



ENVIRONMENT AND SOCIAL MANAGEMENT PLAN (ESMP) FOR THE REHABILITATION OF KAIBOCHE DAM

THARAKA NITHI COUNTY

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Background information

Kaiboche concrete dam is located at Chiakariga ward of Tharaka Nithi County at GPS Coordinates, S 0.290618, and E37.923973. The dam was constructed with assistance from Mount Kenya East Pilot project by the community several years ago. The dammed water was targeted to cater for the livestock within the area. There are no reliable sources of water within the vicinity which provided the rationale for the dam location.

The need to rehabilitate the dam was occasioned by siltation that has greatly reduced the dam storage capacity to almost 2,000 M³. In the process of rehabilitation of the dam several activities are going to be undertaken, among them:

1. Evaluation of the dam structural integrity and survey
2. Excavation and removal of the soil
3. Fencing to secure the dam
4. Reinforcement of the earth dam walls and compaction

The proposed activities will impact on the environment in different ways and that's why it is important to develop an EMP to guide the process of implementation. This EMP was developed in consultation with the community members of the group

Environmental and Social Management Plan (ESMP)

Issue	Impact	Mitigation	Responsibility	Cost (Kshs)	Timeframe
Public health	Increased incidences of vector borne diseases like malaria due to water stagnation at the dam	<ul style="list-style-type: none"> • Health education on malaria prevention e.g. use of nets • Introduce fish into the dam to feed on mosquito larvae(<i>gambusia</i>) 	<ul style="list-style-type: none"> • County government through KCSAP 	100,000	During the project operational phase
Pollution	Air Quality	<ul style="list-style-type: none"> • During excavation dust shall be suppressed by ongoing water spraying and/or installing dust screen enclosures at 	<ul style="list-style-type: none"> • Contractor 	50,000	During project implementation period

		<ul style="list-style-type: none"> • site • No open burning of waste material at the site • There will be no excessive idling of vehicles and machinery at site 			
	Water Quality	<ul style="list-style-type: none"> • Establish appropriate erosion and sediment control measures to prevent excessive water turbidity • Control the invasion of algae – introduce appropriate fish species Nile tilapia • Avoid oil spills 	<ul style="list-style-type: none"> • Contractor • County government 	50,000	During implementation period and after
	Waste management	<ul style="list-style-type: none"> • Waste collection and disposal accordance with waste management regulations • Maintain records of waste collected and disposed. • Whenever feasible the contractor will reuse and recycle appropriate and viable materials. 	<ul style="list-style-type: none"> • Contractor 	20,000	During implementation period

Safety	Noise	<ul style="list-style-type: none"> • Excavation and traffic noise will be limited to restricted times • During operations the engine covers of generators, air compressors and other powered mechanical equipment shall be closed. 	<ul style="list-style-type: none"> • Contractor 	20,000	During implementation period
	Exposure to accidents and falls – workers and public traffic	<ul style="list-style-type: none"> • Fence off the dam area • Restrict access to authorised persons only • Place warning signs on risky areas 	<ul style="list-style-type: none"> • Community • Contractor 	100,000	During implementation period and after
Soil erosion	Dam siltation	<ul style="list-style-type: none"> • Construct a siltation pan on the on the inlet path • Regularly scoop off the sand from the sedimentation pan • Stabilise the dam walls with grass • Ensure the dams walls are well compacted • Install water and soil conservation structures in the dam catchment area and water ways 	<ul style="list-style-type: none"> • Community • Contractor 	50,000	During implementation period and after.

Flooding	Loss of life and property	<ul style="list-style-type: none"> • Construct a well-designed spill way • Ensure there is no settlement downstream on the flow path • Enforce dam building standards to ensure integrity of the dam walls 	<ul style="list-style-type: none"> • Contractor • Community 	100,000	
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Conclusion

The analysis of the impacts and mitigation measures of Kaiboche concrete dam as detailed above indicates that the project will have minimal impacts on the environment since it's a small project. The environmental management plan has to be adhered to.