RCE-GN

WSCSD-Kenya
World Student Community for Sustainable Development
Transforming Students into Sustainabilty Leaders

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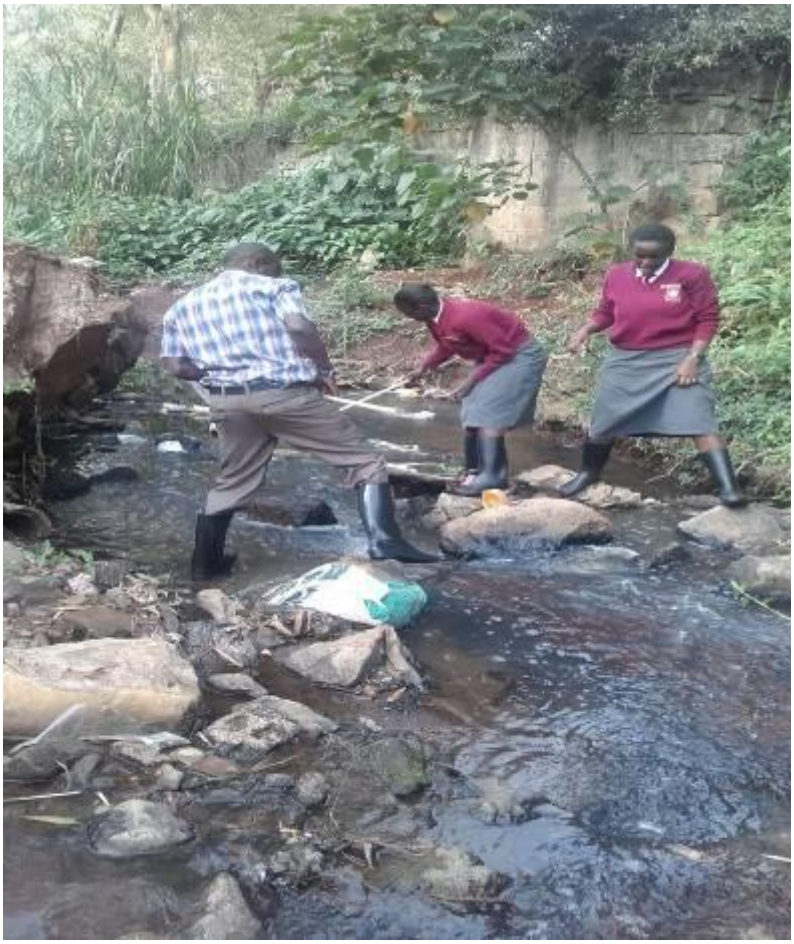
ADOPT-A-RIVER INITIATIVE REPORT



Mobilizing and Empowering Youths to Champion Monitoring and Restoration of Rivers and other Wetlands within the Nairobi River Basin

United Nations Educational, Scientific and Cultural Organization

AFRICAN FUND FOR ENDANGERED WILDLIFE (KENYA) LTD.

KICD

NATIONAL MUSEUMS OF KENYA
WHERE HERITAGE LIVES ON

Adopt –a- River Initiative

INTRODUCTION

Urban wetlands are among the most threatened ecosystems in Kenya. This is due to their direct conversion into built up areas (either planned or unplanned). This has led to acute pollution related problems including uncontrolled domestic and industrial discharges; and irresponsible dumping of commercial, municipal and institutional wastes. There have also been drainage concerns; direct biodiversity habitat loss; overexploitation of wetland plant and animal species; and increased prevalence of invasive alien species.

It is against this backdrop that the World Student Community for Sustainable Development (WSCSD-Kenya) and the National Environment Management Authority (NEMA) with the support of other RCE Greater Nairobi stakeholders partnered to address these challenges through the implementation of the '***Adopt-a-River Initiative'***.

This is a youth-led, multi-stakeholder wetlands monitoring and restoration project that is being piloted within Nairobi River Basin before up-scaling to other parts of the country. The project entails adoption of a nearby river by university/college student groups, community youth groups and other interested institutions. The youth groups are involved in monitoring the adopted river over time, identifying sources of its pollution and taking local action towards its restoration and conservation. The project is being implemented with technical backstopping from University of Nairobi (UoN), School of Biological Sciences.

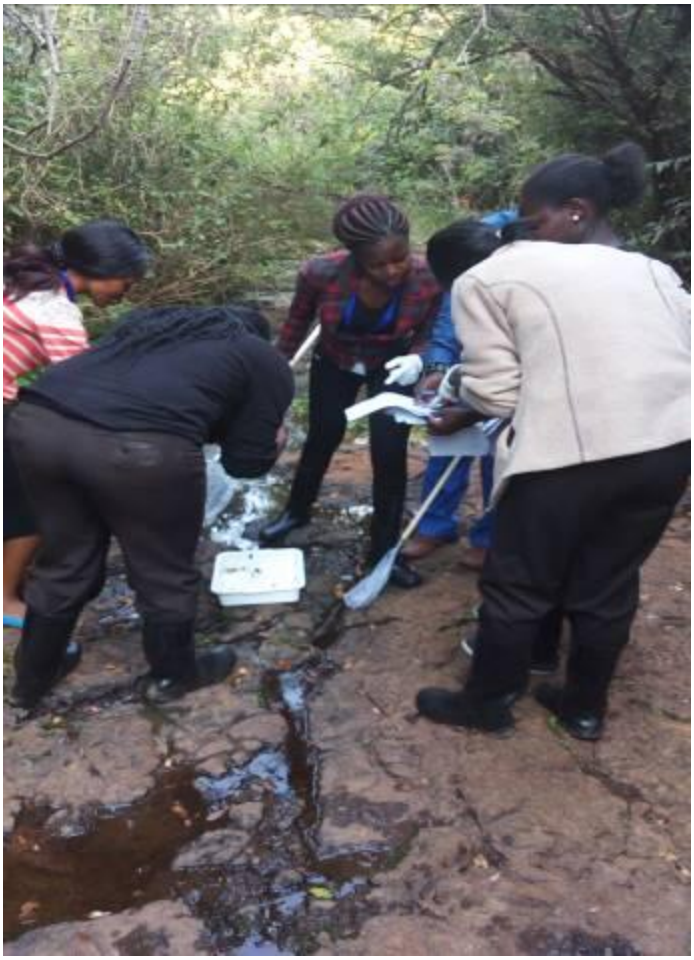


Photo: Staff at Giraffe Center taking samples along Ngong river

The health of rivers are measured using Mini Stream Assessment Scoring System (miniSASS), a simple, user-friendly river health bio-monitoring tool. The tool uses composition of macro-invertebrates in the river and is based on their sensitivity to varying water quality levels. It is therefore hands on, especially in the application of the dichotomous key. A selected number of students from each of the participating institutions are trained on the tool before start of the exercise and provided with all the necessary materials and equipment. They work closely with NEMA and WSCSD-Kenya to identify the sources of pollution and necessary corrective measures.

OVERALL PROJECT OBJECTIVE

The aim of the project is to strengthen the link between the curricula and addressing real sustainability challenges in Kenya. This is by mobilizing students in universities, colleges and secondary schools to collaborate with community youth groups to champion for clean and healthy river ecosystems and other wetlands. This will be achieved through regular monitoring of the health of the rivers coupled with various conservation and restoration efforts.

Specific Objectives

Specifically the project seeks to;

1) Strengthen monitoring of the Nairobi River Basin streams by local youth and RCE stakeholders
2) Steer restoration of polluted streams within the Nairobi River Basin to make them more clean and healthy
3) Make learning of biology, especially the dichotomous key more interesting and hands-on for secondary school students
4) Enhance knowledge on and spur interest in community led ecosystem conservation among youths.

Activities of the project include:

1) Mobilization of participating institutions and youth groups
2) Identification of sampling points and Mapping of sampling points
3) Development of Training Curriculum
4) Procurement of equipment and materials for sampling
5) Training of Trainers (ToT's)
6) Onsite training of participating institutions and youth groups
7) River monitoring and uploading of data
8) Reporting on findings
9) Restoration activities such as clean-ups, tree planting
10) Enforcement based on findings
11) Awareness creation

Photo: students taking samples near National Museums

RCE Greater Nairobi Project Partners

The Adopt-a-River Initiative birthed a model Collaborative Governance Framework for the RCE Greater Nairobi that enables anyone to participate at the level most comfortable for them, most efficient for the organization and most valuable for community at large. This multi-stakeholder

governance framework ensures partnership, accountability, ownership and equity become part of the project design process.

The project is jointly implemented by WSCSD-Kenya and NEMA with active engagement of the following RCE Greater Nairobi partners:

1) National Museums of Kenya (NMK)
2) Wildlife Clubs of Kenya (WCK)
3) African Fund for Endangered Wildlife (AFEW – K)
4) Kenya National Commission for UNESCO (KNATCOM)
5) Kenya Institute of Curriculum Development (KICD)
6) Universities and Colleges e.g. the University of Nairobi, the Cooperative University College, Kenya Institute of Mass Communication among others
7) Secondary schools
8) Community Youth Groups
9) Water Resource Management Authority (WARMA)

PROJECT STATUS

So far, the project activities no. 1 to 7 have already been undertaken as highlighted below:

1) Planning meetings

Ten planning meetings have been held between November 2014 and June 2016 aimed at:

- Mobilizing key stakeholders to be involved in the project,
- Discussing the operation modalities and project's action plan
- Developing the necessary training tools
- Discussing long-term commitment from project partners in implementation of river ecosystem restoration projects

2) Identification of institutions and sampling points

Twenty five (25) institutions and sampling points have been identified for the initial project phase. The institutions include University of Nairobi's Kikuyu Campus, Chiromo Campus and Institute of Development Studies Pangani Girls Secondary school and St. Teresa's Girls Secondary school, Visions School of Professional Studies, Kenya Institute of Social Works, Riara University, Kenya Institute of Mass Communication, Utalii College, Loreto Convent Msongari School, Strathmore School, Cooperative University College, Ngaimurunya Mixed Day Secondary School, Kenya High School, Nairobi School, Alliance High School, Ngara Girls High

School, Kianda High School, Karengata Academy, Mbagathi View Academy, African Fund for Endangered Wildlife/ Giraffe Centre, National Museums of Kenya

3) Training of Trainers Workshop and onsite training of participating institutions and youth groups

A two day training workshop for the trainers from the participating learning institutions was held on 7th - 8th July 2015. The teachers and lecturers from participating learning institutions were trained on both theoretical knowledge on wetlands and practical use of miniSASS and the dichotomous key as tools for monitoring the health of rivers. The topics covered included: Overview of wetlands, Wetlands Health Indicators, Restoration of wetlands/Rivers - Data collection and Management, Monitoring and Reporting and Development of Environmental Restoration projects. The training also integrated practical field work involving actual collection of water samples from the river, laboratory analysis and interpretation of the results.

The ToT exhibited an excellent case of intergenerational learning with most of the young facilitators from WSCSD-Kenya training the university Professors who are to further train other students of river health monitoring and restoration.

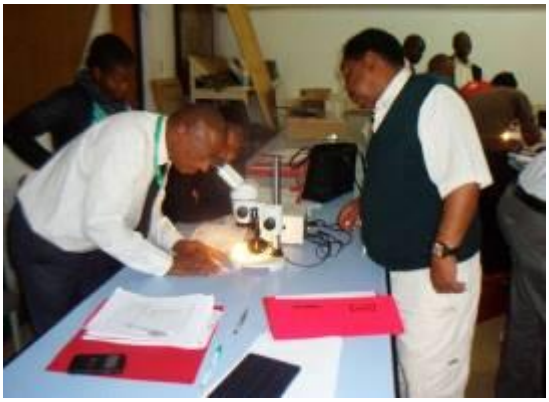



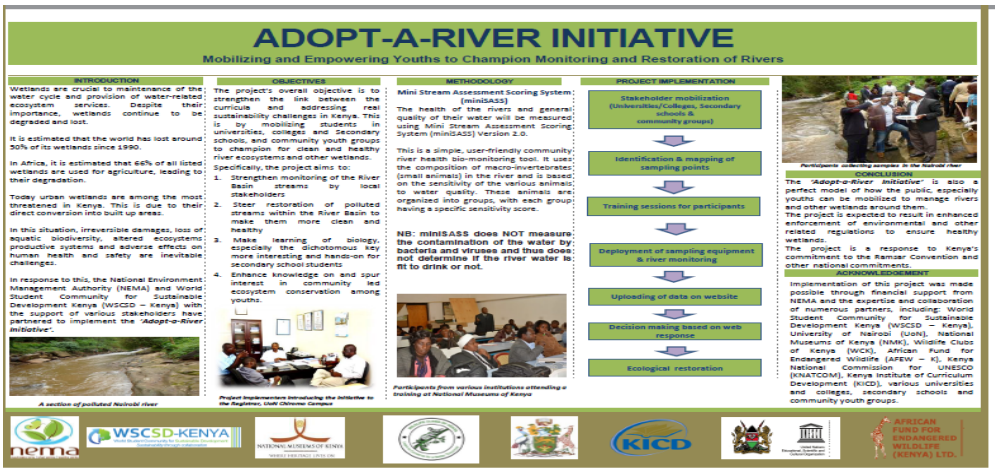
Photo: Training of Trainers at National Museums of Kenya

Onsite training at Chiromo Campus

Proceedings of TOT

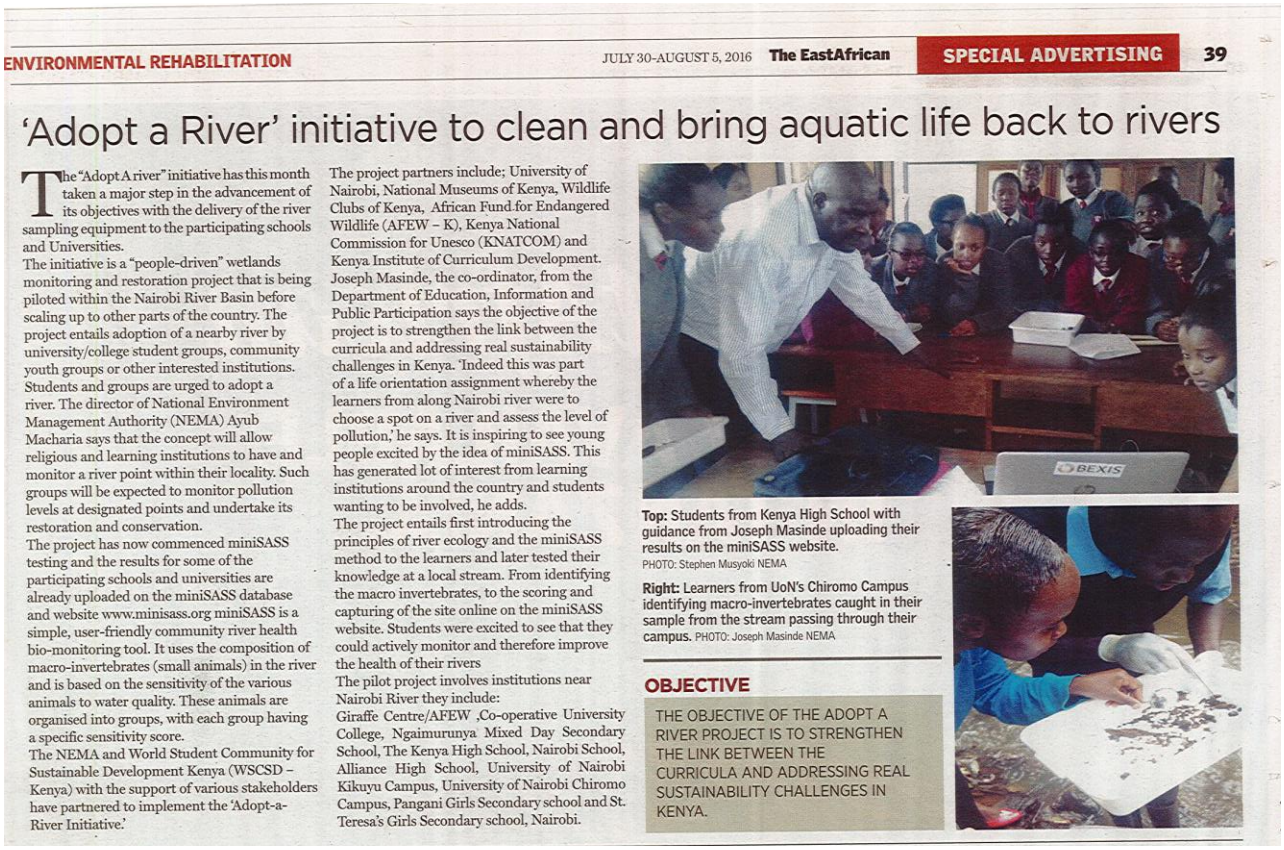
4) Development of Awareness materials and publicity of the project

Awareness materials such as posters and banners have been developed.



Sample of the posters printed

The project is already featured in the national and regional media channels such as the East African Newspaper highlighted below.



ENVIRONMENTAL REHABILITATION JULY 30-AUGUST 5, 2016 The EastAfrican SPECIAL ADVERTISING 39

'Adopt a River' initiative to clean and bring aquatic life back to rivers

The "Adopt A river" initiative has this month taken a major step in the advancement of its objectives with the delivery of the river sampling equipment to the participating schools and Universities.

The initiative is a "people-driven" wetlands monitoring and restoration project that is being piloted within the Nairobi River Basin before scaling up to other parts of the country. The project entails adoption of a nearby river by university/college student groups, community youth groups or other interested institutions. Students and groups are urged to adopt a river. The director of National Environment Management Authority (NEMA) Ayub Macharia says that the concept will allow religious and learning institutions to have and monitor a river point within their locality. Such groups will be expected to monitor pollution levels at designated points and undertake its restoration and conservation.

The project has now commenced miniSASS testing and the results for some of the participating schools and universities are already uploaded on the miniSASS database and website www.minisass.org miniSASS is a simple, user-friendly community river health bio-monitoring tool. It uses the composition of macro-invertebrates (small animals) in the river and is based on the sensitivity of the various animals to water quality. These animals are organised into groups, with each group having a specific sensitivity score.

The NEMA and World Student Community for Sustainable Development Kenya (WSCSD – Kenya) with the support of various stakeholders have partnered to implement the 'Adopt-a-River Initiative.'

The project partners include; University of Nairobi, National Museums of Kenya, Wildlife Clubs of Kenya, African Fund for Endangered Wildlife (AFEW – K), Kenya National Commission for Unesco (KNATCOM) and Kenya Institute of Curriculum Development. Joseph Masinde, the co-ordinator, from the Department of Education, Information and Public Participation says the objective of the project is to strengthen the link between the curricula and addressing real sustainability challenges in Kenya. 'Indeed this was part of a life orientation assignment whereby the learners from along Nairobi river were to choose a spot on a river and assess the level of pollution,' he says. It is inspiring to see young people excited by the idea of miniSASS. This has generated lot of interest from learning institutions around the country and students wanting to be involved, he adds.

The project entails first introducing the principles of river ecology and the miniSASS method to the learners and later tested their knowledge at a local stream. From identifying the macro invertebrates, to the scoring and capturing of the site online on the miniSASS website. Students were excited to see that they could actively monitor and therefore improve the health of their rivers

The pilot project involves institutions near Nairobi River they include:

Giraffe Centre/AFEW ,Co-operative University College, Ngaimurunya Mixed Day Secondary School, The Kenya High School, Nairobi School, Alliance High School, University of Nairobi Kikuyu Campus, University of Nairobi Chiromo Campus, Pangani Girls Secondary school and St. Teresa's Girls Secondary school, Nairobi.

Top: Students from Kenya High School with guidance from Joseph Masinde uploading their results on the miniSASS website.
PHOTO: Stephen Musyoki NEMA

Right: Learners from UoN's Chiromo Campus identifying macro-invertebrates caught in their sample from the stream passing through their campus. PHOTO: Joseph Masinde NEMA

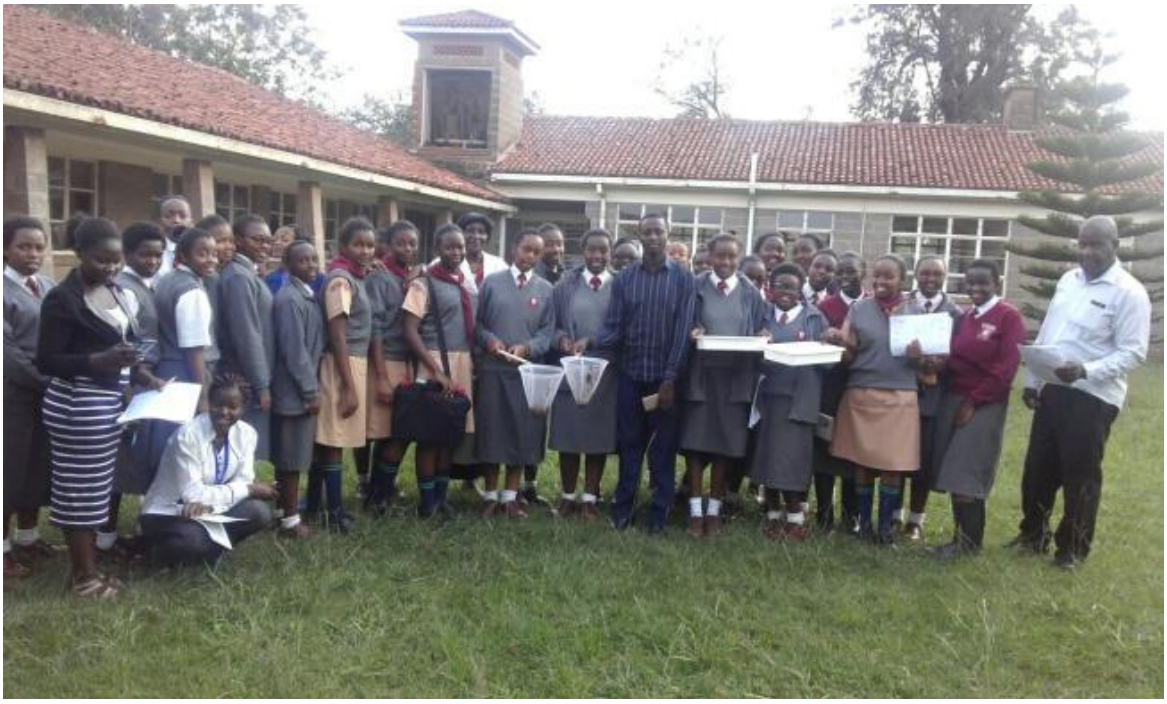
OBJECTIVE

THE OBJECTIVE OF THE ADOPT A RIVER PROJECT IS TO STRENGTHEN THE LINK BETWEEN THE CURRICULA AND ADDRESSING REAL SUSTAINABILITY CHALLENGES IN KENYA.

5) Procurement and distribution of equipment

NEMA has already procured and distributed the following equipment to the participating institutions:

- Pond Net,
- Sweep net,
- White Trays, Dissecting Kits,
- Hand lenses, Gum boots, Specimen Vials,
- Adhesive labels,
- Pencils,
- Masking tape (small),
- Gloves (small, medium and Large),
- Buckets and
- Plastic Forceps.



Kenya High School Environmental club members showing the equipment donated by NEMA on 5th July 2016

6) River Health monitoring using miniSASS

Participating schools and universities are already uploading their results on the miniSASS database and website http://www.minisass.org. The institutions include University of Nairobi Chiromo Campus, Kenya High School Nairobi School and Giraffe Center.

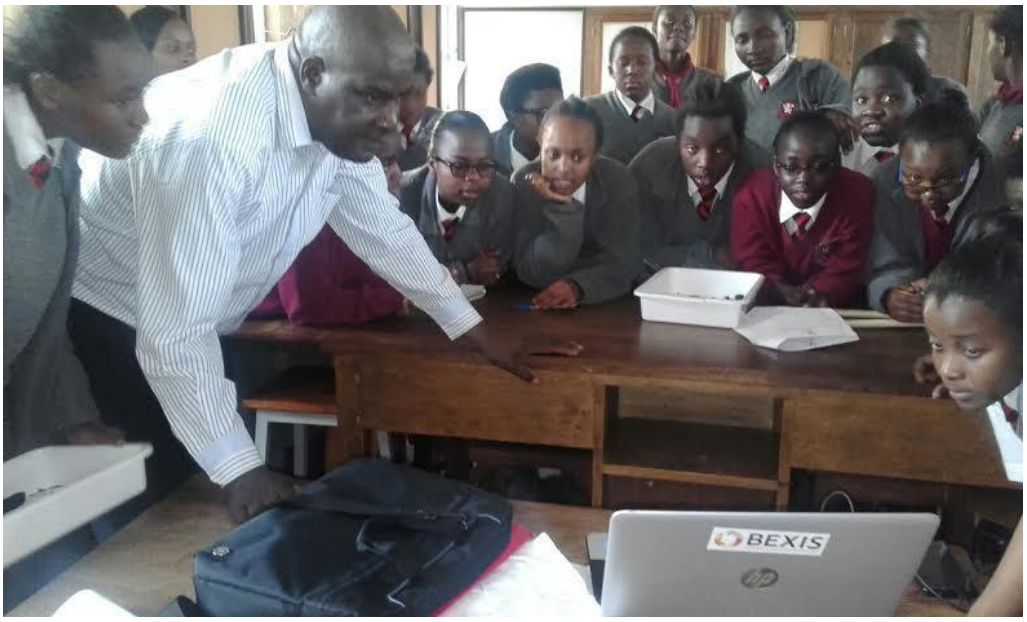
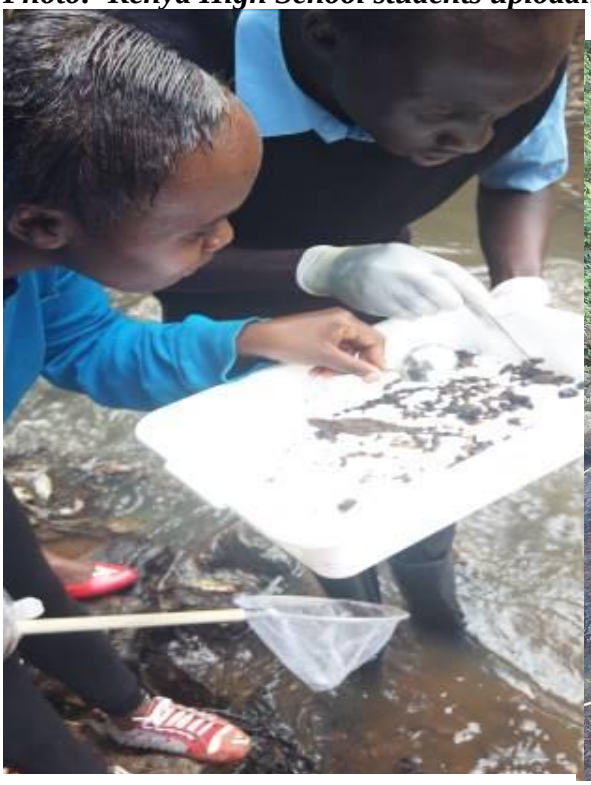
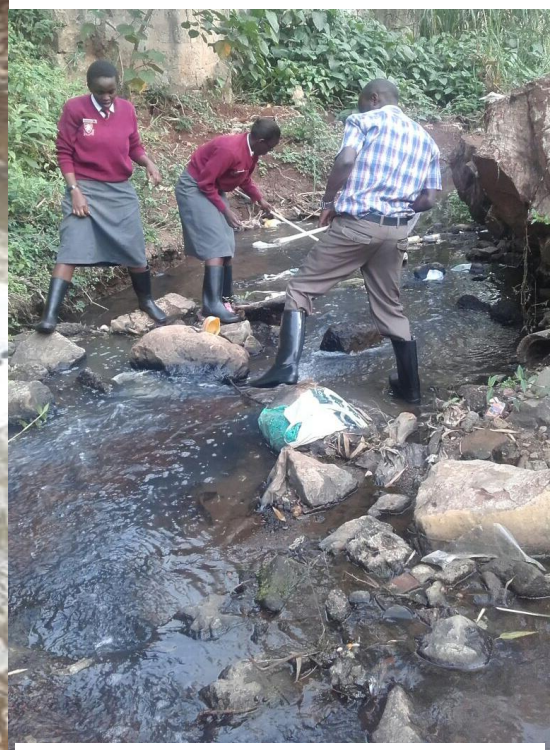


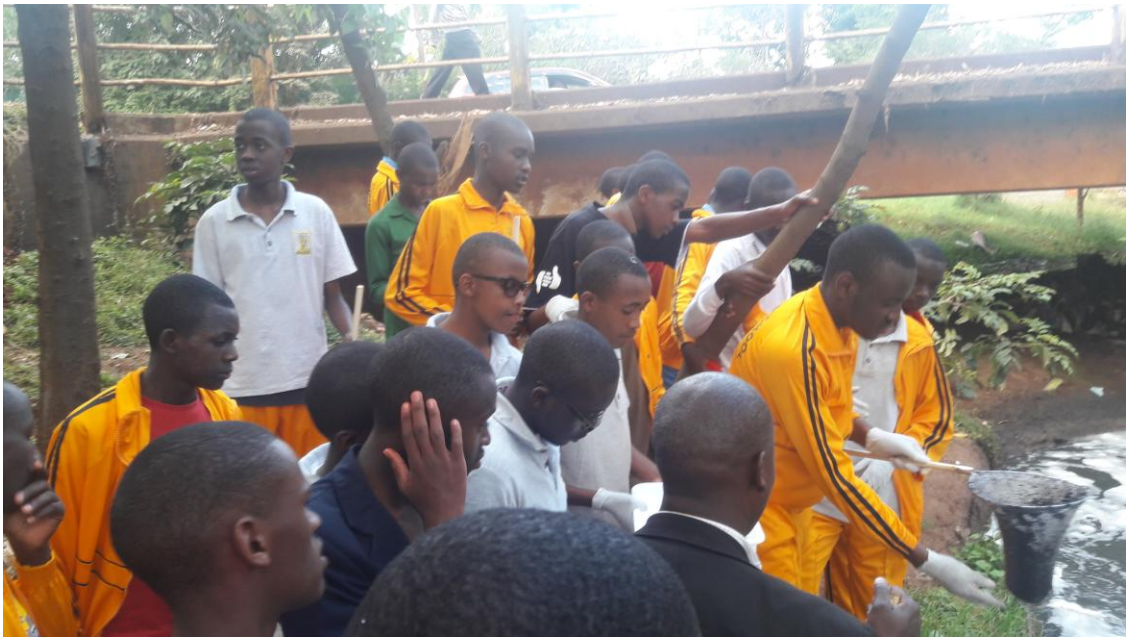
Photo: Kenya High School students uploading the results on the miniSASS



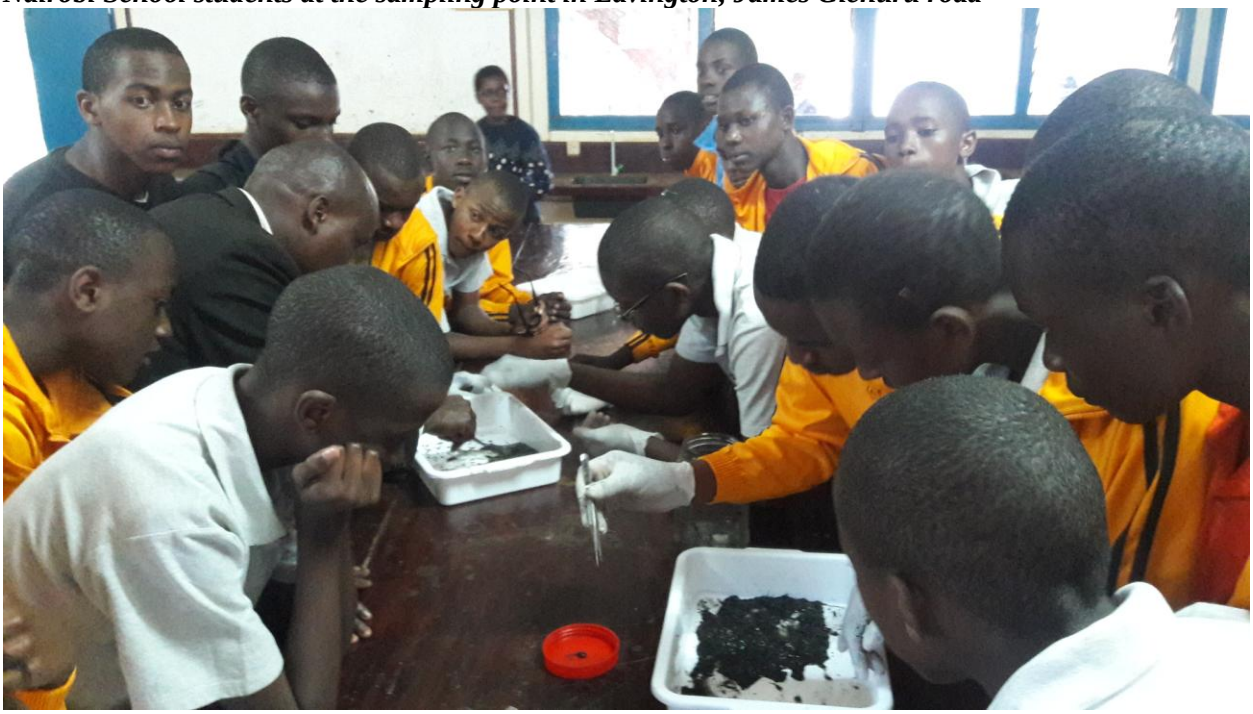
Left: Students at Chiromo campus identifying the macro invertebrates



Right: Kenya High School students collecting Samples from Nairobi River



Nairobi School students at the sampling point in Lavington, James Gichuru road



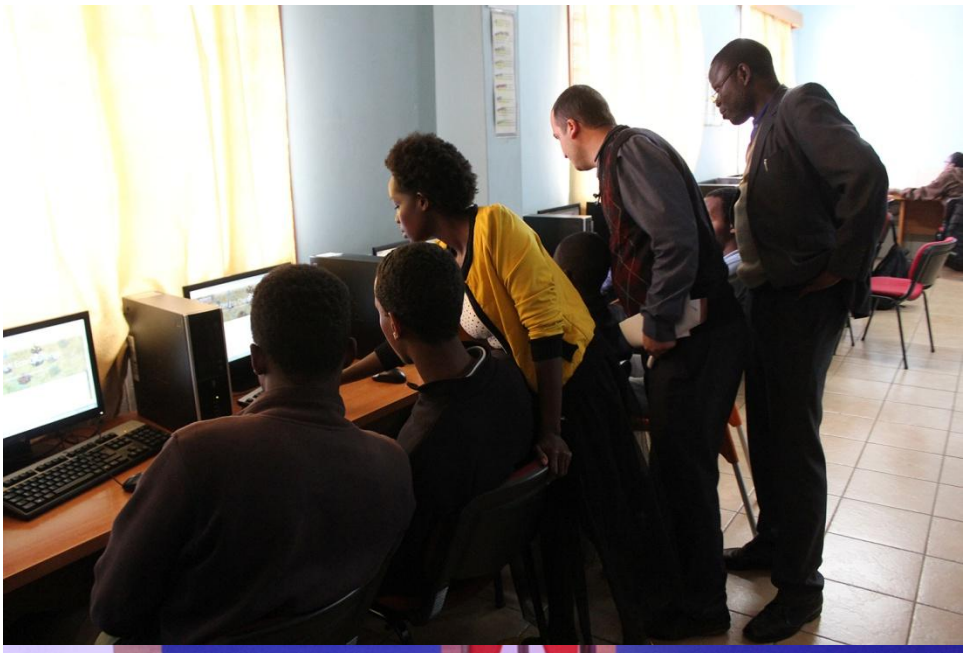
Nairobi school student at their Lab. Identifying the macro-invertebrates.

7) Organisation of an Eco Challenge on Sustainable Water Resource Management

As the national partner of the UNEP-DHI Eco Challenge, WSCSD-Kenya in partnership with NEMA and other RCE Greater Nairobi organized an Eco-Challenge on Sustainable Water Resource Management that was held on 16th July, 2016 at Light Academy, Nairobi.

The UNEP DHI Eco-Challenge is a fun and innovative way of engaging high school students and teachers on issues of sustainable water management using an online virtual game that replicates the real world called Aqua Republica.

Aqua republica is an online 'serious game' where a simplified but realistic world is created for players to play and learn—by personal experience—about the conflicts and trade-offs that exist in a river basin. The game is part of a not-for-profit initiative developed in partnership with UNEP-DHI Partnership, UNEP and DHI.



Top: Students get assistance from their teachers and WSCSD-Kenya game administrator to log in to the game portal Below: Partcipants following the Eco Challenge opening remarks

Pending activities include:

1) Reporting on findings from the monitoring exercises
2) Public Launch - will be organised by NEMA and partners in the next financial year
3) Implementation of restoration projects such as clean-ups, tree planting. To be done by participating institutions and other stakeholders once they present their funding proposals to NEMA and other partners
4) Enforcement by NEMA based on findings on the sources of river pollution
5) Awareness creation

Challenges

1) Delay in acquisition of the equipment for monitoring due to the lengthy requirements for public procurement that NEMA had to adhere to
2) Students given limited time to carry out the project activities. Most of time is devoted to class work
3) Lack of interest shown by some schools especially the private Schools
4) Inadequate funds to support WSCSD-Kenya's administration of the project. As a young youth-led organisation without any external funding, WSCSD-Kenya is quite financially constrained in managing the project's activities.

Conclusion:

The 'Adopt-a-River Initiative' exemplifies how key curricula components can be used to solve real sustainability challenges. It is also a perfect model of how the public, especially youths can be mobilized to manage rivers and other wetlands around them. Through identification of polluted river ecosystems within Nairobi River Basin, the project is expected to result in enhanced enforcement of environmental and other related regulations to ensure healthy wetlands. It is therefore in line with Kenya's commitment to the Ramsar Convention and numerous national commitments. Overall, it helps conserve aquatic biodiversity and implicitly contributes towards achieving Kenya's Vision 2030 objectives. Key among these objectives is poverty alleviation and improved general welfare of the citizenry.