PROPOSAL: SAFE WATER FOR “HIGH ZONE PRIMARY SCHOOL”, NAIVASHA

Submitted by: Rotaract Club of Naivasha

INTRODUCTION

Organisational Information - Rotaract and Rotary.

Rotaract Clubs are a part of Rotary International, https://www.rotary.org/en an international service organization that brings together young adults to take action on global and community issues. Rotaract was founded by Rotary International in 1968 as a program for young adults. Since then, the movement has grown significantly, with thousands of clubs established worldwide.

The Rotaract Club of Naivasha was officially chartered on 28th November 2010. Our mission is to foster leadership, social responsibility, and community development. We work closely with Rotary International and other local and international partners to implement sustainable projects that address community needs.

Executive Summary of the Project.

This project aims to provide clean and fluoride-free water to 80 pupils of “High Zone Primary School” in Naivasha by installing a Reverse Osmosis (RO) system. This initiative addresses the challenges of fluorosis caused by high fluoride levels in the area's groundwater, ensuring the health and wellbeing of the children. The project will be implemented in collaboration with the school administration and community stakeholders, with a total budget of Kshs. 200,000.

The project implementation will be enhanced by a cooperation with the Project Management Institute (PMI) Naivasha, who will assist in strategic planning.

BACKGROUND AND RATIONALE

The Problem.

On the 25th of September 2024, U.S. District Judge Edward Chen ruled that fluoride in drinking water poses an "unreasonable risk" to children's intellectual development. The ruling was influenced by recent studies suggesting a link between higher fluoride exposure and lower IQ levels in children - https://childrenshealthdefense.org/defender/fluoridation-risk-kids-landmark-decision/

In Kenya, the recommended fluoride levels in drinking water are guided by the World Health Organization (WHO), who set the optimal fluoride concentration in drinking water at 0.5 to 1.5 milligrams per liter (mg/L) to prevent tooth decay while minimizing the risk of fluorosis. The Kenya Bureau of Standards (KEBS) aligns with these standards, setting the permissible fluoride levels in drinking water at 1.5 mg/L.

Naivasha's groundwater has naturally high fluoride levels due to the area's geology. Water analysis at High Zone Primary School shows fluoride levels at 10.77 mg/L, significantly exceeding the WHO recommendation of 1.5 mg/L. Consequences include:

- **Dental and Skeletal Fluorosis**: Long-term health impacts.
- **Social Stigma**: Affects children's self-esteem and social interactions.

Why This School?

High Zone Primary School serves 80 pupils, most of whom rely on the borehole water with high fluoride content. The school urgently needs a sustainable solution to provide safe drinking water and protect its pupils.

PROJECT DETAILS

Objectives.

1. **Primary Objective**: Install an RO system to provide safe drinking water.
2. **Secondary Objectives**:
    - Educate pupils and staff on the health effects of fluorosis.
    - Promote community awareness of safe water practices.

Project Activities.

1. **Stakeholder Engagement**:
    - Organize discussions with school administration, parents, and local leaders.
    - Define roles and responsibilities for system maintenance.
2. **Installation of the RO System**:
    - Procure and install the RO unit, plumbing, and electrical systems.
3. **Capacity Building**:
    - Train school staff and pupils on system operation and maintenance.
4. **Community Awareness in cooperation with the PMI (Project Management Institute) Naivasha**:
    - Host an inauguration ceremony to raise awareness about fluorosis.
5. **Monitoring and Evaluation in cooperation with the PMI**:
    - Regularly test water quality and assess system performance.

Implementation Plan.

Activity	Timeline	Responsible Party
Stakeholder meetings	Week 1	Rotaract Team
System procurement	Week 2	Vendor
Installation	Week 3	Technicians
Inauguration and Awareness Campaigns	Week 4	Rotaract Team
Training and handover	Week 4	Rotaract & School Staff
Monitoring and evaluation, technical support	Continuous (monthly)	Rotaract, School Administration, PMI (Project Management Institute)

Budget Breakdown.

Item	Qty	Cost per Unit (Ksh)	Total (Ksh)
400GPD Under-sink RO system (5 stage)	1	56,000	56,000
Plumbing fittings and sundries	1	10,000	10,000
Installation labour and commissioning	1	20,000	20,000
500L storage tanks	2	5,000	10,000
Solar panel, inverter, and battery	1	50,000	50,000
Inauguration activity	1	12,000	12,000
Awareness campaign	**3**	**5,000**	**15,000**
20L buckets with taps	4	500	2,000
Construction for technical installations	1	10,000	10,000
Technical support within the first year	**1**	**5,000**	**5,000**
Contingencies	1	10,000	10,000
Total			**200,000**[1]

Expected Outcomes.

- Pupils will have consistent access to fluoride-free water, reducing health risks.
- Increased awareness of fluorosis among pupils, staff, and the local community.
- A sustainable water system, with the school administration committed to maintenance.

Sustainability Plan.

The school administration will handle ongoing maintenance and ensure the system is used solely for drinking purposes to optimize its lifespan. Rotaract will offer technical support for the first six months post-installation.

SCALING PLAN

While this proposal focuses on addressing the urgent needs of High Zone Primary School, the long-term vision is to expand this initiative to benefit additional schools. This scaling plan involves replicating the model in five similar schools within Naivasha, ensuring broader access to safe drinking water for children.

Criteria for Scaling:

1. Schools with high-fluoride water sources.
2. Schools with 50–100 pupils and no existing water purification system.
3. Institutions with a commitment to maintaining the installed system.

[1] The budget was increased from 180k to 200k compared to the previous concept not due to the inclusion of an extended awareness campaign and the technical support in the first year.

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Estimated Budget for Scaling:

Item	Qty per School	Unit Cost (Ksh)	Cost for 1 School (Ksh)	Cost for 5 Schools (Ksh)
400GPD Under-sink RO system (5 stage)	1	56,000	56,000	280,000
Plumbing fittings and sundries	1	10,000	10,000	50,000
Installation labour and commissioning	1	20,000	20,000	100,000
500L storage tanks	2	5,000	10,000	50,000
Solar panel, inverter, and battery	1	50,000	50,000	250,000
Inauguration activity	1	12,000	12,000	60,000
Awareness campaign	3	5,000	15,000	75,000
20L buckets with taps	4	500	2,000	100,000
Construction for technical installations	1	10,000	10,000	50,000
Technical support within the first year	1	5,000	5,000	25,000
Contingencies	1	10,000	10,000	50,000
Total			**200,000**	**1,000,000**

Expected Impact of Scaling

- Safe drinking water for approximately 400 pupils across five schools.
- Reduced prevalence of fluorosis-related health issues in affected communities.
- Increased awareness of the importance of water quality and community-led solutions.

WHAT YOU CAN DO

Flexible Contributions.

We welcome donors to contribute at any scale:

- Sponsor a single school (Ksh. 200,000).
- Collaborate to fund multiple schools.
- Commit to a long-term partnership to expand the project across the region.

Call to Action.

Your support is critical in ensuring that no child in Naivasha suffers from fluoride-contaminated water. We seek partners and donors to fund as well as expand this initiative and provide young learners with access to safe water. Contributions can be made financially or through donations of equipment.

- **M-Pesa Paybill Number**: 600100
- **Account Number**: 0100010106267

Together, we can give these children a chance to thrive without the burden of fluorosis.

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