

Teachers' Training in Environmental Education

Mombasa / KENYA



Report

**Pilot-Seminar (December 03) &
Monitoring (February 04)**

To be handed to

Baobab Trust (Mombasa, Kenya)
Pro Zimlati (Switzerland)

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Index

1	INTRODUCTION	4
2	ORGANISATION.....	5
2.1	PROJECT MANAGEMENT.....	5
2.2	PROFESSIONAL MANAGEMENT	5
2.3	LOCAL ORGANISATION.....	5
2.4	PARTICIPANTS.....	5
3	INVOLVED SCHOOLS AND ORGANISATIONS.....	6
3.1	BAOBAB TRUST	6
3.2	PRO ZIMLATI	6
3.3	BAMBURI PRIMARY SCHOOL	7
3.4	ZIMLATI PRIMARY SCHOOL	7
4	RUNNING THE PILOT-SEMINAR	7
4.1	PREPARATORY WORK	7
4.1.1	<i>June 2002 through February 2003 (Switzerland)</i>	<i>7</i>
4.1.2	<i>March 2003 (Kenya)</i>	<i>7</i>
4.1.3	<i>April through November 2003 (Switzerland)</i>	<i>7</i>
4.2	CARRYING OUT THE PILOT-SEMINAR 2003	8
4.2.1	<i>December 2003 (Kenya).....</i>	<i>8</i>
4.2.2	<i>January 2004 (Switzerland and Kenya).....</i>	<i>10</i>
4.3	CARRYING OUT THE MONITORING 2004.....	11
4.3.1	<i>March 2004 (Kenya)</i>	<i>11</i>
4.4	POST-PREPARATORY WORK	14
4.4.1	<i>March and April 2004</i>	<i>14</i>
4.4.2	<i>May through November 2004</i>	<i>15</i>
5	EVALUATION	16
5.1	QUESTIONNAIRES.....	16
5.1.1	<i>Pre Questionnaire</i>	<i>16</i>
5.1.2	<i>Post Questionnaire</i>	<i>18</i>
5.1.3	<i>Final Questionnaire</i>	<i>21</i>
5.2	CONCLUSION OF THE PROJECT MANAGER.....	23
6	PROSPECTS.....	23

Index of appendices

- APPENDIX 1: FINDING OUT THE NEEDS
- APPENDIX 2: APPLICATION FORM
- APPENDIX 3: ROUGH OUTLINE
- APPENDIX 4: INFORMATION LETTER
- APPENDIX 5: INVITATION
- APPENDIX 6: LEARNING JOURNAL
- APPENDIX 7: REQUIREMENTS FOR THE CERTIFICATE
- APPENDIX 8: QUESTIONNAIRES (PRE / POST / FINAL)
- APPENDIX 9: REQUIREMENTS FOR THE TRANSFER OF THE SEMINAR CONTENTS
- APPENDIX 10: ROUGH OUTLINE FOR THE FIRST TRIMESTER
- APPENDIX 11: AKNOWLEDGEMENT OF PARTICIPATION
- APPENDIX 12: GROUPODISCUSSION ABOUT THE LIVED EXPERIENCES
- APPENDIX 13: EXAMPLE OF FEEDBACK OF A LEARNING JOURNALS
- APPENDIX 14: GENERAL AN INDIVIDUAL FEEDBACK
- APPENDIX 15: LETTER OF THE MUNICIPAL COUNCIL OF MOMBASA
- APPENDIX 16: MINUTES 7/1/04
- APPENDIX 17: CERTIFICATE
- APPENDIX 18: MINUTES 6/1/04
- APPENDIX 19: DUTIES OF SARAH ATER
- APPENDIX 20: MINUTES 8/1/04

1 Introduction

This Report is meant to be a descriptive evaluation of the Pilot-Seminar „Teachers' Training in Environmental Education“, held on December 8th through 12th, 2003, in Mombasa, Kenya. The report is not a scientific evaluation, it „only“ wants to summarize and describe all activities which took place on the one side as a preparation, on the other side during and after the seminar in order to assure a knowledge transfer. Nevertheless, the evaluation of three questionnaires is included in this report. I hope this report can illustrate what happened before and during the seminar, and some evaluation results may help in planning and realising a future seminar.

At this point I'd like to express my thankfulness to the staff of Baobab Trust (and especially to Dr. René Haller) for making the infrastructure available and for their fruitful professional support during the seminar. My thanks to the Association Pro Zimlati for granting to make good a deficiency and for the stimulating conversations during meetings.

My thanks go as well to the School District Horgen North and South and the Parish Auegst am Albis, for their much appreciated financial help.

My very special thanks go to Seraina Bassin, who, being a biologist and a primary school teacher, planned the seminar and played a primary role in making it successful. Also to Tobias Schmid, who assisted Seraina Bassin in her job, a big thank you.

Last but not least I thank lic. phil. Priska Sieber (scientific collaborator in Development Aid Co-operation at the Institution for International Co-operation in Educational Issues, Switzerland) for giving me her competent professional and human support.

Zürich, April 5th, 2004

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2 Organisation

2.1 Project Management

The Project Manager **Kathrin Futter** (primary school teacher, cand. lic. phil. Pedagogical Psychology, certified Teacher for Adult Education and Chairman of Pro Zimlati, Switzerland), decided in 2002, together with **Dr. René Haller** (Agronomist and Director of Baobab Trust, Kenya), to offer a Pilot-Seminar on Environmental Education for local Kenyan primary school teachers (see also the information leaflet „Pedagogical Developmental Aid Kenya – Switzerland“).

2.2 Professional Management

Seraina Bassin (Biologist ETH and primary school teacher, Switzerland) was recruited for choosing relevant topics and for the professional management of the seminar. **Tobias Schmid** (Agronomist, Switzerland) was present during the seminar as a Teaching Assistant.

2.3 Local Organisation

Samuel Mambo (Deputy Headmaster Zimlati Primary School and participant at the seminar, Kenya) was responsible for the information of the participants.

Sarah Ater (Bachelor of Environmental Science, Kenyatta University and employee at Baobab Trust, Kenya) was of great help and will be in future our direct co-operation partner as well as assistant of Seraina Bassin.

2.4 Participants

A total of eight participants (4 teachers of the Bamburi School und 4 teachers of the Zimlati School) were invited to the seminar. Based on a written application, they were selected out of 17 teachers of both schools.

3 Involved Schools and Organisations

3.1 Baobab Trust

«The Baobab Trust in Mombasa / Kenya is a non-profit making organisation committed to conservation through sustainable utilization. The trust is engaged in activities to protect natural resources, encourage Environmental Education, and develop research».



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3.2 Pro Zimlati

The Association Pro Zimlati is a charity Organisation which sees its goal in supporting Pedagogical Developmental Aid Co-operation in East Africa, as directly as possible and with a minimal administrative effort. E.g. Scholarships to attend Zimlati Primary School are granted to children with poor financial means.

The Association also supports the further education of Kenyan primary school teachers e.g. teachers of Zimlati Primary School.



*Partnership for Teacher
Training between
Switzerland and Kenya*

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3.3 Bamburi Primary School

Bamburi Primary School is a public primary school in the region of Bamburi Cement Factory. The school is situated next door to the Haller-Park.

3.4 Zimlati Primary School

Zimlati Primary School is a private „community“ Primary School with quite low fees. It is situated close to the Haller-Park.

4 Running the Pilot-Seminar

4.1 Preparatory work

4.1.1 June 2002 through February 2003 (Switzerland)

During this period Kathrin Futter prepared for her stay in Kenya in March 2003. Besides the analysis of the subject-matter, the budget was planned and the recruiting of sponsors for the financial support of the Pilot-Seminar was started and run.

4.1.2 March 2003 (Kenya)

During 14 days several meetings with the two schools selected for the Pilot-Seminar took place. Needs were found out (**Appendix 1**) and interested teachers were asked to apply for the Pilot-Seminar by an application form. (**Appendix 2**).

4.1.3 April through November 2003 (Switzerland)

This period was primarily dedicated to the definition of the topics and to the planning of the Seminar. Seraina Bassin made up the rough outlines of the seminar schedule (**Appendix 3**). Kathrin Futter, together with Priska Sieber, selected the eight most suitable teachers following a checklist of criteria. An informative letter as well as a confirmation of admission to the seminar was sent to the participants (**Appendix 4**). Seven

teachers confirmed their enrolment, in order to replace the eight teacher, two people on the waiting list were informed by Samuel Mambo about the vacancy. In the middle of November Kathrin Futter sent out the final invitation to the Pilot-Seminar (**Appendix 5**).

4.2 Carrying out the Pilot-Seminar 2003

4.2.1 December 2003 (Kenya)

On **Sunday night, November 30th 2003**, Seraina Bassin and Kathrin Futter took their flight to Mombasa and landed on Monday morning. The same morning a meeting with Dr. René Haller and Baobab Trust took place at their Office. The first goal was to solve organisational problems (organize the catering for the participants during the seminar, check out the school room, find out what additional material had to be procured). At the same time, this week was dedicated by Seraina Bassin and Kathrin Futter to the elaboration of a detailed programme of the seminar and the choice of suitable teaching methods (the detailed programme may be requested by Kathrin Futter).

Unfortunately Seraina Bassin was seized by a parasite on Thursday and had to be cured with antibiotics during several days. Fortunately she recovered well during the seminar and could take part in it since the first day (even if still a bit weak).

On **Monday, December 8th 2003 at 9 a.m.** the great moment had come - everything had been organised: the Catering Service had been booked and all training units were ready. Dr. Haller and Kathrin Futter (Seraina Bassin saved her strength on this morning) expected the eight teachers in the Baobab Pavilion for the „Welcome Address“. To our regret only two Teachers appeared at 9 a.m. (at 9.15 a.m. a third one came). All of them were from the Zimlati School. The fourth teacher of the Zimlati School had to attend the funeral of her grandmother, and only came back to Mombasa and to the Seminar on Wednesday (she had, however, charged a colleague to give us this message). No one from the Bamburi School had come: this surprised Dr. Haller and the Project Manager. After asking him, Samuel Mambo (Local Coordinator) informed us that he had told the teachers verbally about the Seminar because he hadn't been able to print out the invitation letters sent by email in the middle of November. The letters sent by airmail only came in – so Samuel Mambo

– after the school had already closed (holidays begin on December 1st). It clearly appeared that the verbal information had not proved successful; no one of the teachers of the Bamburi School was now present. Later we learned that until the past Friday the Bamburi teachers didn't know whether the Seminar would be held or not (one teacher came on Tuesday, having spread the voice, another one came on Wednesday). Two teachers had left (in the assumption the Seminar would not be held), to travel to their relatives.

For me as Project Manager this communication failure was a big disappointment! I see my fault in the fact of not having sent an invitation to the Bamburi teachers through Baobab Trust, and letting Samuel Mambo do the information job alone (since he had sent me the confirmation of both schools in October I assumed he would also inform both schools about the dates the Seminar would take place). This surely is one part of the problem. The other part is that Samuel Mambo didn't do his job properly (and I from my side didn't check whether he had done it).

For a future Seminar Dr. Haller and Kathrin Futter were able to gain Sarah Ater, employee at Baobab Trust since November 2003 (Bachelor in Environment and experience as an „Assistant Conservation Education Officer“ in the Wildlife Clubs of Kenya of the Coastal region where she was responsible for the development of Environmental Programmes for school of the surroundings). She will be in charge of the local organisation. This will hopefully help to reduce the communication difficulties.

Kathrin Futter and Dr. Haller started the Seminar with the present teachers (on Tuesday there were four participants, on Wednesday six, together with Sarah Ater it made seven people). Beginning on Tuesday, the schedule worked out well and the moods cheered up. The participants were very interested and motivated to learn as much as possible. They often worked through the breaks or over the lunch-time (the meals of the catering service were delicious!) and filled their „Learning Journals“ (**Appendix 6**). In order to achieve their Certificate (**Appendix 7**) all teachers had to keep a „Learning Journal“ which was meant to contain notes about the topics as well as didactical reflections. On the first and on the last day, the participants filled in a questionnaire, **Appendix 8** shows the evaluation of these forms.

4.2.2 January 2004 (Switzerland and Kenya)

Back in Switzerland, Kathrin Futter wrote this report. The main role of this stage, however, was played in the two schools in Kenya.

The teachers have decided to create an „**Environmental Club**“. In Kenya's Primary Schools the last lesson of the day is not a usual lesson, although the teacher is still present in the classroom, as well as the pupils. Once or twice a week there is a playing-hour (often soccer, if there is a soccer-ball), on one other day the children can take part in a Club, (the Club can be of all kinds: theatre, music, wildlife, or, as in this case, „environmental“). The pupils usually join a Club and stay in it during the whole school term. In public schools (e.g. Bamburi) teachers can make a suggestion to the Schoolmaster and he normally agrees to such a Club. In private schools (e.g. Zimlati) the suggestion is made by the Schoolmaster or by someone of the Management and the teachers will be asked to lead the Clubs. Because of this, the Zimlati teachers were a little reluctant to ask the Schoolmaster. Samuel Mambo (Deputy Schoolmaster) was optimistic and convinced he would be given the agreement of the Management. Should this not work out, Dr. Haller has promised to arrange a meeting with the Board Members of the Zimlati School.

During the Seminar (on Friday), the teachers were concerned about putting into practice what they had learned. At the beginning the idea of the Project Manager was that the teachers could use the lessons of the subject „Science“ to teach „Environmental Education“. This, however, proved to be quite difficult, given a very strict curriculum the schools need to follow. For every lesson there is a precise prescription of what needs to be taught, so to prepare the pupils for the exams held every term. Further it is difficult because the teacher of the Zimlati School don't know until the end of December whether or not they will teach a class in January and if, which grade it will be (the teachers of private schools only have a contract for one term). On the other side, teachers of public schools are employed on a life-long basis.

After a large discussion it was clear that creating an „Environmental Club“ was the best solution, since not only the teachers are free to choose what to teach in their Club but also the pupils attending are interested and motivated (requirements for the transfer of the seminar contents, see **Appendix 9**).

On Friday night the five teachers had prepared together a rough outline of their Club for the next term (**Appendix 10**), as well as a detailed programme for their first Club-lesson.

During the whole term the teachers were asked to write down their detailed programmes of each Club-lesson in their „Learning Journal“, and to make some notes of reflection after holding the lesson. The „Learning Journal“ would be collected and read by Kathrin Futter on February 2004.

In order to reach a possibly long lasting effect of this Pilot-Seminar, there would be a Monitoring in both schools on February 2004. In fact, all research work of Pedagogical Psychology shows how far the way from knowledge to practice is; therefore after a training course it is necessary to allow a supported transfer. It's absolutely human that newly learned knowledge will not be automatically used in practice. For this reason the participants receive their Certificate only after passing the Monitoring.

At the end of the Pilot-Seminar every teacher received an acknowledgement of participation showing also which requirements each one still needed to fulfil in order to achieve the Certificate. (**Appendix 11**).

4.3 Carrying out the Monitoring 2004

4.3.1 March 2004 (Kenya)

On February 9th, Kathrin Futter came back to Kenya for 2 weeks in order to carry out the Monitoring of the teachers. As it had already appeared in outlines in January, for the Bamburi Teachers it was especially difficult to begin with the Club. At the public school Bamburi, teachers' work is very extensive. The two teachers have very big classes and a great deal of administrative work to do. They succeeded in gaining pupils for their Club, yet only one meeting had been held so far, on January 28th. Unfortunately one of these teachers was not sincere to Sarah Ater and Kathrin Futter. She sustained, the pupils had met three times (January 16th, 23rd, and 30th) and handed in the preparation of the Lessons as well as a reflection on how she had felt after holding them. The other teacher claimed she hadn't been able to meet with the Club because of too much work. One week before Kathrin Futter's arrival, Sarah Ater made up the date for the Monitorings: Friday, February 13th. As K.F. and S.A. got there on this day, both teachers as well as 25 pupils were present. How-

ever, nothing happened. Neither of the teachers started the lesson, nor did the pupils move. Reading the notebooks of the children, we found out that the Club had met on January 28th and February 12th. Only on K.F.'s request did one of the teachers start repeating what had been treated during the last lesson.

The first Monitoring of the private Zimlati Teachers was different. K.F. hosted a lesson about the sense and purpose of compost. Each of the three teachers (the fourth one is no longer teaching at this school, but at a high school) held a lecture of about 15 minutes and now and then asked questions to the class, to check whether they understood. The pupils were very disciplined and some of them gave answers.

After these first two Monitorings, K.F. invited all teachers to a meeting on Saturday afternoon at the Office and explained once more the sense and purpose of this transfer phase. She held a group discussion with the teachers about their experiences, which was registered and later transcribed in rough outlines by Sarah Ater (**Appendix 12**).

The Bamburi Teachers became the task to hold a Club meeting on the coming Friday, February 20th. The Zimlati Teachers were to vary their teaching methods. K.F. collected the Learning Journals (**Appendix 13**). During the weekend K.F. wrote a general feedback as well as a personal one for each teacher (**Appendix 14**).

During the Monitoring phase it was also possible for K.F. and S.A. to meet the Municipal Education Officer Mrs. Kirongo and inform this official authority about our activities. For our programme, we can now count on the support of the MEO (see **Appendix 15**).

On Thursday, February 19th, the Bamburi Teachers sent Sarah Ater an SMS, telling her they wanted to retire from the project. They were not able to meet the requirements.

“Pls tell kathrin that maimuna & I hv decided 2 withdraw from EE prgram. We cant take the presure, theres just too much. 2morrow we expect inspection & games.”

S.A. met the two teachers on Friday morning and found out that especially the written preparation of the lessons required too much work. Moreover, Club meetings had a very different structure than the usual lessons, as normally the pupils have the idea of making a Club and one teacher is then asked to be their Club patron, another one will be his assistant. Teachers don't need to make preparations; they rather coordinate and support the ideas and activities of the pupils. Unfortunately Kathrin Futter was not informed about this difference until this point, since the proposal to use the Club meetings to transfer what was learned during the Seminar had come from the teachers themselves. Nobody had ever mentioned this problem as the topic of planning and preparing a lesson was treated at the end of the seminar. S.A. and the Bamburi Teachers agreed upon them continuing with the Club, since both liked the programme they had elaborated. They'd need more time and should be able to proceed at their own pace, i.e. not meeting weekly. Kathrin Futter decided together with Sarah Ater that nevertheless the Bamburi Teachers were to hand in four written lesson preparations and also hold them accordingly (same requirements as the Zimlati Teachers). Finally, everyone agreed.

After this unexpected change, several intense discussions between Kathrin Futter, Sarah Ater and Dr. René Haller took place (**Appendix 16**) – since the new situation concerned the conception and especially the structure of the Monitoring.

On Thursday, February 19th the Zimlati Teachers held the Club meeting planned for Friday the 20th (because on Friday there was a School Football Tournament). Kathrin Futter and Sarah Ater saw a very well structured lesson with group work (each group coached by a teacher) where the correct answers were found out in group discussions based on question-cards. The teachers moderated, added or corrected. One out of each group finally presented the answers. In the end, an 8th grade pupil reminded the teachers that they had promised them to show them a compost. The teachers confirmed and Saturday, February 28th, was agreed for an excursion to the Shambas together with Sarah.

On Friday night, February 20th, Samuel Mambo (Zimlati), Alice Mwaviswa (Zimlati) and Lilian Musungu (Zimlati) were given their Certificate (**Appendix 17**). Ahmed Mohamed (Zimlati) was given the acknowledgement

of participation; for the Certificate, he still has to make up with Sarah Ater the missing days. The Certificates of the Bamburi Teachers are prepared and stored at Sarah Ater's; they will be given them, once they have fulfilled the four Club Lessons still missing. New to Kathrin Futter is, that the teachers asked for an additional motivation, (according to S.A. and Rene Haller this is very important); therefore every teachers will be given a T-shirt with the Environment-Logo (see **Appendix 18**).

Altogether the Monitoring Phase took a quite different course as expected. The following points need to be clarified for a future Seminar:

- What exactly is a Club (compared to usual lessons)?
- How can a Monitoring be structured in order to allow the participants to transfer some of what was learned in the seminar to their teaching practice, without, however, asking too much of the teachers?
- Which topics of the seminar should be transferred into practice? An idea could be: the teachers decide at the end of the seminar for themselves which Monitoring type would make sense and this will be agreed on in a written form with the Seminar Management and the School.

Sarah Ater could be engaged by Kathrin Futter as a Project Assistant for the period of a year. She is responsible for organizing the next Seminar and supporting the teachers (see Duties, **Appendix 19**).

4.4 Post-preparatory work

4.4.1 March and April 2004

The final version of the report was written by Kathrin Futter and an intense email-contact took place between K.F. and Sarah Ater. On March 4th, the District Officer Mr. Abdirahman S. Mohammed visited Baobab Trust and assured again the support from this official side (**Appendix 20**). The Bamburi Teachers are working much better after this visit. Unfortunately the situation of the Zimlati Teachers is no longer as good. The following information was given to K.F. by S.A.:

This is what I found out:

- I attended Lillian's Club yesterday (*Lillian Musungu has on own Club at her new High-School, note of K.F.*). I think she is doing a good job.

She has 12 students, all of whom were active during the club. They are from class 5 to 8 (primary) and include two Form 1 (secondary). Her new school is run from pre-primary to secondary. They wish to visit Haller Park next week also.

- Bamburi Club meeting was quite interactive though the students were much less than expected. This is because not all students continue coming to school after finishing their exams. I am still to confirm their proposed visit to Haller Park.
- Zimlati did not hold a Club meeting that Friday. Actually, they stopped having meetings when the headmaster denied knowledge of existence of the club. He claimed he did not know about the Club and demanded to know if it had any funding.
- Samuel Mambo had been summoned to explain about the trip to Haller Park even though the letter requesting for permission had been written by Alice and Ahmed. Upon this the trip was cancelled. After this Mambo told them (Alice and Ahmed) to go on with the Club activities and he would give support, which unfortunately has not been done. This raises great concern about the sustainability of the Club.

4.4.2 May through November 2004

Preparation of the Seminar of December 2004:

Switzerland (Kathrin Futter):

- Intensive Fundraising
- New talks with Seraina Bassin

Kenya (Sarah Ater):

- Choice of eight more Schools and sixteen new teachers
- Support of the existing Clubs

5 Evaluation

5.1 Questionnaires

5.1.1 Pre Questionnaire

5.1.1.1 Presentation of the results

All six participating teachers filled in a first questionnaire on the first day (see **Appendix 8**). In the following, the results are presented. The answers are based on a 5-step rating-scale.

E.g.: If you ever taught EE, do you think you did it effectively?

absolutely <input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	not at all <input type="checkbox"/> 1
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ANALYSIS OF THE PRE-QUESTIONNAIRE

1. Did you ever teach subjects that you think belong to EE? What kind of subjects?

100% yes

Science, GHC, Social Studies, Islamic Religious Education, Agriculture, Christian Religious Education

2. Do you think you taught EE effectively?

66.6% fair (3/5), 16.6% (4/5), 16.6% (2/5)

- What exactly was it (teaching method, lack of knowledge), that make you feel you taught effectively or not at all effectively?

Effective due to experiments.

Ineffective due to lack of knowledge, inadequate facilities for teaching, lack of practical lessons, poor teaching methods that bore students (lecturing)

3. Do you think with teaching EE your lessons had or will have an influence on student learning?

- **In the past**

16.6% not at all, 33.3% (2/5), 16.6% (3/5), 33.3% (4/5)

- **Why do you think this?**

Insufficient knowledge leading also to less interest and enthusiasm in some teachers, lack of real life situations so as to give accurate practical examples, lack of knowledge on child-centered teaching methods

- **In the future**

83.4% absolutely, 16.6% (4/5)

- **Why do you think this?**

Extra knowledge has been acquired and new approaches to subjects thus better teachers, teachers interest will be passed onto pupils, use of child-centered teaching methods,

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

66.6% think yes absolutely, 33.3% (3/5)

- **Why do you think this?**

Practical experiments will be motivating, pupils are already sharing what they learn, teachers will encourage them to talk and give them research to do as well,

5. What is it exactly you think your pupils should learn in EE?

How to conserve the environment, relationship between the different living things, the importance of the environment, to improve the environment so everyone benefits, importance of animals, plants and soils, controlling pests in crops and animals, appreciating our environment, interdependence of ecosystems, soil formation, soil types and nutrients, plant and animal types, requirements, adaptations

5.1.1.2 Interpretation of the results

It can be assumed that all teachers have taught EE before, but they were not satisfied about it. The reasons here fore is on the one side lack of professional knowledge, on the other side also little knowledge of appropriate teaching methods and Teaching Aids. The teachers agree that EE

has a great influence on their pupils. But this will happen only after the seminar, when they assume they will have enough professional knowledge and will have learned teaching methods which will allow them to transfer the interest for EE to the pupils.

Basically, we can assume that the teachers follow the seminar with a great motivation and want to broaden their professional and methodical knowledge.

5.1.2 Post Questionnaire

5.1.2.1 Presentation of the results

ANALYSIS OF THE POST-QUESTIONNAIRE

1. Contents of the seminar

- To what extent did we succeed in:
- How important are the different parts for your work as a teacher

Table showing averages

PROGRAM	EXTENT OF SUCCESS	IMPORTANCE FOR TEACHERS
Plant physiology, plant nutrition	4.5	4.75
Soil formation, soil biology, compost	4.5	5
Realization of a plant experiment	2.5	5
Theory of evolution	4.5	5
Producing animal descriptions for the classroom	5	5
Feeding strategies	4.5	5
Designing a food web	5	5
Waste – problem or resource?	4.5	5
Excursion to the Baobab farm	5	4.5
Summary of the week	5	4.75
Planning a lesson unit	5	4.75

2. Please rate the following for the whole seminar

(Averages given)

- Level of biological inputs for my work as a teacher was – 4.6
- Level of difficulty of biological inputs for myself was – 2.2
- At the moment I think I can use my biological knowledge at school – 4.6

3. Which methodologies can you apply in class

Group discussion, story telling, field trips, experiments, summary (using cards), networking, note making (learning journal),

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

100% absolutely

▪ Why do you think this?

Transfer of EE knowledge acquired would make students enjoy EE and be good environmentalists, due to new methodologies learnt, due to increased awareness of environment, co-existence with it and its importance, as it will broaden pupils thinking (help them understand nature, its functioning and apply it elsewhere), as what is learnt may be applied in daily activities.

5. Other aspects of the seminar. What do you think of

(Averages given)

- Atmosphere during the course - 5
- Location of the course - 5
- Timetable of the course – 4.8
- Allowances (food) you received – 4.5

6. Further comments:

▪ What did you benefit most from the seminar

More knowledge about the environment, improved methodology, socialization with colleagues and sharing teaching experiences, gained knowledge in bringing practical changes in school and at home, learning to appreciate nature, understanding of need for individual effort to make a difference in awareness, change of attitude, learning different ways of using waste material as well as plant and animal biology.

▪ What did you not like in the seminar

Frequent absents of participants, missing some days and wish seminar was for 1 month, lack of time keeping by participants, lack of means of transport

7. What is your overall assessment of the course

60% perfect, 40% (4/5)

8. If there is another seminar next year, how can the course be improved

Provide transport for teachers, bring in more participants, make seminar longer to cover more topics and in detail, having a timetable that is less squeezed, confirming participants who shall come, changing the time to August

5.1.2.2 Interpretation of the results

This questionnaire was filled in by five teachers immediately following the seminar (on Friday afternoon). One teacher was at the wedding of his sister; again, the answers are based on a 5-step rating-scale.

E.g.: To what extend did we succeed in

	very much				not at all
	5	4	3	2	1
A plant physiology, plant nutrition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The ratings show that in a very high percentage (mean „extent of success“ = 4.55 / mean „importance for teachers“ = 4.88) the content of the seminar was considered important for the teachers, as well as successfully imparted. It is interesting to read, how the difficulty of the subjects was not considered very high (mean = 2.2), while the difficulty of the contents, seen from the teacher side and referred to their teaching activity, was very well chosen (mean = 4.6). All teachers are convinced that their EE lessons will in future have a great influence on the learning of the pupils.

5.1.3 Final Questionnaire

5.1.3.1 Presentation of the results

ANALYSIS OF THE FINAL QUESTIONNAIRE

1. You taught an Environmental Club at your primary school. How did you succeed in achieving the following goals :

a) Teach the pupils relevant contents concerning EE

Average 3.83

- **Where (in which subject) do you think you improved the pupils' knowledge in EE the most?**

Science, Social Studies, Christian Religious Education

b) Teach the pupils more by doing or carry out things than giving them facts about things

Average 3.66

- **What exactly have you done with your pupils outside the classroom?**

Naming plants, making compost, doing a germination experiment, study of school surrounding, visiting shamba, identifying wastes used in compost

c) Could you carry out a learning and teaching process which was as much as possible learner-centered

Average 4

- **What have you done to teach more pupil-centered?**

Experiments, using questionnaires, group discussions, free question sessions, planning activity based lessons, encouraging pupil interaction

2. When you now look back over this term 1

a) Which are your most positive experiences concerning the environmental club?

Increased pupils curiosity on the subject, learning new ideas, personal initiative in motivating pupils, personal attitude change, pupils increased awareness and con-

cern, increased knowledge in EE and better teaching methods, learning how to interact with the environment.

b) Which are your most negative experiences concerning the environmental club?

Pressure from other school work, lack of administrative support, time limitations, pressure at the beginning, kids are stubborn and don't want to change behaviour, lack of motivation

3. Do you want to continue with club lessons in term 2 and 3

5 yes, 1 'hope so'

4. If you would be asked to assist in a next seminar on EE in December 2004 and tell other teachers about your experiences would you agree?

4 yes, 1 'not sure', 1 'with proper arrangements'

5.1.3.2 Interpretation of the results

This last questionnaire was filled in by all six teachers. Basically we can say that also in the eyes of the teachers the transfer was only in part successful. Relevant contents could be imparted (3.83), nevertheless not in a practical but rather in a more theoretical way (3.66). On the other hand, the teachers stated to have been using more often learner-centred teaching methods (4.00). This, however, is probably due to the intervention of Kathrin Futter (see **Appendix 14**).

The teachers judged as positive that they had succeeded in raising the curiosity of the pupils for the subject and how they also developed self-initiative to motivate their pupils. Moreover, they were excited about the new learned methods and pleased to have broadened their professional knowledge.

Above all, they judged as negative the amount of additional work for the Club meetings and the lack of support from the School Management. Also the short period of time for the transfer and the pressure of being measured in a Monitoring already in February were criticized.

Five of the teachers stated they would continue with their Club in the next term, one hoped to.

5.2 Conclusion of the Project Manager

Altogether I feel the Pilot-Seminar can be valued as positive, despite some difficulties in carrying it out.

The following points are positive:

- Increased professional knowledge of the teachers
- Increased methodical-didactical knowledge of the teachers
- Establishment of three „Environmental“-Clubs
- A considerable amount of pupils has joined the Clubs.

Here there were/are difficulties:

- Club meetings are not like regular lessons.
- Lack of motivation from the teachers during the transfer phase
- Difficulties with the Monitoring
- Lack of support from the School Management

Nevertheless, I think that it is worth planning and carrying out another Seminar in December 2004. The teachers will be chosen based on a new procedure and will have experience in Environmental-Club meetings. This time it will be possible, on the one side, to learn from the mistakes made during the Pilot-Seminar, on the other side, to repeat and improve what was already successful.

6 Prospects

Given the financial founding, Dr. René Haller, Sarah Ater and Kathrin Futter are willing to organize the first official Seminar, on the base of the experience made with the Pilot-Seminar, in December 2004. It will be held for 16 Kenyan Primary School Teachers.

Following points will need to be especially considered:

Seminar:

- Choice of the schools: four private und four public schools
- Four schools already offering a „Wild-Life-Club“ or similar
- Altogether 16 teachers (2 from each school)
- Location: Pavilion of the Haller Park
- Catering Service (the same, if still existing)

- Co-Teaching: Environmental Scientist from Switzerland (Seraina Bassin will be asked) and Sarah Ater
- Previous visit of the chosen teachers and delivery of a rough outline of the seminar programme asking for completion, suggestions for changes and wishes.
- Clear statement, that the Certificate will be handed over only after the transfer phase
- Distribution of a T-Shirt as a motivation for the transfer phase.
- Involving the District Education Office at the Welcome Address and at the graduation event (both should be held in a more ceremonial way)

Monitoring:

- The contents of the Monitoring should be agreed upon by the teacher, the Seminar Management and the School Management
- Reciprocal Monitoring of the teachers? Integrate in the Seminar: What does it mean to give feedback? (first it must be clarified, whether or not there is a possibility of mutual visiting)
- Move the Monitoring to a later point in time
- Ceremony for the handing over of the Certificate