

# Marine Environmental Education in Kenya

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## ABSTRACT

Environmental education (EE) and awareness are important tools in conservation and sustainable development. EE is a process through which information, skills and experiences are shared to empower target groups with knowledge that is translated into positive attitudes and values about the environment and hence an ability to make prudent decisions with regard to the conservation and sustainable use of natural resources. A teachers' training program in EE has been established in Mombasa, starting in 2003, with assistance from ProZim, a Swiss NGO, CORDIO (Coastal Oceans Research and Development Indian Ocean) and other donors. Since 2003, 41 teachers from 28 (13 urban and 15 rural) schools have been trained. Minor differences have been observed between rural and urban school teachers while ranking importance of EE topics. For example, in 2005, methods of transferring EE received the same ranking from both rural and urban teachers; ecology topics received a higher ranking from rural teachers while environmental management topics were ranked higher by urban teachers. This report highlights similarities and differences in ranking importance of EE topics, with possible reasons as well as challenges faced by the teachers in transferring EE.

## INTRODUCTION

The Teacher Training concept is adapted in Kenya to meet the Kenyan marine and coastal resource conservation and management needs through partnership with the Mombasa Municipal Education Office and other institutional stakeholders.



*Obura, D.O., Tamelander, J., & Linden, O. (Eds) (2008). Ten years after bleaching - facing the consequences of climate change in the Indian Ocean. CORDIO Status Report 2008. Coastal Oceans Research and Development in the Indian Ocean/Sida-SAREC. Mombasa. <http://www.cordioea.org>*

In Kenya, the primary school curriculum is generally devoid of EE, despite the reliance of people on natural resources for food and livelihood security. The teachers' training program in EE helps to fill this gap by training primary school teachers on aspects of EE ranging from marine and terrestrial ecosystems to methodologies for effective EE knowledge transfer. The training program is carried out through a week-long seminar for 10-15 teachers comprising lectures, discussions, excursions, practical activities and project planning. Case studies for the program are drawn from Haller Park, Mombasa Marine Park and previous year school projects. After the training, teachers implement projects of choice with students through relevant clubs, incorporate EE examples during class lessons and mentor another teacher prior to certification. In addition, follow-up is conducted after the training by linking to learner programs such as "Schools to the Sea" program which offers practical learning opportunities.

The "Schools to the Sea" program promotes greater marine ecology awareness focusing on mangroves, sea grass and corals. It is the result of a collaboration involving CORDIO, ACTS (Assist a Child to School), Buccaneer Diving and Voyager Hotel with funding from Project AWARE and CORDIO. The program targets schools closest to Mombasa Marine Park and has given opportunity to more than 300 pupils and 25 teachers from 9 schools to appreciate the magnificence of the ocean since its commencement in 2006. "Schools to the Sea" is conducted through structured lessons incorporating indoor and outdoor activity including discussions, lectures, art and poetry expression and a component that comprises of guided excursions.

The 2006 Teachers Training Seminar in Environmental Education was the fourth since inception in 2003. Thirteen teachers from 13 primary schools in 4 districts attended, bringing the total number of teachers trained since 2003 to 41. Two environmental education officers and a turtle conservation group member have also attended the seminar in 2004 and 2005 while 3 teachers have



attended the full seminar twice and several have returned to attend some sessions to share their experiences. In the first two years facilitators participated from a supporting Swiss NGO while in the last two years guest facilitators from local institutions have handled technical topics. This has been useful in adapting to local needs and developing a support base for the program.

The aim of the seminars is to build the capacity of teachers to become responsible natural resource users who have an impact on pupils, fellow teachers and the local environment. The objectives are:

1. To increase the environmental capacity of those teachers to pass relevant and correct knowledge and experience to their pupils;
2. To expose the teachers to different methodologies that are effective for EE knowledge transfer;
3. To provide a forum for teachers to interact.

## METHODS

English is the main language of communication. Topics in environmental education (EE) theory are initially covered followed by ecology, transfer methodologies and environmental management. EE theory includes introduction to the environment, evolution of EE and case studies from other countries. Ecology topics covered are Haller Park, corals, sea

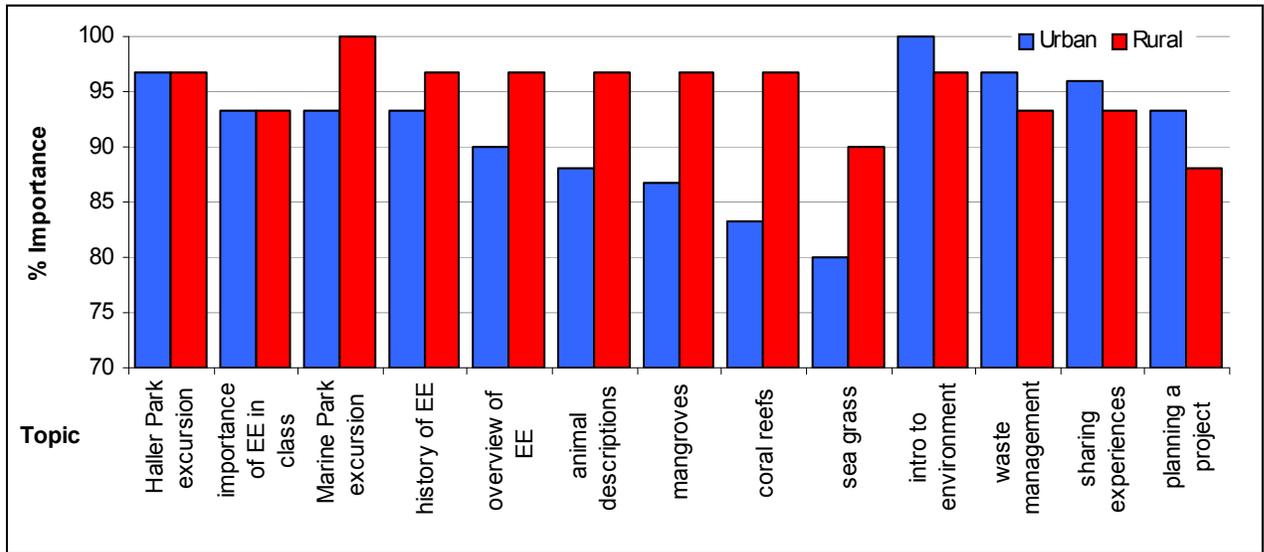


Figure 1. Importance of topics as ranked in 2005.

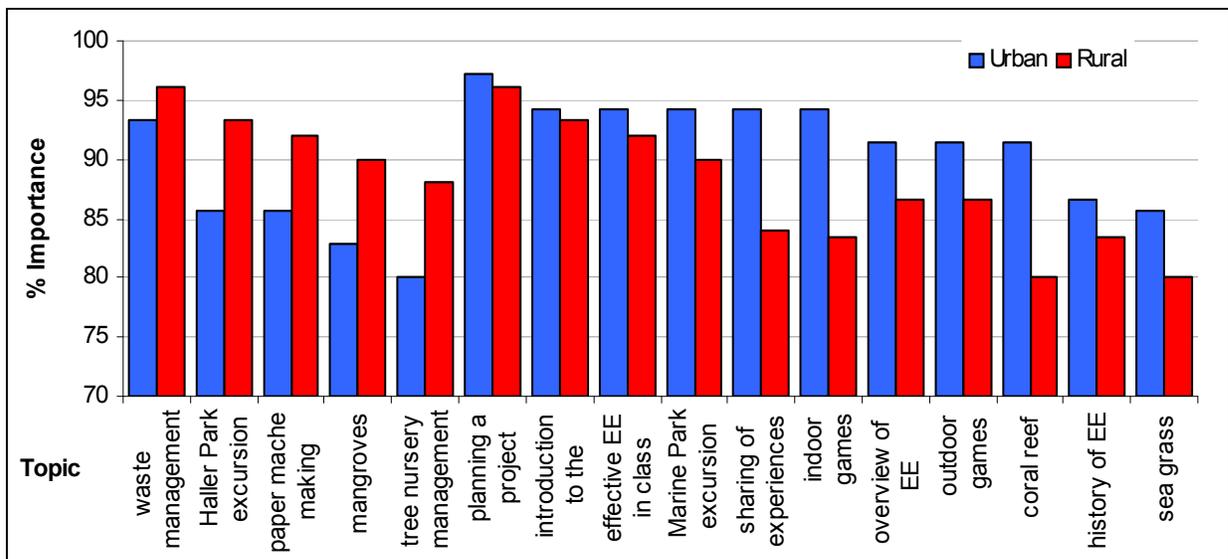


Figure 2. Importance of topics as ranked in 2006.

grass and mangroves. Transfer methodologies shared are indoor and outdoor games, excursions and teacher/pupil project. Environmental management topics covered are tree planting, tree nurseries, waste and pollution as well as recycling opportunities such as paper maché making.

EE theory is led by a facilitator who encourages the participants to be at ease for the transfer methodologies and environmental management topics which are carried out through group sessions, discussions and presentations. Ecology topics are led by technical experts in each particular field.

A pre-seminar questionnaire is used at the start of the seminar to determine the level of exposure participants have in environmental matters and a post seminar questionnaire handed back on the last day summarizes the participants' perceptions on all aspects of the seminar. Daily evaluations are used to determine relevance, level of importance and get suggestions for improvement regarding different topics and how they were covered on each day. Follow-up projects commence in the subsequent school term, in collaboration with partner organizations where possible.

Questionnaires and daily evaluations have been used since 2003 although results and discussion in this paper on relevance of topics ranking is based on 2005 and 2006.

## RESULTS

Of the 41 teachers trained since 2003, 51% were male and 49% female, while 59% were from rural schools and 41% urban. The first seminar had fewer participants, but since then a relatively consistent gender and rural/urban balance has been maintained.

In 2005, out of 13 topics, 2 topics received similar ranking from participants, 7 were ranked more important by rural teachers and the remaining 4 were ranked more important by urban teachers (Fig. 1). Similar ranking was given to the excursion in Haller Park and to the importance of using EE in class. Rural teachers gave a greater importance to (in descending order)- Marine Park excursion, history of EE, overview of EE, animal descriptions, mangroves, coral reefs and sea grass. Urban teachers gave a greater importance to (in descending order)- introduction to the environment, waste management, sharing experiences and planning a project.

In 2006, out of 16 topics, 11 were ranked more important by urban teachers and 5 as more important by rural teachers (Fig. 2.) Rural teachers ranked (in descending order)-waste management, excursion to Haller Park, paper mache making, mangroves and tree nursery management. Urban teachers prioritized

importance (in descending order) as planning a project, introduction to the environment, effective EE in class, excursion to Marine Park, sharing experiences, indoor games, overview of EE, outdoor games, coral reefs, history of EE and sea grass.

## DISCUSSION

In 2005 rural teachers ranked theory topics such as history and overview of EE and ecology topics such as mangroves, corals and sea grass as more important while urban teachers ranked environmental management topics such waste management as being of higher priority. This changed in 2006, with rural teachers ranking environmental management topics like waste management, paper mache making and nursery management higher than their urban counterparts who gave greater priority to EE transfer methods like effective EE in class, sharing experiences as well as indoor and outdoor games.

This difference could be attributed to the characteristics of participating teachers. In 2005, most of the rural teachers attending had existing clubs in their schools and ongoing environmental projects whereas their urban counterparts did not have any environmental interventions in their schools. The rural teachers were thus more interested in deeper understanding of the history of EE and comparison with other areas and ecology topics. Urban teachers in attendance were at the time more interested in intervening in their schools to provide solutions to challenges such as waste management.

In 2006, participating rural teachers had clubs in their schools but no ongoing projects; thus explaining their interest in potential projects. Most urban teachers attending had been involved in the "Schools to the Sea" program (which incorporates learning, guided excursions and student expression through art work) and were keen to improve on EE transfer skills; thus explaining their interest in those topics. Due to their involvement in the "Schools to the Sea" program, these teachers had received more exposure to ecology topics.

In 2005, the Haller Park excursion received similar ranking from both rural and urban teachers unlike the Marine Park excursion which was more prioritized by rural teachers potentially because both categories of teachers had some awareness of the terrestrial ecosystem, while the marine ecosystem was more familiar to rural teachers, many of whom live and work in villages with fishing communities. At the same time, both categories recognized the importance of effective EE transfer through the classrooms and accorded the topic similar ranking.

The similarities and variations in ranking of importance shows the relationship between basic information and how the level of awareness further impacts on the desire to learn more and intervene in providing solutions to local environmental challenges.

The challenges highlighted by the teachers in transferring EE were similar among rural and urban teachers. These include inadequate knowledge concerning environmental matters such as ecology, background and history of EE; options for interventions, and more significantly how to effectively transfer the EE knowledge acquired using the limited time and financial resources available to them. Both categories of teachers were concerned about inadequacy of resources for practical activities such as excursions and project materials, for example acquiring seedlings and necessary implements in the case of tree planting.

Another concern raised by the teachers was the limited time available for extra curricula activities especially in schools where there is greater emphasis on academic performance. This concern is linked to that of inadequate support from the school administration and fellow teachers as a result of the perceived secondary importance of extra curricula activities. All teachers agreed that support from the school administration plays a key role in alleviating the other challenges including limited knowledge, time and fellow teachers support. It is thus important to make school administrators aware of environmental challenges and the significant role they play in supporting their teachers and students in solving environmental challenges.

## **ACKNOWLEDGEMENTS**

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