

## **SUSTAINABLE WATER HARVESTING FOR COMMUNITIES SURROUNDING THE OL PEJETA CONSERVANCY, LAIKIPIA, KENYA**

A Matching Grant Project -Rotary Club of Nairobi North,Kenya, District 9200-The Rotary Club of Langley Central, Canada, District 5050 with the support of the Rotary Club of Langley, District 5050 and Rotary International

### **Community Needs Assessment and Project Brief**

#### **Background**

Generally Laikipia district is an arid and semi arid area (ASAL) and as such water scarcity is widespread. The district receives low rainfall due to its geographical position of being on rain shadow of Mt. Kenya.

The problem of water scarcity make majority of communities surrounding the Ol Pejeta Conservancy to walk for many kilometres on daily basis to collect water from communal water points.

Though this area has existing permanent rivers flowing from Mt. Kenya and the Aberdare ranges, it is discouraging to note that water flow downstream is reduced due to over-abstraction upstream for irrigated agriculture which also contributes to chemical water pollution. Consequently, water for domestic uses and for livestock is insufficient.

Communal boreholes inherited by communities from former ranchers or the government often break-down and fall into disrepair. Where this happens, communities depending on the same as the only water sources do face severe water problems

The proposed projects were identified by the communities based on guidance by the Ol Pejeta Conservancy community development programme. Assessment of these projects was done during the visit by Mr. Wayne Crossen, from the Rotary Club of Langley Central accompanied by Mr. Brian Haworth, the Ol Pejeta Conservancy Engineering Logistics Manager and Joseph Kiama, Community Field Officer.

Implementation of these projects will be done by the specific communities with close supervision by the Ol Pejeta Conservancy; community programme and logistics departments. The Project will be managed by the Host Partner The Rotary Club of Nairobi North. Progress reports and final reporting will be completed by the Rotary Club of Nairobi North with the active support of the Ol Pejeta Conservancy Staff..

## **Proposed interventions using Rotary funds**

The following community water projects has been identified and proposed to utilise Matching Grant Funds provided by the Rotary Club of Nairobi North, their partners, the Rotary Club of Langley Central, the Rotary Club of Langley and Rotary International

### **1. Water supply for Withare Dispensary and resident villagers**

Withare Dispensary is a communal health facility being developed by OPC for residents from Withare community. Water for this dispensary is of high priority as a mandatory requirement from the Ministry of health for all medical facilities.

The proposed supply, being roof catchment; 10,000 litres will provide water for use by Withare dispensary that caters for the medical requirements of more than 4000 residents.

The storage will as well as allows the nearby residents to collect water from this source.

In addition to water, it is also proposed to consider fencing this dispensary and providing it with basic equipments; furniture etc in order to strengthen its capacity to serve community members living in Withare

Estimated cost to supply and install 1 plastic water tank of 10,000 litres, c/w base plinths, 40mtrs gutters, piping and outlet taps, fencing and basic equipments is US\$ 6500

### **2. Safe Water Supply for the pupils of Endana Sec. and Endana Primary Schools**

Endana area on the northern boundary of Ol Pejeta Conservancy is semi-arid and as such water is scarce. The two community schools (Endana Secondary and Primary) are severely faced by water shortage problems on frequent basis.

The community plans to establish boarding facilities for both schools has been hampered by the lack of water. Water for these schools is of high priority.

The proposed project is aimed at tapping clean rain water by roof catchment; purchase and installation of 40,000 storage water tanks. This is expected to benefit more than 600 pupils from schools as well as teachers and other staff.

In addition to clean water being provided for drinking and cooking purposes for the schools, subsistence farming (kitchen gardening) could be done to enable the schools grow fresh vegetables for pupils' meals.

Apart from this project benefiting both schools in the above ways, it is obvious that the burden of pupils walking 5 kilometres to collect water from the stream will be addressed

Estimated cost to supply and install 4 plastic water tanks each 10,000 litres, c/w base plinth, gutters, piping and outlet taps is US\$ 6,700

### **3. Provision of clean rain water for families of Marura and Matanya women groups**

The concept of rainwater tanks for roof catchment is well developed amongst Marura, Matanya and Sweetwaters communities; women groups have established membership systems whereby each member of the group contributes into the water tank project on monthly basis with the aim of each member eventually owning a 2300 litres tank for water storage

This community initiative aimed at helping the women address water shortage and hygiene for the families has proved to work and clearly demonstrates how best a community get organize to address its own problem. The groups have sound leadership and are well organized in terms of managing their finances.

The proposed project is aimed at enabling the women from both groups; Marura and Matanya to purchase 40 more waters tanks each of 2300KS for its members; estimated cost to supply 40 units and part support for installation will cost US\$ 9600

#### **Expected outcomes from the women water tanks project**

- Increased water availability for communities thereby reducing walking in search of water
- Improved hygiene (clean rain-water) hence reduced chances of occurrence of water-borne diseases
- Reduced demand on river water, thereby increased levels of water flow for down stream users (people, livestock and wildlife)

### **4. Mitero Water supply from shallow well for students, villagers, livestock and Growing of Food Crops**

The proposed supply of safe drinking water from a shallow well is located in Mirera primary school, Sweetwaters area. This supply is expected to benefit an estimated local population of 3000 residents, 500 students, and livestock and will allow 2 farming groups to produce food by use of drip irrigation technology.

The proposed intervention will greatly create positive impacts for the beneficiaries; reduced walking distance, minimise chances of water-borne diseases as well as helping to address food insecurity

The estimataed cost to dig an 80ft well and equip it with a hand pump, storage tank and 2 complete drip irrigation kits for ¼ acre for growing of food crops production will cost US\$: 4000

### **5. Drip irrigation technology for Thome and Tharua communities to**

## **discourage unsustainable use of rivers**

Due to increasing human activities and high demand for river water for cultivation and other uses, average water flows in streams including permanent ones have continued to decrease; in some cases rivers have become seasonal as a result of over-abstraction.

The production of food using river water needs to be done using sustainable techniques such as drip irrigation that minimize water wastage.

The proposed initiative fits in within the on-going efforts by farming groups under the OI Pejeta Conservancy agricultural extension support that is aimed at helping to address food insecurity. In addition, this project will produce the following benefits; reduce water wastage, reduce river water abstraction and promoting sustainable farming techniques that are more cost effective than the current use of motorized water pumps (especially in the face of rising fuel prices)

The proposed intervention will involve purchase and installation of 3 complete drip irrigation kits for  $\frac{1}{4}$  acre, 4 complete kits for  $\frac{1}{8}$  acre and one water pump (generator) estimated to cost US\$ 6,200.

Each kit will be placed under the responsibility of one organized farming group (farmers field school) operating on identified demonstration plots that allows local residents to learn about modern farming techniques

## **6. Trainings Communities on Water Management**

For the communities to adhere to a culture of using the available water resources in a sustainable manner their management capacities on issues related to water needs to be enhanced and strengthened through trainings

The OI Pejeta Conservancy water section will help to train community groups on water management; maintenance and suitability. These trainings costs are expected to cost US\$ 3,350

### **Sustainability plan**

It is a policy within the OI Pejeta Conservancy community development programme that support provided for communities must be carried out on the basis of 'bottom-up approach'. Communities are always expected to take a lead role in their development projects, from the identification stage through implementation and maintenance of the same thereafter.

The proposed water projects will be owned and managed by self-help groups or committees managing the local institutions like schools and health facilities. These community-based institutions will manage the water projects to ensure sustainability after completion. OPC community programme will keep track of these projects alongside other community owned projects being supported by the conservancy

### **Project Time Frame**

The proposed activities are planned to be carried out within a period of 8 months (Nov -2009-June 2010). A Specific activity schedule will be developed in consultation the Rotary Club of Nairobi North

### **Summary Budget**

1. Withare Dispensary .....	US\$ 6500.00
2. Endana Schools.....	6666.67
3. Matanya/Marura women water tanks.....	9600.00
4. Mitero shallow wells.....	4000.00
5. Thome/Tharua Drip irrigation.....	6200.00
6. Community Trainings.....	3333.33
Total .....	<u>US\$ 36,350.00</u>
Local admin/travel costs .....	700.00
Grand total.....	<b>US\$ 37,000.00</b>