

Teachers' Training in Environmental Education Mombasa, KENYA



December 2006 Seminar Report

Sarah Ater



Executive Summary

The concept of teachers' seminars is modeled on a similar project in Tanzania by the Association of Swiss teachers in co-operation with the Tanzanian Teachers Union. It has been adapted to meet the Kenyan needs particularly at the Coast through partnership with the Municipal Education Office, Lafarge Eco Systems, the International Ocean Institute (Eastern Africa), Watamu Turtle Watch and World Wide Fund for Nature (Kiunga).

The fourth "Teachers Training in Environmental Education" seminar was held from December 4th through December 8th 2006 in Mombasa, Kenya. This report documents input from partners and participants involved in the seminar. Results of the evaluations carried out during the seminar week are included and trends highlighted since the start of the seminars in 2003.

Emphasis of the seminars is to create a learning and exchange forum through which teachers initiate contact, learn from each other and get exposed to effective and efficient methods to pass correct information to their students and ultimately train/ guide fellow teachers and their students. Participants will be implementing the teacher to teacher transfer in addition to various projects used to enhance knowledge and skills transfer to students as a prerequisite to certification.

Mombasa, 2007

Sarah Ater

Acknowledgements

Institutional support was instrumental in facilitating the teachers from other districts to attend. I am grateful to Lafarge Eco Systems, International Ocean Institute (Eastern Africa), World Wide Fund for Nature (WWF Kiunga) and Watamu Turtle Watch for this. Coastal Oceans Research and Development in Indian Ocean (CORDIO) East Africa and ProZim Society provided core funding while the Municipal Education Office was instrumental in mobilizing teachers.

I acknowledge Mr. Tsuma of the Municipal Education Office for officially opening the seminar and Mr. Juma for closing the seminar. I am grateful to Dr. Jacqueline Uku, Dr. Mebrahtu Ateweberhan, Albert Musando and Zeinab Musa who facilitated various sessions as well as Violet Njambi. Dr. David Obura, Dr. Jacqueline Uku and Kathrin Futter provided guidance and support during planning and implementation while Bucaneer Diving and Juliet Furaha provided guidance during the marine field excursion.

To all of you I say thank you!

Table of Contents

Executive Summary	2
Acknowledgements	3
1 Introduction	5
1.1 Background information	5
1.2 Objectives	5
2 Participation	5
2.1 Participating Organizations	6
2.2 Participating Schools	7
3 The Proceedings	7
4 Evaluation	8
4.1 Pre seminar evaluation results	8
4.2 Daily evaluation feedback results	9
4.3 Post seminar evaluation results	9
5 Monitoring	11
6 Conclusions and recommendations	12
7 Appendices	13
Appendix 1: List of participants	13
Appendix 2: Pre seminar Questionnaire	14
Appendix 3: Post seminar Questionnaire	16

1 Introduction

1.1 Background information

The concept of teachers' seminars in Environmental Education is modeled on a similar project in Tanzania undertaken by the Association of Swiss teachers in co-operation with the Tanzanian Teachers Union. This concept is adapted in Kenya to meet the Kenyan marine and coastal resource conservation and management needs through partnership with the Municipal Education Office and other institutional stakeholders.

The 2006 Teachers Training Seminar in Environmental Education was the fourth since inception in 2003. 13 teachers from 13 primary schools in 4 districts attended bringing to 43, the total number of teachers trained since 2003. 2 environmental education officers and a turtle conservation group member have also attended the seminar in various years. In the latter two years, guest facilitators from local institutions have handled technical topics unlike the former two years when facilitators came from Switzerland. This has been useful in adapting to the regional needs and developing a support base for the program.

1.2 Objectives

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

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

2 Participation

Support and participation of institutions entails nomination and sponsoring of participants to attend the seminar as well as assistance in follow-up and implementation of projects by participants in their respective locations. 13 primary school teachers drawn from 4 districts attended (Lamu, Malindi, Mombasa and Kwale).

Partner organizations nominate participants who have an interest in environmental issues and the capacity to mentor environmental conscious pupils as well as influence and guide fellow teachers to be environmentally conscious. Involvement of partners in the nomination process further helps to ensure follow-up and support of their nominees as they implement their proposed projects in their respective areas. Nominees are thus situated in close proximity to supporting organizations to allow for this oversight. The following is a short description of collaborating organizations.

2.1 Participating Organizations

2.1.1 Municipal Education Office - Mombasa

The Mombasa Municipal Office oversees and provides guidance to primary schools within the Municipality. Although it runs its programs through the local government, it is answerable to the Ministry of Education under which its activities fall. The office is an important player as it provides the needed support for teachers involved in extra curricula activities including clubs such as environmental and wildlife clubs.

The Municipal Education Office sent representatives to open and close the seminar as well as sign the course certificates

2.1.2 ProZim Society

The ProZim Society is a Charity Organization involved in promoting education through provision of scholarships to children with limited financial means and capacity building of Kenyan primary school teachers particularly in the area of environmental education (EE).

ProZim covered stationary, catering and excursion costs of some participants in addition to administrative overheads.

2.1.2 Coastal Oceans Research and Development Indian Ocean-(CORDIO) East Africa

This is a regional research organization involved particularly in research in the coastal area with respect to ecology, management and socioeconomics. CORDIO-EA also assists in implementation of national and regional coastal conservation initiatives.

The organization covered costs of some participants' accommodation, facilitators' honoraria, transport and other administrative overheads.

2.1.3 Lafarge Eco Systems (LES)

This is a subsidiary of Bamburi cement ltd. which has been involved in rehabilitation of the world renowned Haller Park in Mombasa.

Apart from fully supporting two participants from Kwale, LES provided in-kind support in the form of seminar venue, furniture and equipment.

2.1.4 International Ocean Institute- Eastern Africa (IOI-EA)

This is one of the regional centers of the IOI network which focuses on promotion of education, training and research to enhance sustainable use of ocean space and marine resources. IOI fully supported two participants from Diani and Gazi.

2.1.5 World Wide Fund for Nature (Kiunga)

WWF is a conservation organization with interest in areas of climate change, forests, freshwater, marine, species and sustainability.

WWF Kiunga fully supported three participants from Lamu and their Education Officer and

assisted in facilitating some sessions.

2.1.6 Other Organizations

Watamu Turtle Watch partially supported two participants from Watamu area while Buccaneer Diving provided a boat and guides for the marine excursion.

2.2 Participating Schools

2.2.1 Private Schools

School	Area	Follow-up project
St. John's Baptist Primary School	Mombasa	Tree planting
Pentrose Academy	Mombasa	Waste management
Alexander Manuel	Diani	Waste management

2.2.2 Public Schools

School	Area	Follow-up project
Dongokundu Primary	Watamu	School beautification
Dabaso Primary	"	Mangrove planting, fish feeding
Chirimani Primary	Shimba Hills	Waste management
Gazi Primary	Gazi	Mangrove planting
Kiwayuu Primary	Lamu	Tree nursery, paper mache
Ndau Primary	"	Tree planting
Kiunga Primary	"	Waste management
Ziwa la Ng'ombe Primary	Mombasa	Waste management
Kengeleni Primary	"	Waste management, flower garden
Sacred Heart Primary	"	School beautification

3 The Proceedings

The seminar was officially opened by the Deputy Municipal Education Officer (Mr. Tsuma) and ran from Monday 4th December till Friday 8th December 2006 starting at 8:30am and ending at 5pm every day. All the 13 expected participants were in attendance the whole week and morning sessions started on time as the availability of transport ensured participants arrived in time.

English was the main language of communication. Topics covered during the first day were introduction to the environment, overview of the week, overview of EE and Haller Park guided tour.

On the second day, guest speakers covered topics on Haller Park, Corals and Sea grass which were followed by outdoor games. Discussions on handling EE effectively and efficiently in the classroom with emphasis on use of available and affordable resources were held on the third day in addition to waste and pollution as well as a demonstration on making paper mache.

Talks on mangroves and establishment and management of tree nurseries were given on the fourth day. A guided excursion to Mombasa Marine Park and indoor games were carried out on the same day. The final day was used by participants to plan their school projects and present them for critique. The seminar was then closed by the MEO representative- Mr. Juma.

Group sessions, discussions and presentations were well received and everyone got a chance to present or lead at least two sessions. Sessions on environmental games and sharing of experiences were popular while that of handling EE effectively and efficiently elicited plenty of debate.

A pre-seminar questionnaire was used at the start of the seminar to determine the level of exposure participants already had in environmental matters while a post seminar questionnaire handed back on the last day summarized the participants' perceptions on all aspects of the seminar. Daily evaluations were also used to determine relevance, level of importance and get suggestions for improvement regarding different topics and how they were covered on each day. On day one and four, participants filled simple individual questionnaires with predefined rankings while on day two and three different color stickers were used on a common sheet to denote different ratings. The ratings and comments by participants provide useful insight into areas needing emphasis and improvement. Evaluations are highlighted in section 4.

The results of the pre seminar questionnaire influenced some of the activities of the seminar which were tailored towards addressing specific needs of resources and knowledge inadequacies. All areas mentioned as needing emphasis were covered either during the talks by guest facilitators or group discussions and presentations.

4 Evaluation

4.1 Pre seminar evaluation results

All the participants indicated they had taught subjects or topics which relate to Environmental Education (EE) including Science, Social Studies, Religious Education, and Agriculture. However, over 23% did not think they were effective due to inadequate resources, inadequate practical field activities, lack of staff support, poor teaching methods, inadequate knowledge on EE, inadequate reference materials and the level of impact on students and the school community.

All participants felt that following the seminar they would be more effective in transferring knowledge and skills to others. 76.92% of the participants were certain knowledge and skills would be transferred to other people's homes and neighbors hence ensuring that many people are reached.

Areas participants felt should be emphasized during learning included: protection and nurturing of environment, animal and plant species, importance of clean water and planting trees, tree nursery establishment & management, compound cleaning, importance of environment to man, how to conserve the environment, destructive activities as well as interdependence of living organisms.

84.61% of the participants had environmental clubs in their schools or had been involved in some kinds of conservation awareness activity such as planting trees, school beautification, beach cleanups, compound cleaning, poetry and modeling, mangrove planting and marine excursions.

4.2 Daily evaluation feedback results

On the first day 57.1% of the participants rated the overall organization of the day as excellent, 35.7% felt it was very good and 7.14% felt it was satisfactory. All participants indicated they had benefited from sharing of experiences. 78.6% said they got a clear grasp of EE and its evolution, 14.3% were not sure while 7.14% did not. Introduction to the environment was very good in providing 78.6% of the participants with knowledge while the Haller Park excursion was ranked extremely relevant by 64.29% of the participants.

On day 2 participants ranked games, sea grass, corals and overview of Haller Park as important. Time allocated for each was also indicated as adequate. On day 3 handling EE in the classroom and waste & pollution got the highest ranking of topics covered.

The overall organization of the fourth day was ranked excellent by 66.66% of the participants, very good by 25% and satisfactory by 8.3%. Participants indicated they would be more likely to use games, start waste management and tree nurseries projects for transferring EE knowledge in that order. 75% of the participants said that group discussions were very effective, 16.6% thought they were excellent and 8.3% felt that they were satisfactory.

4.3 Post seminar evaluation results

The seminar brought together 13 (11 trained and 2 untrained) teachers with an average of 8.3 years teaching experience. Among them, all subjects offered at primary level between pre-primary and Standard 8 were being taught. 5 of the teachers were from schools in town and 8 from rural schools. There were 6 female and 7 male participants.

Although all participants felt they would use their new knowledge and it would positively influence their teaching, 75.38% found the scientific input very important for their work as teachers while 56.92% found the same input difficult to understand. The most preferred effective teaching aids were ranked as practicals, games, discussions and excursions.

The most beneficial sessions were listed as handling EE efficiently and effectively, sharing of experiences, environmental games as well as waste & pollution. Participants were very pleased with the accommodation, food, excursions, level of interaction with facilitators and tree planting session.

Suggestions for improvement included increasing the seminar duration, providing an allowance, observing time, confirming facilitators' availability and providing participants with full seminar contents on CD at the end.

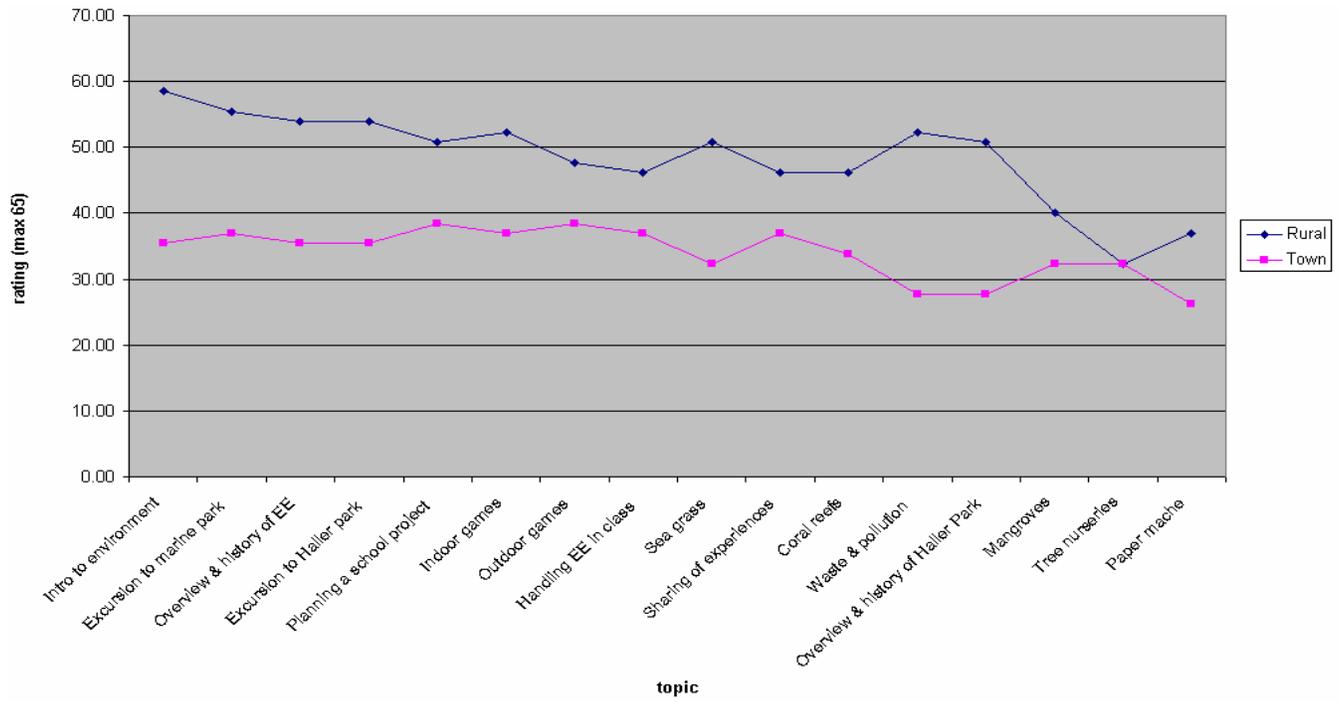


Figure 1: Topics' importance for teaching as ranked by town and rural schools

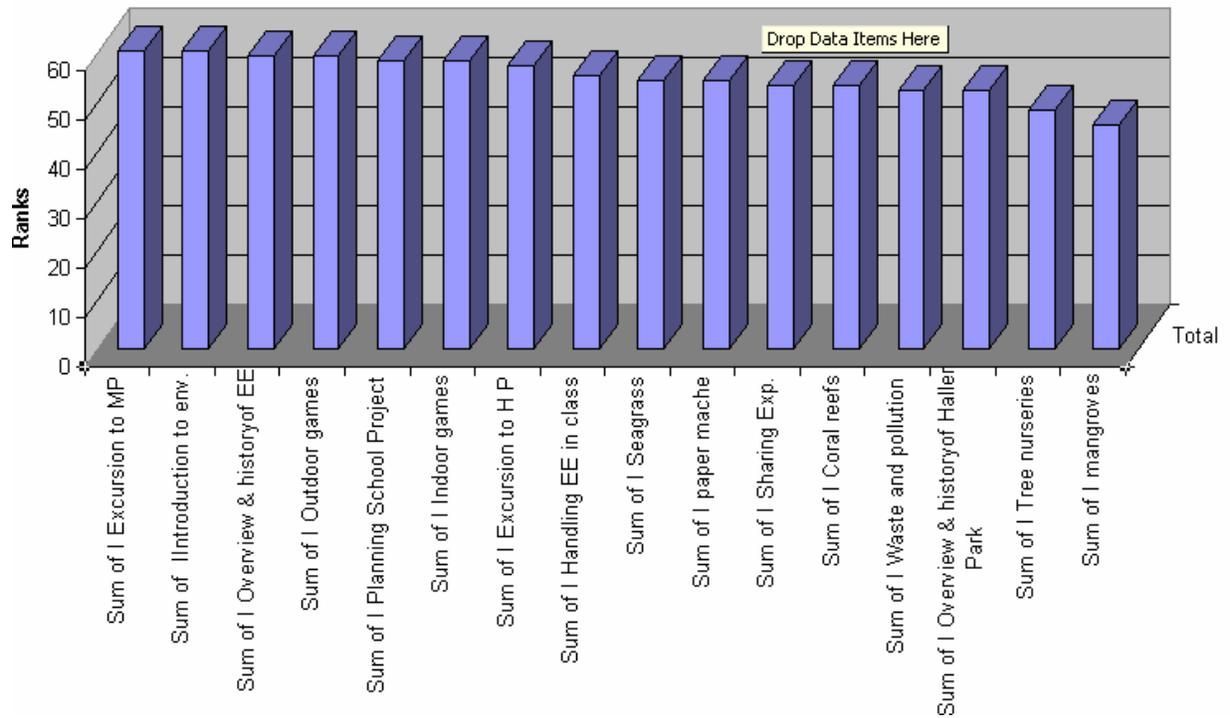


Figure 2: Relevance of topics covered

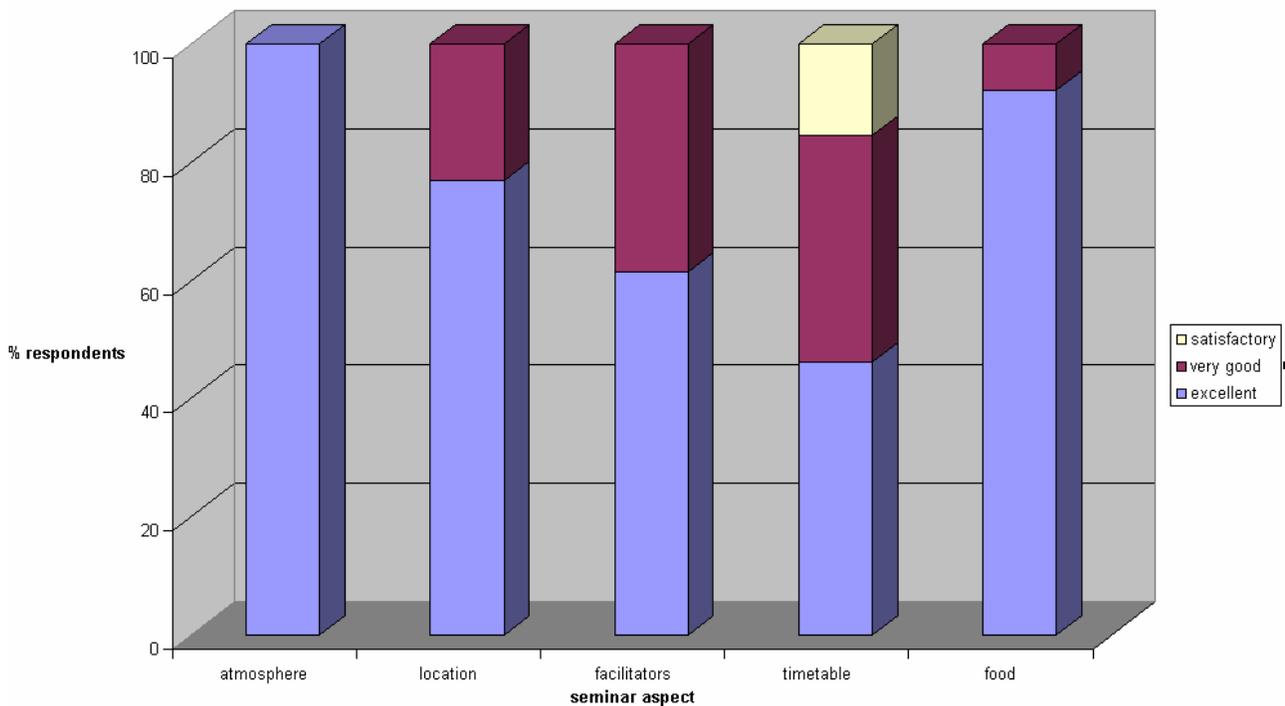


Figure 3: Rating of various seminar aspects by participants

The overall assessment of the seminar was given as 95.38% by participants.

5 Monitoring

Follow-up projects commence in term 1 in 2007. Partner organizations which supported and nominated participants assist in follow-up of their nominees and offer advice in instances of difficulty however, they are not obliged to support them in terms of resources as participants were advised to implement projects that are realistic given their financial, administrative and resource circumstances. Participants were also encouraged to use and reuse available resources to minimize costs.

Visits to schools have begun to assess projects as well as participants' progress in mentoring other teachers. The visits are planned in consultation with nominating organizations and participants. A visiting teacher from Switzerland is involved in monitoring for 5 weeks and instrumental in sharing effective teaching methodologies.

Performance of private schools in carrying out their projects will be compared to those of public schools as well as those of rural schools versus town schools. This is because although experiences from the initial two seminars had indicated that teachers from private schools have been more successful in implementing their projects; this was not the case with 2005 seminar participants. Preliminary assessment indicates that rural schools (mainly public) have already embarked on their projects unlike their town counterparts.

The favorite project among 2006 participants was the waste management probably because it appeared manageable from the demonstrations and would greatly reduce litter in the school compounds.

6 Conclusions and recommendations

Feedback from participants and lessons learnt in the previous seminars were applied while planning and carrying out the 2006 seminar. Partners in the 2005 program confirmed their continued support for the program while World Wide Fund for Nature (WWF Kiunga) participated for the first time.

As there were only 13 participants, all were active with each having a chance to make at least two presentations. The number also allowed greater interaction among participants and with facilitators. Group work done alternately in twos, threes or fours.

Based on the ratings of extent of success and importance of various topics to participants; the topics on covering EE in the classroom effectively and efficiently while addressing resource inadequacies, introduction to the environment as well as waste and waste management have been rated as very important in all the seminar years. Excursions were useful in reinforcing what was learnt and an interesting outdoor learning experience for participants in all the seminars. Teachers have however indicated being constrained in using them due to the financial implications they require.

Support from partners enabled participants from Kwale and Malindi to participate in addition to those from Lamu who were participating for the first time. A large proportion of the budget covers participants accommodation costs while there was a 5.98% increase in the amount spent per participant from the previous year.

The significant achievements of the training program so far include:

1. Implementation of school projects that benefit and influence school communities
2. Formation of cluster groups for teacher mentoring
3. Establishment of wildlife, environmental and eco clubs in schools
4. Linking participating schools with the schools to the sea program and the art and poetry competition
5. Establishment of partnerships with other organizations that support the involvement of teachers from other areas in the training and follow-up projects

The training program still has room for growth and should be strengthened and supported for expansion. Development of linkages with similar programs in other areas for resource exchange would be useful in enhancing the quality of the training for the teachers and the program as a whole.

7 Appendices

Appendix 1: List of participants

Participant	School		Phone	Organization
Sarah M. Divisi	Dongokundu Primary	Box 55 Watamu	0721 234625	Watamu Turtle Watch
Charles A. Babwoyo	Dabaso Primary	Box 140 Malindi	0721 109373	Watamu Turtle Watch
Zawadi Jira Mnyika	Chirimani Primary	Box 54 Kwale	0723 919386	Lafarge Eco Systems
Phylis M. Oduor	St. John's Baptist Pri.	Box 90691 Mombasa	0733 925702	Lafarge Eco Systems
Nebert Kinyua	Gazi Primary	Box 23 Msambweni	0734 668386	International Ocean Institute
Isaac Wangenye	Alexander Manuel	Box 5121 Ukunda	0724 426728	International Ocean Institute
Shahare Bwana	Kiwayuu Primary	Box 75 Lamu	0727 399286	WWF Kiunga
Ali Mohamed Bwana	Ndau Pri	Box 31 Faza		WWF Kiunga
Hussein Ruhuma Nassib	Kiunga Primary	Box 75 Lamu	0725 998199	WWF Kiunga
Hilda W. Kalama	Ziwa la Ng'ombe Pri.	Box	0726 539703	Municipal Education Office
Jane Odhiambo	Kengeleni Primary	Box 90381 Mombasa	0722 645011	Assist a Child to School
Austine A. Muyonga	Pentrose Academy	Box 34141 Mombasa	0726 539703	Assist a Child to School
Lillian Wanja Mutugi	Sacred Heart Pri.	Box 90161 Mombasa	0722 626796	Assist a Child to School

Appendix 2: Pre seminar Questionnaire

Dear Teacher,

In order to meet your needs for practical activities in Environmental Education (EE), it would be useful for us to know, what you are doing or have done in environmental education. Please assist us by answering the following questions:

1. Think about your lessons in class. Did you ever teach subjects that you think belong to EE?

Yes_____ No_____

Which subjects were this?

2. If you ever taught EE, did you do it effectively?

absolutely θ 5	θ 4	θ 3	θ 2	not at all θ 1
-------------------	-----	-----	-----	-------------------

What exactly was it (e.g. teaching method, inadequate knowledge or resources), that made you feel you taught or did not teach effectively?

3. Do you think with teaching EE (in the past) your lessons had an influence on student learning?

In the past (before the seminar):

absolutely θ 5	θ 4	θ 3	θ 2	not at all θ 1
-------------------	-----	-----	-----	-------------------

What kind of influence?

4. Do parents, neighbours, other children learn something in EE from your pupils?

absolutely				not at all
------------	--	--	--	------------

0 5	0 4	0 3	0 2	0 1
-----	-----	-----	-----	-----

Why do you think this?

5. What is it exactly, that you think that your pupils should learn in the EE in their lessons?

6. Do you have an environmental or related club at your school? Yes_____ No_____

a) If Yes, What activities are carried out by members?

b) How does the club influence other pupils and teachers?

Thank you very much!



Appendix 3: Post seminar Questionnaire

Dear Teachers

Please cross the appropriate box or fill in the answer! Thank you! ☺

Details will be treated as confidential

Name: _____ Age: _____

Sex: _____ School: _____

Address: _____

How many years have you been teaching? _____

Which standards are you teaching? _____

Which subjects are you teaching? _____

Are you a trained or an untrained teacher? _____

1. **Contents of the seminar:** Please look at the program and rate the two following questions for each part of the seminar (A until M)

a) To what extent did we succeed in

	very much				Not at all
	5	4	3	2	1
A Introduction to the environment	<input type="checkbox"/>				
B Overview and history of EE	<input type="checkbox"/>				
C History, overview of Haller Park	<input type="checkbox"/>				
D Excursion to Haller Park	<input type="checkbox"/>				
E Handling EE in the classroom	<input type="checkbox"/>				
F Mangroves	<input type="checkbox"/>				
G Sea grass	<input type="checkbox"/>				
H Coral reefs	<input type="checkbox"/>				
I Waste and pollution	<input type="checkbox"/>				
J Excursion to Marine Park	<input type="checkbox"/>				
K Planning an school project	<input type="checkbox"/>				
L Sharing of experiences	<input type="checkbox"/>				
M Outdoor environmental games	<input type="checkbox"/>				
N Indoor environmental games	<input type="checkbox"/>				
O Establishment and management of tree nurseries	<input type="checkbox"/>				
P Demonstration in making paper Mache	<input type="checkbox"/>				

b) How important are the different parts of the seminar for your work as teacher?

	very much				not at all
	5	4	3	2	1
A Introduction to the environment	<input type="checkbox"/>				
B Overview and history of EE	<input type="checkbox"/>				
C History, overview of Haller Park	<input type="checkbox"/>				
D Excursion to Haller Park	<input type="checkbox"/>				
E Handling EE in the classroom	<input type="checkbox"/>				
F Mangroves	<input type="checkbox"/>				
G Sea grass	<input type="checkbox"/>				
H Coral reefs	<input type="checkbox"/>				
I Waste and pollution	<input type="checkbox"/>				
J Excursion to Marine Park	<input type="checkbox"/>				
K Planning an school project	<input type="checkbox"/>				
L Sharing of experiences	<input type="checkbox"/>				
M Indoor environmental games	<input type="checkbox"/>				
N Outdoor environmental games	<input type="checkbox"/>				
O Establishment and management of tree nurseries	<input type="checkbox"/>				
P Demonstration in making paper Mache	<input type="checkbox"/>				

2. Please rate the following for the whole seminar:

a) The importance of scientific input for my work as a Teacher was.....	very important 5 5	4	3	2	not important 1
b) How difficult was the scientific input for me to understand?	very difficult 5 5	4	3	2	not difficult 1
c) At the moment I think that I would use my new knowledge at school	absolutely 5 5	4	3	2	not at all 1

3. Which ones of the methodologies from the seminar can you apply in your classes?

4. In future: Do you think with teaching EE your lessons will have an influence on student learning?

absolutely 5	4	3	2	not at all 1
-----------------	---	---	---	-----------------

Why do you think this?

5. Other Aspects of the Seminar: What do you think of ...

	excellent			not satisfactory	
	5	4	3	2	1
... the atmosphere during the course?	<input type="checkbox"/>				
... the location of the course?	<input type="checkbox"/>				
...the facilitators at the course?	<input type="checkbox"/>				
... the timetable of the course?	<input type="checkbox"/>				
... the place where you were staying?	<input type="checkbox"/>				
...the food at the seminar?	<input type="checkbox"/>				

6. a) Further comments: What did you benefit most from in the seminar?

b) What did you not like in the seminar?

7. What is your overall assessment of the course?

	excellent			needs major improvement	
	5	4	3	2	1
	<input type="checkbox"/>				

8. If there will be another seminar next year: How do you think the course can be improved?

Thank you! 😊