further assessment and management required for compliance
Lands and Soil Conservation	No~~Yes~~	Moderate	Risks include soil degradation, erosion, and loss of agricultural productivity if sites are poorly located or managed. ESIA must assess soil conservation risks. Site selection must avoid erosion-prone and high-value agricultural lands. Soil protection and rehabilitation measures must be integrated into project design, construction, and closure plans. Monitoring of soil health and site stability is required.

Conclusion

This analysis demonstrates that Activity 5.2.3 is broadly aligned with the 15 principles of the Adaptation Fund Environmental and Social Policy (ESP). While the activity carries inherent environmental and social risks due to its Category A classification, these risks are manageable through robust Environmental and Social Impact Assessment (ESIA) processes, targeted mitigation measures, and ongoing stakeholder engagement.

Positive impacts are anticipated in relation to climate change adaptation and pollution prevention, which are central to the activity's objectives. Key areas requiring heightened attention include the potential impacts on Indigenous Peoples (if present in the project site), the risk of involuntary resettlement, and the need for inclusive approaches that safeguard marginalized and vulnerable groups and biodiversity.

A comprehensive Environmental and Social Management Plan (ESMP), aligned with Kenyan legal requirements and international good practice, will be implemented to ensure that all identified risks are effectively mitigated and that positive social and environmental outcomes are maximized. Continuous monitoring, reporting, and adaptive management will further strengthen alignment with the Adaptation Fund ESP throughout the project lifecycle.

Environmental and Social Impact Analysis for Category A and B Activities

Project AWARE is designed to enhance climate resilience and sustainable development across Garissa, Mandera, Wajir, and Marsabit counties through a range of targeted interventions. The project is expected to generate significant positive impacts—such as improved livelihoods, healthier ecosystems, and enhanced access to water and sanitation services. At the same time, the project acknowledges the possibility of adverse impacts, particularly if interventions are not carefully planned or implemented in close collaboration with local communities. These may include risks related to land use changes, or potential impacts on natural and cultural heritage. As such, Project AWARE is committed to applying robust environmental and social safeguards, guided by the Adaptation Fund's Environmental and Social Policy (ESP), and the Kenyan National Legal Framework, to maximize benefits and minimize harm.

Positive Impacts

Through integrated interventions focused on climate-resilient water infrastructure, sustainable waste management, ecosystem restoration, and green energy solutions, the project will contribute significantly to community well-being, environmental conservation, and equitable access to essential services. Below is an outline of the anticipated positive impacts associated with the project:

- Communities will benefit from improved access to water throughout the year through sand dams, boreholes, shallow wells, and recharge systems like Managed Aquifer Recharge (MAR).
- Nature-based flood control and ecosystem restoration efforts will help protect villages and farms from the impacts of floods and droughts.
- Activities such as reseeding, protecting watersheds, and rehabilitating grazing lands will bring back native plants, support soil health, and strengthen local ecosystems.

- By introducing better waste segregation, Material Recovery Facilities (MRFs), and climate-resilient solid waste disposal sites communities will experience cleaner environments and better public health.
- Improved land use and better management of stormwater will reduce erosion, protecting homes and farmland from degradation.
- With cleaner water and reduced pollution, families will face fewer waterborne diseases and health hazards related to waste.
- Women and girls will spend less time fetching water and will have more opportunities to lead in recycling, agriculture, and local water committees.
- Special attention will be given to ensure that pastoralists, the urban poor, women, youth, and the elderly receive fair and prioritized access to project services.
- Indigenous communities will be actively involved, with their knowledge, traditions, and sacred places fully respected during project planning and implementation.
- The project will create green job opportunities in areas such as water infrastructure, waste recycling, land restoration, and environmental conservation.
- Reliable water for irrigation and restored rangelands will support food production and improve incomes for small-scale farmers.
- Waste will be seen as a valuable resource, as recycling and segregation activities reduce the need for landfills and generate local benefits.
- Community members will receive training in climate adaptation, sustainable farming, water governance, and environmental stewardship.
- Project activities will be carried out through strong partnerships between counties, community-based organizations, water user groups, and national institutions.
- All interventions will follow Kenyan environmental, land, labour, and water laws, and uphold the Adaptation Fund's Environmental and Social Policy (ESP), ensuring communities are protected and empowered.

Category A activity Risks

This section provides a detailed analysis for activities categorized as A . Activity 5.2.3 - construction of climate-resilient waste sites adhering to the Sustainable Waste Management Act, 2022 has been classified under category A, in line with the 2nd Schedule of the EMCA 1999 (as amended in 2015).

Given that activity 5.2.3 is included as USP, and the exact design and exact location are not yet known, the ESIA and ESMP presented for this activity in this annex is preliminary and will be updated as per the process and timeline described in the USP Justification and Compliance Plan (Annex 15).

1) Climate-Resilient Waste Disposal Infrastructure

Below is a summary of the key potential environmental and social risks and impacts of the activity, and the potential mitigation measures:

a) Occupational Health and Safety Hazards: There is a significant risk to the health and safety of workers involved in handling and disposal of solid wastes, especially when handling unsorted or improperly segregated waste. Exposure to sharp objects, toxic substances, and biological contaminants can lead to injuries or illnesses. The magnitude of this risk is high due to the daily interaction with potentially hazardous materials. Sensitivity is also high, particularly in communities with limited access to healthcare.

Mitigation measures

- Provision of adequate PPE,
- Regular health and safety training,
- Installation of handwashing stations and first-aid kits on site.
- Implementation of SOPs for waste handling and emergency response protocols

b) Environmental Contamination (Soil, Water, and Air): Improperly managed disposal facilities can lead to leachate seepage, air pollution from open burning, and contamination of waterways—risks that are significantly heightened during heavy rainfall or flooding events. Flooding can overwhelm waste facilities, causing leachate overflow and the spread of solid waste into nearby ecosystems and communities. Decomposition of organic waste can emit methane and odorous gases, affecting nearby settlements. This

risk is high in significance due to its long-term impact on ecosystems, water resources, and public health. The magnitude is moderate to high depending on waste volume, facility location, and flood vulnerability. Sensitivity is particularly high in flood-prone areas near agricultural land, wetlands, or residential zones.

Mitigation Measures

- Construct facilities with lined containment areas and drainage systems,
- Implement regular monitoring of effluent discharge, especially during rainy seasons.
- Prohibition of open burning.
- Adoption of engineered landfill or composting methods
- Adopt engineered landfills, composting, or anaerobic digestion methods that are climate- and flood-resilient.
- Locate site facilities away from flood plains and integrate them into local land use and disaster risk management plans.
- Construct facilities with lined containment areas, flood-resilient designs, and integrated drainage systems to manage runoff and leachate.

c) **Dust and Noise Pollution:** Site operations and trucks may generate dust and noise, affecting neighboring communities along access roads and near the disposal sites. This risk is low to moderate in significance, depending on proximity to residential areas. The magnitude is moderate, while sensitivity is high in densely populated or environmentally sensitive areas.

Mitigation measures

- Proper facility siting,
- Enclosing noisy equipment,
- Regular waste processing to prevent build-up,
- Planting buffer vegetation to reduce noise and dust dispersion.

d) **Fire Hazards and Chemical Spills:** The presence of flammable materials or improper storage of hazardous waste increases the risk of fires and chemical spills. This has a high significance, with moderate to high magnitude depending on the type of waste handled. Sensitivity is high in urban or semi-urban locations.

Mitigation measures

- Fire safety planning,
- Installation of extinguishers and alarms,
- Employee training, and
- Establishment of secure storage for chemicals and combustibles.

e) **Biodiversity loss, visual and landscape degradation:** Site clearance to establish a waste disposal site and associated facilities including access roads and transfer stations can lead to destruction of habitats and loss of local plant and animal species. It could also lead to colonization by invasive plant and animal species. Creation of waste mounds during operations could also lead to loss of visual appeal of the area, and loss of land value.

Mitigation measures

- Siting of disposal facilities on brownfields or disturbed sites and avoiding pristine/biodiversity rich areas;
- Establishing vegetation in buffer and non-operational areas around the facilities

f) **Social Conflicts and Livelihood Disruption:** There is a moderate to high risk of social tension if the infrastructure leads to the displacement of informal waste pickers or excludes vulnerable groups. The siting of a waste disposal facility may also face community resistance due to the associated stigma, and could affect community access to land, aggravating conflicts.

Mitigation measures

- Disclose project information in a timely manner and carry out extensive stakeholder consultations,
- Integration of informal workers into formal systems through training and cooperative models, and
- Ensuring equitable access to employment opportunities created by the infrastructure;
- Where resettlement is required, acquire the land in accordance with the Land Act.

g) Child Labor and Gender Disparities: In unregulated work environments, there is a moderate risk of child labour and exclusion of women from safer or better-paid positions. The significance is high from a human rights perspective, with moderate magnitude depending on local labour practices and high sensitivity in low-income or vulnerable communities.

Mitigation measures

- Implementing strict hiring protocols aligned with national and international labour standards,
- offering gender-sensitive work environments, and
- establishing grievance redress mechanisms.

Category B activity Risks

1) Construction of Sand Dams and Subsurface Dams

The construction of sand and subsurface dams may pose moderate environmental risks, primarily linked to disturbance of riverine ecosystems, sedimentation, and disruption of natural water flow, which may impact downstream water users. The magnitude of the impact is moderate due to the physical alteration of streambeds, while the sensitivity is high in areas reliant on natural water flows. The significance is moderate to high if downstream users are not adequately considered.

Mitigation measures

- Conducting hydrological assessments before dam construction,
- Ensuring that dam design allows for ecological water flow, and
- Implementing community consultations with upstream and downstream users.
- Restoration of vegetation and stabilization of riverbanks post-construction will further reduce environmental disruption.

2) Construction of Water Filtration and Reverse Wells (Managed Aquifer Recharge - MAR)

The risks associated with MAR systems are moderate in significance due to potential contamination of aquifers if poorly managed. The magnitude is low to moderate depending on the scale, but sensitivity is high in areas where communities rely solely on groundwater. Improper siting or use of unfiltered recharge water could introduce pollutants into the aquifer.

Mitigation measures

- Prior water quality testing,
- Use of pre-filtration systems, and
- Careful siting of recharge structures away from potential contamination sources.
- Continuous monitoring of water quality and community capacity building for maintenance are also key to minimizing risks.

3) Drilling New Boreholes for Community Supply

Drilling boreholes poses a moderate risk to groundwater resources if over-abstraction or salinization occurs. The magnitude is medium due to the potential for cumulative impacts, especially in arid regions. The sensitivity is high in areas with limited groundwater reserves.

Mitigation Measures

- Conducting hydrogeological surveys to assess aquifer capacity,
- Establishing abstraction limits, and
- Registering boreholes for monitoring.

- Involving local water user associations to manage and monitor use ensures sustainability and equitable access.

4) **Small-scale Flood Control and Riverbank Safeguarding (Nature-based Solutions - NbS)**
Flood control structures, even when nature-based, can carry moderate risks if they alter hydrology, displace flora/fauna, or affect community land. The magnitude is moderate, particularly during the construction phase, while sensitivity is high in riparian and agriculturally productive areas. The significance of these risks can be high without proper planning.

Mitigation measures

- Integrating natural materials and processes,
- Designing interventions that mimic natural floodplains, and
- Conducting environmental impact assessments.
- Community involvement and local knowledge should guide design and implementation.

5) **Upgrading of Shallow Wells to green energy Pumped Systems**
Groundwater Over-Abstraction Risk: The transition to green energy pumping systems, such as solar-powered pumps, may lead to increased extraction rates, potentially resulting in over-abstraction of groundwater. This poses a risk of aquifer depletion, especially in areas with low recharge rates. The significance of this risk is high, as it affects long-term water availability. The magnitude is moderate to high, depending on the number of upgraded wells and pumping efficiency. The sensitivity is high in arid and semi-arid regions with limited groundwater resources.

Mitigation measures

- Conduct hydrogeological assessments before upgrading each well to determine safe yield levels.
- Install flow meters and regulate pumping hours to prevent overuse.
- Encourage community-based monitoring of groundwater levels and introduce water conservation awareness programs.

Energy System Failure or Incompatibility Risk: Green energy systems (e.g., solar PV pumps) may malfunction due to poor installation, inadequate maintenance, or incompatibility with local environmental conditions (e.g., low sunlight, high dust). The significance of this risk is moderate, as failure would interrupt water access. The magnitude is low to moderate, depending on equipment quality and maintenance routines. The sensitivity is moderate, especially in remote or underserved communities relying solely on the system.

Mitigation measures

- Procure high-quality, weather-resistant components.
- Train local technicians on system operation and maintenance.
- Ensure design accounts for local solar irradiance patterns and includes battery backup where feasible.

Contamination of Water Supply: Upgrading wells may disturb existing well structures or expose them to surface contaminants, especially during construction or retrofitting. Without proper sealing or drainage, there is a risk of faecal or chemical contamination. The significance of this risk is high, due to potential health impacts. The magnitude is moderate, and sensitivity is high in communities with no alternative water sources or high child morbidity rates.

Mitigation measures

- Apply sanitary sealing and construct aprons with proper slope to direct runoff away.
- Integrate water quality testing before and after the upgrade.
- Provide hygiene education alongside system commissioning.

Land Use and Conflict Risk: Installation of solar panels and system infrastructure may require land acquisition or reallocation, leading to potential land disputes, especially in communal or informally owned areas. The significance is moderate, the magnitude is moderate, and sensitivity is high in densely populated or land-scarce regions.

Mitigation measures

- Conduct inclusive stakeholder consultations prior to siting, following Free, Prior, and Informed Consent (FPIC) principles.
- Use existing well footprints and minimize additional land requirements.
- Document land use agreements transparently.

Social Exclusion and Gender Access Barriers: Without inclusive planning, women, youth, or vulnerable groups may have limited influence over system management or access to water resources. The **significance** is **moderate**, the magnitude is moderate, and sensitivity is **high** in areas with existing gender or social disparities.

Mitigation measures

- Integrate gender-sensitive planning and ensure representation of women and youth in water user committees.
- Provide separate access points if necessary to accommodate different user needs, and ensure time-saving benefits are equitably distributed.

E-Waste and Equipment Disposal Risk: The use of solar energy systems introduces a long-term risk related to the disposal of solar panels, batteries, and inverters, which can contribute to environmental degradation if not managed properly. The significance is low to moderate, the magnitude is low, but sensitivity increases over time.

Mitigation measures

- Develop an end-of-life equipment management plan in partnership with suppliers.
- Promote extended producer responsibility (EPR) and link communities with certified recyclers.
- Educate users on safe disposal practices.

6) Rehabilitation/Development of Water Infrastructure

Rehabilitation activities, though less invasive than new construction, carry moderate risks such as temporary disruption of water supply, occupational hazards, or inappropriate technology choices. The magnitude is moderate, sensitivity depends on dependency on the water source, and the significance is moderate to high where water access is critical.

Mitigation measures

- Conducting rehabilitation during low-demand periods,
- Ensuring safety protocols for workers,
- Selecting technologies that are climate-resilient and community-appropriate.
- Inclusion of gender-sensitive and inclusive infrastructure features is also essential.

7) Establishment of Material Recovery Facilities (MRFs)

Occupational Health and Safety Hazards: Workers may be exposed to hazardous materials (e.g., broken glass, sharps, biohazardous waste), leading to injury or illness. This impact is of high significance due to its direct effects on human health and workplace safety. The magnitude of this risk ranges from medium to high depending on the scale of operations and the nature of waste processed. Sensitivity is also high, particularly in areas with limited healthcare infrastructure or where workers may not be adequately trained or equipped to handle hazardous waste.

Mitigation Measures

- Provide Personal Protective Equipment (PPE) and safety training.
- Ensure proper segregation of hazardous waste before recovery processes.
- Implement Standard Operating Procedures (SOPs) for handling materials.

Air and Odor Pollution: Decomposing organic materials and dust from sorting activities can lead to poor air quality and foul odors, impacting both workers and surrounding communities. This risk is considered to have medium significance as it primarily affects environmental comfort and respiratory health. The magnitude is moderate but can escalate in larger facilities or those near residential zones. Sensitivity varies, but it tends to be high in densely populated or vulnerable neighborhoods where air quality is already compromised.

Mitigation measures

- Regular waste collection and sorting to avoid buildup.
- Install proper ventilation and air filtration systems.
- Schedule odour-emitting tasks during off-peak hours and away from residential zones.

Contamination of Soil and Water Resources: Leachate from waste materials may seep into the soil or nearby water bodies. The significance of this impact is high due to the potential for long-term environmental damage and water resource degradation. The magnitude is also high, especially in locations with shallow water tables or where proper containment infrastructure is lacking. Sensitivity is high in communities that rely on local water sources for drinking or agriculture.

Mitigation measures

- Design MRFs with impermeable flooring and proper drainage systems.
- Collect and treat leachate before discharge.
- Conduct regular environmental monitoring.

Social Displacement and Land Use Conflict: Establishing MRFs may lead to disputes over land use, especially if the site was previously used informally or by vulnerable groups (e.g., informal waste pickers). This social risk carries medium to high significance, as it can disrupt livelihoods and lead to community opposition. The magnitude of the impact is variable, depending on the scale of displacement and the site's prior use. Sensitivity is high in contexts where marginalized or vulnerable groups are at risk of being excluded or relocated without adequate consultation or compensation.

Mitigation measures:

- Engage stakeholders through Free, Prior, and Informed Consent (FPIC) processes.
- Provide alternative livelihoods or integration programs for affected waste pickers.
- Conduct a Social Impact Assessment (SIA) before site selection.

Gender and Social Inclusion Risks: MRF operations may unintentionally exclude women, youth, or persons with disabilities from employment or decision-making. This impact is of medium significance as it can perpetuate social inequality and reduce the potential for inclusive development. The magnitude of exclusion is moderate but can be significant if not addressed proactively. Sensitivity is high, particularly in settings where gender disparities and social exclusion are already entrenched.

Mitigation measures

- Ensure inclusive hiring practices and equal opportunity policies.
- Provide gender-sensitive sanitation facilities and workspaces.
- Conduct gender and social inclusion training for staff.

Child Labor or Exploitation Risk: There is a risk of engaging underage workers, especially in areas with informal recycling sectors. This risk is of high significance due to its ethical, legal, and reputational implications. While the magnitude may be moderate depending on local context, the sensitivity is extremely high, as children are a protected and vulnerable population whose involvement in hazardous work is strictly prohibited by international standards.

Mitigation measures

- Enforce strict hiring policies aligned with child protection standards.
- Partner with community organizations to raise awareness on child rights and labour laws.

Environmental and Social Management Plan (ESMP)

Institutional responsibilities for implementation

NEMA, as the National Implementing Entity (NIE) for Project AWARE, will lead and oversee the overall coordination, quality assurance, and compliance of Environmental and Social (E&S) safeguard measures. NEMA will ensure that all project activities are aligned with national environmental regulations and the Adaptation Fund's Environmental and Social Policy. In collaboration with Executing Entities, NEMA will supervise the application of ESMPs, facilitate environmental reporting, and provide technical backstopping and policy guidance throughout implementation.

NEMA will set up the project management team as described in section III.A.1.2, which will incorporate an Environmental and Social Safeguards Specialist responsible for overseeing the implementation of ESMPs and ensuring technical alignment with NEMA requirements. At the county level, Project Implementation Units (PIUs) will be formed, each designating an E&S focal point to coordinate local ESMP implementation. Contractors engaged in the project will be required to assign E&S personnel within their construction teams to implement ESMP activities and submit regular reports to the PIUs and PCU.

Reporting and Compliance Tracking Mechanisms
Each ESMP will outline specific monitoring objectives and define the monitoring methodologies that correspond to the identified risks and mitigation measures. The ESMP monitoring section will include:

(a) Technical descriptions of monitoring protocols, including parameters to be measured, sampling methods and locations, frequency, detection thresholds, and corrective action triggers; and
(b) Clear monitoring and reporting procedures, which will ensure both early detection of potential E&S issues and track progress on mitigation implementation.

To ensure timely and effective ESMP execution, NEMA will coordinate national-level oversight in collaboration with the E&S Safeguards Specialist and executing entities. County-level E&S focal points under the PIUs will monitor local impacts and feed into national reporting. Contractors will submit routine Environmental, Social, Health, and Safety (ESHS) performance reports, which will be reviewed by the PIUs and WFP and UNICEF, with oversight from NEMA. Additionally, capacity building will be conducted to strengthen local E&S management systems, particularly at the county level. This includes training and empowering Social Accountability Committees (SACs), Community Project Committees, and Grievance Mechanism (GM) Committees to undertake day-to-day community-level monitoring and feedback. These structures will report to the county PIUs, thereby enhancing transparency, accountability, and stakeholder engagement in the implementation of ESMPs across Project AWARE interventions.

Development of ESMMPs for Project AWARE activities

This section provides ESMPs for activities categorized as A and B in line with the 2nd Schedule of the EMCA 1999 (as amended in 2015) and the AF ESP.

Construction of sand dams and subsurface dams

Table 17: ESMMP Construction of sand dams and subsurface dams

Risk	Impacts Identified	Mitigation Measures	Monitoring Measures	Monitoring Indicators	Frequency of Monitoring	Responsibility /Technical resources required
Disturbance of Riverine Ecosystems and Natural Water Flow	Alteration of streambed structure, disruption of aquatic life, impact on downstream water access	•Conduct hydrological assessments prior to construction •Design dams to allow for ecological water flow •Engage communities upstream and downstream •Restore vegetation and stabilize riverbanks after construction	•Site inspections, •hydrological monitoring, •community feedback sessions	•Presence of ecological flow provisions •Number of community consultations held •Percentage of riverbank vegetation restored	•Hydrological- Before and after construction Community consultations- Quarterly •Vegetation checks- Bi-annually	•Hydrologist Environmental Specialist •Community Liaison Officer

Construction of water filtration and reverse wells for managed aquifer recharge (MAR)

Table 18: ESMMP for the Construction of water filtration and reverse wells for managed aquifer recharge (MAR)

Risk	Impacts Identified	Mitigation Measures	Monitoring Measures	Monitoring Indicators	Frequency of Monitoring	Responsibility / Technical resources required
Aquifer Contamination from Poorly Managed Recharge	•Pollution of groundwater sources used for domestic and agricultural use, potential public health risks	• Conduct prior water quality testing •Install pre-filtration systems •Site recharge structures away from latrines, dumpsites, or other contamination sources •Train communities in operation and maintenance •Establish water quality monitoring protocols	•Periodic water sampling and lab analysis •Regular inspections of recharge and filtration systems •Community feedback and training assessments	•Water quality parameters (e.g., turbidity, E. coli, nitrates) within safe limits •Number of maintenance checks completed •Number of community members trained	•Water quality testing: Quarterly •System inspections: Monthly •Community training: Bi-annually	•Hydrogeologist •Water Quality Officer •Community Mobilizer

Drilling of new boreholes for community water supply

Table 19: ESMMP for the Drilling of new boreholes for community water supply

Risk	Impacts Identified	Mitigation Measures	Monitoring Measures	Monitoring Indicators	Frequency of Monitoring	Responsibility/ Technical resources required
Over-abstraction and Groundwater Depletion	•Depletion of groundwater resources, •Drying of nearby wells, •Reduced water availability during dry seasons	•Conduct hydrogeological surveys prior to drilling •Establish abstraction limits based on aquifer yield – •Register and license all boreholes - Form or engage local water user associations to manage water use	•Monitor abstraction rates and water table levels •Track borehole registration and permit compliance • Collect usage records through water user associations	•Number of boreholes with abstraction limits • Water levels remain within sustainable range • Compliance with water use permits - Functionality of user associations	•- Water level monitoring: Monthly - Abstraction records: Quarterly - Compliance audit: Annually	•- Hydrogeologist - Water Resources Authority (WRA) - Community Water User Associations

Salinization and Water Quality Deterioration	•Poor water quality leading to health risks or unfit water for agriculture and livestock	•Water quality testing during and after drilling - Avoid drilling in saline-prone zones - Install filtration or treatment systems if needed	•- Water sampling and lab analysis - Community reporting on water taste/smell - Maintenance logs for treatment systems	•- Water salinity and pH within safe limits - Number of complaints logged and resolved - Maintenance schedule adhered to	•- Water testing: Bi-annually - Community check-ins: Quarterly	•- Public Health Officer - Local Water Committees

Upgrading of shallow wells to green energy pumped systems

Table 20: ESMMP for Upgrading of shallow wells to green energy pumped systems

Risk	Impacts Identified	Mitigation Measures	Monitoring Measures	Monitoring Indicators	Frequency of Monitoring	Responsibility/ Technical resources required
Over-abstraction of Shallow Aquifers	Decline in water table, drying of nearby wells, reduced ecosystem support	- Conduct water yield assessment before upgrade - Establish abstraction limits for each system - Train communities on sustainable use	- Monitor water abstraction rates and aquifer levels - Keep community records of usage - Audit compliance with abstraction limits	- Stable water levels - Number of systems adhering to abstraction limits - Community reporting on water sufficiency	- Water level checks: Monthly - Usage records: Quarterly	- Water Resources Authority (WRA) - Community Water User Associations
Energy System Malfunction or Inefficiency	Interruption of water supply, community frustration, financial losses	- Use certified green energy equipment (e.g. solar pumps) - Train local technicians for operation and maintenance - Schedule routine maintenance checks	- Regular inspection of pumps and panels - Log operational hours and maintenance activities	- Number of systems functioning without breakdown - Maintenance logs up to date - Trained local technicians available	- System inspection: Monthly - Maintenance: Quarterly	- Contractor/Installer - Local Water Management Committees
Improper Siting of Solar Infrastructure	Land disputes, shading or vandalism of equipment	- Conduct community consultations for siting - Install panels in secure, publicly accepted areas - Use fencing and signage	- Site approval documentation - Reports of vandalism or conflict - Periodic community feedback sessions	- No. of reported disputes or vandalism cases - Proper fencing and community agreement visible	- Site monitoring: Quarterly - Feedback sessions: Bi-annually	- Community Leaders - Local Government - Contractor

Ecosystem restoration: soil and water conservation, stormwater harvesting, fodder/rangeland reseeding

Table 21: ESMMP for Ecosystem restoration: soil and water conservation, stormwater harvesting, fodder/rangeland reseeding

Risk / Impact Identified	Mitigation Measures	Monitoring Measures	Monitoring Indicators	Monitoring Frequency	Responsibility/ Technical resources required
Disruption of local ecosystems due to introduction of non-native species	- Use only native or locally adapted species	- Field verification of species planted- Cross-check with local biodiversity records	- percentage of species used that are native	Quarterly	PIU, MoE, Community Committees
Loss of traditional grazing access and local livelihoods	- Align restoration plans with traditional land use practices- Engage local pastoralists in	- Field observation of restored grazing areas- Feedback from herders and land users	- number of community consultations held- Area accessible to grazing	Bi-annually	PIU, Local Authorities, Community Elders

	planning				
Reduced community ownership and sustainability of interventions if not involved in planning	- Conduct participatory planning with community and technical experts	- Review of meeting minutes and attendance- Post-activity community satisfaction surveys	- Stakeholder meeting reports- Level of community satisfaction	Quarterly	PIU, Local NGOs, County Governments
Degradation due to poor management or lack of follow-up	- Implement adaptive management through regular monitoring and feedback loops	- Inspection reports- Satellite imagery or photographic documentation- Soil/fodder quality sampling	- Restoration success rates- Observed degradation signs	Semi-annually	MoE, PIU, Community Monitoring Teams

Small-scale flood control and riverbank protection using nature-based approaches

Table 22: ESMMP for Small-scale flood control and riverbank protection using nature-based approaches

Risk / Impact Identified	Mitigation Measures	Monitoring Measures	Monitoring Indicators	Monitoring Frequency	Responsibility/Technical resources required
Disruption of hydrology or natural floodplain processes	- Design structures to mimic natural floodplains- Avoid hard engineering where unnecessary- Conduct EIAs before implementation	- Review of floodplain modelling reports- Field inspection during and after rainfall events	- Functionality of NbS structures- Evidence of altered water flow patterns	Quarterly during implementation; Bi-annually post-construction	PIU, Water Resources Authority (WRA), MoE
Loss or displacement of riparian flora/fauna	- Use native vegetation- Avoid construction during breeding/nesting seasons- Buffer zones around sensitive habitats	- Biodiversity assessments pre- and post-intervention- Visual inspections	- Species richness/diversity- Habitat condition	Bi-annually	PIU, KWS, Local Environmental NGOs
Loss of access to agricultural or communal land	- Community consultations prior to site selection- Clearly define intervention boundaries and access routes	- Meeting records- Mapping of access points and buffer zones	- Number of grievances filed- Land use maintained	Quarterly	PIU, County Lands Office, Community Leaders
Poor community uptake and maintenance of NbS structures post-construction	- Community-based planning and training- Use local materials and labor to build ownership	- Training attendance sheets- Community follow-up reports	- Number of locals involved- Maintenance frequency	Quarterly	PIU, Local CBOs/NGOs, Community Water Committees

Development/rehabilitation of stormwater harvesting & groundwater irrigation infrastructure

Table 23: ESMMP for Development/rehabilitation of stormwater harvesting & groundwater irrigation infrastructure

Risk / Impact Identified	Mitigation Measures	Monitoring Measures	Monitoring Indicators	Monitoring Frequency	Responsibility/Technical resources required
Temporary disruption of water supply during rehabilitation	- Schedule works during low-demand periods- Provide alternative temporary water sources where feasible	- Review of rehabilitation work plan- Community feedback surveys	- Number of complaints filed- Availability of alternative supply	Weekly during construction	PIU, Water Service Providers, County Government
Occupational health and safety risks to workers	- Implement safety protocols (e.g., PPE, site supervision)- Conduct worker safety training	- Safety audit reports- Record of safety briefings and PPE distribution	- Number of incidents reported- % of workers using PPE	Weekly	Contractor, PIU, Ministry of Labour

Use of inappropriate or unsustainable technology	- Choose climate-resilient and community-preferred technologies- Ensure spare parts availability and technical support	- Technical design review- Consultations with local water user associations	- Functionality rate of infrastructure- Technology adaptability	At key design stages + post-installation	PIU, Ministry of Water, Local Technical Experts
Exclusion of women, persons with disabilities (PWDs), or other vulnerable groups from design/use	- Conduct gender-sensitive consultations- Incorporate inclusive design features (e.g., ramps, child-friendly access, multiple tap heights)	- Design review reports- Field verification of inclusive features	- % of infrastructure with inclusive features- Satisfaction levels by gender and group	Quarterly	PIU, County Gender Office, Local NGOs

Establish Material Recovery Facilities (MRFs)

Table 24: Establish Material Recovery Facilities (MRFs)

Risk	Mitigation Measures	Monitoring Measures	Monitoring Indicators	Frequency of Monitoring	Responsibility/Technical resources required
Occupational Health and Safety Hazards	•Provide PPE and training Segregate hazardous waste •Implement SOPs	•Safety audits •Training records review	•Percentage of staff with PPE •Percentage of reported incidents •Number of staff trained	Monthly	MRF Manager, Health & Safety Officer
Air and Odor Pollution	•Timely waste sorting •Install ventilation & filters •Schedule odor tasks off-peak	•Air quality tests •Odor complaint logs	•PM and VOC levels •Number of odor complaints	Quarterly	MRF Operations Manager, Environmental Officer
Contamination of Soil and Water Resources	•Use impermeable floors & drainage •Collect/treat leachate • Monitor environment	•Water and soil sampling Leachate management logs	•Presence of contaminants Leachate treatment efficiency	Biannually	Environmental Officer, Site Engineer
Social Displacement and Land Use Conflict	•Conduct FPIC •Offer livelihood alternatives •Carry out SIA	•Stakeholder engagement reports SIA documentation	•Number of grievances logged/resolved • Participation rate in consultations	Prior to construction & biannual updates	Social Safeguards Officer, Local Authorities
Gender and Social Inclusion Risks	•Inclusive hiring • Gender-sensitive facilities •Staff sensitization training	•HR audits •Facility inspection Training attendance logs	•Percentage of women/PWDs employed •number of trainings held	Quarterly	HR Manager, Gender Specialist
Child Labour or Exploitation Risk	•Enforce strict age verification • Collaborate with child protection groups	•Employment records review •Community outreach reports	•Number of underage labor violations •number of community sessions held	Monthly	HR Officer, Child Rights NGO

Climate-Resilient Waste Disposal Infrastructure.

Given that activity 5.2.3 is included as USP, and the exact design and exact location are not yet known, the ESIA and ESMP presented for this activity in this annex is preliminary and will be updated as per the process and timeline described in the USP Justification and Compliance Plan (Annex 15).

Table 25: ESMMP for establishing Climate-Resilient Waste Disposal Infrastructure

Risk	Impacts Identified	Mitigation Measures	Monitoring Measures	Monitoring Indicators	Frequency of Monitoring	Responsibility/Technical resources required
Occupational Health and Safety Hazards	Injuries, infections, and exposure to toxic waste	Provide PPE train workers install handwashing and first-aid stations, implement SOPs	Routine safety audits, medical screenings	Number of incidents, PPE usage rate, training records	Monthly	Facility Manager, H&S Officer
Environmental Contamination	Soil and water pollution, air pollution from open burning	Lined containment areas, drainage, effluent monitoring, no open burning, engineered landfill use	Effluent sampling, air quality checks, visual inspections	Leachate quality, odour presence, visible pollution	Quarterly	Environmental Officer, Local Authority
Social Conflicts and Livelihood Disruption	Displacement of informal workers, loss of income	Stakeholder consultations, training, integration programs	Consultation logs, employment tracking	Number of integrated informal workers, complaints received	Quarterly	Social Specialist, NGO Partner
Poor Community Participation and Awareness	Low segregation rates, mixed waste disposal	Awareness campaigns, education programs, labelled bins	Survey participation, community feedback, campaign reports	percentage increase in segregation rates, campaign reach	Bi-annually	Community Liaison Officer, Ward Administrator
Child Labour and Gender Disparities	Child labour, exclusion of women	Enforce hiring protocols, gender-inclusive workspaces, grievance mechanisms	Worker demographics, grievance records, HR audits	Gender ratio, child labour cases, complaint resolution rate	Monthly	HR Manager, Labour Officer
Odour and Noise Pollution	Nuisance to communities	Site facilities appropriately, enclose equipment, vegetative buffers	Noise and odour level checks, community feedback	Decibel levels, odour complaints, vegetation health	Quarterly	Environmental Officer, Facility Supervisor
Fire Hazards and Chemical Spills	Fires, chemical exposure risks	Fire safety plans, extinguishers, staff training, secure chemical storage	Fire drill records, inspection logs, spill response reports	Number of fire drills, equipment maintenance logs	Monthly	Facility Safety Officer, Fire Department

Annex 4 Grievance Redressal mechanism

Requirements of the ESP Adaptation Fund on Grievance Mechanism

Under the Environmental and Social Policy (ESP) of the Adaptation Fund, all projects and programmes are required to establish an effective Grievance Mechanism to ensure accountability, inclusivity, and the fair treatment of all stakeholders. This mechanism must be easily accessible to all community members, including vulnerable and marginalized groups such as women, youth, persons with disabilities, and Indigenous Peoples. It should be designed in a culturally appropriate manner, respectful of local norms, and sensitive to the needs of the affected populations.

Project AWARE's Grievance Mechanism

The Project's Grievance Mechanism (GM) provides channels and structures for project stakeholders to provide feedback and/or express grievances related to project supported activities. By providing this platform, it increases transparency and accountability by acting as important feedback and learning mechanism that helps reduce the risk of the project inadvertently affecting citizens/ beneficiaries.

The GM aims to address project-related concerns in a timely and transparent manner and effectively. The GM seeks to fulfil the following objectives:

- Encourage registration, acknowledgment, and recording of all concerns or issues raised by aggrieved;
- Identify the frequencies of issues raised: for instance, unpaid compensation, inadequate compensation, disregard for local ritual ceremonies, land acquisition, workplace concerns and many more;
- Ensure that complaints are properly registered, tracked and documented, with due regard for confidentiality;
- Address the composition of a committee that would handle all grievances; Inform people of the public information centre establishment and access;
- Establish procedures for the GM to enhance easy access, transparency and accountability, and tackle escalation of grievances beyond expectations;
- Manage the concerns raised by aggrieved parties to achieve a win-win situation within a reasonable time frame that would comply with national and international best practices; and
- Record all resolutions agreed upon by all parties involved and ensure that aggrieved persons are satisfied with every outcome of remedial resolution to foster harmony in subprojects.

A Grievance Manual will be developed that describes the process by which people affected by the Project can bring their grievances and concerns to the project management's attention, and how they will be considered and addressed. The Manual will consider existing informal processes of grievance redress, and will ensure that adopted processes of handling community concerns are culturally appropriate.

Grievance focal points will be appointed at the various levels (National, county and sub-project levels) and will be capable of receiving both verbal and written grievances. The focal points will record the grievances in a systematic manner and categorize them by type, and severity, in line with the Grievance Manual.

Grievance redress committees (GRC) will also be established at national, county and sub-project levels. The members of these committees at the county and sub-project levels will be locally appointed to enhance ownership of the redress process. These committees may include existing local committees such as Ward Water Committees (WWCs) or Water Resource Users Associations (WRUAs) and will have strong representation of disadvantaged groups. The grievance focal persons will be appointed to receive and process grievances will be part of the GRCs, and will interface between the grievant and the GRC. The committees will be coordinated by the Project Manager, and additional staff with particular expertise will be included as necessary depending on the complaint (procurement, finance, monitoring and evaluation (M&E), GBV advisor and communication).

The GRCs will meet monthly to review minor complaints, progress on complaints resolution, review the development and effectiveness of the grievance mechanism, and ensure that all staff and communities are aware of the system and the project. Ad hoc meetings may also be held upon receipt of significant complaints depending on their nature, or as defined in the Grievance Manual.
The existence of the grievance mechanism will be communicated to all stakeholder groups during meetings and briefings at Project and sub-projects launch. The communication will be maintained throughout Project implementation through periodic stakeholder meetings at Project and sub-project levels, and through the Executing Entities media communication channels.
An appeals process will also be established and communicated for complainants who are not satisfied with the proposed resolution of the complaint. In all cases, complainants will be reassured that they still have all their legal rights under their national judicial process.
All contractors and suppliers will be expected to sensitize their workers on the Project GRM and have a focal person to receive complaints regarding the construction and their workers and put in place complaints redress structures specific for the workers.

Integration of NEMA's Existing GRM and the Ombudsman into Project AWARE
Since NEMA is the National Implementing Entity (NIE) and lead agency for Project AWARE, its existing Grievance Redress Mechanism (GRM) and relationship with the Ombudsman Kenya (CAJ) must be integrated into the project's grievance structure to enhance transparency, compliance with national frameworks, and alignment with the Adaptation Fund's Environmental and Social Policy (ESP).
As the National Implementing Entity (NIE) for the Adaptation Fund and the institution leading Project AWARE, NEMA oversees the Environmental and Social Risk Management of the project, including the functionality of the grievance system. NEMA's existing institutional GRM will serve as the central escalation point for unresolved or serious complaints arising from project activities.

To strengthen the Project AWARE Grievance Redress Mechanism (GRM), it will be anchored within NEMA's existing GRM framework to ensure alignment with national procedures and legal mandates under the Environmental Management and Coordination Act (EMCA) of 1999. At the operational level, community structures such as Ward Water Committees (WWCs) and Water Resource Users Associations (WRUAs), together with county-level Grievance Redress Committees (GRCs), will serve as the first point of contact for complaints. If issues remain unresolved at the local level, they will be escalated through the Project Management Unit (PMU) to NEMA headquarters, where the Compliance and Enforcement Department will investigate, issue binding resolutions, or refer unresolved or systemic concerns to appropriate national legal or oversight institutions. Additionally, for subprojects that require Environmental and Social Impact Assessments (ESIA) or Environmental and Social Management Plans (ESMP), NEMA will ensure that public consultations are effectively conducted and stakeholder concerns are addressed in licensing decisions. Complaints related to environmental compliance, such as illegal discharges or unauthorized water use, will also be addressed through NEMA's regulatory authority.

Table 26: Proposed Grievance Redress Flow under Project AWARE

Community Level (WRUAs, WWCs)
↓
County GRCs (PIUs + social/environmental specialists)
↓
Project PMU / National GRC (chaired by NEMA Project Manager)
↓
NEMA Headquarters GRM (Compliance & Enforcement Dept)
↓
If unresolved or involves maladministration:
Commission on Administrative Justice (Ombudsman Kenya)

Communication Channels for Project AWARE GRM
To ensure that all stakeholders—including community members, implementing partners, and government agencies—can easily raise concerns or provide feedback, the project will adopt a variety of accessible, inclusive, and culturally appropriate communication channels. These channels are outlined below. They will facilitate the transparent and timely flow of information between the public and project implementers, promote early identification and resolution of grievances, and strengthen trust, accountability, and stakeholder participation throughout the project lifecycle

1. **Community-Level Channels**
    - Suggestion/Complaint Boxes placed at project sites, local administration offices, and community centers
    - Verbal submissions during community barazas, WRUA/WWC meetings, or to village elders and local focal persons
    - Mobile phone hotlines/SMS lines operated by the County Project Implementation Units (PIUs) or local implementing partners
    - Noticeboards displaying GRM procedures and contact persons at key community institutions (health centers, schools, water points, Chief's office)
2. **County and Sub-county Level Channels**
    - GRM Focal Persons within the PIUs, including social/environmental specialists
    - Email submissions to the County GRC or PIU
    - Dedicated telephone lines or WhatsApp groups for project-related feedback and complaints
3. **National Level Channels (NEMA/PMU)**
    - Official NEMA GRM email and telephone contacts
    - Online submission forms via NEMA's website or dedicated Project AWARE GRM platform
    - Physical mail to NEMA's national offices (for written complaints)
    - Project-level helpdesk or information center managed by the PMU
4. **Escalation/Independent Oversight**
    - Complaints unresolved at project or NEMA level can be referred to the Commission on Administrative Justice (Ombudsman Kenya) through:
        - Online portal (www.ombudsman.go.ke)
        - Physical offices or mobile complaint clinics held in counties
    - An aggrieved person may also appeal to the National Environment Tribunal if dissatisfied with the grievance resolution under the project GRM

Annex 5 Gender Assessment and Action Plan

Purpose and methodology
This gender assessment aimed to examine how gender dynamics and intersecting identities influence climate resilience efforts in Garissa, Wajir, Mandera and Marsabit Counties, Kenya. Grounded in a gender-responsive and intersectional framework, the study sought to identify gender-differentiated impacts of climate change, barriers to inclusive participation, and systemic inequalities in access to climate adaptation resources and decision-making, particularly in light of the proposed activities through project AWARE.

A qualitative approach was employed, guided by four key pillars: Institutional Arrangements, Leadership and Participation, Access to Resources, and Social Norms, Beliefs, and Perceptions. A total of 15 Key Informant Interviews (KIIs) were conducted with government officials from relevant departments (e.g., water, environment, agriculture, gender), community mobilizers (chiefs, social workers), and UNICEF and FCA representatives. Additionally, eight Focus Group Discussions (FGDs) were carried out-four in each county-with purposively selected groups: adult women, adult men, adolescent girls, and adolescent boys. FGDs with adolescents included participatory exercises such as mapping gendered daily routines and reflecting on

present vs. desired gender roles. The study applied an intersectional lens throughout, ensuring inclusion across age, gender, disability, ethnicity, and economic status. Qualitative data were coded and categorized based on the four pillars, with some quantification to highlight disparities across identity markers.

LITERATURE REVIEW

Legislative and normative environment: Climate adaptation initiatives in Kenya consider gender as an important driver of vulnerability to climate risks, and a key factor to consider in developing effective policy responses to climate change and development challenges. Kenya is among the first African countries to develop legislation and policies that promote the participation of women in climate change activities[51]. In line with the Constitution of Kenya which has a climate change and a gender equity agenda, Kenya has made great strides to realizing both[52]. Besides, there have been a lot of efforts and engagement both at the National and County level for the gender inclusion in climate adaptation strategies and efforts. For instance, the formulation of the Kenya National Climate Change Action Plan ensured that gender and women's issues are well articulated in climate risks and adaptation measures[53]. At the time of implementation of the Action plan Kenya's cabinet secretary in charge of matters related to climate change and the environment, was a woman. It is during her tenure that the Climate Change Act, 2016 was enacted. The Act has solid provisions that if implemented shall ensure that women's contribution in climate change adaptation and mitigation are adequately considered. While having a sound legislative framework is often an important pre-requisite to action, implementation of plans and policies developed will still require more effort to ensure that resources, such as financial and technical expertise, are available.

Despite existing legislation and policy efforts in Kenya, gender inclusion in climate adaptation still faces significant gaps that vary by county. Common challenges include unequal access to resources, limited awareness, insufficient gender-specific data, and the influence of social inequalities and cultural norms that marginalize women, children, and persons with disabilities. These barriers hinder inclusive participation and access to climate initiatives like smart farming. For interventions by stakeholders like NEMA, WFP and UNICEF to be effective, it is crucial to integrate gender assessments during the planning phase. The provided gender assessment examines climate policies and sectoral plans within both the normative and socioeconomic contexts, focusing on the differentiated impacts of climate change on women.

Normative Environment: Gender Inclusivity in Kenya's Climate Policies and Sectoral Plans. Kenya ranks 7th out of 20 countries on the 2024 Gender Action Plan (GAP) with a moderate score of 1.98 out of 3, second only to Madagascar in Africa. This ranking reflects Kenya's progress since the GAP's adoption at COP23 in 2017, recognizing both recent and earlier gender-responsive climate actions. Kenya's Climate Change Act (2016) laid a strong legislative foundation, establishing bodies like the National Climate Change Council and the Climate Change Directorate, and mandating the integration of gender and intergenerational equity into climate policies.

National leadership, including the President and key ministries, has driven the effective implementation of the National Climate Change Action Plan (NCCAP), with support from civil society and the private sector. Counties have followed suit by developing localized climate action plans, though challenges remain in fully integrating gender components due to local socio-cultural norms. Whereas some counties like Nairobi have succeeded in incorporating gender mainstreaming in their policies, including equitable recruitment practices, the counties of Garissa, Marsabit, Wajir and Mandera counties, while having strong plans on paper, face difficulties in

[51] Matheka, J.(2022). Gender Mainstreaming and Climate Change. Retrieved on May 20, 2025, ,https://icj-kenya.org/news/gender-mainstreaming-and-climate-change/

[52] The Kenyan Constitution. Retrieved on May 19, 2025, http://kenyalaw.org:8181/exist/rest/db/kenyalex/Kenya/Legislation/English/Acts%20and%20Regulations/C/Climate%20Change%20Act%20-%20No.%2011%20of%202016/docs/ClimateChangeAct11of2016.pdf

[53] National Climate Change Action Plan (Kenya) 2023-2027. Retrieved on May 19, 2025. https://emsi.co.ke/wp-content/uploads/2024/08/Kenya-NCCAP-2023-2027-1.pdf

implementation due to entrenched cultural patriarchal norms. Nonetheless, efforts like appointing women to county climate change task forces signal progress toward long-term structural reform.

On specific County initiatives, Garissa County initiated Garissa County's Climate Change Action Plan (GCCAP) in 2018. GCCP incorporates gender dimension in climate change, recognizing that climate change impacts women and men differently[54]. Similarly, Marsabit County Climate Change Action Plan 2023-2027 also incorporates gender mainstreaming in, change initiatives. Wajir and Mandera County also developed a gender action framework on climate change through Wajir County Climate Change Financing of 2023[55] and Mandera County Climate Change adaptation policy of 2021[56].

GENDER ANALYSIS – BASED ON FIELD CONSULTATION

Methodology: This assessment employed a qualitative approach underpinned by a gender-responsive, intersectional framework structured around four core pillars: Institutional Arrangements, Leadership and Participation, Access to Resources, and Social Norms, Beliefs, and Perceptions. These pillars guided the development of tools and analysis for the 4 targeted counties by project AWARE. Given the similarity of the norms and practices across all the 4 counties two counties-Garissa and Marsabit selected for field missions as both are representatives for the diverse communities across all the 4 target counties. The field work focused on how gender and intersecting identities (such as age, disability, and ethnicity) shape climate resilience efforts. Data was collected from May 5 to 10 2025 through Key Informant Interviews (KIIs), Focus Group Discussions (FGDs), and participatory exercises. A total of 15 KIIs were conducted-7 in each county with county-level officers from departments related to water, environment, agriculture, gender, and local administration, plus one KII with a UNICEF WASH expert. FGDs were held with four distinct groups in each county: women, men, adolescent girls, and adolescent boys (total of 8 FGDs), with adolescent sessions conducted in schools. Participatory exercises with junior secondary students included a gendered daily routine mapping and reflections on current vs. desired gender roles. These qualitative tools were designed to be inclusive and responsive to the diverse social realities of the communities. The analysis involved thematic coding aligned with the four research pillars and included disaggregation by sex, age, and disability to surface nuanced gender inequalities in climate adaptation contexts.

PILLAR 1: INSTITUTIONAL ARRANGEMENT

Examines the extent to which policies, structures, and coordination mechanisms at local and county levels integrate gender considerations in climate adaptation planning and implementation-particularly in water access, livelihood, early warning systems, and waste management.

All the 4 Northern Counties of Wajir, Mandera, Garissa and Marsabit Counties reveals growing institutional commitment to gender-responsive climate governance, supported by national frameworks such as the National Climate Change Action Plan (NCCAP) 2023–2027. The 4 counties are aligning local policies with national gender mandates, though implementation levels vary. County-level legislation reflects notable progress. Garissa County is currently amending its County Climate Change Act (2018) to incorporate gender-responsive budgeting and affirmative action measures. *"We have made some suggestions on how to achieve the requisite numbers of women, girls or Persons with disability in climate change initiatives,"* noted the County Climate Change Program Officer.

In Marsabit, the Financing Locally-Led Climate Action (FLLoCA) initiative has been a key driver of gender mainstreaming through conditional funding. "*FLLoCA fund has been key on gender mainstreaming... Each*

[54] Garissa County Climate Change ACT – 2018. Retrieved from, https://adaconsortium.org/publication/garissa-county-climate-change-act-2018
[55] Wajir County Climate Change Financing of 2023. Retrieved from, https://admin.adaconsortium.org/storage/uploads//2024/10/29/WCCF_Wajir__uid_67209ae62edab.pdf
[56] Mandera County Assembly reports. Retrieved on June 3 2025. ttps://www.manderaassembly.go.ke/storage/downloads/March2021/ZhTW01T89qoM2YeIpvTS.pdf

county including ours has been forced to adopt gender mainstreaming to qualify," said the Director of Gender in Marsabit.

Wajir County have established a gender desk, a one-stop shop where different county programs including climate adaptation initiatives by various stakeholders are guided on gender mainstreaming processes[57].

Mandera County Climate Change Adaptation Policy of 2021 is a policy framework that has been implemented by Mandera County towards ensuring gender equality initiatives are handled in climate change matters within the County[58]. The initiatives are supported by a gender department that oversees gender mainstreaming in all county activities

All the 4 counties have established gender departments responsible for mainstreaming gender across all sectors, including climate-related initiatives. However, these departments face significant capacity constraints, leading to delays in coordination and implementation. As the Director of Water and Sanitation in Garissa noted, "*We rely on the ministry of gender... but sometimes we encounter a lot of delays because the department is serving other departments."*

Affirmative action has shaped local decision-making structures, particularly through adherence to the two-thirds gender rule, which stipulates that no more than two-thirds of committee or group members can be of the same gender. This ensures a minimum of one-third representation of the opposite gender, typically women to promote inclusive participation. The rule is increasingly applied in project management committees and community training selections. However, implementation remains inconsistent, especially within government-led efforts. Gendered patterns in local coordination roles were also evident: in Marsabit, women serve as the majority of community volunteers and social workers responsible for issuing early warning signs, whereas in Garissa, men predominantly fulfill these roles. *"In some cases, we receive the warning signs from social workers who are women," shared a female participant in Marsabit.*

Pillar 2: Leadership and Participation

Assesses women's, youth's, and marginalized groups' representation and influence in decision-making spaces related to climate-resilient water management, livelihood planning, and anticipatory action structures like early warning task forces.

Consultations with community members and stakeholders reveal gender dynamics shaping household decision-making and leadership roles in climate adaptation and resource management. While men remain the primary decision-makers on major household matters, women hold significant authority over key daily responsibilities such as collecting and storing rainwater, managing waste disposal, and spreading messages about sanitation and environmental health. Women's involvement in these tasks translates into decision-making power related to them, including deciding *"on means used to collect water, instructing children (boys and girls) to assist in waste disposal and where to store water in normal circumstances."* During times of drought or other calamities, women, together with the elderly, persons with disabilities (People with disability), and young children, are often left at home as men and boys seek pasture for livestock. In these situations, women make critical decisions about how and where to fetch water and food, a fact acknowledged by men who recognize that *"since women are the ones who fetch water, we don't interfere when they make decisions on where they go to collect water or if they are storing water for future use."* However, men retain control over larger household responses to early warnings, such as relocating families to safer areas or moving livestock, explaining that *"it is us men who decide on where to move our families when we are told there will be floods. We also decide on where to take our animals if the land is dry."*

[57] Gender Programs Fact sheets. Retrieved from, https://www.mercycorps.org/sites/default/files/2020-02/GenderProgramFactSheetBRACED.pdf
[58] Mandera county assembly publications, retrieved from, https://www.manderaassembly.go.ke/storage/downloads/March2021/ZhTW01T89qoM2YeIpvTS.pdf

Capacity-building efforts led mainly by NGOs have sought to promote gender equity in climate adaptation, targeting women, girls, and People with disability through initiatives like smart agricultural projects. These programs, such as the Pastoralist Girls Initiative coordinated by the Danish Refugee Council in Garissa, organize participants into groups provided with farms and necessary technologies. Nevertheless, barriers such as the considerable distances to farms limit participation, especially for People with disability. Agricultural stakeholders affirm these initiatives, with one noting, *"We do have initiatives that involve women, girls & People with disability…we are in coordination with Danish Refugee Council on a smart agricultural project called Pastoralist Girls Initiative (PGI) in Fafi Sub-constituency."* Similarly, savings groups and women empowerment programs implemented by organizations like BOMA have been positively received, with women recognizing the value of financial empowerment in elevating their community voices: *"What BOMA has done especially on kitchen farming project that have empowered our savings is very good. When financially empowered, we can also take care of some matters in the family like paying children school fees. This can also make us to be respected."*

Women's participation in water management, rangeland restoration, and climate-smart agriculture varies regionally. In Marsabit, women are actively involved in operating water pumps, managing rainwater harvesting, and maintaining water storage systems, often boosted by NGO training. They express confidence in these roles as part of their daily responsibilities, stating, *"These are part of our everyday work, and we feel confident doing them because we've always done them."* Nonetheless, they acknowledge lacking technical skills for repairs, highlighting a desire to learn basic maintenance to better manage water systems. In Garissa, women's participation in such initiatives is more limited due to fewer NGO activities, with one woman noting, *"Where NGOs work with us, we know what to do. Where they don't, we are left out."* Challenges to women's participation in technical or leadership roles include heavy household duties, societal norms requiring men's permission, limited land access, and low literacy levels, which restrict women's ability to attend training or engage fully. One woman captured the constraints succinctly: *"If I have young children at home, how can I go to a training?"* and *"If a man says no, we cannot go. That's how it is."*

Regarding meaningful participation and claiming rights, women, girls, and People with disability now increasingly engage in village and project management committees where gender quotas apply, reflecting progress since affirmative action was devolved. However, their presence in open public forums such as village barazas remains minimal, discouraged by social norms that stigmatize women's participation in such settings. A female participant observed, *"If it is an open meeting like a village baraza or a chief's session, then women, girls and People with disability will not come. The culture cannot allow them to sit with men in same open forums."* Persons with disabilities face additional exclusion, often hidden from public view due to stigma. In waste management campaigns, women predominantly lead community efforts, either as social or community health workers in Marsabit or as respected retired elders in Garissa, fulfilling critical mobilizing roles. A community mobilizer remarked, *"In this community, those who spearhead campaigns on environmental conservation are social workers or community health workers. All of them are women, and they have been doing some good work."*

Women also play a crucial role in disseminating early warning messages about natural hazards. Unlike men, who often withhold information after receiving training, women actively share these messages within their social groups or "chamas," thereby ensuring broader community awareness. As a community mobilizer explained, *"Women are easy to disseminate early warning messages, during their chamas on Saturdays, they always share on any topic including early warning messages if any of them has received."*

In Wajir County, Chamas and social networks formed by women, youths and People with disability and funded by NGOs have been active in influencing the community on disaster mitigation measures. They are involved in village dissemination of warning messages and campaigns for environmental conservation such as tree planting. The main challenge is that the social groups only comprise of dominant ethnic Somali community primarily represented by Degodia, Ajuran, and Ogaden clans. Minority ethnic groups such as the Borana and

Gabraa are rarely represented in the social groups. Another challenge is some of the initiatives are ignored by the community based on social-cultural practices where the voice of a woman is *seen as not bearing any weight*[59].

Secondary data from Mandera county also indicates similar initiatives of women chamas as the tool for women and marginalized to participate in decision making related to related to climate-resilient water management, livelihood planning, and anticipatory action structures like early warning task forces. The county government of Mandera has also supported the formation and registration of women and marginalized groups by forming sub-county registration offices. Just like Wajir, initiatives by women, youth and marginalized are in most cases ignored by the entire community unless if they are backed by men. In recognition of this challenge, the County government of Mandera has ensured that those chamas have men patrons who affirms initiatives done in the community [60].

Pillar 3: Access to resources

Analyzes gender- and identity-based disparities in access to and control over critical resources such as safe water, rangeland, farmland, climate-resilient technologies, and financial or technical support for livelihoods and adaptation.

Control of Productive Assets: Across all four targeted areas, men predominantly own and control key productive assets such as land and livestock, while women and children are often considered part of men's property. A female participant from Marsabit explained that *"before marriage, you are your father's daughter and then after marriage, you become your husband's property. They say that once dowry is paid, you are owned by your husband."* Men also exert control over women's participation in climate adaptation activities, requiring women to seek their husband's permission before attending community functions. As a female elder from Garissa noted, *"You must ask the permission from your husband and ask nicely so that he doesn't say no, if he refuses, even Quran itself says that you can't argue."*

Community land is collectively owned and governed by ethnic elders, who are predominantly men. These elders make decisions on land use based on cultural norms. However, some women have broken through these traditional barriers due to their prominence in government service or community leadership. An elder from Garissa observed that *"the elders are mainly dominated by men. However, there are some few cases especially at the moment where some elders are women. Those women elders have proven to the community that they deserve it."* At the household level, women play a crucial role in managing kitchen assets and water storage, particularly during drought conditions. A female participant from Marsabit emphasized that *"in most homes here, women have been given water tanks by NGOs, they ensure that they harvest enough rain water and control how that water is utilized to caution against drought situations."*

Capacity of Women and Girls in Resource Management: Women have benefited from NGO-led trainings on water harvesting, rangeland restoration, and climate-smart farming. While not all women have been formally trained, knowledge is widely disseminated across households. One female participant from Garissa shared, *"Not all have been trained, but almost all households have water storage tanks and with knowledge on how to harvest rain water and preserve it."* In contrast, there are a lot of women who feel excluded from climate adaptation initiatives due to restrictive social norms and the perception that men represent their interests. A climate change task force member explained, *"Sometimes we train, and we also have good initiatives around that. But rarely would you see women and girls volunteering to come and participate. They feel that when a man comes, then they are represented."* Girls, however, are active participants through school environmental clubs where they learn about climate-smart agriculture and environmental conservation. A girl

[59]Conflict-Sensitive Adaptation Governance. Retrieved from, https://maarifa.cog.go.ke/sites/default/files/2024-03/Wajir%20County%20Participatory%20Climate%20Risk%20Assessment%20Report.pdf
[60]Mandera County's Green Revolution. Retrieved from, https://climatechange.co.ke/how-women-in-the-mandera-green-revolution-tackle-climate-change/

from Garissa described, *"We learn through our environment clubs... we practice what we learn in school and even at home."*

Violence and Justice in Access to Resources: Disputes over water access tend to be minor and are typically resolved by water management committees. For example, when men jump queues at water kiosks where women have been waiting, small disagreements arise but rarely escalate to formal authorities. An area chief in Garissa reported, *"We only have some small disagreements like in a water kiosk when a man comes in and jumps the water queue when women have been queueing for hours... They rarely get to our offices."* In Marsabit, Wajir and Mandera, however, conflicts are more frequent and severe, including ethnic violence linked to the exclusion of certain communities from resource projects. A water department official noted, *"There are some stalled energy and water projects... because the community who were owning that land were not involved in any discussions."* Women in Marsabit face significant gender-based violence when accessing distant water points, including rape and physical abuse. Shared use of these points with livestock exacerbates these risks, as men sometimes force women to yield water access to animals. A community mobilizer explained, *"Women face many challenges... some women are raped on their way from or to fetching water. Those water points are very far."* While local elders and administrative leaders investigate these cases, resolutions often prioritize community forgiveness over justice for survivors. A female participant lamented, *"Elders try, they investigate and get culprits who rapped someone, however... they have consensually agreed for forgiveness. The woman who suffered is never considered in this."*

Gendered Division of Labor Among Adolescents: Insights from a Participatory Exercise: A participatory exercise with adolescent boys and girls revealed a stark gender divide in daily routines and responsibilities. Girls consistently reported longer, more labor-intensive chores before school and on weekends, while boys had shorter, individual-centered tasks. In reflective activities, adolescents recognized the imbalance-advocating for a more equal division, especially in tasks like water collection and community engagement. Yet, deeply rooted gender norms still limit girls' time, mobility, and voice. As one girl shared, *"Even if I want to go to the meeting, I must ask my father or brother first."*

Pillar 4: Social norms, beliefs and perception

Explores how prevailing gender norms, roles, and community beliefs shape perceptions of responsibility, access, and capacity to engage in climate adaptation-especially in household water management, livelihood activities, and participation in climate resilience efforts.

Field consultations across the four target counties indicate that deeply rooted social norms and cultural beliefs significantly shape the roles and perceptions of women, girls, and marginalized groups in climate change adaptation. In all counties, gendered divisions of labour remain strong, assigning domestic and caregiving responsibilities to women and girls, while men are more commonly engaged in productive, income-generating, and decision-making roles. Across the sites, women and girls carry the burden of unpaid care work such as fetching water, collecting firewood, cooking, and caring for children. These responsibilities often prevent them from participating in community-level climate change discussions or adaptation projects. In contrast, men are more visible in public forums and decision-making spaces, especially in sectors like agriculture, livestock management, and local governance.

In the four Northern Counties of Marsabit, Wajir, Mandera and Garissa, these patterns are especially evident due to entrenched patriarchal cultural structures. However, there are emerging signs of change, particularly among younger and more educated families. Some men expressed openness to sharing domestic responsibilities, suggesting a shift in traditional expectations. As one male FGD participant in Garissa explained, *"Though not commonly practiced, things are changing. We find no wrong when we are also involved in taking care of the babies. When your wife is busy with kitchen, you can sometimes help with taking care of the baby."*

Despite growing awareness, women's participation in climate adaptation continues to face substantial barriers. Many women reported that their domestic workload, including tasks such as cooking, fetching water and firewood, and caring for children, limits their availability to engage in climate-related community activities. As a woman in Garissa shared, *"We are supposed to take care of our houses, looking after children, fetching water, cooking and performing other duties. We don't have time to participate in other activities."* Moreover, women's involvement often depends on the permission of male family members. In both Marsabit and Garissa, communities are highly patriarchal, with men making household decisions. A stakeholder from the Department of Water and Environment in Garissa noted, *"Men call the shots, however much a woman might want to participate in any initiative. If they receive a 'No' feedback from the husband or their father, if unmarried, then that is it. You can't do anything about it."*

The exclusion is reinforced by structural inequalities in local governance. In Garissa, for example, most county departments are headed by men, with the exception of the Department of Environment and Natural Resources. This male dominance within institutions reduces the visibility and voice of women in climate adaptation processes. A stakeholder from the Department of Agriculture shared, *"There is a workshop on inclusivity we went to and found ourselves being the mobilizers and financiers-all men. In fact, we were challenged by the participants that how would they discuss inclusivity when the financiers are men."*

Educational barriers further compound the problem. Many elderly women, especially in Marsabit and Garissa, had limited or no access to formal education due to cultural preferences for educating boys. This has contributed to a skills gap that continues to affect women's participation in training and leadership roles in climate adaptation.

Attitudes toward climate-smart practices also reflect gendered expectations. While men showed interest in early warning systems and livestock-related interventions, they tended to view smart farming and kitchen gardens as roles more suitable for women. Women, particularly in Marsabit, expressed a desire to expand their role in food production, recognizing its value for household food security. One woman stated, *"We should have more space for smart farming and not just our kitchen gardens. We have seen that they are bringing food to us."* Conversely, many men emphasized the cultural and economic importance of livestock, seeing it as central to their identity. A participant from Garissa explained, *"Livestock is our life. Any initiative on climate change should be towards making us have more animals or those towards our animals surviving during drought seasons."*

Gender Action Plan

Based on field consultations and literature review, a comprehensive Gender Action Plan has been developed. It outlines specific gender actions, corresponding indicators, and how these contribute to measurable achievements in gender equality and social inclusion across all project components.

To effectively implement the Gender Action Plan and promote Gender Equality and Social Inclusion (GESI) in the project, a gender-responsive budgeting strategy will be adopted.

Key Budget Priorities:

- Training programs will intentionally target women and female-headed households on climate-resilient livelihoods, disaster risk reduction (DRR), and early warning systems (EWS).
- Support gender-sensitive technical training and leadership development initiatives focused on women's participation in water governance and climate adaptation planning.
- Invest in water infrastructure (safe, private water points) that are co-designed with women and girls to meet their specific needs and safety concerns.

- Fund inclusive community consultations and participatory design processes that actively engage women, youth, and marginalized groups in planning, implementation, and monitoring of water and climate-related projects.
- Provide financial and technical support to women's cooperatives and initiatives promoting climate-smart agriculture (CSA), including tailored training, access to climate-resilient inputs, and value chain integration.
- Ensure budget allocation for women to access diversified livelihoods, agricultural technology, extension services, and financial tools (credit, insurance) suited to climate-related risks.
- Allocate resources for the collection of sex- and age-disaggregated data, gender audits, and household-level assessments to inform programming and track gender-specific outcomes.
- Fund awareness campaigns and community dialogues to address restrictive gender norms and promote equitable roles in water use, climate resilience, and household decision-making.
- Provide funding to embed gender and inclusion experts within technical working groups and government committees, and to integrate GESI (Gender Equality and Social Inclusion) in climate and water governance policies.
- Support ongoing gender analysis and provide training for government, CSOs, and local institutions to strengthen their ability to plan, implement, and evaluate gender-responsive interventions.

Outcomes	Outputs	Gender Action	Gender Responsive Indicators	Target Gender Achievement	Means of verification
Climate-resilient water access for human and livestock consumption					
OUTCOME 1: By 2029, increased numbers of people are benefiting from climate-resilient water systems in targeted communities within the Ewaso Nyiro North River Basin (ENRB)	**Output 1.1** Enhanced capacity of Water Resource Management Institutions and professionals for sustainable groundwater development and management in ENRB	• Ensure a minimum 33% participation of women and other marginalized groups (e.g., youth, persons with disabilities) in all training, CPD, and internship programs. • Integrate gender equality and social inclusion (GESI) content into training curricula and internship orientation.	# and % of women and marginalized professionals trained in sustainable groundwater development and management	A minimum number (as mandated by the constitution for the participation of women) of trainees are women and/or marginalized professionals, with active participation ensured across all training activities.	• Training participant registers disaggregated by sex, age, disability, and professional affiliation • Pre- and post-training assessments • Institutional plans/policies with gender-responsive clauses
			% of trained women and marginalized professionals demonstrating increased knowledge and skills in sustainable groundwater development and management	Trained women and marginalized professionals show measurable improvement in knowledge and skills, as assessed through pre/post evaluations.	
	Output 1.2 Improved rain/floodwater for Managed Aquifer recharge (MAR) and Nature based Solution (NbS)				
	Output 1.3 Community validated climate-resilient groundwater infrastructure developed and in operation in target communities within ENRB counties	• Conduct pre-construction consultations with women and vulnerable community members to inform decisions on siting and timing of groundwater infrastructure.	# of new climate-resilient groundwater systems constructed in consultation with women and vulnerable groups, prioritizing access needs of female-headed households and key institutions (schools, clinics)	Newly constructed systems are within safe, accessible distance of schools, health centres, or communities with high numbers of female-headed households; women report improved access and safety.	• Engineering and site selection reports • Participation and consultation meeting logs (disaggregated by gender and vulnerability) • Household water access surveys
			# of rehabilitated groundwater systems upgraded with climate-resilient features based on women's consultations, with women involved in maintenance and oversight	Upgraded systems have female representation in operations and maintenance roles, and incorporate gender-informed design improvements.	
	Output 1.4 Strengthened financial management capacity of Water Services for	Design training curricula that include gender-sensitive modules, prioritizing the participation	% of trainees in rural technical training (TIVET/KEWI) who are women or marginalized	Enhanced technical and financial participation of women and marginalized youth in the water sector	• Training rosters and attendance (disaggregated by

	sustainable water service delivery in the context of climate change	of women and marginalized youth in climate-sensitive financial planning, budgeting, and resource mobilization. Promote inclusion of women in governance structures and decision-making roles within water utilities.	youth # of female board members or water committee leaders trained on water governance and decision-making	 Governance structures reflect gender balance and responsiveness	gender and social group) • Updated financial plans and governance policies from WSPs
Water access for climate resilient livelihoods					
Outcome 2 **By 2029, communities in targeted ENRB locations have established and sustained climate-resilient and diversified livelihoods supported by functional water infrastructure and resilient and productive ecosystems**	**Output 2.1** Prioritized rangeland resources including land are brought under restoration, safeguarded and sustainably managed for improved climate change resilience.	• Facilitate equitable participation of women and marginalized groups in rangeland and ecosystem assessments and restoration planning processes. • Provide gender-inclusive training programs on ecosystem conservation, drought-resilient fodder practices, and land restoration techniques. • Promote community dialogues to address gender norms and empower female pastoralists in rangeland decision-making.	% of rangeland restoration initiatives with documented and active participation of women, including leadership roles in community rangeland/watershed management committees and activities. % of female-headed households among beneficiaries accessing restored rangeland resources.	Women are recognized as key actors in rangeland stewardship and have access to restored resources and a shift in traditional norms where men dominate land governance, toward more gender-inclusive practices Increased income or food security benefits for women due to involvement in fodder cultivation or restoration-linked value chains	Training and participation logs disaggregated by gender, rangeland management activity reports. Beneficiary lists disaggregated by gender of household head, restoration reports.
	Output 2.2 Community validated climate resilient water infrastructure developed and rehabilitated for food security	• Ensure gender-sensitive consultations in the planning and development of water infrastructure.	% of water infrastructure projects where women's participation in design, development, and rehabilitation activities is documented and meaningful.	At least 33% of participants in water infrastructure development activities are women, with roles extending beyond labour to decision-making.	• Sex-disaggregated membership lists and training rosters • Committee meeting records and water use agreements

		• Promote equitable access to rehabilitated water sources for women, youth, and marginalized groups, prioritizing productive uses like small-scale irrigation and household needs. • Establish guidelines for gender-inclusive water management committees with representation and decision-making roles for women. • Provide training and resources for women and youth to participate actively in managing and benefiting from water infrastructure.	% of beneficiaries who are women or from female-headed households accessing improved water sources for domestic and productive use. % of water management committees with at least 33% women in leadership roles.	Women constitute at least 50% of direct beneficiaries, with a focus on improved access for female-headed households. At least one-third of leadership positions in water management committees are held by women, with active participation in decision-making processes.	• Pre/post time-use surveys (optional but useful in longer-term evaluation)
	Output 2.3 Climate -smart agriculture and nature-based enterprises promoted through inclusive value chains for climate resilient livelihood s	• Promote women and youth leadership in CSA initiatives, including demonstration plots, training facilitation, and enterprise development. • Facilitate access to gender-sensitive financial tools and resources tailored to support women's and youth's agro-enterprises. • Challenge restrictive norms and practices through community dialogues and capacity-building with	% of women and youth among smallholder farmers trained in climate-smart agriculture (CSA) practices and sustainable production % of complementary livelihood beneficiaries who are women or youth actively involved in income-generating activities.	At least 50% of participants applying sustainable agricultural practices are women or youth, with documented improvements in productivity or resilience. At least 40% of beneficiaries engaged in complementary livelihood options are women or youth, with measurable increases in income or productivity.	• Pre/post surveys on decision-making and income levels • Enterprise registration and support records

		local leaders to encourage equitable engagement in agriculture.			
	Output 2.4 Improved household access to nutritious and diversified diets, contributing to enhanced livelihood resilience	• Target women (particularly caregivers of young children, pregnant, and lactating women) in nutrition education, food preparation, and storage training. • Promote women's engagement in local production and preservation of nutrient-dense foods, leveraging traditional knowledge and community innovation.	% of female caregivers in households reporting increased consumption of locally produced nutritious foods.	At least 50% of female caregivers in participating households report increased knowledge and adoption of locally produced nutritious foods, with an emphasis on culturally appropriate and climate-resilient practices.	Household surveys disaggregated by gender and caregiver status, training participation records, and pre/post assessments of dietary diversity.
Enhanced early warning systems and anticipatory action					
Outcome 3 **By 2029, communities in targeted ENRB locations benefit from having an enhanced early warning system**	**Output 3.1** Flood EWS accuracy improved by incorporating more data using open-source flood models	• Develop and disseminate gender-inclusive operational guidelines and SOPs for flood EWS that address the needs of women, youth, and marginalized groups. • Ensure training sessions on updated flood EWS target equitable participation of women and marginalized group representatives among county officials. • Incorporate feedback from women, youth, and other vulnerable populations into the development and refinement of EWS	Evidence of operational guidelines and SOPs integrating gender and inclusion considerations, ensuring the needs and roles of women and marginalized groups are reflected in EWS roles, responsibilities, data flow, and alert dissemination.	Operational guidelines for flood EWS explicitly address gender and inclusion considerations, with feedback mechanisms showing 70% of targeted stakeholders, including women and marginalized groups, reporting satisfaction with clarity and inclusivity of roles and responsibilities.	• Review of operational guidelines and SOPs for documented integration of gender and inclusion principles. • Training records disaggregated by gender and group affiliation.
			% of women and marginalized group representatives among county officials trained on updated flood EWS, disaggregated by gender and group.	Required proportion of trained county officials on updated flood EWS are women or representatives of marginalized groups, contributing to inclusive local disaster risk management.	

		data flow and alert dissemination mechanisms.			
	Output 3.2 Improved Anticipatory Action triggers defined in updated plans, integrating (child) vulnerability in target counties and nationally	• Ensure gender-equitable participation in the development of Anticipatory Action Plans (AAPs), with a focus on including women and marginalized groups in decision-making and implementation roles. • Promote the use of inclusive language and accessible formats (e.g., women-led focus groups, community radio, and pictorial guides) in CCDRM and seasonal forecast publications.	% of anticipatory action plans (AAPs) integrating gender-sensitive triggers and addressing the vulnerabilities of women, children, and marginalized groups.	By 2027, all anticipatory action plans include gender-responsive triggers and mechanisms to reduce climate vulnerabilities specific to women, children, and marginalized groups, ensuring inclusive community preparedness.	Gender-disaggregated AAPs with documented triggers and vulnerability measurements. Case studies highlighting the outcomes of gender-sensitive anticipatory actions in targeted counties.
	Output 3.3 County budgeting process for Anticipatory Action strengthened				
	Output 3.4 Early Warning Communication systems improved to effectively reach last-mile communities		% of tailored EWS messages co-created with women, youth, and marginalized groups, ensuring accessibility and cultural relevance.	EWS messages disseminated are co-designed with community input, reflecting the preferences and needs of women, youth, and marginalized groups.	• Records from co-design workshops, including attendance disaggregated by gender, age, and vulnerability. • Dissemination tracking reports highlighting community preferences and inclusive practices.
			Evidence of differentiated strategies addressing gendered barriers to EWS access (e.g., literacy, phone ownership, language, risk perception)	Vulnerable groups do not have to face lack of information due to digital divides.	
Systems strengthening for enhanced and inclusive climate adaptation coordination and knowledge management					
Outcome 4: By 2029, the Ministries of Environment and	**Output 4.1** Enhanced capacity of the Ministry of Water and County Climate Units in	• Ensure women and marginalized groups are targeted and	% of women and marginalized groups (e.g., youth, persons with disabilities) among trained	Significant number of participants in technical capacity-building trainings are women or	• Training participant lists disaggregated

Water and County Climate Units in targeted ENRB counties adopt an enhanced coordination and governance framework.	targeted ENRB Counties for inclusive and participatory climate adaptation planning and coordination in the water sector.	prioritized in all training activities at the national and county levels • Require that all coordination bodies adopt inclusive Terms of Reference (ToR) with gender balance goals and clear accountability mechanisms	water sector professionals and CCU staff on inclusive climate adaptation coordination	from marginalized groups	by sex, age, and social group • Reviewed policy and strategy documents for GESI integration • Minutes and attendance of coordination meetings • Gender audit reports and institutional review documents
			# of County Climate Units with institutionalized gender-responsive planning tools and protocols	CCUs in targeted counties adopt gender-responsive climate adaptation planning tools by 2027	
	Output 4.2 National Adaptation Plan (NAP) and key elements of National Environment Action Plan (NEAP) updated through an inclusive and participatory process incorporating feedback from key stakeholders, including youth and ENRB County Representatives	• Facilitate stakeholder consultations ensuring meaningful participation from women, youth, persons with disabilities, and Indigenous communities. • Conduct gender analysis to inform NAP content in key climate-vulnerable sectors, such as water, agriculture, and health. • Create a GESI advisory group within the NAP technical working committee to guide gender integration.	Evidence of gender equality and social inclusion (GESI) integration as cross-cutting themes in the updated NAP.	The updated NAP explicitly incorporates GESI principles across all its priority areas, ensuring inclusivity and responsiveness to gender-differentiated needs.	• Stakeholder consultation reports and attendance lists disaggregated by sex, age, and marginalized group. • Final NAP document with GESI principles integrated throughout its content. • M&E framework documentation with gender-responsive indicators.
			Presence of and # of gender-responsive M&E framework for the NAP, including sex- and age-disaggregated indicators and provisions for marginalized groups.	The NAP M&E framework incorporates tools to monitor and report on the inclusion of women and marginalized groups, ensuring accountability for gender equity outcomes.	
	Output 4.3 Increased capacity of youth in targeted ENRB counties to meaningfully participate in climate adaptation governance and action.	• Design and implement training programs on climate adaptation, ensuring at least 50% participation of young women, including	% of youth trained in climate change adaptation and project development who are young women, disaggregated by disability and marginalized group status.	Training programs ensure equitable participation by young women, empowering them to lead and contribute to gender-responsive climate initiatives.	• Training attendance lists disaggregated by sex, age, and disability status.
			% of youth representatives in	Young women actively	

		those from marginalized and rural backgrounds. • Collaborate with youth-led CSOs, girls' networks, and local women's organizations for outreach and mobilization. • Establish mentorship opportunities pairing young women with leaders in climate governance and policy-making.	climate adaptation policy processes who are young women, with evidence of their meaningful contributions. % of young women reporting increased knowledge, confidence, and ability to lead or contribute to climate adaptation governance and action.	participate and influence decision-making in climate adaptation policy processes at local and county levels. Young women consistently demonstrate leadership and advocacy in climate adaptation governance, driving inclusive and gender-responsive initiatives.	• Reports from youth-led climate adaptation projects with documented gender-responsive outcomes. • Participation records from governance platforms and policy dialogues.
	Output 4.4 A functional and regularly updated climate change and adaptation knowledge platform established and used by the Ministries, County Climate Units, Youth, and other stakeholders in targeted ENRB counties	• Ensure the knowledge platform is developed with user-friendly, accessible interfaces (e.g., mobile-friendly, low-bandwidth versions) that cater to women and marginalized users in rural settings • Translate key platform content into local languages and include multimedia formats (audio/video) to reach low-literacy users, especially women	% of climate knowledge platform users who are women, youth, and persons with disabilities (disaggregated by sex, age, and location) # of gender-specific or gender-responsive resources (case studies, tools, policies) available on the platform	By 2028, the platform ensures equitable access and use by women and youth, enabling meaningful engagement with climate adaptation knowledge. By 2027, the platform becomes a repository for gender-responsive climate adaptation stories, amplifying the voices of women and youth leaders in targeted counties.	• Platform analytics with disaggregated user data (sex, age, location). • Repository logs of gender-responsive and multimedia resources uploaded. • User satisfaction surveys focusing on accessibility, relevance, and ease of use, disaggregated by gender and other social markers.
Enhanced water quality through climate resilient waste management					
Outcome 5 **By 2029, an increased number of people in targeted ENRB communities benefit from safe climate-resilient waste management**	**Output 5.1** Enhanced technical capacity of relevant institutions in targeted ENRB Counties for water quality monitoring and enforcement related to waste management	• Target women, youth, and marginalized groups for inclusion in water quality monitoring training programs.	% of NEMA officials trained in water quality monitoring who are women, with representation from marginalized groups (disaggregated by sex, age, disability, and county)	The training of NEMA officials includes substantial participation of women and marginalized groups, ensuring equitable access to technical skills and leadership	• Training attendance records disaggregated by sex, age, and social group.

and water quality practices in communities		• Offer gender-sensitive training that accommodates caregiving roles (e.g., timing, location, childcare support). • Include GESI (Gender Equality and Social Inclusion) modules in the training curricula for water quality monitoring.		opportunities. # of counties with water quality monitoring mechanisms that incorporate input from women and marginalized groups in their design and operations.	Water quality monitoring mechanisms in all target counties integrate GESI principles, fostering inclusive participation and ensuring community-wide benefits.	• Documentation of contributions from women and marginalized groups in the development of monitoring mechanisms. • Copies of monitoring and enforcement protocols with evidence of gender-responsive provisions.
	Output 5.2 Increased technical and organizational capacity of communities and institutions for the management and maintenance of climate-resilient waste management infrastructure	• Prioritize women, youth, and persons with disabilities for skills training in technical and operational aspects of waste management. • Provide tailored capacity-building sessions on leadership, financial management, and technology use for women in the waste sector. • Facilitate inclusive community dialogues to reduce stigma surrounding women's participation in waste-related labor.	% of women and marginalized individuals trained in the operation and maintenance of waste management infrastructure (disaggregated by sex, age, disability) % of climate-resilient waste sites designed and operated with active participation of women and marginalized groups, incorporating safety and accessibility features. % of women and marginalized individuals in targeted communities with access to and utilizing safe and climate-resilient waste management systems.	Trained individuals in MRF and infrastructure maintenance are women contributing significantly. By 2027, all climate-resilient waste sites integrate GESI principles, with women's participation in the planning and operational stages contributing to inclusive and sustainable infrastructure use. By 2028, targeted women and marginalized groups report improved access to and use of safe waste management systems, supported by inclusive design and outreach initiatives.	• Training attendance records disaggregated by sex, age, and disability. • Operational reports from waste management cooperatives or micro-enterprises led by women. • Infrastructure designs and O&M plans documenting GESI considerations (safety, accessibility). • Community feedback forms, meeting minutes, and testimonies from women and marginalized participants.
	Output 5.3 Improved knowledge and adoption of safe and	• Design and deliver inclusive and gender-	% of women and marginalized individuals (disaggregated by sex, age,	All awareness campaigns include equal representation of women	• Participation records from

	climate-resilient waste management practices and the importance of water quality monitoring within communities and institutions	sensitive community education campaigns through diverse channels (e.g., community forums, women's groups, youth clubs, radio dramas). • Ensure active involvement of women, particularly in informal settlements and water-stressed areas, in campaign design and delivery. • Develop culturally appropriate IEC materials, ensuring literacy levels, local languages, and disability inclusion are considered.	and disability) actively engaged in education and awareness campaigns on safe waste management practices and water quality. # of gender-sensitive IEC materials (e.g., visuals, radio content in local languages, inclusive illustrations) produced and disseminated % of women and men (disaggregated by sex, age, and disability) demonstrating improved understanding and commitment to adopting waste management and water quality practices.	and marginalized individuals, with active engagement contributing to increased community participation in safe waste management practices. IEC materials reviewed for gender and inclusion sensitivity Women and youth in targeted communities demonstrate an increased understanding of and leadership in adopting waste management and water quality practices, supported by inclusive learning tools and capacity-building efforts.	campaigns and education sessions, disaggregated by sex, age, and disability. • Post-campaign knowledge assessments demonstrating gender-disaggregated changes in understanding and intent to act. • Samples of IEC materials with documented reviews for gender and inclusion sensitivity. • Reports from trained peer educators, including testimonials and case stories from women and youth champions.
	Output 5.4 Strengthened organizational capacity of county environmental committees in ENRB Counties to develop, implement, and monitor policies and actions addressing waste-related water pollution	• Establish minimum quotas or targets for women's and marginalized groups' representation in County Environmental Committees (CECs). • Conduct leadership and policy training tailored for women and youth members of CECs. • Integrate gender analysis into policy development to	% of targeted counties with County Environmental Committees that meet gender representation quotas and have active participation from women and marginalized groups. % of women and marginalized group members trained in policy development, implementation, and monitoring within County Environmental Committees.	Established County Environmental Committees in targeted counties include women and marginalized groups as active contributors, ensuring diverse perspectives in environmental policy decisions. Women and marginalized group members of CECs report increased capacity and confidence in policy development, implementation, and monitoring of waste	• Disaggregated rosters of County Environmental Committee members, including gender and social group representation. • Training attendance records and post-training evaluation data. • Reports or surveys capturing women's and marginalized

		address differentiated impacts (e.g., water pollution's effect on caregiving and sanitation roles).		management and water pollution measures.	group members' participation and experiences in CECs.

The ***GESI Monitoring plan*** ensures that all gender groups, including the most marginalized, are actively included and benefit equally from project activities. It emphasizes adaptive management, continuous learning, and regular analysis of gender-disaggregated data to identify gaps and guide improvements. The approach combines quantitative and qualitative tools (e.g., surveys, focus groups, storytelling), regular feedback loops, and inclusive engagement with stakeholders. It builds staff capacity in gender-responsive monitoring and follows a clear schedule to track participation, outcomes, and lessons learned, ensuring gender equality goals are met throughout the project lifecycle.

Monitoring Schedule Activity	Frequency	Responsible	Outputs
Gender-disaggregated data collection & entry	**Quarterly**	Monitoring team with gender expertise/ NIE	Updated database with disaggregated data
Participatory monitoring sessions with stakeholders	**Bi-annual**	Monitoring team with gender expertise/ NIE	Reports on qualitative gender outcomes, 'red flags'
Progress review meetings (include gender focus)	**Bi-annually**	Project management team	Minutes and action points on gender issues
Submission of Gender Baseline Data Report	**At project start**	Independent evaluators	Baseline report with gender data
Submission of Annual Project Performance Report (PPR)	**Annually**	Executing Entity	Comprehensive gender performance report
Terminal Evaluation	**project end**	Independent evaluators	Gender lessons learned and recommendations

The ***GESI evaluation*** will be incorporated as part of the overall terminal evaluation of the project and will assess how well gender concerns have been integrated throughout the project cycle-from design to implementation, monitoring, and reporting-with a focus on gender equality and women's empowerment outcomes. It includes a Mid-Term Review (MTR) and a Final Evaluation, both emphasizing gender-responsive systems. The evaluation team will be gender-diverse and skilled in gender mainstreaming, using mixed methods (qualitative and quantitative) and ensuring inclusive participation of marginalized gender groups. Data collection and feedback mechanisms will be culturally sensitive and accessible.

The evaluation will focus on how well gender was integrated throughout the project cycle, including whether gender-responsive goals, indicators, and expertise were embedded in all stages and structures. It will assess if project activities effectively addressed intersecting gender inequalities, how partners implemented these activities, and how any barriers to participation were managed. The evaluation will also examine the project's impact on reducing vulnerabilities and promoting equitable resource distribution among diverse gender groups, as well as its influence on gender norms and whether it created more opportunities or unintended burdens. Finally, it will review how adaptive management was used to improve gender mainstreaming and whether lessons learned were documented and shared for ongoing improvement.

The Midterm meeting will review initial gender assumptions, results frameworks, and capacity to implement gender-responsive activities, recommending adjustments if needed. The Final Evaluation will assess overall gender mainstreaming success, long-term changes in gender relations, and document best practices for future projects. Findings and recommendations will be reported with gender-disaggregated data and shared broadly to promote transparency, learning, and improved gender-responsive adaptation programming.

Annex 6: Geospatial Details of Physical Interventions

Component	Sub-County	Ward	Proposed Intervention	Number of Sites	Latitude	Longitude
Marsabit						
1	North Horr	Dukana	New Borehole Drilling	1	4.127441919	36.997622
1	North Horr	Dukana	Borehole Rehabilitation	1	4.127441919	36.997622
1	Laisamis	Gatab	New Borehole Drilling	1	2.643908	36.9299219.
1	Laisamis	Gatab	Borehole Rehabilitation	1	2.643908	36.9299219.
1	North Horr	Golbo	New Borehole Drilling	2	3.12537752	39.121335
2	North Horr	Golbo	Water Storage Tank Instalation	2	3.12537752	39.121335
2	North Horr	Golbo	Rangeland Rehabilitation	2	3.12537752	39.121335
2	North Horr	Golbo	Bee Keeping	1	3.12537752	39.121335
2	North Horr	Golbo	Soil & Water Conservation Structures Construction	1	3.12537752	39.121335
2	North Horr	Golbo	Water Pan Construction	1	3.12537752	39.121335
1	North Horr	Ileret	New Borehole Drilling	1	4.31084761	36.227685
1	North Horr	Ileret	Borehole Rehabilitation	1	4.31084761	36.227685
1	Laisamis	Kargi	New Borehole Drilling	1	2.50361337	37.569766
1	Laisamis	Kargi	Sand Dam Construction	1	2.50361337	37.569766
1	Laisamis	Loglogo	Sand Dam Construction	1	3.59887	36.52364
1	Laisamis	Loglogo	Borehole Rehabilitation	1	3.59887	36.52364
1	Laisamis	Loiyangalani	Sand Dam Construction	1	2.762778339	36.720335
1	Laisamis	Loiyangalani	Borehole Rehabilitation	1	2.762778339	36.720335
1	North Horr	Maikona	Sand Dam Construction	2	2.938039895	37.628937
2	North Horr	Maikona	Spate Irrigation	1	2.938039895	37.628937
2	North Horr	Maikona	Rangeland Rehabilitation	1	2.938039895	37.628937
1	Saku	Marsabit Central	Sand Dam Construction	2	2.331628158	37.99853
1	Saku	Marsabit Central	Borehole Rehabilitation	1	2.331628158	37.99853
1	Laisamis	Moite	New Borehole Drilling	1	3.332970821	36.318617
1	Laisamis	Moite	Borehole Rehabilitation	1	3.332970821	36.318617
1	North Horr	North Horr	Sand Dam Construction	2	3.326432132	37.069353
1	North Horr	North Horr	New Borehole Drilling	1	3.326432132	37.069353
1	Moyale	Obbu	New Borehole Drilling	1	3.27084874	38.72675
1	Moyale	Obbu	Borehole Rehabilitation	1	3.27084874	38.72675
1	Saku	Sagante	Sand Dam Construction	2	2.338558805	38.087237
1	Saku	Sagante	Borehole Rehabilitation	1	2.338558805	38.087237
1	Moyale	Sololo	Sand Dam Construction	1	3.560939732	38.649164
1	Moyale	Sololo	Borehole Rehabilitation	1	3.560939732	38.649164
2	Moyale	Sololo	Water Pan Construction	2	3.560939732	38.649164
2	Moyale	Sololo	Rangeland Rehabilitation	2	3.560939732	38.649164
1	Moyale	Uran	Sand Dam Construction	1	3.394693589	38.562932
Garissa						
1	Balambala	Balambala	New Borehole Drilling	4	0.164918112	39.250653

1	Balambala	Balambala	Sand Dam Construction	1	0.164918112	39.250653
1	Shanta Aabak	Baraki	New Borehole Drilling	1	0.550432137	39.446129
1	Shanta Aabak	Baraki	Sand Dam Construction	1	0.550432137	39.446129
1	Shanta Aabak	Baraki	Borehole Rehabilitation	1	0.550432137	39.446129
1	Bura East	Bura	Sand Dam Construction	1	-1.09516101	39.941273
1	Bura East	Bura	Borehole Rehabilitation	3	-1.09516101	39.941273
1	Dadaab	Dertu	New Borehole Drilling	1	0.079551615	39.691421
1	Dadaab	Dertu	Borehole Rehabilitation	3	0.079551615	39.691421
1	Lagdera	Maalimin	Sand Dam Construction	2	0.430340469	39.130934
1	Lagdera	Maalimin	New Borehole Drilling	4	0.430340469	39.130934
2	Lagdera	Maalimin	Water Pan Construction	1	0.430340469	39.130934
2	Lagdera	Maalimin	Soil & Water Conservation Structures Construction	10	0.430340469	39.130934
2	Lagdera	Maalimin	Water Pan Rehabilitation	3	0.430340469	39.130934
2	Lagdera	Maalimin	Run-off Harvesting Structures Construction	100acres	0.430340469	39.130934
2	Lagdera	Maalimin	Irrigation Micro-Basin Construction	10acres	0.430340469	39.130934
2	Lagdera	Maalimin	Water Source Protection	10	0.430340469	39.130934
2	Lagdera	Maalimin	Rangeland Rehabilitation	10	0.430340469	39.130934
1	Lagdera	Madogashe	Sand Dam Construction	3	0.590396295	39.167775
1	Lagdera	Madogashe	New Borehole Drilling	6	0.590396295	39.167775
1	Balambala	Sankuri	New Borehole Drilling	1	-0.11583777	39.498407
1	Balambala	Sankuri	Borehole Rehabilitation	3	-0.11583777	39.498407
2	Lagdera	Afweyne	Water Pan Construction	2	-0.44100239	39.652949
2	Lagdera	Afweyne	Soil & Water Conservation Structures Construction	5	-0.44100239	39.652949
2	Lagdera	Afweyne	Water Pan Rehabilitation	1	-0.44100239	39.652949
2	Lagdera	Afweyne	Run-off Harvesting Structures Construction	100acres	-0.44100239	39.652949
2	Lagdera	Afweyne	Irrigation Micro-Basin Construction	10acres	-0.44100239	39.652949
2	Lagdera	Afweyne	Water Source Protection	2	-0.44100239	39.652949
2	Lagdera	Afweyne	Rangeland Rehabilitation	5	-0.44100239	39.652949
2	Lagdera	Loyangulata	Water Pan Construction	2	-0.44100239	39.652949
2	Lagdera	Loyangulata	Soil & Water Conservation Structures Construction	5	-0.44100239	39.652949
2	Lagdera	Loyangulata	Water Pan Rehabilitation	1	-0.44100239	39.652949
2	Lagdera	Loyangulata	Run-off Harvesting Structures Construction	100 acres	-0.44100239	39.652949
2	Lagdera	Loyangulata	Irrigation Micro-Basin Construction	10 acres	-0.44100239	39.652949
2	Lagdera	Loyangulata	Water Source Protection	2	-0.44100239	39.652949
2	Lagdera	Loyangulata	Rangeland Rehabilitation	5	-0.44100239	39.652949
Wajir						
1	Wajir West	Ademasajida	New Borehole Drilling	1	1.734153544	40.061735
1	Wajir West	Ademasajida	Borehole Rehabilitation	2	1.734153544	40.061735
1	Wajir West	Arbajahan	Sand Dam Construction	2	2.190561107	39.188033
1	Wajir West	Arbajahan	New Borehole Drilling	1	2.190561107	39.188033
2	Wajir West	Arbajahan	Water Pan Construction	1	2.190561107	39.188033
2	Wajir West	Arbajahan	Hay Store Construction	1	2.190561107	39.188033

2	Wajir West	Arbajahan	Rangeland Restoration	1	2.190561107	39.188033
2	Wajir West	Arbajahan	Wetland Restoration	2	2.190561107	39.188033
1	Eldas	Basir/Lakoley	New Borehole Drilling	1	2.362685629	38.988452
1	Eldas	Basir/Lakoley	Sand Dam Construction	1	2.362685629	38.988452
1	Wajir North	Buna/Batalu	New Borehole Drilling	2	2.882478629	39.875847
1	Wajir North	Buna/Batalu	Borehole Rehabilitation	2	2.882478629	39.875847
1	Wajir North	Bute	Sand Dam Construction	3	3.371524846	39.425063
2	Wajir North	Bute	Water Pan Construction	1	3.371524846	39.425063
2	Wajir North	Bute	Water Pan Rehabilitation	1	3.371524846	39.425063
2	Wajir North	Bute	Gum Resin Production	1	3.371524846	39.425063
2	Wajir North	Bute	Bee Keeping	1	3.371524846	39.425063
2	Wajir North	Bute	Maize & Sorghum Value Chain Support	1	3.371524846	39.425063
1	Eldas	Eldas	New Borehole Drilling	3	2.473473097	39.631326
1	Wajir north	Godoma	New Borehole Drilling	1	-4.40005348	39.283312
1	Wajir north	Godoma	Borehole Rehabilitation	2	-4.40005348	39.283312
1	Wajir North	Gurar	Sand Dam Construction	1	3.364243147	39.570813
1	Wajir North	Gurar	Borehole Rehabilitation	2	3.364243147	39.570813
1	Wajir south	Habaswein	Sand Dam Construction	1	1.021674271	39.492845
1	Wajir south	Habaswein	Borehole Rehabilitation	2	1.021674271	39.492845
2	Wajir south	Habaswein	Water Pan Construction	2	1.021674271	39.492845
2	Wajir south	Habaswein	Rangeland Rehabilitation	2	1.021674271	39.492845
2	Wajir south	Habaswein	Wetland Restoration	10	1.021674271	39.492845
1	Wajir West	Hadado/Athibohol	New Borehole Drilling	2	1.360407968	39.596684
1	Wajir North	Korondille	New Borehole Drilling	3	2.954857328	39.346259
Mandera						
1	Mandera north	Ashabito	Sand Dam Construction	1	3.589058582	40.668447
1	Mandera north	Ashabito	Borehole Rehabilitation	2	3.589058582	40.668447
1	Dandu	Dandu	New Borehole Drilling	3	3.625357512	39.883367
1	Dandu	Dandu	Sand Dam Construction	1	3.625357512	39.883367
1	Banisa	Derkale	New Borehole Drilling	2	3.865238843	40.208531
2	Banisa	Derkale	Water Pan Construction	1	3.865238843	40.208531
2	Banisa	Derkale	Rangeland Rehabilitation	1	3.865238843	40.208531
1	Mandera west	Gither	Sand Dam Construction	1	3.675656945	39.919378
1	Mandera west	Gither	Borehole Rehabilitation	2	3.675656945	39.919378
1	Ashabito	Guticha	Sand Dam Construction	2	3.660972083	40.619301
1	Kiliwaheri	Kiliwaheri	New Borehole Drilling	1	3.90521558	40.077942
1	Kiliwaheri	Kiliwaheri	Borehole Rehabilitation	2	3.90521558	40.077942
2	Kiliwaheri	Kiliwaheri	Rangeland Rehabilitation	2	3.90521558	40.077942
1	Mandera north	Rhamu	New Borehole Drilling	2	3.931090153	41.214512
2	Mandera north	Rhamu	Water Pan Construction	1	3.931090153	41.214512
2	Mandera north	Rhamu	Rangeland Rehabilitation	1	3.931090153	41.214512

1	Mandera north	Rhamu Dimtu	Sand Dam Construction	4	3.982171765	41.00093
2	Mandera north	Rhamu Dimtu	Rangeland Rehabilitation	3	3.982171765	41.00093
1	Lafey	Sala	Sand Dam Construction	1	3.700250548	41.18183
1	Lafey	Sala	Borehole Rehabilitation	2	3.700250548	41.18183
1	Mandera west	Takaba	Sand Dam Construction	1	3.394990293	40.220931
1	Mandera west	Takaba	Borehole Rehabilitation	2	3.394990293	40.220931
1	Mandera west	Takaba south	New Borehole Drilling	2	3.396532532	40.224107
2	Mandera west	Takaba south	Rangeland Rehabilitation	2	3.396532532	40.224107
2	Mandera west	Takaba south	Water Pan Construction	2	3.396532532	40.224107

Annex 7: Economic, Social and Environmental Benefits by Component

Type of Benefit	Specific Benefit	Baseline	Projected Endline status
Economic	Water collection time for women and children saved.	Women and children in Ewaso Nyiro River Basin (ENRB) spend long hours and go for long distances to fetch water- Water access is generally low, and a large part of the population rely on surface water, which dries up seasonally and even more during worsening droughts.	Strengthened infrastructure for sustainable, flood resilient, groundwater access- 282,000 people reached with basic, safe water access, reducing water collection time burden.
Economic	Strengthened institutional capacity for groundwater access	Lack of institutional capacity in the water sector to sustainably arrange for groundwater access in the face of climate shocks (droughts/ floods).	Strengthened capacity of the water sector to ensure groundwater access in the face of climate shocks, especially during worsening droughts
Social	Reduced waterborne illnesses	Waterborne diseases like cholera impact the well-being of communities during floods. This results from destroyed water and contamination from destructive floods	Climate resilient water infrastructure is not broken down by floods, leading to no contamination and decreased outbreaks of waterborne diseases.
Social	Increased crop yield and improved Food and Nutrition Security	Food and Nutrition Insecurity- Communities get low crop yields due to declining productivity resulting from unsustainable land use.	Improved Food and Nutrition Security through livelihood improvement and building resilient ecosystems.
Social	Improved dietary diversity for children	Over 75% of children aged 6–23 months are not receiving a minimum acceptable diet	Increased access to diverse diets through climate smart agriculture and nutrition behavior change interventions.
Social	Increased capacity of women and youth Nature Based Enterprises.	Low investment in sustainable Land use management practices worsening the health and productivity of the rangeland and cropland in ENRB	Capacity built Nature Based Enterprises working with women and Youth contributing to ecosystem restoration.
Economic	Increased access to Early Warning Systems	Communities lack access to / information on climate Services leading to high losses and	Communities have access to Early Warning Systems reducing economic losses through early

		damages induced by extreme weather conditions (drought and floods)	action.
Social	Increased community resilience to climate shocks.	A vicious cycle of extreme weather events followed by heavy losses of lives and livelihoods and damages to property potential harvest and income- Communities lack capacity to understand, anticipate and respond to extreme weather conditions.	Communities have the tools to plan, anticipate and respond to extreme weather conditions.
Economic	Improved coordination of climate change units.	Weak coordination of Kenya's Climate Adaptation- Capacity gaps and overlapping efforts within counties reduce effectiveness	Strengthened County climate change Units (CCUs) leading to improved localized adaptation efforts, enhanced coordination and technical capacity
Economic	Updated National Adaptation Plan, relevant to emerging climate risks	The National Adaptation Plan (NAP) is not aligned to National Determined Commitments (NDCs) hence requires updating.	Updated NAP with the latest climate data, aligned to NDCs and addressing emerging risks
Economic	Evidence based decision making.	Underdeveloped knowledge management systems for climate adaptation.	A functional knowledge platform facilitating knowledge sharing and evidence-based decision making
Social	Reduced water contamination	High disease burden, elevated cost of treatment and increased mortality of the vulnerable members of the community due to water contamination triggered by poor waste management.	Low disease burden stemming from water contamination
Social	Improved water quality and management systems	Communities have poor water quality due to high rates of contamination and inadequate monitoring of water quality.	Established Water Quality management and monitoring systems.
Social	Improved Education outcomes in schools	Children miss school to spend long hours and distance to fetch water.	Improved school attendance as time for fetching water is saved
Environmental	Groundwater and watershed sustainability	Over-abstraction, pollution, and unmanaged aquifer use threaten long-term sustainability	Nature-based aquifer recharge, restoration of sub-catchments, and community-led water governance improve sustainability.

Environmental	Climate resilience and ecosystem biodiversity	Climate shocks degrade ecosystems, reduce biodiversity, and cause crop/livestock losses.	Improved biodiversity through restoration, ecosystem management, and climate-resilient agriculture supports long-term environmental and livelihood resilience
Environmental	Improved waste management assets and institutions.	Inadequate Waste management and related infrastructure- Microbial and chemical contamination in major urban centers within Ewaso Nyiro Water Basin	Functional waste management assets and institutions.
Environmental	Ecosystem restoration and increased productivity	Decline in health and productivity of rangeland and crop land of the fragile Arid and Semi-Arid Lands in the ENRB- Unsustainable land use practices including overgrazing, encroachment on riparian land and water use conflicts between crop farmers and pastoralists are key challenges faced in the basin.	Restoration of aquifers to address water availability, rangeland and cropland restoration to enhance agricultural productivity in the basin.
Environmental	Improved waste management and Reduced pollution	Open dumping and burning prevalent in towns like Moyale in and Marsabit- high risk of contamination of aquifers serving the urban population	Climate-resilient waste management infrastructure, education campaigns, and strengthened monitoring reduce water and soil pollution risks.

Annex 8: Summary of Climate Hazards and Underlying Vulnerabilities in Project Areas

Climate Hazard	Impact on Community	Underlying Vulnerability	Target Community Affected	Proposed project Interventions
Rising frequency and intensity of drought	**Water scarcity** - Drying up of surface water sources - Inadequate safe water supply **Livelihoods** - Livestock deaths - Crop failure - Food insecurity - Malnutrition - Reduced livestock productivity **Ecosystems** - Loss of pasture - Declining soil fertility **Society** - Increased community conflicts	- Poor water infrastructure - Lack of resilience in the water sector - Arid and semi-arid climate - Climate pressure - Scarce resources - Degraded rangelands - Unsustainable land use - Weak rangeland governance - Weak governance on water and natural resources	Pastoralists and agro-pastoralists in Wajir, Garissa, Mandera and Marsabit	- Establish infrastructure to access groundwater. *(Output 1.3)* - Recharge aquifers. *(Output 1.2)* - Build sand dams for water storage. *(Output 1.2)* - Enhance fodder production. *(Output 2.1)* - Strengthen Climate-smart agriculture, Nutrition education and SBC. *(Output 2.3 &2.4)* - Establish fodder banks - Restore rangelands-reseeding. *(Output 2.1)* - Establish grazing plans. *(Output 2.1)* - Strengthening Water Resources Users Associations (WRUAs) and water governance structures. *(Output 2.2)* - Strengthen Natural Resource Management (NRM) committees/ groups. *(Output 1.1)* - Develop inclusive resource-sharing agreements (Output 1.4)
Increasingly unpredictable and intense rainfall	**Infrastructure** - Destruction of fragile water infrastructure	- Poor drainage - Lack of resilient infrastructure	Urban informal settlements in	- Conduct flood risk assessments. *(Output 3.1)*

leading to (flash) floods	- Destruction of homes and infrastructure **Public Health** - Water pollution / contamination - Disease outbreaks **Society** - Displacement	- Unplanned settlements - Water infrastructure prone to contamination - Dumping and poor waste management - Lack of structured waste sites - Weak environmental management (lack of zoning in flood-prone areas)	Marsabit, Wajir, Garissa	- Implement flood-sensitive planning. *(Output 3.3)* - Develop drainage systems. *(Output 5.2)* - Establish early warning systems. *(Output 3.1& 3.4)* - Monitor water quality. *(Output 5.1)* - Provide WASH education. *(Output 1.1 & 5.3)* - Protect boreholes. *(Output 1.3)* - Build resilient waste management infrastructure *(Output 5.2)* - Implement waste segregation and safe disposal systems. *(Output 5.2)* - Strengthen environmental committees. *(Output 5.4)*
	Agriculture and livelihoods - Unpredictable food production - Poor harvests Livelihood instability	- Rainfed agriculture - Lack of irrigation - Limited climate information	Agro-pastoralists across all 4 counties	- Develop climate-resilient irrigation. *(Output 2.3)* - Disseminate tailored climate advisories. *(Output 3.1)* - Implement water harvesting systems. *(Output 2.2)*
Heatwaves/ High Temperatures	- Increased evaporation - Reduced water availability - Increased livestock stress - Reduced human productivity	- Lack of vegetation cover - Reliance on open water sources - No heat mitigation infrastructure	Whole basin especially Marsabit and Wajir	- Restore vegetation cover. *(Output 2.1)* - Introduce water harvesting systems. *(Output 2.2)* - Implement solar-powered water pumps. *(Output 2.3)* - Use climate-adapted livestock/crops. *(Output 2.3)*

Annex 9 Component specific benefits of the project

Output	Target Area	No. of Beneficiaries	Cost per Beneficiary (US$)	Economic Benefit	Logic
Output 1.1: Enhanced capacity of Water Resource Management Institutions and professionals for sustainable groundwater development and management in ENRB	Mandera, Marsabit, Garissa and Wajir	600.00	450.00	Improved technical capacity in water management leads to more efficient groundwater development, reducing the need for costly crisis management and improving overall water resource sustainability. By building the skills of local professionals in climate-resilient (ground)water management, the project ensures long-term sustainable water services, improving adaptive capacity and reducing future humanitarian and adaptation costs.	By building the skills of local professionals, the project ensures more efficient and sustainable water management, reducing costs related to maladaptation and increasing adaptive capacity for climate shocks.
Output 1.2 Improved rain/floodwater harnessing for Managed Aquifer Recharge (MAR) and Nature-based Solution (NbS)	Mandera, Marsabit, Garissa and Wajir	52,000.00	1.73	Improved groundwater recharge leads to increased yields and reduced salinity in boreholes, enhancing water security and supporting local economies, particularly in drought-prone areas. By implementing MAR and NbS, the project increases groundwater availability, reduces dependency on seasonal rainfall, and enhances water quality, ensuring more reliable and resilient water access for communities and livestock.	Improving groundwater recharge through MAR and NbS increases water availability and quality, providing long-term benefits to agricultural production, household water access, and economic stability in vulnerable communities.

Output 1.3: Community validated Climate-resilient groundwater infrastructure developed and in operation in target communities within ENRB counties	Mandera, Marsabit, Garissa and Wajir	230,000.00	0.39	Increased access to climate-resilient water infrastructure enhances household productivity, reduces water collection time (especially for women), and improves educational outcomes (for girls) by reducing water scarcity. Investing in resilient water infrastructure (e.g., boreholes) ensures communities are less affected by climate change impacts, ensuring consistent access to water for domestic use and livestock, even in drought conditions. During floods, resilient infrastructure will not get washed away, preventing high repair costs	Investing in climate-resilient water infrastructure reduces water scarcity and the time women spend collecting water, leading to increased household productivity, better health outcomes, and improved education, especially for women and girls.
Output 1.4: Strengthened financial management capacity of Water Services for sustainable water service delivery in the context of climate change	Mandera, Marsabit, Garissa and Wajir	NA	NA	Strengthening technical capacity and financial management of water utilities ensures more efficient water service delivery, increases tariff collection, and supports long-term service sustainability. Improved financial and management capacity of Water Service Providers ensures that services are sustainable, affordable, and equitable, especially for the most vulnerable populations, through better governance and climate-resilient financial models.	Improved management of water services increases the sustainability of water delivery, reduces operating costs, and ensures that water tariffs are more effectively collected, supporting long-term, climate-resilient water systems for vulnerable communities.
Output 2.1: Prioritized rangeland resources including land are brought under restoration, safeguarded and sustainably managed for improved climate change resilience	Mandera, Marsabit, Garissa and Wajir	11655	185.33	Restored rangelands increase livestock productivity and reduce the need for costly drought relief, thus enhancing the economic stability of pastoralist communities.	Ecosystem restoration through participatory approaches ensures long-term land and water sustainability, improving pasture availability, reducing livestock mortality, and enhancing climate resilience.

Output 2.2: Community-validated climate resilient water infrastructure developed and or rehabilitated for food security	Mandera, Marsabit, Garissa and Wajir	127760	1.88	Climate-resilient water infrastructure improves water availability for agriculture and livestock, boosting productivity, food security, and reducing the need for emergency aid.	Investing in water infrastructure for irrigation and groundwater, along with renewable energy systems, enhances food security and strengthens community resilience to climate-induced water scarcity and erratic rainfall.
Output 2.3: Climate-smart agriculture and nature-based enterprises promoted through inclusive value chains for climate resilient livelihoods	Mandera, Marsabit, Garissa and Wajir	61600	25.97	Adoption of climate-smart practices and diversification into nature-based enterprises increases household incomes, reduces vulnerability to climate shocks, and creates new economic opportunities for women and youth.	Empowering smallholder farmers with climate-resilient agricultural practices, including drought-tolerant crops and sustainable production technologies, improves productivity and reduces vulnerability to climate risks, ensuring long-term livelihood security.
Output 2.4: Improved household access to nutritious and diversified diets, contributing to enhanced livelihood resilience	Mandera, Marsabit, Garissa and Wajir	11520	27.78	Improved nutrition outcomes contribute to better health, productivity, and reduced healthcare costs, reducing population vulnerability and supporting long-term climate resilience and economic stability.	Strengthening climate-resilient livelihoods and promoting diverse, nutritious diets enhances food security, reduces malnutrition, and builds resilience, particularly for vulnerable groups, against the impacts of climate change.
Output 3.1: Flood EWS accuracy improved by incorporating more data using existing open source flood models	Mandera, Marsabit, Garissa and Wajir	Countywide	NA	Reduced financial losses through proactive flood risk management, minimizing infrastructure damage and agricultural losses.	Flood risk maps and anticipatory action plans enable early interventions, which prevent costly damages to homes, businesses, and agricultural production.

Output 3.2: Improved Anticipatory Action triggers defined in updated plans, integrating (child) vulnerability in target counties and nationally	Mandera, Marsabit, Garissa and Wajir	nationwide and countywide	NA	Cost savings from integrated climate risk advisories that guide resource allocation and minimize economic disruptions.	Linking climate risk predictions with vulnerability assessments ensures targeted actions, reducing waste and enhancing resource management efficiency.
Output 3.3: County budgeting process for Anticipatory Action strengthened	Mandera, Marsabit, Garissa and Wajir	county wide	NA	Reduced disaster recovery costs due to strengthened early warning systems and anticipatory action planning.	Flood and drought EWS provide advanced notice, enabling governments and communities to take preventative measures, reducing the need for costly emergency responses.
Output 3.4: Early Warning Communication systems improved to effectively reach last-mile communities	Mandera, Marsabit, Garissa and Wajir	countywide	NA	Improved economic stability through better access to tailored climate services and early warning information for vulnerable communities.	By providing local communities with tailored climate information, this reduces the likelihood of economic disruptions caused by floods or droughts.
Output 4.1: Enhanced capacity of the Ministry of Water and County Climate Unites in targeted ENRB Counties for inclusive and participatory climate adaptation planning and coordination in the water sector.	Mandera, Marsabit, Garissa and Wajir	Countywide	NA	Strengthening technical capacity and coordination in the water sector enhances efficiency in climate adaptation efforts, reducing duplication of efforts and maximizing resource use. Improved coordination leads to better decision-making, reducing costs associated with uncoordinated responses and ensuring long-term sustainability of water resources.	Building capacity and strengthening coordination in the water sector enables more effective climate adaptation, reducing costs associated with poor management and ensuring better outcomes for communities at risk from climate impacts.

Output 4.2: National Adaptation Plan (NAP) and key elements of National Environment Action Plan (NEAP) updated through an inclusive and participatory process incorporating feedback from key stakeholders, including youth and ENRB County Representatives	Nationwide	Nationwide	NA	Updating the National Adaptation Plan (NAP) ensures that Kenya's climate strategies remain relevant and responsive to current and future climate risks, optimizing investments in adaptation actions. By integrating the latest climate data and knowledge, the updated NAP will improve the effectiveness of adaptation efforts, reducing the long-term costs of climate inaction.	Updating the NAP helps align Kenya's climate strategies with current data, enabling more effective and targeted adaptation efforts, which in turn reduces the financial burden of unaddressed climate risks.
Output 4.3: Increased capacity of youth in targeted ENRB counties to meaningfully participate in climate adaptation governance and action	Nationwide	2060	NA	Building the capacity of youth to develop and implement climate projects fosters innovation and ensures sustainable, community-driven climate action. Empowering youth in climate adaptation contributes to long-term resilience by creating job opportunities and reducing vulnerability in the face of climate change.	Training youth to engage in climate adaptation efforts ensures a generation that is proactive in climate resilience, creating job opportunities, and reducing economic vulnerability to climate impacts.
Output 4.4: A functional and regularly updated climate change and adaptation knowledge platform established and used by the Ministries, County Climate Units, Youth, and other stakeholders in targeted ENRB counties	Nationwide	Nationwide	NA	Enhancing knowledge-sharing platforms facilitates better access to climate data and best practices, improving the effectiveness of climate adaptation efforts across sectors. Increased access to information enables stakeholders to make informed decisions, reducing risks and costs associated with climate-related disasters.	Improving climate knowledge-sharing enhances collaboration, informs decision-making, and reduces the costs of ineffective climate adaptation efforts by ensuring stakeholders are better equipped to respond to climate challenges.

Output 5.1: Enhanced technical capacity of relevant institutions in targeted ENRB Counties for water quality monitoring and enforcement related to waste management.	Mandera, Marsabit, Garissa and Wajir	Countywide	NA	Strengthening institutional capacity for water pollution monitoring and enforcement ensures that pollution risks are detected and mitigated promptly, preventing water contamination during floods and droughts. This reduces the economic costs of waterborne diseases and the need for costly cleanup and restoration efforts.	Improved pollution monitoring and enforcement reduce the costs associated with water contamination, protecting public health and ensuring that water resources are available and safe for communities and agriculture.
Output 5.2: Increased access to climate-resilient waste management infrastructure	Marsabit	22407	1.38	Building climate-resilient waste management infrastructure reduces flood-related pollution risks and improves water quality during droughts. By fostering circular economy practices, the project minimizes waste accumulation, improving the resilience of water systems and reducing the costs of flood damage and water scarcity.	Establishing resilient waste management infrastructure ensures that waste does not exacerbate climate impacts, such as flooding or drought, protecting water systems and reducing the economic costs of water pollution.
Output 5.3: Improved knowledge and adoption of safe and climate-resilient waste management practices and the importance of water quality monitoring within communities and institutions	Mandera, Marsabit, Garissa and Wajir	90000	0.44	Community education on responsible waste management promotes sustainable behaviors that reduce the impacts of floods and droughts on water systems. This results in fewer waste-related disruptions to water infrastructure and improved water quality, reducing long-term costs associated with flood damage and drought-related water scarcity.	Improved community awareness on waste management reduces the economic impact of waste-related disruptions to water systems, protecting water resources and promoting sustainable practices.

Output 5.4: Strengthened organizational capacity of county environmental committees in ENRB Counties to develop, implement, and monitor policies and actions addressing waste-related water pollution.	Mandera, Marsabit, Garissa and Wajir	Countywide	Na	Strengthening County Environment Committees enhances local capacity to manage waste-related pollution, mitigating the risks of flooding and water contamination during droughts. This reduces the financial burden of disaster recovery and ensures more effective management of water resources at the local level.	Empowering County Environment Committees to manage waste-related pollution ensures more efficient and cost-effective disaster risk management, preventing the financial costs associated with flood-induced contamination and drought-related water scarcity.

Annex 10: Complementarity to Contemporary Initiatives

S/No	Relevant Project	Description	Goals	Complementary Potential	Action to Avoid Overlap	Time-line
1	Horn of Africa Groundwater for Resilience (HoAGW4R)	Led by the Ministry of Water, Sanitation and Irrigation in Wajir, Garissa, Turkana, Marsabit, and Mandera. Supports sustainable groundwater access and management via 400 boreholes, 50 exploratory wells, MAR systems, and WRUA capacity-building.	Improve groundwater access, recharge, and governance in border counties.	AWARE will expand reach to more beneficiaries and adopt best practices on MAR, WRUA capacity, and catchment restoration.	Coordinate targeting within ASAL counties to avoid duplication in borehole rehabilitation.	6 years
2	Kenya Water, Sanitation and Hygiene Programme (K-WASH)	World Bank-funded support to NAWASIP aiming for universal WASH access in all 47 counties; focuses on sustainable rural water, sanitation, WSP performance, and sector monitoring.	Universal access to water and sanitation, WSP efficiency, sector coordination.	AWARE can leverage national frameworks and monitoring tools while filling implementation gaps in underserved areas.	Focus on ASAL counties and innovations to avoid duplicating broad national efforts.	Ongoing to 2030
3	Financing Locally-Led Climate Action (FLLoCA)	Focuses on community-driven climate adaptation, including borehole rehab, solar water systems, and water harvesting infrastructure in northeastern Kenya.	Empower communities, enhance local resilience, water access and livelihoods.	AWARE can scale up and replicate locally successful FLLoCA approaches in new areas.	Harmonize community engagement and investment planning to align with FLLoCA priorities.	Ongoing
4	UNICEF “More Water More Life” Groundwater Innovation	Targets ASAL counties (Turkana, Samburu, Marsabit, Mandera, Wajir, Garissa) using advanced mapping for sustainable groundwater access and resilience to climate shocks.	Improve drought resilience through scientific groundwater mapping and sustainable services.	AWARE will adopt technical and scientific approaches to improve drilling success and sustainability.	Share data, avoid redundant exploration in same zones.	Ongoing
5	KOICA-UNICEF WASH Programme –	Started in 2019 (ends 2027), includes solar water systems, sand dams, and hygiene for communities and	Enhance resilience via improved water	AWARE will build on climate-resilient infrastructure and	Project AWARE is not targeting	2019 – 2027

	Turkana	institutions in Turkana.	management and WASH services.	community-based models.	Turkana	
6	Climate Resilient Food Systems (CRFS) – WFP	Implemented in 10 ASAL counties using an area-based hub model targeting 885,000 beneficiaries with integrated climate-smart investments.	Strengthen food and water security, ecosystem resilience, and livelihoods.	AWARE will complement CRFS through water infrastructure and integrated resilience approaches.	Joint planning in shared counties (e.g., Wajir, Garissa, Turkana) to avoid double-counting and overlap.	4 years
7	Water and Sanitation Development Project (WSDP)	World Bank and GoK project in Mombasa, Kwale, Kilifi, Taita Taveta, Wajir, and Garissa to improve WASH services and WSP performance post-COVID.	Improve water access for 2M people, sanitation for 130,000.	AWARE can focus on hard-to-reach ASAL populations within these counties.	Align geographic focus to avoid duplication in Wajir and Garissa.	Ends in 2025
8	UNESCO Initiatives (Flood Risk & Groundwater Tech)	Past activities include flood impact assessment (2024 Nairobi), groundwater desalination pilot (Naivasha), and “Enhancing Flood Resilience in Kenya” project in Tana River.	Improve flood resilience and water quality in high-risk areas.	AWARE can benefit from lessons on capacitive de-ionization and flood early warning systems.	Technical integration rather than duplication.	Completed & ongoing components

Annex 11: Knowledge Management Plan

Strategic Purpose

To create a robust, inclusive, and decentralized knowledge management system that:

- Enables informed decision-making on climate adaptation.

By providing stakeholders with timely, accurate, and relevant climate data and insights, this KM system empowers decision-makers at national and county levels to respond to climate risks effectively.

- Bridges national policies with local actions.

The plan facilitates the translation of high-level strategies like NCCAP III into practical, localized interventions that are shaped by community knowledge and ground realities.

- Enhances the visibility, voice, and agency of youth, women, and marginalized groups.

Through participatory knowledge tools and inclusive storytelling, the KM system ensures underrepresented voices contribute to shaping adaptation priorities and innovations.

- Supports the National Climate Change Action Plan (NCCAP III) and upcoming NAP and NDC revisions.

The KM system captures evidence and learning that can directly feed into national reporting and planning cycles, ensuring that policy remains grounded in real-world outcomes.

Pillars of the KM Plan

1. Knowledge Generation

Objective: Generate detailed, inclusive, and up-to-date information for effective adaptation.

Actions:

- Conduct vulnerability and risk assessments for health, nutrition, and energy in all counties.

These assessments will identify high-risk populations and geographies, enabling more targeted adaptation strategies for underserved sectors.

- Mobilize youth and community-based organizations to co-produce knowledge.

Engaging these groups helps capture localized and indigenous insights while building grassroots ownership of adaptation efforts.

- Commission studies and thematic briefs for CCUs on local climate impacts and priorities.

Evidence-based briefs will support CCUs in mainstreaming adaptation into county development planning and resource mobilization.

Tools: KoBoToolbox, Google Sheets or Excel templates.

2. Knowledge Structuring and Standardization

Objective: Enable interoperability and usability of data across counties and national platforms.

Actions:

- Develop a national taxonomy and metadata standard.

This standardization ensures consistent classification of climate data across counties and platforms, improving national-level data synthesis and integration.

- Train CCUs to tag and store their local data consistently.

Training will help ensure that county-level data is usable and comparable across contexts, supporting more effective cross-county collaboration.

- Create County Climate Knowledge Briefs.

These briefs will serve as digestible, high-impact summaries of local vulnerabilities, interventions, and outcomes, useful for planning and advocacy.

Why Structuring Matters

A major challenge in Kenya's climate adaptation governance is the **fragmentation of knowledge** - often stored in PDFs, Word docs, and spreadsheets with inconsistent formats. To enable comparison, dashboarding, and policy feedback loops, the AWARE project promotes a **standardized, collaborative, and lightweight approach** to documenting county knowledge.

Tool of Choice: HackMD

HackMD is a free, real-time, cloud-based Markdown editor designed for teams to co-author structured notes. It is:

- **Accessible** from any browser or mobile device
- **Simple to use** - no coding required
- **Collaboration-friendly** - multiple users can edit and comment in real time
- Supports **Markdown**, a plain text format that can easily be converted to structured data like **JSON** for dashboards

How it works:

HackMD will play a central role in the AWARE project by enabling Climate Change Units (CCUs) and local stakeholders to co-author County Climate Knowledge Briefs in a structured and consistent Markdown format. This ensures that every county captures data using the same headings, categories, and terminology-reducing inconsistencies that often arise with Word or PDF documents. By using a shared HackMD template, counties can document key risks, adaptation actions, and lessons learned in a format that is both human-readable and machine-convertible to JSON. This structured approach

supports cross-county comparison, dashboard integration, and seamless aggregation into national and regional knowledge platforms like the CCD Portal and IHP-WINS.

Tools/ Data format: HackMD / Markdown, JSON.

3. Knowledge Platforms and Accessibility

Objective: Ensure data and insights reach all stakeholders.

Actions:

- Strengthen the CCD Knowledge Platform.

Upgrading this platform will provide a centralized, government-endorsed repository for adaptation knowledge accessible to all stakeholders.

- Mirror information on UNESCO's IHP-WINS.

Using IHP-WINS enables international visibility, facilitates South-South learning, and ensures long-term data accessibility through a UNESCO-supported platform.

- Develop an SMS-based delivery channel and a mobile-first community dashboard.

To ensure inclusive access to climate information, the KM system will support both a **mobile-first community dashboard** and an **SMS-based delivery channel**. The dashboard-developed using no-code tools like **Power BI (mobile version)**-will deliver real-time forecasts, borehole status, alerts, and local advisories in a browser-based format optimized for low-bandwidth smartphones. In parallel, an **SMS version of the dashboard**, implemented using platforms like **RapidPro** will allow users in rural or offline areas to receive the same updates through automated daily broadcasts or keyword-based queries (e.g., "WEATHER", "WATER", "TIP"). This dual-delivery approach ensures that both smartphone and basic phone users-especially women, youth, and pastoral communities-can access actionable climate knowledge in real time, regardless of their device, digital literacy, or internet connectivity. In **Annex 2**, there is an illustrated example of the SMS channel.

Tools: CCD Portal, IHP-WINS, Power BI, USSD/SMS channels.

4. Feedback and Learning Loops

Objective: Make KM a two-way process.

Actions:

- Integrate feedback into alerts (e.g., SMS polls).

Feedback mechanisms help determine if communities are receiving, understanding, and acting on climate alerts, enabling continuous improvement.

- Hold quarterly CCU learning forums.

These forums promote peer-to-peer learning, knowledge sharing, and iterative improvements to adaptation efforts.

- Use storytelling to collect and share adaptation stories.

Narrative-driven data captures lived experiences and promotes horizontal learning across counties and communities. Annex 3 is a generic step-by-step guide for this approach.

Tools: WhatsApp groups, Google Forms, IHP-WINS story pages.

5. Capacity Strengthening

Objective: Build the KM skills of CCUs, youth, and community leaders.

Actions:

- Train CCUs in data interpretation and risk communication.

Building technical capacity ensures CCUs can use data effectively to inform policies and communicate risks to the public.

- Mentor youth on bankable climate proposals.

Youth engagement in proposal writing builds future leadership and attracts climate finance to innovative local ideas.

- Train local media and radios on climate insights.

Media actors can play a key role in translating technical knowledge into accessible formats for the wider public.

Tools: Moodle, YouTube-based training, in-person bootcamps.

6. Policy Alignment and Institutional Integration

Objective: Anchor KM in legal and planning frameworks.

Actions:

- Integrate KM targets in the updated NAP.

This ensures national-level policy explicitly supports ongoing knowledge management practices and infrastructure.

- Create a National KM Working Group under CCD.

This group will guide implementation, encourage collaboration, and align efforts across counties and sectors.

- Advocate for KM funding in CIDPs.

Securing budget lines for KM at county level will ensure sustainability beyond project cycles.

Implementation Support Tools

Tool	Role
IHP-WINS	Global knowledge sharing platform
CCD Knowledge Platform	National KM hub
Power BI	Interactive dashboards
KoBoToolbox	Field data collection
USSD/SMS	Communication with remote communities
HackMD	Collaborative authoring of structured briefs
RapidPro	Automated SMS flows for alerts and registration

Annex 12: Stakeholder consultations

i. National Stakeholder consultations with National Government Ministries and Development stakeholders

	Date	Stakeholders	Consultation Objectives	Outcome – Key Highlights	Consultation Conclusion
1	**26–27 Jun 2023**	Ministries, Counties (ASAL + urban), UN agencies, NGOs, Donors, Academia, LNOB groups	Co-develop ToC & results framework; establish governance & secure buy-in.	TOC matrices developed around six thematic pillars. Strong emphasis on inclusion, gender, climate resilience, and PPPs. Coordination committees validated.	JP draft to be finalized by July; launch planned for September 2023.
2	**6 Dec 2024**	UN agencies, SDG Platform, RCO	Coordinate climate finance; define agency roles for AF proposal; prep for workshop.	UNICEF & WFP selected as co-executing agencies; NEMA confirmed as implementing entity. Technical needs (e.g., gender, ESS) identified. Workshop format agreed.	Concept note due mid-Jan 2025; donor & Treasury consultations and WATSAN DPG intro planned.
3	**31 Jan 2025**	NEMA DG, UNICEF	Present near-final AF concept for endorsement; align with national priorities.	NEMA emphasized NbS (e.g., wetlands), long-term O&M, and reverse osmosis tech for saline areas.	Proposal to highlight NbS and infrastructure sustainability; revise budget and activities accordingly.
4	**18 Feb 2025**	PS MoWSI, senior team, UNICEF, RCO	Present full AF concept; gather feedback on structure and geographic scope.	PS called for focus on 3–4 counties in Ewaso Nyiro basin, stronger infrastructure component, clearer adaptation zones, and removal of overly policy-heavy activities.	Proposal to refocus on infrastructure and NbS; canal idea later dropped due to budget constraints.
5	**13 Mar 2025**	CS MECCF, UNICEF leadership	High-level briefing on AWARE concept; explore political support and alignment.	CS welcomed project focus on northern Kenya and affirmed alignment with national resilience priorities.	Ministry pledged support; coordination with counties and other ministries to follow.
6	**22 Apr 2025**	WATSAN DPG (WB, AfDB, AFD, Embassies, MoWSI)	Introduce AWARE proposal and explore collaboration.	Proposal components and locations shared; UNICEF called for alignment and synergies with DPG partner activities.	Partners informed; potential for collaboration noted.

ii. County Stakeholder consultations with Government Departments and Non-Government stakeholders

	Date	Organization	County	Outcome – Key Highlights	Consultation Conclusion

1	**7 Apr 2025**	Dept. of Environment, Climate Change, NEMA	Wajir	County has allocated 2% of development budget to climate resilience; projects like model farms, solar-powered boreholes, and irrigation under FLLOCA are improving community adaptation. Gaps remain in climate info access, waste management, and EIA enforcement.	County and NEMA endorsed the project, aligned with priorities on water access, climate finance, waste management, and community resilience.
2	**7 Apr 2025**	County Department of Water	Wajir	Strong alignment with county water priorities. Key issues: seasonal water stress, reliance on costly water trucking, unregulated settlements, and weak governance (failed Water Bill, underperforming WAJWASCO). Emphasis on boreholes, governance reform, and national support.	County welcomes the proposal for improving household, livestock, and institutional water access and resilient livelihoods.
3	**7 Apr 2025**	NEMA	Marsabit	Official dumpsite exists but is non-compliant and not operational. Illegal dumping prevalent. Community demands better waste infrastructure and management.	Project seen as timely and aligned with community needs. Emphasis on infrastructure and capacity-building to strengthen climate-resilient waste management.
4	**7 Apr 2025**	Director of Environment	Marsabit	Heavy reliance on boreholes, with water table declining and high salinity. Surface water potential untapped due to pollution and fragmented management. Waste is handled by urban planning, not environment department.	Critical water needs for domestic and livestock use. Better waste management can unlock surface water as a viable source.
5	**8 Apr 2025**	NDMA (Deputy Director)	Marsabit	NDMA issues drought bulletins with KMD, WFP, ICPAC, but has limited coverage (7 stations), low disaster budget utilization (<1%), and weak communication systems. Needs: flood modeling, vulnerability indicators, and improved local dissemination.	Proposed actions address gaps in early warning, flood modeling, and anticipatory financing. Will enhance local ownership and response effectiveness.
6	8/4/2025	County Commissioner	Marsabit	Sporadic rainfall impacts water availability. Need for stronger coordination and climate adaptation. Early warning systems need	Emphasized multi-sectoral coordination to tackle water scarcity and environmental degradation. County

				improvement, recommending adding more weather stations. Waste management issues from illegal dumping. Proposes indigenous tree planting and community nurseries to combat desertification.	Commissioner supports the project and community engagement. Key priorities include local ownership, better early warning systems, resilient water infrastructure, waste management, and afforestation for long-term resilience and community well-being.
7	8/4/2025	Director of Public Health	Marsabit	High malnutrition (especially in Laisamis), rising climate-related diseases (Kala-azar), cholera hotspots linked to unsafe water sources and open defecation. Flooding increases risk of waterborne diseases and displacement. Community Health Promoters vital but underfunded. USAID program suspension strains health efforts.	Integration of sanitation, hygiene, and household water treatment with water access is critical. Strengthening Community Health Promoters and funding the County's Anticipatory Action Plan are essential to improve health resilience and reduce disease risks linked to climate impacts.
8	8/4/2025	Director of Agriculture	Marsabit	Strong alignment with government/donor climate resilience efforts (World Bank, ADB). Gaps in soil/water management and governance remain. Successful pilots (fish farms, greenhouses) can be scaled. Challenges include borehole management, political interference, and land conflicts. Crop diversification and sand dams prioritized.	Project strongly aligns with county priorities and ongoing initiatives. It can bridge gaps by leveraging county and traditional governance structures, scaling pilot projects, and promoting integrated crop-livestock approaches for sustainable climate resilience and food security.
9	8/4/2025	Kenya Meteorological Department (KMD)	Marsabit	Climate variability and erratic rainfall disrupt agriculture and water use. Only two weather stations limit forecasting accuracy. Need for more localized meteorological infrastructure and funding for communication (radio airtime).	KMD's needs strongly align with project goals to enhance early warning systems and climate resilience. Broad support confirms urgency and relevance of planned

				Participatory disaster planning limited by funding.	interventions.
10	8/4/2025	Garissa County - Water Dept / Water Resources Authority / NEMA	Garissa	Lagdera and Dadaab face severe water scarcity, drought, groundwater salinity, and reliance on water trucking. Existing projects include borehole drilling and pipeline extensions but with challenges like low yields and breakdowns. Plans include operation & maintenance, solar-powered boreholes, community training, and strengthening Water Users Associations.	Department supports project alignment with county water priorities. Recommends drilling high-yield boreholes near rivers, flood-proofing boreholes, maintaining spare parts stock, operationalizing rural water supply guidelines via GARUWASCO, and solarizing boreholes to improve sustainability and service delivery.
11	8/4/2025	Ministry of Interior, County Commissioners office, NDMA	Garissa	Early Warning Systems constrained by delays, limited budgets, and weak coordination. County Commissioner leads coordination due to lack of structured office, causing communication delays. Need for localized, accessible communication with messages in local dialects. Existing but underutilized infrastructure and emergency budget.	County Commissioner office critical in disaster coordination; partnerships and capacity building needed. NDMA's mandate limited to drought but should expand to other disasters like floods. Strengthening and formalizing early warning systems and disaster response mechanisms are essential for improved preparedness and timely action.
12	8/4/2025	County Government of Garissa	Garissa	Project aligns with county climate adaptation laws and initiatives (e.g., FLLoCA, 12 Mega Project). Climate action anchored in existing structures with stakeholder meetings and combined funding from county and partners. Capacity building needed for mainstreaming climate action and youth engagement. GIS lab and DRC platform support data and coordination.	Climate Change Department coordinates programs with a clear framework from ward to county level. The county dedicates 2% budget to emergencies, with potential co-funding from departments like Environment and Water. Project integration within county systems and emergency funding

					mechanisms can strengthen climate resilience and implementation effectiveness.
13	9/4/2025	Dept. of Agriculture / Livestock / Irrigation	Garissa	Water scarcity, groundwater depletion, resource conflicts, and high salinity challenge farming. Need for climate-smart agriculture, water harvesting, and community training.	Department endorses project; aligns with ongoing water and resilience initiatives; supports integrated nature-based solutions.
14	10/4/2025	Chief of Water	Marsabit	Rapid borehole increase with weak governance, high salinity, evaporation, and recharge issues. Need better policy, WUA capacity, and diverse water harvesting methods.	Project aligns with goals to improve governance, water quality, and infrastructure; supports policy review and innovative solutions.
15	10/4/2025	Water Resources Authority (WRA)	Marsabit	Declining groundwater, governance gaps due to pending Water Act, water pollution in sand dams, costly water treatment, and resource limits.	Emphasizes sustainable resource management, stronger regulation, local capacity building, and affordable treatment options.
16	11/4/2025	County Department of Health	Wajir	WASH access, malnutrition linked to climate impacts, disease outbreaks, insufficient CHPs, and poor waste management.	Supports integrated program linking climate resilience with health; prioritizes WASH access, training, and community sensitization.
17	11/4/2025	Kenya Meteorological Department (KMD)	Wajir	Limited budget reduces climate information outreach; improved data collection underway; need better tech capacity and dissemination via local media and extension services.	Calls for enhancing access to climate data, technical capacity, and wider dissemination to support livestock and community decisions.
18	11/4/2025	Wajir Community Radio	Wajir	Critical for climate info dissemination to nomads; faces challenges in rangeland management and youth climate knowledge loss; advocates for proactive engagement.	Welcomes integrated program; stresses importance of climate info access for remote communities to build resilience.
19	11/4/2025	MARWASCO	Marsabit	Need to expand storage and water kiosks, improve borehole management,	Supports project alignment with sustainable water

				replicate successful dams, register boreholes, and enhance school/health water access.	harvesting and equitable service delivery; good collaboration potential.
20	11/4/2025	PACIDA	Marsabit	Active in prepaid water systems, reverse osmosis, rangeland management; challenges include limited anticipatory action funding and drought waste management.	Project well aligned with community needs; should strengthen county budgeting/planning for anticipatory measures and rangeland care.
21	11/5/2025	FH	Marsabit	Groundwater recharge, storage, rangeland conflict, salinity, youth engagement, and climate info gaps noted; calls for zoning and committee strengthening.	Project focus matches resilience-building needs; prioritizes inclusive planning, local capacity, and simplified climate messaging.
22	14/4/2025	County Director, Dept. of Agriculture	Mandera	Emphasis on water infrastructure, climate-smart agriculture, community ownership, coordination, and security risks; lessons from past projects highlighted.	County strongly supports project; stresses community governance, sustainability, compliance, and integration with early warning.
23	14/4/2025	Environment Director	Mandera	Project aligns with county priorities on ecosystem restoration and agriculture; requires environmental compliance, land tenure clarity, and multi-sector collaboration.	Focus on ecosystem restoration, rangeland management, youth engagement, and strengthened communication platforms for resilience.
24	16/4/2025	Water Sector Stakeholders (Online Consultation)	Mandera	Existing geohydrological data supports groundwater; need to explore surface water, waste management, land protection, and stronger environment committee.	Project aligns with county priorities; recommends collaboration with water authorities and inclusion of surface water harvesting.

iii. Community Consultations

	Date	Village/Community Unit	Proposed Intervention	Key Highlights	Conclusion
1	8/4/2025	Habaswein, Sabena, Zeitun, 11M 9 WBanane		Community members supported drought and water scarcity interventions, emphasizing permanent water sources, pest control, agronomic support, and improved climate info. They stressed better governance to avoid project failures.	Strong support for securing water sources and improving climate resilience, emphasizing community involvement, climate-resilient livelihoods, and good governance for sustainability.
2	8/4/2025	Kargi Town 15M 7 W	Drill new boreholes for community water supply	Reduced rainfall and unpredictable weather, with disaster events like windstorms. Existing boreholes mostly saline and unsuitable for domestic use. Early warning systems exist but info is delayed. Women face water access challenges.	Community receptive, with recommendations to extend water supply via piping and install reverse osmosis to address high salinity for safe domestic use.
3	8/4/2025	Odda 13M 7W	Construction of sand dams and subsurface dams	Irregular rainfall causing water scarcity and floods, damaging infrastructure. Borehole often breaks down, forcing long water trips, especially affecting women/girls. Limited irrigation limits crop production. Weak early warning systems.	Recommendations include alternative borehole for irrigation, household water taps, environmental conservation, and promoting alternative livelihoods like beekeeping to improve resilience.
4	8/4/2025	Rhamu Dimtu, Kalicha, Kalmalab, Shangala 15M 7W	Sand dams/water pan, ecosystem restoration	Severe climate impacts with erratic rainfall, droughts, floods, and locusts. High water costs during dry spells, few operational boreholes, and no functional sand dams. Weak governance and limited inclusion of vulnerable groups. Early warning systems exist but need better interpretation and action.	Identified three viable sites for sand dams and water pans due to suitable catchments and seasonal streams.
5	8/5/2025	Watiti 9M 16W	Drill new boreholes for community water supply	Recurrent climate shocks reducing crops and livestock. Water scarcity causes high water costs and social issues (divorce, domestic violence). Livelihoods diversified; water committee in place. Early	Recommended new borehole development with inclusive participation of women, female facilitators for discussions, and creation of climate-friendly livelihoods to reduce vulnerability.

				warning important for timely action.	
6	9/4/2025	Anona 23M 11W	Construction of sand dams and subsurface dams	Rising temperatures, erratic rainfall, flooding, and soil erosion disrupting farming. Adaptation includes roof water harvesting and climate-smart agriculture. Few sand dams; preference for water pans. Early warning combines traditional and tech methods. Coping via rotational grazing, destocking, water trucking, and grass regeneration.	Community prefers water pans over sand dams, suggesting expansion/desilting of an existing silted water pan. Women actively participate in climate decision-making committees.
7	9/4/2025	Arbajahan, Garsekoftu/Noorgose, Wel Athi, Fatumanur 15M 9 W		Residents face water scarcity due to erratic rainfall, droughts, degraded sources, floods, rising temps, and disease outbreaks. Main water sources vary, some lack direct access and depend on trucking. Adaptations include crop diversification, poultry, destocking, and livestock migration. They emphasize integrated water and climate-smart livelihoods with solar irrigation and infrastructure rehab.	The community strongly supports the project for addressing water challenges and enhancing climate resilience via diversified livelihoods and improved productivity.
8	9/4/2025	Goro Rukesa 13M 7W	Construction of sand dams and subsurface dams	Reliance on one borehole, nearest water source 8 km away. Piped water preferred, sand dam not feasible due to no seasonal rivers. Previous borehole attempt halted by resources. High salinity affects water quality. Droughts cause livestock loss; adaptation includes camel farming. Early warning via radio but poor response; women excluded from decision-making.	Strong need for piped water, more boreholes, reverse osmosis for salinity, livelihood diversification, rangeland restoration, improved early warnings. Calls for inclusive decision-making and capacity building to ensure sustainability.
9	9/5/2025	Golole 25M 4W	Drill new boreholes for community water supply	Climate change effects include drought, drying sources, erratic rainfall, reduced borehole yields, causing migration and long queues. Coping through hay harvesting, pasture enclosures, migration, selling livestock, switching to camels. Early	Community supports new borehole development, recommending strategic location to reduce pressure on existing sources and improve access for remote users.

				warnings via radio, traditional forecasting, social gatherings.	
10	10/4/2025	Afwein 9M 6W	Sand Dam, Water Pans	Pastoralist community faces drought; small, flood-prone water pan used for domestic/livestock water. Floods, droughts, disease outbreaks, resource competition affect livelihoods. Water trucking used during dry spells. Preferences include new borehole in fresh aquifer, sand/subsurface dams for rangeland and erosion control. Capacity building needed for water management; conflicts between pastoralists and farmers.	Endorsed interventions include drilling borehole with piping, sand dam feasibility, desilting/expanding water pans, water user training, and ecosystem restoration to improve resilience and sustainability.
11	10/4/2025	Bute, Bute godha, Adadjole, Ogorji, Gurar 14M 9W	Drill new boreholes for community water supply	High rainfall area experiencing reduced rains, droughts, invasive plants, drying wells. Water pans dry or damaged; women travel long distances for unsafe water. Health risks from untreated water, plastic pollution threatens quality. Adaptive practices include drought-tolerant crops, beekeeping, fodder storage. Community structures exist but need capacity building. Poor governance and county support affect project success.	Community satisfied with proposed projects and committed to support sustainability and continuity, highlighting the importance of involving women for food production and nutrition.
12	10/4/2025	Kotkoto/ Wangaidan/ Harbillow/ Kobadadi	Sand dams/water pan, ecosystem restoration	Unpredictable climate with alternating heavy rains and droughts, El Niño rains damage infrastructure. Water access and livelihoods affected by drought, floods, livestock loss, crop failure, migration. Sand dams favored where seasonal streams exist; boreholes less viable due to salinity. Sustainability depends on community ownership, management, training. Environmental degradation and governance challenges persist.	Community actively adapts via traditional knowledge and migration but faces challenges from salinity, land tenure, gender inequality, and governance fragmentation. Emphasizes need for inclusive, locally tailored, participatory approaches focused on empowering women, youth, and marginalized groups.

13	10/4/2025	Laguyata (10M, 9W)	Borehole Rehabilitation, Desilting/redesign of water pan, Sand dam/check dams	Pastoralist community affected by drought and floods; water pan silted and borehole non-functional; rely on water trucking and tanks. Propose solarizing borehole, desilting pans, sand/check dams, and managing water with local associations.	Community supports borehole rehab with solarization, new borehole drilling, pan expansion, sand dam feasibility studies, water user training, and ecosystem restoration initiatives.
14	10/4/2025	Maalimin (14M, 0W)	Drilling new borehole, development of new water pan, sand/check dams	Community reliant on a 50,000m³ water pan and a non-operational borehole. Climate change impacts include floods, drought, disease, and insecurity. Prefer new borehole and expanded pans.	Endorsed drilling new borehole, mega water pan development, expansion and desilting of existing pans, water management training, and ecosystem restoration for resilience.
15	10/5/2025	Elgadhe (27M, 8W)	Construction of sanddams and subsurface dams	Facing declining rainfall, droughts, invasive plants; water pans dry up, causing unsafe water access and health risks; adaptive livelihood strategies ongoing; capacity building needed.	Sand dam construction recommended near riverbed for spate diversion and water security; new borehole proposed to improve household and agricultural water access and productivity.
16	9/4/2925	Karare (31M, 12W)	Development/rehabilitation of climate-resilient water infrastructure	Recovering from severe drought; borehole non-functional leading to high water costs; rangeland management in place; women face hardships due to water scarcity and unsafe access.	Strong support for borehole rehabilitation and pipeline extension to improve safe, affordable water access and reduce burdens on women and vulnerable groups.
17	*(Date missing)*	Kiliwehiri, Wara, Borashum, Derkale (25M, 8W)	Sand dams	Communities face unpredictable rainfall, drought, and water scarcity; adaptive strategies include crop changes and livestock migration; issues with land ownership and water management.	Recommendations include sustainable sand dams, solar boreholes, piped water, inclusive governance with women and youth, ecosystem restoration, and empowerment for resilience-building.

Picture 2 UNICEF/WFP meeting with the Governor Wajir County and team during the County Stakeholder engagement

Picture 1 FGD with women and girls only for a gender perspective discussions

Picture 3 Community consultations at Karare Village, Marsabit County

Annex 13: Sustainability of interventions

Project Components	Outputs	Sustainability Interventions
1. Climate-resilient Water Access for Human and livestock Consumption	Output 1.1: Enhanced capacity of Water Resource Management Institutions and professionals for sustainable groundwater development and management in ENRB	Engagement with the state department of water, sector professional societies and water industry association to review the existing syllabus, define relevant skills and deliver continuous professional development (CPD) for sustainable groundwater management. The emerging learning will be included in the review of subsequent national water policy, legislation and regulations to entrench quality CPD by professional societies, registration boards and associations.
	Output 1.2 Improved rain/floodwater harnessing for Managed Aquifer Recharge (MAR) and Nature-based Solution (NbS)	Hydrological and climate risk analysis that ensures Environmental and Social Safeguards, do no harm and do more good principles and gender responsive considerations will inform site selection, design and construction of the structures for Managed Aquifer Recharge (MAR). Small Scale water providers and /or regulated water utilities will be established to operate and maintain the water conservation structures.
	Output 1.3: Community validated Climate-resilient groundwater infrastructure developed and in operation in target communities within ENRB counties	Hydrogeological and climate risk analysis for each proposed site that ensures Environmental and Social Safeguards, do no harm and do more good principles and gender responsive considerations will inform the site selection, design and construction of the new or upgraded infrastructure and risk mitigation measures. Small Scale water providers or regulated water utilities will be established to operate and maintain the infrastructure.
	Output 1.4: Strengthened financial management capacity of Water Services for sustainable water service delivery in the context of climate change	Alignment to the Water Act 2016, national water management policy 2021, water services regulations 2021 and the national water regulator sector performance benchmarks. Socio-economic assessment will inform the tariff structure to ensure affordability and pro-poor approaches. The emerging learning will be utilized to inform review of existing regulations for rural communities to further strengthen sustainability.
2. Ecosystem restoration and climate resilient livelihoods for food and nutrition security	Output 2.1: Prioritized rangeland resources including land are brought under restoration, safeguarded and sustainably managed for improved climate change resilience	Formation and strengthening of Rangeland Management Committees (RMC) with representation of women, youth and marginalized groups, anchored within the county departments of environment and livestock production. The RMCs will be supported to develop and implement community-led rangeland management plans and linked with the Water Resources Users' Associations (WRUAs) to integrate sub-catchment management into the broader land restoration plans.
	Output 2.2: Community-validated climate resilient water infrastructure developed and or rehabilitated for food security	Site selection, implementation and management of rehabilitated/developed water infrastructure will be embedded on water management committees who will be trained on best practices (financial management, on farm water management) and skills on operation and maintenance of the infrastructure. The committees will be anchored/ supported by the county government departments of agriculture and livestock for multiple-use systems. Ecosystem restoration will contribute to long term

		safeguarding of water sources against siltation and related high recurrent rehabilitation needs, in addition to contributing to groundwater recharge.
	Output 2.3: Climate-smart agriculture and sustainable production technologies promoted at community level for climate-resilient livelihoods	Farmer to farmer extension networks will be supported in addition to scaling the Farmer Service Centre (FSC) model to provide capacity building and extension services to ensure continuous knowledge transfer and guidance. Smallholder farmers will also be supported with linkages to providers of inputs as well as market linkages.
	Output 2.4: Improved household access to nutritious and diversified diets, contributing to enhanced livelihood resilience	Households will be capacity-built to access, preserve and consume nutritious and diversified foods produced through climate resilience water access interventions. A system strengthening approach will be utilized to engage Health Workers and Community Health Promoters (CHPS) to influence adoption of appropriate household food consumption behaviours for children, adolescents and women.
3. Enhanced early warning systems and anticipatory action	Output 3.1: Flood EWS accuracy improved by incorporating more data using existing open source flood models	The Google flood model that will be used is freely available online, leading to no continued costs on the model site. The model will be integrated in the existing early warning structures at the county level operated by the County KMD, ensuring government ownership.
	Output 3.2: Improved Anticipatory Action triggers defined in updated plans, integrating (child) vulnerability in target counties and nationally	The updated anticipatory action plan and triggers will be led by the County government. By supporting the budgetary process, the aim is to ensure adequate budget to be set aside to by the government to support the AA interventions. By including this in the budget cycle, the sustainability of the intervention will be ensured.
	Output 3.3: County budgeting process for Anticipatory Action strengthened	See 3.2
	Output 3.4: Early Warning Communication systems improved to effectively reach last-mile communities	To ensure sustainability, the activity builds the capacity of local radio broadcasters and county early warning actors (KMD, NDMA) to deliver timely, locally tailored warnings. Training will emphasize inclusive, culturally relevant messaging that strengthens community trust and action. By embedding these practices into existing systems, the intervention promotes long-term, community-responsive early warning communication.
4. Systems strengthening for enhanced and inclusive climate adaptation coordination and knowledge management	Output 4.1: Enhanced capacity of the Ministry of Water and County Climate Unites in targeted ENRB Counties for inclusive and participatory climate adaptation planning and coordination in the water sector.	This activity strengthens institutional systems by embedding inclusive adaptation planning practices into existing water governance structures, ensuring ongoing coordination and ownership by County Climate Units and the Ministry of Water.
	Output 4.2: National Adaptation Plan (NAP) and key elements of National Environment Action Plan (NEAP) updated through an inclusive and participatory process incorporating feedback from key stakeholders, including youth and ENRB County Representatives	Sustainability is ensured through a participatory update process and the integration of a monitoring framework, enabling long-term tracking, institutional alignment, and stakeholder engagement in national adaptation planning.

	Output 4.3: Increased capacity of youth in targeted ENRB counties to meaningfully participate in climate adaptation governance and action	By equipping youth with governance and advocacy skills, this output fosters long-term civic engagement and supports intergenerational leadership in climate adaptation at local and county levels.
	Output 4.4: A functional and regularly updated climate change and adaptation knowledge platform established and used by the Ministries, County Climate Units, Youth, and other stakeholders in targeted ENRB counties	The platform institutionalizes knowledge sharing and coordination among stakeholders, ensuring sustained access to data, tools, and best practices for informed adaptation planning and decision-making.
5. Enhanced water quality through climate resilient waste management	Output 5.1: Enhanced technical capacity of relevant institutions in targeted ENRB Counties for water quality monitoring and enforcement related to waste management.	By embedding water quality monitoring tools and training into county systems, this activity enables long-term enforcement and adaptive management of pollution risks under changing climate conditions.
	Output 5.2: Increased access to climate-resilient waste management infrastructure	Sustainability is supported through training and institutional strengthening, ensuring that infrastructure is properly managed and maintained beyond the project lifespan.
	Output 5.3: Improved knowledge and adoption of safe and climate-resilient waste management practices and the importance of water quality monitoring within communities and institutions	By integrating awareness-raising with practical training, this output drives behavioral change and reinforces community-level stewardship of water and waste resources under climate stress.
	Output 5.4: Strengthened organizational capacity of county environmental committees in ENRB Counties to develop, implement, and monitor policies and actions addressing waste-related water pollution.	The activity institutionalizes policy-making capacity within county committees, supporting long-term implementation and monitoring of locally relevant pollution control measures.

Annex 14 Adaptation Fund Risk Register

ID	Category	Risk Area	Risk Type	Risk Description	Mitigation Actions	Likelihood	Impact	Residual Risk Seriousness
1	Strategic	Programme	Funding insufficient	Insufficient skill/experience to effectively implement programmes and/or ensure field readiness. Funding is insufficient to implement programme activities	1. Scenario Planning: Develop contingency plans for different funding scenarios. This can help you quickly adapt to changes in funding. 2. Financial Analysis: Regularly review your financial health and	3	5	15

				both planned and emergencies, like; a. Resilient activities, climate change and nutrition programmes. b. Common services including United Nations Humanitarian Air Service (UNHAS). c. Single donor reliance for key activities and the Adaptation Fund at large. This is attributed to increased needs, shifting donor priorities leading to underachievement or failure for UN organizations to meet its objectives.	adjust your strategies accordingly. 3. Regular Communication: Keep donors informed about how their contributions are making a difference. Regular updates and reports can build trust and loyalty.			
2	Strategic	Programme	Skill shortage/mismatch	1. Funding is insufficient to implement programme activities 2. Government agencies may lack the institutional capacity, technical expertise, and resources to effectively implement and manage anticipatory action programs.	1. Diversify donor base & institute cost-effective measures. 2. Enhanced resource mobilization and strengthened partnerships with UNICEF, UNESCO, UNEP, GoK and other UN agencies and development partners. 3. Increase engagement of donors.	4	5	20
5	Strategic	External Relationship	Misalignment with UN system, governments, partners or non-state actors	Inadequate partnership and third-party management	1. Map out government structure to analyze areas for expanded collaboration, coordination and communication. 2. Distribute responsibilities between Outcomes to eliminate duplication, confusion and elimination. 3. Develop engagement strategies through collaboration with all concerned senior management. 4. Carry out spot check on partners during the implementation of activities 5. Ensure biannual County Consultations are done and recommendations tracked and implemented. 6. Feedback from evaluation process and all complaints raised by FOs will be employed to inform further engagement with CPs	3	3	9

6	Strategic	Context	Conflict	1. Conflicts over water resources between different user groups (e.g., farmers, pastoralists, domestic users) due to increased scarcity. 2. Food insecurity due to conflict involving state and/or non-state armed groups and/or civilians, communal violence, electoral violence.	1. Develop and maintain climate-resilient water access systems. 2. Encouraging economic and livelihood diversification can reduce dependency on scarce resources. 3. Dialogue and Mediation: Establishing platforms for dialogue and mediation can help address grievances and foster mutual understanding. 4. Resource Management: Implementing sustainable resource management practices, such as rotational grazing and water-sharing agreements, can reduce competition over resources. 5. Social Capital: Building social capital through community activities, joint decision-making, and shared economic ventures can strengthen relationships and cooperation between the group. 6. Policy and Legal Frameworks: Developing and enforcing policies that clearly define land and resource rights can help prevent disputes. This includes land tenure reforms and legal recognition of pastoralist rights. 7. Anticipatory Actions: Establishing early warning systems to detect and address potential conflicts before they escalate.	3	5	15
9	Strategic	Context	Natural disaster	1. Depletion of groundwater resources due to over-extraction or prolonged drought. 2. Food insecurity due to natural geophysical or biological hazard (e.g. flooding, drought, earthquakes, epidemics).	1. Undertake Environmental & Social Impact Assessments and geological surveys before embarking on program implementation. 2. Regular assessment of impact (floods and drought) through Short Rains Assessments (SRA), Long Rains Assessments (LRA), Standardized Monitoring and Assessment of Relief and Transitions (SMART). 3. Coordination and collaboration	3	5	15

					with government and other development partners on preparedness, response and recovery actions. 4. Further engagement and research on remote programme implementation. 5. Allocate additional resources for climate-proofing infrastructure and enhance efforts to climate-proof the target counties. 6. Monitor impact on efforts to promote Good Agricultural Practice (GAP), crop diversification and empowerment of (Farmer Service Center) FSCs. 7. Sensitizing beneficiaries on weather resilient farming. 8. Assess the impact of Adaptation Fund activities in relation to climate change and environment risk through the Engineering team /Technical teams. 9. Continuous assessments and reporting on the Adaptation Fund climate change initiatives in line with risk management. 10.Anticipatory Actions and utilization of early warning reports.			
10	Strategic	Business model	Weak/poor execution	1.Failure of newly constructed water infrastructure (e.g., boreholes, water pans) due to unforeseen geological issues, poor construction quality, or extreme weather events. 2. Inadequate selection, development or delivery of technology or innovation to meet intended outcomes compromises the Adaptation Fund's ability to serve beneficiaries and/ or threatens the Fund's relevance in addressing community needs.	1. Capacity building of staff, government representatives and communities. 2. Undertake rigorous site monitoring, supervision and spot checks. 3. Develop SOPs and blueprints for all planned projects, 4. Ensure that procurement standards are adhered to when selecting contractors to design and construct assets. 5. Ensure that engineering team and standards are adhered to before awarding contracts.	3	4	12

13	Operational	Beneficiary_Health_Safety_and_Security	Lack of protection	1. Failure to prevent, detect and respond to Prevention of Sexual Exploitation and Abuse (PSEA), Harassment, Sexual Harassment, Abuse of Authority (HSHAAD) in the workplace and towards beneficiaries. 2. Ineffective sensitization tools to fight and report Gender Based Violence (GBV). 3. Insufficient tools to effectively support people with disability. The above is attributed to inadequate systems and poor planning resulting into reputation damage, ineffective processes.	1.Ensure a Complaints and Feedback Mechanism Helpline in place (including P1 case communities). 2. Establish PSEA focal points at Country Office (CO) and in all field offices (FO) and PSEA clauses in all Field Level Agreements (FLAs). 3. Develop SOPs on handling cases. 4. Sensitize staff, partners, and beneficiaries on Protection from Sexual Exploitation and Abuse (PSEA). 5. Undertake Annual gender and protection assessments in host communities. 6. Identify Gender and protection Focal Points at CO and FO. 7. Review the Control oversight checklist annually. 8. Sensitize community on hotline numbers and recourse mechanisms.	3	5	15
14	Operational	Partners_and_Vendors	Inadequate availability or capacity	Lack of capacity for effective Government partnerships, attributed to insufficient investment in partnering; limited capacity within the Government to engage with the UN; government staff turnover, resulting in delay or even failure of planned activities.	1. Memorandum of Understanding (MoU) with individual county governments- including cost-sharing provisions. 2. Technical guidance and trainings for county governments. 3. Engage government sectors and departments during budgeting cycle to ensure Adaptation Fund activities are supported activities are aligned with government plans and priorities. 4. Undertake joint capacity needs assessment and quarterly progress reviews. 5. Formalized commitments by County Government (CG) in terms of policy validation and signoff by Governor. 6. Regular monitoring and identifying interim solutions for gaps noted.	4	4	16
15	Operational	Business_Process	Supply chain disruption	Normal and continuous sourcing, transport, storage, handling and/or distribution (of	1) Negotiate humanitarian cargo movement as applicable. 2) Monitor markets for availability of	3	5	15

				assistance) is interrupted. Delays in other critical business processes impact delivery or programme activities or assistance. Pipeline breaks attributed to long lead times, supply chain bottlenecks, government regulation resulting to Adaptation Fund implementing organizations inability to meet our demand.	products, increase in prices for both fuel and other transport costs and food. Also monitor exchange rates and impact on cost of all items. 3) Implement operational adjustments as required, which may include changes in food basket composition and/or assistance modalities (e.g. in-kind vs CBT or vice versa depending on the local market situation. 4) Expand the local suppliers for food and nutritious products and get the support from GCMF to increase our local purchase through Small Holder farmers, traders and nutritious products. 5).Enhancing our transport and supply chain intelligence to anticipate any changes in the market and be able to adapt. 6). Structures in place to allow for dialogue with government/Adaptation Fund Implementing organizations on changes. 7. Ensuring informed contingency plans.			
16	Operational	Business_Process	Disruption from change programmes	Ongoing programmes or support activities are interrupted due to the implementation or changes from new organizational initiatives.	The government's capacity to coordinate with the implementing organizations and other partners, its decentralization policies, and its ability to mobilize resources at the county level are important considerations.	3	5	15
17	Operational	Governance_and_Oversight	Inadequate monitoring, reporting or escalation	1). Frequency and/or intensity or monitoring and reporting is incommensurate with the scale and complexity of the programme. 2). Unclear escalation path and authority. 3). Failure to employ monitoring and evaluation recommendations to improve	.1. Joint multiagency assessments: - including joint assessment missions in EWASO Nyiro Catchment Area (3participating counties -Marsabit, Wajir & Garissa) 2. Joint food systems strengthening approach with partners. 3. Joint capacity needs assessments. 4. Set targets on broadcast and monitor success levels (Contracting	3	5	15

				processes. 4). Ineffective and untimely communication to stakeholders of key findings from studies and outcome monitoring exercises hence affecting the Adaptation Fund's reputation and donor confidence. 5).Failure to broadcast the impact of Adaptation Fund's activities for communities and GoK at large. The above is attributed to inadequate planning of different process and lack of coordinated and informed processes resulting into lack of confidence in our stakeholders and maintaining inadequate processes that don't meet all our stakeholder needs.	external evaluation company to provide technical expertise). 5. Modify programme design using evidence from studies and outcome monitoring. 6. Formal commitment / progress reports on utilization to be in place beyond annual work plan. 7. Support direct engagement between the FOs of implementing organizations and the local government to ensure close monitoring of the process. 8. Regular review meetings with Government partners and communities. 9. Setting and training committees to manage structures provided by organizations implementing the Adaptation Fund.			
12	Fiduciary	Breach_of_Obligations	Donor agreements	Underutilization of Donor Funds and Grants with Tight Terminal Disbursement Dates (TDDs): Non-compliance with donor earmarking and conditions often stems from inadequate communication and engagement with beneficiaries during program design and implementation. This issue is frequently attributed to insufficient knowledge and research at the project's inception, as well as poor planning and tracking of fund utilization throughout the project's lifecycle. Additionally, donors' reluctance to review and amend terms exacerbates the problem.	1. Monthly Review meetings focused on grant management and on the pipeline. 2. Bilateral meetings with each strategic outcome on Resource Utilization. 3. Ad hoc Taskforce meeting for exceptional cases.	3	5	15

				Consequences of these challenges include: - Erosion of donor confidence. - Disruption in service delivery. - Reputational risk when World Food Programme (WFP) commitments are unmet.				
13	Fiduciary	Fraud_and_Corruption	Corruption	Dishonest or unethical conduct for personal gain by a person or a group of people entrusted with a position of authority (e.g. bribery, collusion)	1 Increased sensitization on Anti-Fraud & Corruption (AFAC) & reporting mechanisms such as JIRA (Incident Tracking System), Community Feedback Mechanism (CFM), UN Agency hotline numbers of both staff & Cooperating Partners (CPs)through training. 2. Strengthen internal controls processes through regular spot-checks, self-assessments to identify gaps, enhance transparency, accountability. and address them timely. 3. Due diligence reviews through micro assessments of partners (including third party reviews).	3	5	15
14	Financial	Price_Volatility	Price volatility	Spikes or excessive volatility in international food prices / unstable economic conditions / market disruptions /inflation / currency fluctuations / macroeconomic shocks. These cause an increase in prices of all key commodities for both staff and beneficiaries, unfavourable market conditions e.g. price fluctuations. It leads to reduction in the resource envelope for secured funding. Increased food insecurity & humanitarian needs, deterioration of security situation.	1. Continuous monitoring of the currencies. 2. Continuous monitoring of commodity prices through market assessments. 3. Continuous monitoring of the trends through the Resource management meetings. 4. Quarterly joint market monitoring (JMMI) in the ASALs and monthly price trends analysis. 5. Revision of activities due to less funding.	3	4	12
15	Financia	Assets_and_In	Misutilization	1. Programme budget not	1. Due diligence reviews through	3	4	12

	I	vestments	of assets	managed appropriately (e.g. under-/over-utilization of financial/non-financial assets). 2. Failure to prevent, detect and respond to fraud and corruption exposure across the organization caused by lack of fraud risk assessments and inadequate fraud awareness to all stakeholders leading to; misappropriation of programme funds/resources.	micro assessments of partners (including third party reviews). 2. Funds being disbursed through the exchequer to ensure they are visible in the National Auditing Systems (Auditor General and Controller of Budgets). 3. Spot checks for partners. 4. Direct procurement done by selected UN Agency when risk is assessed as high for a particular county. 5. Due diligence done by the Steering Committee. 6. Funds disbursed to implementing organizations in tranches to reduce exposure. 7. All staff working taking and passing the mandatory Fraud training.			

Likelihood Scale Scores

Score	Likelihood
1	Very unlikely
2	Unlikely
3	Moderately likely
4	Likely
5	Very likely

Impact Scale Scores

Score	Impact
1	Negligible
2	Minor
3	Moderate
4	Severe
5	Critical

Residual Risks Ranking

21-25 Very High
17-20 High
13-16High
7-12 Moderate
1-5. Very likely

Annex 15 USP justification and compliance plan

Activity 5.2.3 is developed as an Unidentified Sub Project (USP). The reasoning for this and the compliance with AF ESP and Gender Policy is described below. This USP description and management approach fully aligns with the Adaptation Fund's Updated Guidance on Unidentified Sub-Projects (May 2021[61]).

Justification for USP approach
The proposal includes the establishment of a climate-resilient waste management site near Marsabit town as an Unidentified Sub-Project (USP). While the activity is clearly defined—focused on enabling circular waste management and reducing climate and health risks—the specific site and infrastructure design cannot yet be finalized.

There are several key reasons for treating this activity as a USP:

1. **There is currently no standard design for climate-resilient waste management infrastructure in Kenya.** Despite having developed 10 criteria for a sustainable waste management site as part of the Sustainable Waste Management Act, including secure fencing, leachate and fire control systems, controlled tipping, and proper licensing, there is no design for a climate resilient waste management site yet. The project will therefore first develop a scalable and climate-robust design under activity 5.2.2. Only once the design is complete will the exact site, footprint, and layout requirements be known—guiding location decisions.
2. **The site must be selected based on detailed climate, hydrological, and environmental risk assessments.** Marsabit is exposed to flash floods, erosion, and rising waste volumes due to urban growth. To ensure the facility contributes to adaptation and doesn't introduce new risks, location selection will consider seasonal water flows, land gradients, and proximity to settlements or ecologically sensitive areas. These steps are also necessary to comply with Kenya's Waste Management Regulations under EMCA.
3. **Coordination is ongoing with Marsabit County Government to identify suitable land parcels.** The process involves reviewing land tenure status, compatibility with county physical and spatial plans, and integration into broader solid waste strategies. The County Government has expressed interest in the facility but needs detailed designs and internal alignment before a final location can be agreed.
4. **A participatory and inclusive process is needed to ensure long-term acceptance and utility.** Waste handlers, informal workers, and local communities must be consulted on siting preferences, accessibility, and co-benefit opportunities. Meaningful engagement is only possible once the design parameters and trade-offs (e.g. transport routes, buffer zones) are known.
5. **Waste management was brought forward as a critical issue by Marsabit based stakeholders consulted.** As described in Annex 12 and Section II.H, waste management was defined as a critical issue made worse by climate change in Marsabit town and also features prominently in the Marsabit County Integrated Development Plan (CIDP 2023-2027[62])**.**

[61] https://www.adaptation-fund.org/wp-content/uploads/2021/05/Updated-guidance-on-USPs-.pdf
[62] https://www.marsabitassembly.go.ke/wp-content/uploads/2023/07/3rd-CIDP-Report-DRAFT-2.pdf

Not finalizing the detailed design and site selection for the climate-resilient waste management facility at this stage allows the project to first develop a strong, context-specific design under Activity 5.2.2, based on thorough technical, environmental, and social assessments. This step-by-step approach ensures that the final infrastructure will be technically sound, climate-resilient, socially acceptable, and fully aligned with national regulations and stakeholder expectations. The advantage of this adaptive and participatory process is the ability to incorporate critical site-specific information—such as flood risks, land tenure issues, community preferences, and environmental sensitivities—into decision-making, which greatly increases the chances of long-term success and sustainability. Although this method creates a higher initial uncertainty and potential risk of non-compliance with the Adaptation Fund's Environmental and Social Policy (ESP) and Gender Policy (GP), these risks are reduced through proactive actions including a preliminary ESIA and ESMP, continuous stakeholder engagement, and a strong adaptive management approach. In the end, the benefits of having a well-informed, context-appropriate, and legally compliant project design outweigh the risks related to delaying the final formulation of this activity.

Preliminary ESIA and ESMP

Though this activity is an Unidentified Sub-Project (USP), several proactive steps have been taken to reduce uncertainty and risks. A preliminary Environmental and Social Impact Assessment (ESIA), including screening against all 15 ESP principles, and an Environmental and Social Management Plan (ESMP) have been prepared based on indicative designs and contextual data (see Annex 3). With the approximate location already known, close to Marsabit known, the ESIA addresses key environmental and social risks, and the waste management site is included in the project's gender analysis and action plan (Annex 5). These documents provide a solid basis for full safeguards compliance once the final design and site are confirmed. The activity is classified as Category A for environmental and social risk, requiring strict safeguards and mitigation. Treating it as a USP enables detailed, site-specific assessments to ensure full compliance with the Adaptation Fund's ESP.

Timeline for Site-Specific Safeguards

Due to uncertainties in site selection and design, the project uses an adaptive management approach. This allows safeguards to be updated as new information arises. Key milestones (design finalization, site screening, community consultations, and ESIA/ESMP development) offer ongoing opportunities for assessment, engagement, and mitigation. This ensures responsive decisions, reduces risks, and maintains full compliance with the Adaptation Fund's Environmental and Social and Gender Policies. The milestones are listed in the Table below.

Milestone	Description	Estimated Timing
Finalization of climate-resilient waste facility design (act. 5.2.2)	Design framework developed under activity 5.2.2, defining technical and spatial requirements	Month 6 of implementation
Identification and screening of suitable site near Marsabit town	Technical feasibility assessment, land availability analysis, flood risk, safe distance from water sources, and climate vulnerability screening	Month 7–9
Community consultations, including with marginalized and vulnerable groups	Participatory engagement to identify site preferences, access concerns, social risks, and opportunities for inclusion (women, youth, informal waste workers, persons with disabilities) using FPIC.	Month 9
Development of site-specific (updated)	Based on selected location and final design; includes risk analysis, mitigation,	Month 10–12

Milestone	Description	Estimated Timing
ESIA and ESMP	and monitoring measures	
NEMA review and approval of ESIA/ESMP	In line with EMCA and Adaptation Fund Environmental and Social Policy (ESP)	Month 13
Implementation of ESMP and monitoring system	Rollout of safeguards and continuous tracking of social/environmental performance	Month 14 onward

Progress on the above milestones will be reported to the Adaptation Fund by NEMA (as both EE and NIE in this case) on an annual basis through the project performance report (PPR) as prescribed by the Updated Guidance on USPs.
Adequate budget has been included under activity 5.2.3 to conduct the necessary site specific ESIA and develop the ESMP by a professional and independent consultancy service. This is estimated at 10,000 USD and is included in the budget for activity 5.2.3. The total costs of the USP (251,000 USD) are also low compared to the total size of the project (1.2 %). Budget has also been included for continuous monitoring, adaptive management activities, stakeholder engagement, and operation of the grievance redress mechanism. These resources ensure the USP can be managed in full compliance with AF safeguard policies and standards.

Preliminary Environmental and Social Management Plan

A full ESMP has been developed based on the preliminary ESIA conducted based on the prevailing social and environmental risks in the target area (close to Marsabit town) and of the activity. This is available in Annex 3. As described in the section above, this ESMP will be updated once the full design for the waste site is completed and the location has been identified. Records will be kept of the ESP and GP compliance process

Proposed Site Selection Criteria for the Marsabit Waste Management Facility

Based on the preliminary ESIA and ESMP, below are the site selection criteria for the Climate Resilient Waste Management Facility.

1. **Climate and Environmental Risk Suitability**
   The site must be located outside flood-prone zones and seasonal water channels to reduce vulnerability to climate hazards. It should not be adjacent to ecologically sensitive areas such as wetlands, protected forests, or key water sources. The soils and geology must be suitable for waste handling activities, featuring low infiltration risk and stable slopes to prevent environmental contamination.
2. **Land Tenure and Legal Status**
   The site should be on public land or land with clear, documented ownership and free from disputes or competing claims. It must align with local land use policies and zoning regulations to ensure legal compliance and avoid future conflicts.
3. **Technical and Operational Feasibility**
   The selected site needs to provide sufficient space to accommodate the required infrastructure, potential future expansions, and buffer zones. It should be accessible by all-weather roads suitable for waste collection and transport vehicles. Availability of basic utilities, such as water and electricity, or the potential for their extension, is essential for effective operation.
4. **Community and Social Acceptability**
   The location should be at a reasonable distance from densely populated residential areas to

minimize nuisances such as noise, odor, or dust. It must have broad community acceptance, demonstrated through consultations that show no significant opposition. The site should offer opportunities for livelihood generation, including jobs for local residents in waste sorting and related activities.

5. **Inclusion and Gender Considerations**
   The site should be in proximity to communities of informal waste workers and designed to accommodate gender-inclusive facilities and safe working conditions. This ensures equitable access to employment and participation, particularly for women and marginalized groups.
6. **Regulatory Compliance and Strategic Fit**
   The selected site must comply with Kenya's Environmental Management and Coordination Act (EMCA) Waste Management Regulation. It should support broader urban planning goals and contribute to circular economy objectives within the county.

Grievance redressal mechanism for USP

The Unidentified Sub-Project (USP) will utilize the existing Project AWARE Grievance Redress Mechanism (GRM) described in Annex 4, ensuring continuity, inclusivity, and accountability across all project activities. This mechanism, anchored within NEMA's institutional grievance framework and integrated with community-level structures, provides accessible channels for all stakeholders—including marginalized and vulnerable groups—to raise concerns or grievances. Given the evolving nature of the USP, an adaptive management approach will be applied to the GRM to address any specific issues that arise related to site selection, design, or operation of the climate-resilient waste management facility. This will include regular reviews and updates of grievance handling procedures, appointment of focal points as needed, and tailored communication strategies to ensure transparency and responsiveness.

USP Monitoring and Evaluation

The USP has been fully integrated into the project's overall M&E system. This integration guarantees that progress on USP implementation and safeguards compliance is captured in periodic Project Performance Reports (PPRs) submitted to the Adaptation Fund Secretariat. Furthermore, the USP will be included in the project's terminal evaluation to assess effectiveness, sustainability, and lessons learned regarding both climate adaptation outcomes and safeguard adherence (see Section III.D).

Gender specific indicators have been fully developed and can be found in section III.E and Annex 5.

Response to Comments from Switzerland for the "*AWARE: Adaptation for Water Access and Resilience in Ewaso Nyiro River Basin*".

Q1

Program Focus: *The program is focusing on the downstream Ewaso Nyiro Basin, the question which comes to mind is what about upstream and middle stream? The reasoning is that the river passes through 10 Counties in total and the catchment is expansive beyond the selected Counties. What informed their focus Counties? Also issues experienced in the downstream is mainly because of the problems created upstream and middle stream e.g. abstraction, pollution, environmental degradation among others. If the program initiatives are to be sustainable then there is need to look beyond the symptoms of the problem but also focus on the root causes of these problems upstream.*

Q1 Answer

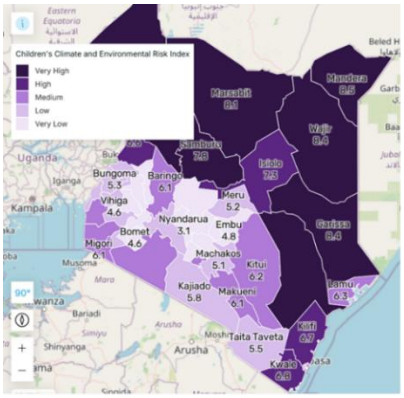
The Ewaso Ny'iro Basin spans 10 counties and our overall programme is basin wide approach for improved adaptation of climate change hazards across all the counties in the basin However, for this specific Adaptation Fund project the decision to focus on downstream counties of **Wajir, Garissa, Mandera, and Marsabit** is based on several factors:

1. **Heightened vulnerability of downstream populations**

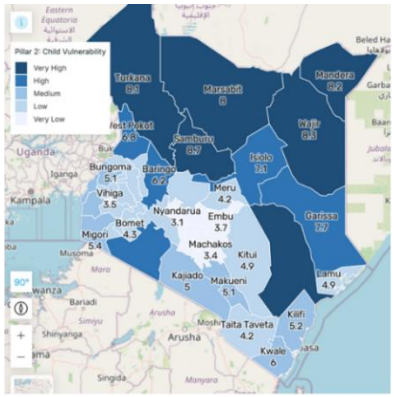
   These counties are among Kenya's most arid and water-insecure, with communities heavily dependent on the river for livelihoods and pastoralism. Recurrent droughts, floods, and conflicts over scarce water resources make them disproportionately exposed to climate and environmental shocks.

   Furthermore, the target counties are among those with the highest vulnerability and poverty indicators of the country.

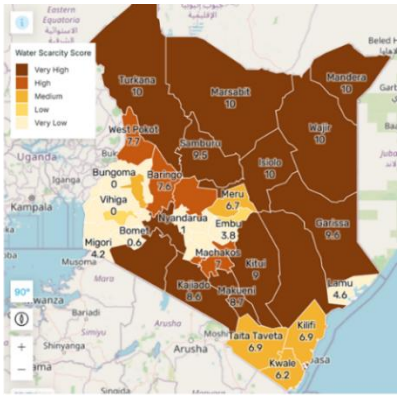
   All of this is expanded upon in section I.A.1 (page 5) of the full proposal. The vulnerability and exposure, as well as the combined risk is further described in section II.B.4 (p. 41), specifically Figure 17 (pasted below too). From the left map it becomes clear that the target counties have the highest composite risk of the Ewaso Ny'iro basin due to their very high exposure and vulnerability



Composite risk index per county in Kenya



Composite child vulnerability in Kenya per county



Exposure to water scarcity in Kenya per county

2. **Targeted impact within budget constraints**

   The program's USD 20 million budget is not sufficient to cover the entire basin with impactful interventions. Concentrating resources on these four counties allows for higher impact, rather than spreading interventions too thinly across all 10 counties.

3. **Alignment with government priorities**

   The focus counties were selected in consultation with the Ministry of Water, ensuring alignment with national priorities.

4. **Integration with UN JP on water and plans for scale up through GCF**

   This project is part of a broader consortium of Government and UN partners under the Joint Program (JP) on Water, which addresses water issues in Kenya holistically. Some projects under this JP focus on upstream challenges in the Ewaso Ng'iro Basin, complementing the downstream interventions of this program.

   The current AF project is also intended as a stepping stone to access GCF funding in the future, which could enable expansion to additional counties, including upstream areas.

Q2

Rangelands Restoration initiatives: *The partner referenced livestock movement in the proposal. However during droughts where problems emerge, Counties like Isiolo and Samburu becomes a strategic pasture and water reserve areas. Animals move to these Counties to access pastures and strategic boreholes. As much as rangelands restoration activities are implemented in the target Counties, not focusing on areas where most resource conflicts emerge because of animal influx, would be a futile journey. The program needs to take into consideration the conflict dynamics, the cultural differences and different natural resource management processes in place which is not homogenous in all the selected and neighboring Counties.*

Q2 answer

Recognizing the need for better governance of rangelands and related resources, the project will establish and strengthen (where already existing) community-based rangeland management committees. These committees will develop and implement rangeland management plans that promote sustainable grazing (including deferred and rotational grazing), which helps to prevent migration. They will serve as formal natural resource use and governance bodies, working alongside the informal groups, such as those led by community elders. Furthermore, the project will strengthen inter-county rangeland management committees to manage shared grazing resources, safeguard critical ecosystems and reduce resource-use conflicts. This will strengthen collaboration with neighbouring counties through inter-county dialogue forums, joint planning and alignment with existing structures including peace committees and cross-border grazing agreements. Lessons from successful models of community-led rangeland governance, such as the Dhedha Councils in Isiolo will be leveraged to guide the adoption of best practices and governance frameworks for these committees.

Further, existing grazing and migration routes for the respective counties will be mapped out in consultation with the target beneficiaries. This will be critical as it will inform the design of restoration interventions that support sustainable livestock management by balancing grazing pressure, ensuring access to forage, water and reducing natural resource use conflicts (between pastoralists, farmers and wildlife conservation

areas). These maps are also expected to contribute to guiding infrastructure planning and siting to avoid disrupting critical corridors and support disaster preparedness by securing pathways for movement during droughts, floods or conflicts. Rangeland management committees will monitor these routes to enable adaptive management, prevent encroachment, improve conflict management and resolution and guide investment decisions.

Q3

Anticipatory actions: *The proposal provides details on the importance of early warning information and its importance in enhancing the capacities of Counties to take early actions. However the main challenge in the selected Counties is not information or capacity based on our current programmes in those Counties. In my opinion the problem is resources, especially the Government commitment towards DRR measures and budgeting for early actions and emergency response. In my opinion there should be a balance between strengthening early warning information dissemination and early actions, especially from Government side for sustainability. BTW many partners have supported the MET department (including Swiss Meteo) but the problems comes back to resources and commitment from the Government at County level.*

Q3 answer

We fully agree with the need for strengthened capacity and budgeting at the county level. To address this, the project has a specific *output 3.3 -"County budgeting process for Anticipatory Action strengthened"*- UNICEF has experience in supporting other counties in this already, where they helped and advocated with counties to allocate the mandatory 2% of their budget to DRM. Furthermore, Output 3.2 and specifically *activity 3.2.2 - Review and improve triggers and thresholds for AA in county Anticipatory Action Plans and integrate (child) vulnerability data*- have a strong county focus too. This is made possible through the strong county presence and working relationships with the county government that NEMA, WFP and UNICEF have and maintain, both in development and preparedness context but also in emergency context.

Still, significant gaps exist in early warning systems, particularly for floods, and inadequate attention to children's vulnerabilities. There is also limited attention given to the best way to communicate early warnings to last mile communities. All this is addressed in the other outputs of component 3.

Q4

Private investments: *In the proposal document, there is mention of private investors to be leveraged for the program, however the "how" is not explained in details. How do they plan to engage private sector in livelihoods and ecosystem restoration and what is their approach? There are already some examples in the Counties they have chosen. Some have been positive and others led to community unrest due to land use and access, it will be important to get practical examples on how they plan to engage with private sector on this matter.*

Q4 Answer

The project will develop a clear private sector engagement strategy focusing on; co-investment in rangeland restoration, value chain development for livestock and non-livestock products, and market linkages to enhance livelihoods. Beekeepers involved in revegetation and soil and water conservation will partner with vetted private companies under agreed quality standards and long-term offtake contracts. This ensures that honey is aggregated and purchased at competitive prices. The same approach applies to gums and resins, where producers will benefit from structured markets. In addition, opportunities in native grass seed and hay enterprises will be promoted through community seed banks and contract production, supplying private buyers including organizations within the landscapes, with consistent raw materials while

guaranteeing reliable markets for participating households. The Farmer Service Centre (FSC) model will be leveraged on to support with aggregation and marketing of the produce. FSCs are essentially rural agri-preneurs (individual or group) that provides essential first and last mile services for agro-pastoralists. They form an entry point through which bundled essential services and products by private and public actors are made available to farmers. These products and services include farm inputs, extension services, post-harvest handling solutions, mechanization services, financial services, produce aggregation, and marketing.

Q5

Capacity building: *The proposal mentions how it will engage professional drillers in strengthening their capacities. From my understanding the private companies who are drilling the boreholes are not necessarily from the region. So how are they planning to organize this sector and stakeholders to ensure there are standards within the profession. What incentives will they use for this engagement which might be different for each stakeholder?*

Q5 answer

The activity to strengthen the capacity of professional drillers will be implemented at national level through the Kenya Water Institute (KEWI), who already offer a recognized Diploma in Water Engineering (drilling option), to provide tailor made short course for Continuous Professional Development (CPD) for Drilling Engineers / Master drillers and Drilling Supervisors / Inspectors, which is contextualized for the specific skill gaps in the project areas. This will entail Training Needs Assessment (TNA) in consultation with the Kenya Water Industry Association (KWIA), drilling rig owners association, County government in the target counties, the Water Resources Authority and the Ministry of Water, Sanitation and Irrigation to identify the unique challenges of drilling in the target counties, assess existing capacity and design training modules based on the drilling methodologies, depth and diameters of boreholes in the target areas. The TNA and design of the training will be informed by the Code of Practice for Borehole Construction in Kenya Here and draw on a recent national drilling landscape analysis developed by UNICEF with support of Word Bank. UNICEF already has a Long-Term Agreement (LTA) with KEWI and as such implementation can rapidly be undertaken. The project will leverage the interest of the different stakeholders to enhance participation and cooperation in the assessment, design, and delivery of the continuous professional development training:

- *County governments* – Frequent replacement drilling due to poor quality of borehole construction has increased budget allocation for water as such strengthening professional development will enhance the sustainability and reliability of boreholes.
- *Drilling companies* – Inadequate drilling expertise is associated with increased risks of borehole failure, loss of drilling tools, duration of drilling, cost of drilling and ultimately reduces drilling profit. Strengthening availability of well skilled master drillers/ drilling engineers and supervisors will make drilling profitable and attractive.
- *Drilling engineers/ Master drillers/ Supervisors* – Professional development will sharpen skills and build strong human resources base that can be deployed in the project areas. Increased practical skills will enhance the competitiveness of the drilling engineers / master drillers / supervisors for employment in the drilling market.
- *Water Resources Authority* – Strengthened professionalization will enhance compliance to existing regulations which will enhance protection of groundwater from pollution / contamination during drilling, over abstraction / depletion and improve sustainability.
- *Ministry of Water, Sanitation and Irrigation* - Continuous professional development in the drilling industry will improve water resources management and sustainable development as per the sessional paper No. 01 of February 2021 on national water policy part 5.1(4) “Strengthen capacity and training of water resources professionals, in the public and private sectors, to optimize the exploration and use of water resources, and to support sustainable development”.