

REPUBLIC OF KENYA MINISTRY OF WATER, SANITATION, AND IRRIGATION STATE DEPARTMENT FOR IRRIGATION COAST WATER SECURITY AND CLIMATE RESILIENCE PROJECT

MWACHE MULTI-PURPOSE DAM PROJECT IMPLEMENTATION PROGRESS MAY-JUNE 2024

The Mwache Multi-Purpose Dam Development Project is a priority investment by the Government of Kenya and a flagship project of Vision 2030. The project is being implemented by the Ministry of Water, Sanitation, and Irrigation (MoWSI) through the Coastal Region Water Security and Climate Resilience Project (CRWSCRP), funded by a World Bank credit of US\$255 million, with the Kenyan Government providing an additional US\$40 million for land compensation.

The dam site is located across the Mwache River at Fulugani village in Kinango Sub-County, Kwale County, approximately 22 km west of Mombasa. The Coast Water Supply Master Plan identified the dam as the most preferential, viable, and necessary long-term solution for water supply to Mombasa and Kwale counties.



Comparative photo of the Mwache Dam on completion

Mwache Dam Features:

- Purpose of Dam water supply and irrigation
- Type of Dam -Concrete
- Dam Height 84m,
- Crest Length 526 m,
- Effective Storage Capacity 127 M³
- Water Supply Capacity 86,000M³/day
- Construction Period 54 Months

PROJECT BENEFITS

- I. Economic Impact on Kwale County
- Employment and Wages:
 - From October 2023 to mid-June 2024, 57% (477 out of 833) of job positions were filled by Kwale County residents.
 - Mwavumbo/Kasemeni: 287 positions (96%).
 - Other areas of Kwale County: 190 positions

- Residents outside Kwale County: 365 positions
- o Total earnings for these positions amounted to **Ksh 55.8 million**, assuming a minimum daily wage of Ksh 500 per worker.

• Projected Earnings:

- By January 31, 2027, Kwale County residents are projected to earn Ksh 351 million, based on the cumulative employment of 674 local workers over the project's duration.
- In the FY2020/21, a total of 62 beneficiary CBOs from 3 pilot Wards in Kinango Sub- County (Kasemeni-22, Mwavumbo-20 and Samburu/Chengoni-20) received grants worth Kshs 22.5 million to support implementation of their respective proposed livelihood improvement activities.
- In the current FY (2023/24), 10 Water User Associations (WRUAs) and their affiliated CBOs will benefit from Ksh 46,500,000. In 2024/25, Ksh 134 million is earmarked to support 22 WRUAs. This investment will spur catchment management initiatives and economic activities (livelihoods).

Multiplier Effect:

o Increased wages lead to further economic activity and job creation through heightened spending, boosting local businesses and the overall economy.

• Economic Growth:

 The project is expected to enhance social and economic stability, increase local tax revenue, and stimulate growth in the tourism and hospitality sectors.

2. Community Benefits

• Employment Opportunities:

- The project provides substantial employment opportunities (674 positions) for residents, improving livelihoods and economic empowerment.
- Provision of farm inputs and irrigation infrastructure for households with access to water pans.
 This will increase employment in agricultural activities.

• Skill Development:

 Community members gain new skills and experiences, enhancing employability and long-term job prospects, enhancing crop and livestock production and fostering social cohesion and resilience.

• Living Standards:

 Better housing for Project-Affected Persons, improved healthcare with the construction of the Kasemeni Health Centre, and better education through the relocation and construction of three fully furnished schools with larger land sizes.

• Nutrition:

- Surveys of 207 households with water pans identified quick-win interventions such as:
 - Expanding irrigation from 250 to over 1000 acres, with some households already under irrigated production with support of the project.
 - Establishing Farmer Led Irrigation Demonstration (FLID) demonstrations in 10 subcatchments and supporting 70 farmers with irrigation kits and technologies.

Infrastructure Development:

- Construction of 10 temporary roads (A, B, C, D, E1, E2, F, G, H, J) with roads F and G substantially complete and road A under construction.
- Relocation and rebuilding of the Kasemeni police post and Mazeras clinic, with works scheduled to commence in July 2024.
- The project has earmarked US\$ 4 Million (Approx Kshs 520m) for community infrastructure works. The communities have previously been engaged at the village level and proposed projects.

3. Environmental Conservation

• Water Resource User Associations (WRUAs):

 Ongoing establishment and training of 22 WRUAs in catchment management, serving over 10,000 beneficiaries. • FLID demonstrations and Farmer Filed Schools (FaFFS) set up in 10 sub-catchments, with 16 farmer field school facilitators trained.

• Tree Planting:

 Planting of 39,189 trees by 5 WRUAs to restore the Mwache water catchment, with continued training and support for nursery operators and sustainable production practices.

Terracing:

o Terracing 2000 Kms of land to reduce soil erosion and sedimentation in the dam

4. Enhanced water supply

The dam will supply water to Kwale county through the connection at Kayambombo tanks that will provide up to 4,000 cumecs/day in Ngombeni, Waa, Checkpoint, Ndenyenye, Maganyakulo, Kombani. In addition, through the collaborative framework, Coast Water Works Development Agency will agree on other measures of enhancing supply to Kwale.

PROJECT COMPONENT

STATUS/UPDATES

CONSTRUCTION WORKS

Mwache Dam civil works and related infrastructure

Preparatory works:

Since the commencement of the Mwache works in Jan 2023, the Contractor has been undertaking preparatory works which include the development of the quarry at the Mazeras-Kinango Bridge, installation of aggregate crushing plant to produce aggregates from the quarry rock, batching plants to produce concrete mixes, grading of access roads, construction of the contractor's camp and site laboratory. All these facilities are substantially complete, and production and stockpiling of aggregates has commenced. The aggregates crushing plant will provide the construction materials and will be availed by July 2024 for the commencement of concreting works for the Lower Check Dam.

Status: Permanent Works

To date, excavation works, slope protection, and grouting have been ongoing in both the Main Dam and Lower Check Dam sites.

- Main Dam: The actual progress is 10.3% and these activities are scheduled for completion by Oct 2024 in readiness for the start of concreting works by Nov 2024. The construction of the base is completed, construction of the dam walls ongoing
- **Lower Check Dam**: The actual progress is 17.9%. The excavation of the dam foundation and stilling basin foundation is complete.
- Base Camp and Administration Building: Construction of the Base Camp and Administration Building -14 junior and 12 senior houses are above the ground level and four at roofing stage.
- Police Post: Relocation of the existing unihuts is underway to pave the way.
 The layout plan has been discussed and agreed with the Police post and the contractor is set to start works and expected to be completed by 29 June 2025.
- **Mazeras Clinic:** The layout plan has been discussed and agreed with the County Health department and set to be completed by September 2025.
- Roads: Grading for most of the access roads for use by the Contractor has been completed. Diversion works at the Mazeras- Kinango Bridge have also been completed and traffic diverted to pave the way for quarry development.

SAFEGUARDS ACTIVITIES

Land Acquisition

The project is acquiring approximately 1,360Ha that belong to 1,394 households divided into Priority Area I- the lower check dam site and quarry site areas, part of which is in Mwavumbo Group Ranch, and the main dam site and some operational areas. Priority Area 2 - part of the main dam operational and reservoir areas and Priority Area 3 - part of the main dam operational and impoundment areas and part of the lower check dam reservoir areas, silt pile, and various access roads.

Status:

- **Priority Area 1:** 100 % all the required 288 parcels have been compensated and Project Affected Households (PAHs) relocated.
- **Priority Area 2:** 99 % all the required 418 parcels have been compensated and Project Affected Households (PAHs) relocated with only a few cases being finalized for compensation.
- **Priority Area 3:** The acquisition of the required 968 parcels is currently in progress. The National Lands Commission (NLC) has conducted inspections for all 968 parcels (100%). Between September and December 2023, 909 (94%) parcel owners participated in the inquiry process, while 6% did not attend but this will not impede the compensation process for all 968 parcels. However, the NLC has prioritized compensating beneficiaries in 72 parcels located near the crushing plant to safeguard the affected households from potential exposure to dust and other health hazards once the crushing plant becomes operational. Issuance of awards of the prioritized beneficiaries has started on 6th June 2024. Valuation of the remaining P3 Parcels and the Valuation Team is finalizing valuation report for presentation to the Ministry of Water, Sanitation, and Irrigation.

Relocation of Graves and Shrines

The project's Resettlement Action Plan (RAP) ensures that graves and shrines affected by the project are compensated, relocated, and handled with care and respect. The following steps are undertaken:

- Informing and obtaining consent from family members,
- Allocating budgets to cover all funeral rites expenses,
- Conducting the exhumation of graves thoughtfully,
- Obtaining court approval through legal procedures,
- Consulting with elders for guidance on the cultural process of relocating graves and shrines, and
- Providing compensation to affected families in accordance with cultural rites, along with covering associated costs.

Status: Overall, 52% of the graves and shrines have been compensated and relocated.

- **Priority Area 1:** 100% All the 526 targeted graves, and 40 shrines have been compensated and relocated.
- **Priority Area 2:** 99.5 % 590 out of 593 graves and 4 out of 4 shrines have been relocated.
- Priority Area 3: The Cultural Heritage Management Plan (CHMP) is under review
 to pave the way for validation, valuation, and issuance of Awards of graves by the
 NLC. The revised CHMP has been shared with the World Bank for approval to
 pave way for disclosure to the community. The process will be completed by end
 of June 2024.

Construction of temporary housing

The RAP provides temporary housing to Project Affected Households (PAHs) if they can't move within the mandated three-month notice period and need shelter until they complete

the construction of their permanent homes. The project has so far constructed 14 housing units, but none have been occupied yet.

All the PAHs who have been compensated have completed their permanent homes and resettled.

Relocation of affected institutions

In preparation for the construction of the Main Dam, three (3) public schools—Nunguni and Fulugani primary schools, and the Mwache Bridge Early Childhood Development Education (ECDE) centre—were identified for complete displacement. The schools will be relocated to newly acquired land facilitated by the Ministry of Water & Sanitation and Irrigation. The relocation process has been conducted in consultation with the affected schools, students, the local community, and relevant stakeholders. The Ministry of Education, in collaboration with the Ministry of Water & Sanitation and Irrigation (MoWSI), led the development of initial designs for the new schools.

Status:

- The original school designs have been modified to align with the allocated budget of Ksh 450 million. Nonetheless, the revised designs are an improvement of the current schools and provide additional enhancements such as increased land acreages and improved structures.
- The Variation Order for the approved budget was signed between MoWSI and the main contractor Sinohydro Ltd in February 2024
- Following, consultative meetings to disclose the approved designs were conducted in the three schools' Board of Management, teachers, and the local community.
- In March 2024, preparation works for the three schools began but were halted by community members due to concerns about changes in the construction designs. Subsequently, two stakeholder meetings were held to involve local leadership in discussions about the design changes:
- On April 18, 2024, a meeting took place between the PS State Department for Irrigation and Kwale County leaders.
- On 10th May 2024, another meeting included the MoWSI Project Management
 Unit and various stakeholders such as Kwale County leaders, the MP for
 Kinango, the Ministry of Education (MOE), the Ministry of Public Works
 (MOPW), the Ministry of Water, Sanitation, and Irrigation (MoWSI), Members
 of County Assembly (MCAs), County Commissioners (CC), Deputy County
 Commissioners (DCC), Assistant County Commissioners (ACC), Community
 Liaison Committees (CLC), Chiefs, Assistant Chiefs, representatives of Kaya
 leaders, and community opinion leaders.
- Despite these meetings, no conclusive decision was reached regarding the resumption of construction by the contractor.
- Another meeting between the PS State Department for Irrigation and Kwale County leaders is scheduled for June 10, 2024.
- A follow-up meeting with Kwale County leaders is scheduled for 24th June 2024.
- A community meeting for all stakeholders led by the Ps Irrigation, and Kwale leaders is scheduled for 25th June 2024.

Livelihood Restoration Plans

As part of the Resettlement Action Plan (RAP), the project offers a Livelihood Restoration Program (LRP) to ensure that the livelihoods of Project-Affected Persons (PAPs) are reinstated following resettlement, particularly focusing on households with vulnerable

individuals and families who may struggle with the transition. This includes elderly individuals (over 70 years old), those with physical disabilities, individuals suffering from chronic illnesses, widows, and children under 18 years of age.

Status:

Preparation of Household Livelihood Restoration Plans (LRPs):

- Priority Area I: 584 LRPs (701 PAHs) has been completed.
- Priority Area 2: 536 LRPs (869 PAHs) has been completed.
- **Priority Area 3:** 1254 LRPs have been completed.
- All (100%) of the PAPs in Priority 1 and Priority 2 have successfully resettled in other places and they have replaced their houses and lost assets.
- The procurement process for the Livelihood Consultant is ongoing, and the
 consultant is expected to commence work by July 2024. They will be responsible
 for implementing interventions aligned with the proposals of the Project Affected
 Persons (PAPs) livelihood restoration plans, focusing on agriculture/crop
 restoration and development, livestock development, enterprise-based livelihood
 strategies, and social protection. Additionally, the consultant will play a crucial role
 in supporting the implementation of community infrastructure projects.
- Compensation for loss of livelihood along the river has been done with a total number of 74 beneficiaries compensated where 47 are groups and the rest are individual claimants.

Grievance Redress Mechanism

To address potential grievances arising during the RAP implementation, a Grievance Redress Management (GRM) system has been established. This system offers transparent and traceable procedures for reporting any grievances. The GRM is structured in three levels: Village, Sub-location (including Bofu, Munyenzeni, Chigato, Mazeras, Mwatate, and Matumbi), and Sub-County.

Overall Grievances: Out of a total of 347 RAP implementation grievances received 326(94%) had been resolved: land ownership disputes are the majority (43 %) followed by compensation grievances 29%, and succession-related grievances 12%.

Village-Level Cases: All 154 reported cases have been successfully resolved, accounting for a 100% resolution rate while 155 out of 176 at sub county level have been resolved giving resolution rate of 88%.

Construction Grievances: The sub-county Grievance Redress Committee (GRC) has received and commenced hearings of 25 disputes related to construction where 13 have been resolved and 12 are ongoing. These grievances encompass environmental concerns such as cracking of houses due to blasting, dust pollution, safety issues including road safety, and health matters. Additionally, social issues like access to Kaya Forest, labor disputes, damaging of cultural artefacts during blasting, and the felling of baobab trees on land allocated for Kaya activities are also included in these grievances.

Other Disputes: Various other disputes were resolved and closed including the contractor's use of community roads, disputes over the utilization of available water resources between the contractor and the community, underpayment of workers, allegations of corruption, subcontractor tendering disputes, arbitrary employment and dismissal issues, and concerns related to community representation in administrative posts within the project.

Remedial Actions: In response to these grievances, the committee requested the contractor to take specific actions. These included measures such as sprinkling water on roads to reduce dust, reworking site access roads, enforcing speed limits, installing road

	signage, deploying traffic marshals, conducting community sensitization, mapping out and			
	constructing an access road to the Kaya Forest, and addressing emerging labor and			
	employment grievances in collaboration with other stakeholde	ers.		
Gender-Based	To address the risk of exploitation and abuse during the RAP	and project	t implementation,	
Violence/	a consultant firm, WomanKind Kenya, has been engaged to provide services. These services			
Sexual	include implementing prevention measures for the community and project team against			
Exploitation	Gender-based Violence (GBV), Sexual Harassment (SH), and Sexual Exploitation and Abuse			
and Abuse/	(SEA). Additionally, WomanKind Kenya enhances the project team's capacity to identify and			
Sexual	manage GBV risks, understand the Project Code of Conduct, and establish a GBV-sensitive			
Harassment	Grievance Redress Mechanism, while ensuring that GBV prevention and response services			
	are accessible within the project area.			
	Status:			
	WOKIKE addressed Gender-Based Violence/Sexu	al Exploita	tion and Abuse	
	(GBV/SEA) and Sexual Harassment (SH) issues.	-		
	 Conducted training of Mwache project managers drawn from Client (PMU), PIU, CDA, Consultant/NIPPON KOEI MIBP, Contractor Sinohydro, Conveyance Lawyer (AKIDE) and RIC consultants FRONTMAN. 			
	 Contractor/Sinohydro sensitization reached 521 National and 30 females). Categories sensitized included of 		`	
	contractors and food vendors.			
	 A total of eighty-two (82) Contractor/Sinohydro Expa were trained. The expatriates are supervisors and tec campsites. 	hnicians of 1	the Contractor	
	Information Communication Education (IEC) materials specifi		• •	
	were produced and displayed in eleven (11) sites. The mat		-	
	workers on prevention and response measures, expected typ	e of behavio	our and where to	
	report incidences of GBV/SEAH.			
Conveyance	To facilitate land acquisition and compensation processes, MoV		_	
	of Akide Legal Consultants. Their responsibilities include man			
	Project Affected Persons (PAPs), drafting land lease agreer			
	measures, and offering legal support for the preparation and			
	sale agreements needed by PAPs acquiring new resettle			
	displacement and conveyancing services to ensure PAPs get	titles deed	s to secure their	
	ownership and resettlement land.			
	STATUS UPDATE:	T		
	Succession 21/5/2024	No	Total	
	Total No. of PAPS attended to as at 31/5/2024		230	
	Total No. of Succession Grants processed as at 31/5/2024	44	227 44	
	P2	41	41	
	P3 (Batch I)	79	78	
	P3 (Batch 2)	66	64	
	Total Pending Succession Cases awaiting verification after P3 NLC		3	

Total No. of PAPS (payees) attended to as at 31/5/2024

Total Number of PAPs registered with Akide & Co. for Sale Agreements

SALE AGREEMENTS

No.

Total

308 280

Total PAPS with executed Sale Agreements and surveyed land		131
PI	120	
P2	11	
P3	Awaiting	
	compensation	
Total Pending Sale Agreements based on registered PAPs in P1& P2		149

- Data collection is ongoing for Sale agreements in Priority area 1 & 2.
- PAPs with executed sale agreements will begin the Title processing phase under the Conveyancing Services contract that has just concluded its Inception stage.

Key Stakeholders Engagement

Stakeholder engagement is essential for implementing the RAP and ensuring project success, fostering a positive relationship between the project and stakeholders. Various players conduct engagement based on the situation:

I. Contractor's Stakeholder Engagement (SE)

- Task-Related SE: Regularly informs neighboring communities about ongoing project activities, such as rock blasting at the quarry site, and encourages them to avoid project sites due to potential risks. This includes using designated community roads and avoiding grazing at the project site.
- Community Sensitization: Informs the community about the contractor's activities and addresses their concerns.
- Emergency Response: Periodically conducts community barazas to educate them on emergency response, such as the April 2024 session on potential floods during the rainy season in the Mwache river area.

2. General Stakeholder Engagement

- Radio Talk Show: Aired on May 2, 2024, to raise project awareness in Kwale
 county and inform the public about job opportunities. Similar talk shows have
 been scheduled from July to December 2024 to address different project
 components.
- Chiefs' Barazas: Local leaders held meetings to address community concerns raised by the project team, with two barazas discussing community issues.

3. Resettlement Implementation Consultant's Engagement

- Public Participation Forums: Organized to engage PAPs and other stakeholders at strategic locations.
- Community Engagement Meetings: Four meetings held since January 2024, including:
 - 1. Meetings at three schools undergoing relocation to disclose approved designs.
 - 2. A Community Baraza with 667 participants to address concerns about school design changes, the Livelihood Restoration Plan (LRP), and land compensation.
 - 3. Quarterly progress meetings with the Community Liaison Committee (CLC).
 - 4. Daily engagements with PAPs to address resettlement and emerging concerns.

	5. Continuous consultations with the National Lands Commission (NLC) regarding land acquisition and follow-up on delayed payments	
Irrigation and Watershed Catchment Management	The project has realigned its focus from the initial Irrigation Demonstration Scheme in Pemba to a more comprehensive, catchment-centric approach, utilizing a variety of water resources. The Farmer Led Irrigation Demonstration (FLID) initiative aims to increase irrigation from 250 to over 1000 acres, with 60 acres being prepared for irrigated production this year. Additionally, 70 farmers with household pans have received irrigation kits and support, and FLID demonstrations are being set up in 10 sub-catchments. Ten (10) Water Resource User Associations (WRUAs), have been established, serving over 10,000 beneficiaries, and efforts include setting up Farmer Field Schools (FFS) and training 16 FFS facilitators. The project aims to ensure food security, improve nutritional status, and reduce poverty by boosting agricultural production and enhancing income-generating opportunities. It also aims to optimize water resources for irrigation through the provision of storage facilities, drip irrigation kits, and solar pumping systems, with FLID demonstration sites showcasing these interventions. Capacity building is a significant focus, with initiatives aimed at enhancing the knowledge and skills of small-scale rural producers in irrigated production, processing, and marketing, utilizing the WRUA platform. Tree planting efforts are also underway, using indigenous species from community nurseries, with ongoing support and training for nursery operators.	
Kwale Water Development	 Sanitation status: ODF Certification 27 villages were targeted for open defecation free (ODF) initiatives. Out of these, 25 villages were declared ODF by a third-party certifier between 2017 and 2019. 2 villages were verified ODF by sub-county verifiers. The remaining villages are undergoing post-triggering follow-up. 20 motorbikes and 200 bicycles were procured and distributed. 	

PICTORIALS



Main Dam Left Abutment: Excavation and Slope Protection Completed



Main Dam Right Abutment: Excavation and Slope Protection Ongoing



Lower Check Dam: Concrete works at the stilling basin



Main Dam: Aggregate Crushing Plant



Ongoing Construction of the project administration offices



WRUA members terracing one of the members farms to control soil erosion and reduce sediments to river Mwache



Kwale County Development Support – Water Supply Investments: Flocculation, sedimentation, Filters



Kwale County Development Support: Backwash lagoon blinding concrete