



**WATER AND SANITATION SERVICES IMPROVEMENT PROJECT  
ADDITIONAL FINANCING (WaSSIP AF)**

**RESETTLEMENT ACTION PLAN SCREENING REPORT FOR  
CONSTRUCTION OF BOREHOLES WITHIN TANATHI  
WATER SERVICES BOARD**



**September 2015**

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## **1.0 INTRODUCTION**

### **1.1 Background of the Project**

The Government of Kenya with the support from the World Bank has been implementing the Water and Sanitation Service Improvement Project (WaSSIP). The Government has now secured further financing from the World Bank under the Water and Sanitation Service Improvement Project Additional Financing (WaSSIP AF) project that was made possible because of the satisfactory implementation of the ‘original’ WaSSIP and its contribution to water services improvement. In order to consolidate gains so far realized and to scale up improvement of water services, WaSSIP AF will focus development of new water sources, rehabilitation and expansion of water and sanitation (WSS) infrastructure including drought response activities and capacity building for water sector institutions supported by the Project.

The Project’s development objectives are:

- a) To increase access to water supply and sanitation services; and
- b) To improve the water and wastewater services in the areas served by Athi Water Services Board, Lake Victoria North Water Services Board, and Coast Water Services Board.

Part 1 of the WASSIP AF Project involves Support to the Athi Water Services Board (AWSB). This component supports the rehabilitation and extension of water supply systems, the development of additional water sources for Nairobi, drought mitigation measures, and improvements in wastewater collection and treatment facilities in the jurisdiction of the Athi Water Services Board (AWSB). Technical assistance will also be provided to the AWSB and its water services providers, the Water Services Regulatory Board, and the Water Appeal Board.

In the implementation of the WaSSIP AF Project and other projects funded by Government of Kenya and other development partners, AWSB is currently drilling and equipping twenty one (21 No.) boreholes within Tanathi Water Services Board (TAWSB) area of jurisdiction. The boreholes are within Kajiado, Kitui, Machakos and Makeni. They include Emboliol, Kajiado Town, Kibiko, Mashuru, Namanga Town, Namelok Paranai Community, Kangondi, Katse, Kauma, Kithanake, Kwa Wamasai, Mbitini, Mekyuyi, Nduumoni, Kanyongo, Kikumbulyu,

Kwawanzilu, Kyua (Kyaani), Malili Township and Matooi boreholes.

## 1.2 Project Location

The twenty one boreholes are spread within four counties within TAWSB as follows:

- Kajiado: 7 No. Boreholes
- Kitui: 8 No. Boreholes
- Mackakos: 3 No. Boreholes
- Makueni: 3 No. Boreholes

The breakdown is as shown in Table 1.1.

**Table1.1 Location of the proposed boreholes**

No	County	Borehole	Location
1.	<b>Kajiado</b>	Emboliol Borehole	The proposed borehole site is located in Emboliol area of Mashuru district in Kajiado County.
2.		Kajiado Town Borehole	The proposed borehole site is located in Oloiyangalani area 8.6 kilometers West of Kajiado Town in Kajiado Central District, Kajiado County
3.		Kibiko Borehole	The borehole site is located in Kibikoi area of Kajiado north district in Kajiado County.
4.		Mashuru Borehole	The proposed borehole site is located in Mashuru town area of Mashuru district in Kajiado County.
5.		Namanga Town Borehole	The proposed borehole site is located in Namanga township area of Kajiado central district in Kajiado County
6.		Namelok Borehole	The proposed borehole site is located in Namelok area of Mashuru district, Kajiado County.
7.		Paranai Community Borehole	The proposed borehole site is located in Paranai area of Mashuru district in Kajiado County. The project area is generally used for livestock keeping being the main economic activity of the local Maasai community.

No	County	Borehole	Location
8.	<b>Kitui</b>	Kangondi Borehole	The proposed borehole site is situated at Kangondi area of Kitui West District in Kitui County. The project area is generally used for small scale subsistence cropping especially maize and other food crops with some horticultural farming activity.
9.		Katse Borehole	The proposed borehole site is situated at Katse Township Area of Mumoni District, Kitui County.
10.		Kauma Borehole	The proposed borehole site is situated at Kauma Area of Matinyani District, Kitui County.
11.		Kithanake Borehole	The proposed borehole site is situated at Kithanake area in Kitui County.
12.		Kwa Wamasai Borehole	The proposed borehole site is situated at Ilalambyu Area of Migwani District, Kitui County.
13.		Mbitini Borehole	The proposed borehole site is situated at Mbitini Area of Kisasi District, Kitui County.
14.		Mekyuyi Borehole	The proposed borehole site is situated at Karia Katune area in Kitui County.
15.		Nduumoni Borehole	The proposed borehole site is situated at Nduumoni area in Kitui County.
16.	<b>Machakos</b>	Kanyongo Borehole	The proposed borehole site is situated at Kanyongo village, Kyangala Location, Kalama, Machakos County.
17.		Kwawanzilu Borehole	The proposed borehole site is situated at Kwawanzilu secondary school in Masinga district of Machakos County.
18.		Kyua (Kyaani) Borehole	The proposed borehole site is situated at Kyua area in Yatta sub county, Machakos County.
19.	<b>Makueni</b>	Kikumbulyu Borehole	The proposed borehole site is situated at Kikumbulyu location, Kibwezi sub-county in Makueni County.
20.		Malili Township Borehole	The proposed borehole site is situated at Malili Township in Makueni County.
21.		Matooi Borehole	The proposed borehole site is situated at Matooi area in Makueni County.

### **1.3 Objectives of the RAP Screening Report**

The main objective of this screening process is to identify and highlight the resettlement and social issues that need to be taken into account in the planning, design and drilling of the twenty one boreholes in Kajiado, Kitui, Machakos and Makueni Counties. This process will set the ground for further reports that may require to be done especially to ensure compliance with World Bank safeguards. Further, this screening will assist in determining if this project requires a full Resettlement Action Plan done before its implementation. The aim is to support the sustainable implementation of the planned borehole projects. The screening is carried out at an early stage of the project (i.e., pre-feasibility), in accordance with the requirement for World Bank financed projects.

## 2.0 PROJECT DESCRIPTION

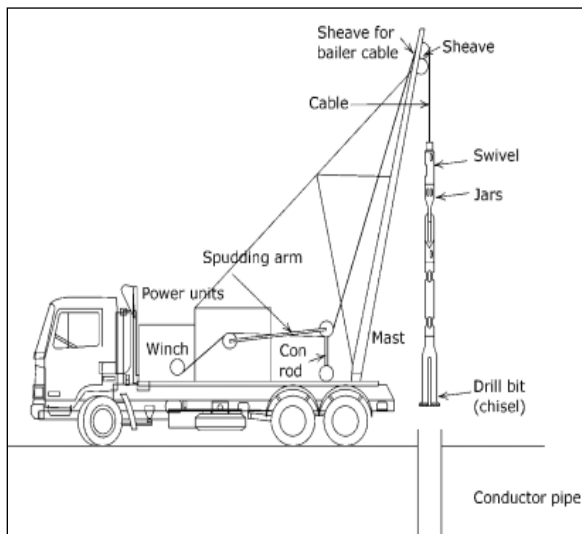
The goal of the project is to improve access to portable water for the people of Kajiado, Kitui, Machakos and Makueni Counties. With the completion of the project, the increased amount of water will lead to increased number of water connections to the community. Increased access to water is also expected to boost livestock production leading to improved livelihoods.

### 2.1 Project Implementation

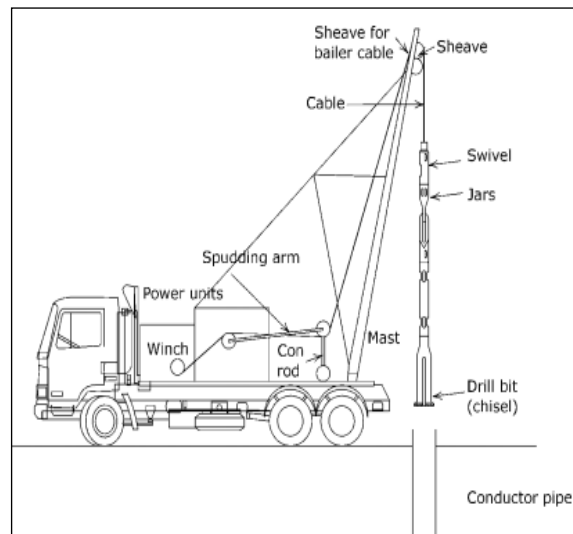
The proposed project will involve construction/drilling and casing of the borehole, test pumping, water quality analysis and installation of pump set. It also involves construction of storage tanks and in some instances laying of water pipelines.

### 2.2 Borehole Drilling

Boreholes may be drilled with either percussion (cable-tool) or rotary plant: the former have the advantage of lower cost, but the disadvantages of longer time at site, less flexibility in borehole development, and the greater possibility that temporary casing will be needed to hold back heaving or unstable formations.



**Figure 3.1a:** Percussion drilling rig



**Figure 3.1b:** Rotary drilling rig

In percussion drilling, a string of heavy cutting tools is suspended on a cable which passes over a sheave (pulley) mounted on a mast, beneath a sheave on the free end of a spudding arm (which

imparts the reciprocating motion to the tool string), over the sheave at the base of a spudding arm, and is then wound on a heavy duty winch. The cable is a non-performed, left-hand lay, steel-wire rope. The left-hand lay of the cable tends to impart a slight rotation to the tool string and to tighten the right hand threaded joints of the string. Power is normally supplied by a diesel engine. The whole rig can be mounted on a truck or trailer and is quite mobile.

Rotary plant is more expensive to use, but it is considerably faster. Rigs with a compressor and mud pump allow efficient development (i.e. jetting and air lifting), which percussion rigs cannot emulate. In addition, approximate yields may be estimated during drilling, from the air-blown volume of water and cuttings (when air rotary techniques are used).

UNICEF-WES, OXFAM and DEMOTECH deploy a PAT 301 rig for work in the northern Kenya. Despite its small size, this machine generally has enough capacity to drill boreholes of the depth and diameter being considered in this study. However, considering its limited capacity, this rig may have difficulties in penetrating fresh to nearly fresh basement rocks.

### **2.3 Testing**

Once the borehole has been drilled, testing is done in order to:

- (i) Confirm yield, efficiency and performance;
- (ii) Investigate water quality;
- (iii) Assess whether abstraction can be sustained in terms of yield and quality;
- (iv) Identify potential impacts; and
- (v) Characterize the aquifer properties such as transmissivity, hydraulic conductivity and storage.

### **2.4 Borehole Development and Cleaning**

This shall be carried out upon completion of the drilling and installation of casing/screens until the water is completely free from fine particles. This will remove the native silts, clays and drilling fluid residues deposited on the borehole wall and adjacent portions of the aquifer during the drilling process. Cleaning shall be carried out by airlift pumping, surging, backwashing or jetting.



### 3.0 LEGAL AND REGULATORY FRAMEWORK

#### 3.1 Legal Framework

One of the principles of the Resettlement Action Plan (RAP) is that resettlement planning should adhere to national policies and legislation, and international best practices. This section provides a brief overview of the Kenya laws and provisions related to land use, planning, acquisition, management and tenure, and more specifically the legislations related with land expropriation or acquisition, land valuation and land replacement. It also provides the World Bank Policy on resettlement. The legislative frameworks relevant to the project are discussed in Table 3.1 below:

**Table 3.1 Legislative and Policy Framework**

Kenyan Laws	
Legislation	Relevance
Land Act 2012	This Act gives effect to Article 68 of the Constitution, to revise, consolidate and rationalize land laws; to provide for the sustainable administration and management of land and land based resources, and for connected purposes.
Environmental Management and Co-ordination Act 1999 (EMCA)	Development in relation to the following provisions: <ul style="list-style-type: none"> <li>• Environmental impact assessment;</li> <li>• Environmental Audit and Monitoring, Environmental Quality standards and environmental protection orders;</li> </ul>
Environment and Land Court Act, Cap 19 of 2011	Covers arbitration on issues relating to the environment or to the use and occupation and title to land.
World Bank Policies	
Legislation	Relevance
Involuntary resettlement (Operational Policy, OP 4.12)	Related to land acquisition and resettlement in the event that private land will be required for the drilling of the boreholes.
Environmental Assessment: Operational Policy, OP 4.01	OP 4.01 covers impacts on the natural environment (air, water and land); human health and safety; physical cultural resources; and trans-boundary and global environment concerns.

#### 3.2 Institutional Framework

During the RAP preparation process, a number of key institutions are critical to both preparation, and implementation of the RAP. This is summarized in Table 3.2 below.

**Table 3.2 Statutory Institutions with Roles in the RAP process**

<b>Institution</b>	<b>Role</b>
County Government of Kajiado, Kitui, Machakos and Makueni	Has the responsibility of planning and enforcing policies to discourage encroachments on acquired land for public use.
WSPs	These are water service providers mandated to provide efficient and effective water and sewerage services within their areas of jurisdiction. They will run the project upon completion.
National Environment Management Authority (NEMA)	Approving and issuing EIA licenses for projects which have addressed environmental and social impacts
Water Resources Management Authority (WRMA)	Demarcation of the Government riparian reserve
AWSB/TAWSB	Provision of counterpart funding – part of which is used to settle compensation claims by project affected persons (PAPs) and facilitation and implementation of the RAP.
Local Administration (chiefs/assistant chiefs etc)	Facilitation and mobilization of public meetings, dispute resolution at the local level, assisting in the identification and verification of PAPs.

## 4.0 POTENTIAL IMPACTS

This section outlines the potential negative impacts that are anticipated and will be associated with the drilling of the boreholes. The impacts will be related to activities carried out during construction, commissioning, operations, maintenance and decommissioning phases.

### 4.1 Land take

Most of the land under this project is publicly owned or belongs to members of self-help groups who will be operating the boreholes hence no land will be acquired for the drilling of the boreholes. A summary of ownership of the parcels where the boreholes will be drilled is as shown in Table 4.1.

**Table 4.1 Summary of land ownership**

No	Area	Name of Borehole	Details of each borehole		Comment/Mitigation Measure
1.	Kajiado	Emboliol Borehole	Land ownership	Emboliol Group Ranch	This is a community land which is currently being used as a grazing field. The whole land is expansive while the borehole will occupy a small section of the land. Therefore no negative impact on livelihood is anticipated.
			Size of land acquired for the borehole	0.1 Acre	
			Land use at site	Livestock grazing area	
			Location	Latitude 01° 52' 51" S and longitudes 37° 03' 46" E	
2.	Kajiado	Kajiado Town Borehole	Land ownership	Olkejuado Water and Sewerage Company	This is a public land. The construction works will not affect the grazing activities.
			Size of land acquired for the borehole	0.1 Acre	
			Land use at site	Grazing land	
			Location	Latitude 01° 48' 54" S and longitudes 36° 43' 04" E	
3.	Kajiado	Kibiko Borehole	Land ownership	Kibiko water project	This is a public land owned by Oololaiser Water and Sewerage Company Ltd. The land
			Size of land acquired for the borehole	0.1 Acre	
			Land use at site	Grazing area	

No	Area	Name of Borehole	Details of each borehole		Comment/Mitigation Measure
			<b>Location</b>	Latitude 01° 20' 41" S and longitudes 36° 38' 31" E	is big and will not interfere with the livelihoods of farmers using it as a grazing field
4.		<b>Mashuru Borehole</b>	<b>Land ownership</b>	Sold by community member	The land was sold by a private farmer who was using the land for grazing. His livelihood will not be affected since he will use the remaining section of the land for grazing.
			<b>Size of land acquired for the borehole</b>	0.1 acres	
			<b>Land use at site</b>	Grazing area	
			<b>Location</b>	Latitude 02° 07' 01" S and longitudes 37° 07' 53" E	
5.		<b>Namanga Town Borehole</b>	<b>Land ownership</b>	Namanga Water Users Trust	The land belongs to the water company and has existing water supply facilities.
			<b>Size of land acquired for the borehole</b>	0.1 Acres	
			<b>Land use at site</b>	Water facilities	
			<b>Location</b>	Latitude 02° 31' 48" S and longitudes 36° 49' 45" E	
6.		<b>Namelok Borehole</b>	<b>Land ownership</b>	Namelok Community Water Project	The land belongs to the community. Small portion will be used for the borehole and the rest will continue being used for grazing.
			<b>Size of land acquired for the borehole</b>	0.1 Acres	
			<b>Land use at site</b>	Grazing land	
			<b>Location</b>	Latitude 01° 48' 10" S and longitudes 36° 59' 34" E	
7.		<b>Paranai Community Borehole</b>	<b>Land ownership</b>	Paranai Community Water Project	The community bought the land for purposes of drilling the borehole. The owner will not be affected as the remaining land is sufficient for grazing.
			<b>Size of land acquired for the borehole</b>	2 Acres	
			<b>Land use at site</b>	Grazing land	
			<b>Location</b>	Latitude 02° 19' 06" S and longitudes 37° 35' 58" E	

No	Area	Name of Borehole	Details of each borehole		Comment/Mitigation Measure
8.	Kitui	Kangondi Borehole	Land ownership	Land belongs to a member of the community who bought the land	The owner sold a portion of his land to the community. The owner was paid for both the land and the crops. The livelihood of this individual will therefore not be affected.
			Size of land acquired for the borehole	20*20 feet	
			Land use at site	Maize field	
			Location	01° 11' 10"S, 38° 00' 30" E	
9.		Katse Borehole	Land ownership	Public land earmarked for water supply	This is a publicly owned land with existing water facilities (pump house).
			Size of land acquired for the borehole	0.1 Acre	
			Land use at site	Existing water facilities	
			Location	01° 11' 10"S, 38° 00' 30" E	
10.		Kauma Borehole	Land ownership	Community land	The land is owned by the community and they practice farming. However, the section where the borehole is to be drilled is bare, therefore no negative impact of livelihood.
			Size of land acquired for the borehole		
			Land use at site	Crops	
			Location	01.28072 <sup>0</sup> S, 037.99829 <sup>0</sup> E	
11.		Kithanake Borehole	Land ownership	Land belongs to Richard Mutia who is a member of Sanga youth group	Richard sold the land to Sanga Youth Group since he believes the easy access to water will be beneficial to him.
			Size of land acquired for the borehole	20*20 feet	
			Land use at site	Bare	
			Location	01.59608 <sup>0</sup> S, 038.19082 <sup>0</sup> E	
12.		Kwa Wamasai Borehole	Land ownership	Public land	This is a public land. Construction of a borehole will not affect the current cropping
			Size of land acquired for the borehole		
			Land use at site	subsistence cropping	

No	Area	Name of Borehole	Details of each borehole		Comment/Mitigation Measure
			<b>Location</b>	01.06856 <sup>0</sup> S, 038.06607 <sup>0</sup> E	activities since more land is available in the site.
13.		<b>Mbitini Borehole</b>	<b>Land ownership</b>	Public land	This is a public land. Construction of a borehole will not affect the current cropping activities since more land is available in the site.
			<b>Size of land acquired for the borehole</b>		
			<b>Land use at site</b>	Vegetation cover	
			<b>Location</b>	01.59565 <sup>0</sup> S, 038.12203 <sup>0</sup> E	
14.		<b>Mekyuyi Borehole</b>	<b>Land ownership</b>	Public land	The land belongs to County Government of Kitui within Mutha town Centre. This land is not being used currently.
			<b>Size of land acquired for the borehole</b>	20*20 feet	
			<b>Land use at site</b>	Bare	
			<b>Location</b>	01.81262 <sup>0</sup> S, 038.42702 <sup>0</sup> E	
15.		<b>Ndumoni Borehole</b>	<b>Land ownership</b>	Ndumooni Afya Self-help Group	Ndumooni Afya Self-help Group bought the land from an individual who was using it as a grazing field. More land is available for continued grazing therefore no loss of livelihood.
			<b>Size of land acquired for the borehole</b>	20*20 feet	
			<b>Land use at site</b>	Grazing	
			<b>Location</b>	01.33564 <sup>0</sup> S, 037.87315 <sup>0</sup> E	
16.	<b>Machakos and Makueni</b>	<b>Kanyongo Borehole</b>	<b>Land ownership</b>	Member of the water user association	The land was bought from Kiti family who agreed to sell the land to the community.
			<b>Size of land acquired for the borehole</b>	20*40 feet	
			<b>Land use at site</b>	crops	
			<b>Location</b>	01.62264 <sup>0</sup> S, 037.32184 <sup>0</sup> E	
17.		<b>Kikumbulyu Borehole</b>	<b>Land ownership</b>	A member of Kibwezi Farmers Community Based Organization (C.B.O)	The land is owned by a cooperative society. The activities of the members practicing farming will not be affected since more land is available.
			<b>Size of land acquired for the borehole</b>	0.5 acres	

No	Area	Name of Borehole	Details of each borehole		Comment/Mitigation Measure
			Land use at site	cropping	
			Location	02.3558 <sup>0</sup> S, 037.94351 <sup>0</sup> E	
18.		<b>Kwawanzilu Borehole</b>	Land ownership	Kwawanzilu secondary school	This is a publicly owned land.
			Size of land acquired for the borehole		
			Land use at site	School compound	
			Location	01.04713 <sup>0</sup> S, 037.52674 <sup>0</sup> E	
19.		<b>Kyua (Kyaani) Borehole</b>	Land ownership	Kasau Ka Kyaani Self Help Group	The land is owned the community. The activities of the community members practicing farming will not be affected since more land is available for farming.
			Size of land acquired for the borehole	40*40 feet	
			Land use at site	Vegetation cover	
			Location	01.42429 <sup>0</sup> S, 037.69681 <sup>0</sup> E	
20.		<b>Malili Township Borehole</b>	Land ownership	County Government of Makueni	The land is owned by the county government. The land is not being used for any economic activity.
			Size of land acquired for the borehole	0.5 acres	
			Land use at site	Bare	
			Location	02.3558 <sup>0</sup> S, 037.94351 <sup>0</sup> E	
21.		<b>Matooi Borehole</b>	Land ownership	A member of United Kambuu Self-help Group	The land was bought from an individual. The mango trees will not be affected by drilling of the borehole.
			Size of land acquired for the borehole	13m * 17m	
			Land use at site	Mangoes	
			Location	02.01076 <sup>0</sup> S, 037.52726 <sup>0</sup> E	

#### 4.2 Loss of Livelihoods

Most of the sites to be used for the drilling of the twenty one (21) boreholes within Tanathi are owned by the community. The community organised themselves into self-help groups and bought the land for the purposes of drilling these boreholes. The self-help groups compensated

the land owners who were using the land either for farming or grazing. These boreholes will be operated and maintained by these community groups once commissioned. The ones in public land will be operated and maintained by the respective water service providers. This means that no negative impact on livelihoods is anticipated.

#### **4.3 Impacts on Public Health**

Some of the public health issues related to construction works are HIV/AIDS and other communicable and sexually transmitted diseases (STDs). It has been observed that construction works and projects increase disease prevalence through sexual interactions between project staff and local communities. However, no camps will be put up that might attract concentration of prostitutes. The contractor will, as part of each workers initial orientation and on-going education, provide public education information about HIV/AIDS and prevention measures. Condoms will be made available to project workers at no cost. This impact is considered minimal.

#### **4.4 Social Vices**

Construction activities will attract an influx of people to the project area. This may lead to social vices like drug abuse, spread of diseases like HIV and may pose security concerns. Sensitization and awareness creation need to be done before and during the construction works.



## **5.0 RECOMMENDATIONS**

Based on the above screening results, the project has no Project Affected Persons since the land need for drilling all the twenty one (21) boreholes is either public land or land belonging to members of self-help groups who will be operating the boreholes. Before construction, consent will be sought from the respective institutions/organisations/individuals to allow works to be carried out in the proposed sites. This means therefore that there is ***no need of carrying out a detailed Resettlement Action Plan.***

## **Plate of Photographs**



**Economic activity at the proposed borehole site at Emboliol**



**Proposed borehole site at Kyua, Machakos**



**Proposed Borehole Site at Katse, Kitui County**



**Community consultations during site visit at the Proposed Nduumoni site, Kitui**