

Save the Rhino International: Environmental education programmes supporting Laikipia, Mkomazi and North Luangwa

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Introduction

This presentation arises from the last AfRSG meeting, held at Lake Manyara, Tanzania, in 2008, when attendees rated Environmental Education Programmes (EEPs) as the lowest of all the Key Components and subcomponents, when considering African rhino conservation priorities for the next 10 years. Why are EEPs often still seen as an add-on, as a ‘nice-to-do’ adjunct to the overall conservation programme? We believe that in many cases they have not been properly thought through, and that, were they done properly, they could really help the organisation to deliver its conservation goals.

The pitfalls for EEPs

There is a tendency for EEPs to fall into several traps:

Not thinking about why do an EEP in the first place:

- *“We know we ought to offer an EEP and it goes down well with donors.”* The tail should never wag the dog. With limited resources (staff, time and money), conservation organisations need to start with their conservation goals, and then consider whether an EEP would help them to achieve those

Do you know what you what you want your EEP to achieve?

- *“We could have a bus and take children to see wildlife. We could build an education centre and put displays in it and then people would come to visit.”* This is thinking in terms of what can be offered – usually tangible resources – rather than whether the programme supports the overall conservation goals
- *“We need to teach people how to save the planet.”* EEPs try to be all things to all people and fail to consider audience segmentation and prioritisation
- *“We need to cover everything to do with the environment because it is not well taught in schools.”* EEPs often try to replace the work of school teachers, rather than adding to it. It’s true that many school teachers don’t have the necessary background themselves, but if the EEP starts trying to cover everything, it loses the focus on the programme’s conservation goals
- *“We gave them a day they will never forget for the rest of their lives.”* Lack of preparatory work and follow through means that trips are regarded as a fun day out

Just as importantly, many EEPs fail to produce measurable educational objectives before the commencement of an EEP and therefore have no benchmark to conduct M&E against.

How do you know if you have achieved that?

- *“1,550 people visited our education centre in 2010.”* This is an example of an output (tangible results) and not an outcome (conservation impact)
- *“We get teachers to fill out a questionnaire at the end of the day.”* Inevitably there is a strong “willingness to please” element associated with this method of data collection; teachers don’t critique the programme because they are worried it will be taken away if they say anything negative

These pitfalls are understandable, given that rhino programme managers are not education experts. So, how to avoid the pitfalls?

Relating your EEP to your overall conservation goals

Save the Rhino International (SRI) now supports three EEPs: at the Laikipia Wildlife Forum in Kenya (since 2004), at the Mkomazi Rhino Sanctuary in Tanzania (since 2006), and at the North Luangwa Conservation Programme in Zambia (since 2007). We don't pretend to have got things perfect, but we do think that the EEPs we support – financially and technically – are good blueprints for how to go about setting up an EEP. The starting point for each of the three EEPs is the conservation goal of the organisation concerned. These are as follows:

- The Laikipia Wildlife Forum, Kenya: to conserve the integrity of the Laikipia ecosystem by creatively managing its natural resources to improve the livelihoods of its people
- The Mkomazi Rhino Sanctuary, Tanzania: to enhance the protection and management of this rhino population and its habitat
- The North Luangwa Conservation Program, Zambia: to develop and implement policies and plans in support of effective ecosystem management, to maintain the wilderness of North Luangwa National Park, and the function of the natural ecosystems in surrounding areas, for its intrinsic value and the benefit of people

Each of these three EEPs then asked themselves: what difference do you want to make? This in terms of measurable outputs, outcomes and impacts. Broadly, they can be characterised as aiming to increase understanding of the need for and value of wildlife and a healthy natural environment. Here's how our three EEPs answered that question:

- The Laikipia Wildlife Forum: to provide action-orientated learning in schools, conservancies and through community leaders and structures, that addresses environmental degradation, erosion and deforestation, and the issues of land use and other activities that threaten the stability of natural resources and wildlife in the Laikipia District
- The Mkomazi Rhino Sanctuary: to change attitudes towards wildlife and habitat conservation to secure the long-term sustainability of Mkomazi National Park and its conservation efforts
- The North Luangwa Conservation Program: to reduce threats to species and ecosystems by improving the understanding of conservation by the communities living in the Game Management Areas surrounding North Luangwa National Park

So how do you put that into practice? What does your EEP look like? The EEP in Mkomazi is probably the simplest, clearest illustration of what we mean. The other EEPs in Laikipia and in North Luangwa are following the same broad structure, even though the messages, audiences and delivery methods vary.

Rafiki wa Faru at Mkomazi Rhino Sanctuary

First, some background on Mkomazi. Mkomazi was established as a Game Reserve in 1951, but never attracted the financial support provided for better-known wildlife strongholds such as the Ngorongoro and the Serengeti National Parks. By 1988, Mkomazi was in steep decline. It represented a classic example of degradation. Heavy poaching had wiped out its black rhino and elephant populations. Overgrazing, deliberate burning and illegal hunting had also taken their toll. At one time it was even feared that the Reserve might be de-gazetted and released for subsistence agriculture.

In 1989, the Government of Tanzania (GOT) invited Tony and Lucy Fitzjohn from the George Adamson Wildlife Preservation Trust (GAWPT) to work with them:

- to rehabilitate the habitat of MGR, so that nature (flora and fauna) will survive in the long term as an ecosystem, directly linked to Tsavo National Park in Kenya
- to manage the re-introduction and breeding programmes for the highly endangered wild dog and black rhinoceros
- to strengthen the protected status of MGR to National Park status

while involving the indigenous peoples of the Mkomazi area.

The Mkomazi Project was born. Since 1989, Tony and Lucy have worked with the Government to put in infrastructure, recruit and train personnel, and then to reintroduce endangered species: the black rhino and the African wild dog. A couple of years ago, Mkomazi was gazetted as a National Park, in recognition of the importance of the habitat and of its wildlife populations. As well as the work inside Mkomazi, the Fitzjohns' Trust did a lot of outreach work: donating bags of cement to local schools to build classrooms, building an entire secondary school and so on.

Recruiting expertise

However, Mkomazi had never had an EEP, and when Tony and Lucy began talking about the possibility with us, we called in the expertise of Chester Zoo, a very well-known UK conservation organisation, which has provided funding for black rhino programmes in East Africa for many years through SRI. In common with many other zoos, Chester wants to be more than just a cheque-book; it wants to offer strategic technical support in areas where it has core conservation programmes. For Mkomazi's EEP, we work with Dr Maggie Esson, Education Programmes Manager at Chester Zoo.

Designing the programme

Having established what Tony and Lucy wanted to achieve with Mkomazi's EEP, the third question Maggie asked was: What messages do you want to deliver? There were four main areas that the EEP needed to cover, all essential parts of the Mkomazi Project:

- Habitat restoration of Mkomazi National Park
- Water conservation
- The black rhino breeding programme in the Mkomazi Rhino Sanctuary
- The wild dog breeding programme

However, there were two other factors to consider. Firstly, could the EEP be used to deliver strong messages about the very high levels of security in the Mkomazi Rhino Sanctuary, to deter poachers? And secondly, despite all the outreach work, there was still a lot of mistrust in the local communities about the whole Mkomazi Project. They asked why two white people, Tony and Lucy Fitzjohn, were allowed to live inside the Game Reserve, when they had been forced to move out. Were they mining for tanzanite? They knew that Tony had a plane: was he using that to fly out precious minerals or ivory? Tony's Trust was giving some schools bags of cement to build classrooms. But any school that didn't get cement (after all, the Trust couldn't afford to build everything) simply wondered what Tony had done that he was trying to keep secret by bribing headmasters with new school buildings. None of this outreach addressed the suspicions of the local communities. So when designing Mkomazi's EEP, we knew we had to tackle all these rumours, before we could even begin to teach people about environmental education.

The fourth question was: Who do you want to reach with these messages? The answer for Mkomazi, (as it will be for many rhino programmes) was the people living on the Park boundaries. There are 44 significantly important schools within the area surrounding Mkomazi Game Reserve, which are located within four Districts: Same East, Same West, Lushoto and Mwanganga and Handeni. It was agreed that the programme should target children aged 15 years from Form One of the 14 secondary schools nearest to the National Park. Children of this age have the ability to tell a reliable story about the experience with their developed language skills and understanding. This story is therefore told to family, younger siblings and elders; children are recognised as important message multipliers in families and communities.

We also decided that an important secondary audience was decision-makers at a district government and village community levels.

One answer, possibly the cheapest option, might have been to train the teachers so that they could then teach the schoolchildren. However, teacher training is only really effective if teachers stay in post and our conservation investment creates a legacy. In the schools around Mkomazi, teachers are routinely moved out of district every three years or so and without consultation. In this situation, therefore, teachers were not considered a target audience for the EEP.

The fifth question was: How do you deliver these messages to those people? We thought about this very carefully. We could have employed an EE Officer (EEO) and given him a vehicle, a generator and a laptop, so that he could travel around the schools giving presentations, as they do in North Luangwa. We could probably have covered the four issues – habitat restoration, water conservation, and black rhino and wild dog breeding programmes – reasonably well that way, albeit without those inspirational moments that can happen when a child sees a rhino, or a zebra or a giraffe for the first time. However, we couldn't see how the other two factors – the strong security in the Sanctuary and dispelling the rumours about the Trust's work – would be covered. Maggie, Tony and Lucy agreed that it was essential to be able to bring people into Mkomazi National Park, to show them the work being done. Let them see the project for themselves, with their own eyes, and then they could go back to their communities and spread the conservation messages.

The answer then was a bus: a bus that would collect 27 schoolchildren and 2 teachers from the 14 schools nearest to Mkomazi National Park, and take them into Mkomazi and the Rhino Sanctuary. Two of the Mkomazi staff – Elisaria Nnko and Semu Pallangyo – would share the teaching duties between them; supported by a bus driver, also seconded from the team at Mkomazi. The programme itself is called “Rafiki wa Faru” – friend of the rhino.

Delivering the programme

The whole day is very tightly choreographed, to stay focused on those four key messages – habitat restoration, water conservation, wild dogs and black rhinos – together with the other two underlying messages – tight security at the MRS and dispelling rumours about activities in the Park. The basic format of each trip is therefore as follows:

The school is responsible for getting the students and teachers as far as Same or Kisiwani, and the bus meets them there. The bus is brightly painted in tinga-tinga style with scenes from Mkomazi, and there is a lot of detail in these paintings for Elisaria / Semu to be able to teach brief lessons from them: what they will see, and how it relates to them. For example, rivers flow from Mt Kilimanjaro. Animals drink from the river, and people collect water from it to drink and to wash their clothes. Then the bus sets off for the Park. Large groups of parent and villagers

usually turn out to see the bus collect the children and by utilising the bus as a teaching resource, the EEOs are able to deliver an impromptu presentation to large and diverse audiences.

TANAPA officers or rangers always greet the Rafiki wa Faru students as they enter Mkomazi National Park, either through Zange HQ or the Njiro Gate. TANAPA gives the students a welcome to the Park and explain to them the differences between a Game Reserve and a National Park. The Mkomazi TANAPA personnel are happy to be part of the Rafiki wa Faru programme. The officers or rangers tell the students about the history of Mkomazi, the devastation that took place with over-grazing, sport-hunting, poaching and relentless burning in the 1980s and the rehabilitation that took place to date to bring it up to National Park status with Tanzania's first Rhino Sanctuary as a flagship conservation project. TANAPA always talks to the students about the working partnership and cooperation between their organisation and GAWPT, giving the students a chance for interaction with the wildlife authority of their Nation.

Elisaria / Semu pause the bus in the village, at the Park entrance (where there are some invasive plant species) and then again in the middle of the Sanctuary, and ask the students to identify the differences in what they see. Many of them have never been into "the bush" before: the places where they live have all been given over to human habitation and agriculture. This action immediately conveys the concept of plant biodiversity in a concrete way.

After driving through the National Park with the possibility of sighting wildlife, the students arrive at Kisima base. First, they go to see the wild dogs, and have a talk by Sangito, who is in charge of that programme. He talks about how they hunt, about the alpha male and female, and how the group works together to help raise pups. Then they see the vehicles needed to maintain the Park infrastructure: the grader, the tractors, the water bowser, the haycutter etc. They see the vehicle workshops and how the vehicles themselves are maintained.

They visit the water-catchment project, and Elisaria explains how the rainwater run-off is captured and stored.

Next they drive to the Mkomazi Rhino Sanctuary (passing through the security gate and meeting Philbert Shindano (i/c security), who makes a big show of counting heads and entering the date in the vehicle log-book. From now on, all the people they meet are carrying guns and are in uniform.

The bus takes them through the Sanctuary to the Environmental Education Centre. This is on a hill in the middle of the Rhino Sanctuary with panoramic views of the Park. Despite the huge logistics that were undertaken to build the Centre here, it has been well worthwhile, as it has a positive impact on virtually all who visit it. The students feel safe on top of the hill looking down at the environment and the habitat.

Here, they have a 20-minute lesson about conservation, a 10-minute DVD about rhinos and Mkomazi, followed by lunch outside. The film presentation was specially edited for use in the Education Centre and limited to ten minutes, following research on the optimum concentration levels of viewers. After lunch, they meet two of GAWPT's rhino trackers, Evans Goodluck and Emmanuel Maxi, and learn about their work. The trackers are excellent role models for this age group, who are thinking about future employment. Then they have a re-cap and an activity (current activities are about categorisation or the food chain, depending on the nature of each school group). The activity has been researched and materials sourced by Maggie Esson. The

pupils participate in these hands-on activities with relish and this is a rare opportunity for their learning to be participatory; and tactile as they handle biofacts and artefacts.

At the end of the session, the pupils visit the rhino observation bunker, hopefully see a rhino (many of the students are lucky enough to see a black rhino from the safety of the observation bunker by the watering hole) and this contributes greatly to the conservation impact. It is considered important that the pupils have a rhino experience of some kind and Chester Zoo has just donated a lifelike model rhino cow and calf, which the students can see and be photographed with. They can sense the size and power of rhinos and the photograph is a souvenir of the day to take home to family. They are then taken back to Same or Kisiwani, using bird and animal laminated sheets to identify what they are seeing. The students use monoculars to study the wildlife both from the vantage point of the education Centre and during the game drives on the bus.

As outlined above, the four key issues have been covered during the day: habitat restoration, water conservation, black rhinos and wild dogs. The students have been able to interact with Elisaria and Semu and learn about their working lives. They have met rangers working on security and on rhino monitoring. Being able to meet and talk to men of this calibre adds value for the students, and presents them with strong role models. Finally, they have seen for themselves what Tony and Lucy and their team are actually doing in Mkomazi. This will have been the most exciting day of their lives, and they go back to their schools and their families with stories about everything they have seen and done.

Occasionally, Tony has used the bus to bring in community groups from the nearby villages, or students from Mweka college, or TANAPA officials. Even his own staff have been on the bus, and have been taught exactly the same lessons by Elisaria and Semu, so that they know what Rafiki wa Faru does.

One of the key things with this programme was to keep it manageable and sustainable. Elisaria and Semu are not trained educators. Their primary roles are to manage the rhino sanctuary and to manage operations. So it was important that the EEP did not take up too much of that time. For that reason, it was specified very early on that the programme would only take place on one day a week, and not in the wet season, when the roads become difficult. Rafiki wa Faru offers something different for Elisaria and Semu and they enjoy their work on the EEP, while continuing to focus on their main jobs.

Monitoring and evaluating the programme

There is a sixth key question: How do you know it is working? Maggie has put in place several ways of capturing data, to test whether the programme is (to go back to Mkomazi's original goal for the EEP) "changing attitudes towards wildlife and habitat conservation to secure the long-term sustainability of Mkomazi National Park and its conservation efforts." She does this in several ways:

- Worksheets completed by the pupils during each trip
- Evaluation forms completed by Elisaria / Semu after each trip, in which they record the name of the school, number of participants, details of aspects that went well and those that could have gone better, positive and negative quotes from the pupils, questions asked at the time of the original enquiry and their overall impression of the session
- Teachers' review sheets completed after each trip
- Teachers' feedback sessions

- Pupils' Personal Meaning Maps
- Anecdotal evidence

These data are collected by Lucy and then sent to Maggie in Chester, where the Education Department staff analyse them. Here are some of the results:

Pupil worksheets: A selection of 20 pupil-completed worksheets (Living thing / Not a living thing) were reviewed. Out of the 20 responses, only one pupil managed to score all of the 'living things' correctly (nine out of nine possible answers). The vast majority of the other pupils (13) scored six correct answers. No pupil scored less than four. All pupils correctly identified the four animals in the worksheet so it is clear that the areas of difficulty lay with identifying plants as living things. This type of information is useful to feed back into the teaching agenda and identifies which teaching points need to be strengthened. 20 pupils completed a second worksheet (All living things need food). Students did not seem to have a problem with this worksheet and 20 of the 20 pupils scored a maximum of four correct answers.

The teachers' evaluation forms: After each session, the teachers must complete a review sheet which asks the following questions:

- How will the safari help you with your lessons in school?
- Did the safari change your understanding of what goes on inside Mkomazi?
- [Lists five important parts to the work in Mkomazi National Park and asks the teacher to prioritize them]
- Can the safari be improved for you and your pupils?
- Your Rafiki wa Faru Safari to Mkomazi was free. If the school or the pupils had to pay, would you still want to come?
- Please can you list three words that could be used to describe the experience that you and your class had on the Rafiki wa Faru safari?
- Please send us any other opinions, criticism, comments or suggestions you would like us to consider for the future

Again, these are being analysed by the Chester Zoo team.

Teachers' feedback sessions. Maggie and Elisaria visited seven participating schools a week after their trip to Mkomazi. 28 teachers were interviewed in a series of focus groups. Four of the seven groups wanted to talk at length about rumours they had heard concerning activities inside Mkomazi (the issue did not come up in the other groups). These conversations covered issues of:

- Ownership of the Park – that it was owned by 'Mr Tony.' This is the name used to identify Tony Fitzjohn OBE, Manager of the Mkomazi Project
- Illegal mining for minerals, including gold and rubies
- Mr Tony bringing in invited guests, who paid him money to use the Park
- Illegal trade in wildlife
- Using the project plane to take resources out of the Park

“Mr Tony he takes those animals and kills them. Then he exports them. They say he uses his plane.”

The nature of these rumours bears out what we already knew concerning the local suspicions about the activities inside the Park, and demonstrates the need to raise awareness through the education programme of the true nature of the conservation effort.

Teachers were confused to some extent about what National Park status meant and what animals were in the Park. They felt that there was a low level of awareness in the community too. In particular, the rumour that rhinos had come from South Africa seemed to confuse them. They instinctively felt this was some sort of 'a deal'.

Teachers stated they had changed their opinions of activities in the Park following their visit and now believed that conservation was taking place. They noted the quality of the environment as an indicator that positive work was happening. They said they would urge others to visit if they could, to see things with their own eyes.

Teachers were impressed by the credibility of the project staff who talked to them, though they confused the Rangers with 'soldiers'. Teachers felt the information they were given was genuine and this, combined with seeing the infrastructure of the Park, appeared to have changed their opinion for the better. Five of the seven groups talked positively and in some detail about what they had been told or shown by project staff. The water catchment system and how machinery and heavy plant was used for conservation was noted by several teachers. Previously they had thought that the machinery was something to do with mining.

"The rain water, they have a project to keep water from draining."

As was to be expected, they were in awe of the animals they saw. It is interesting to note that many of the teachers had never seen the wildlife of their own country. It may be expected that seeing a rhino or wild dogs would be a new experience and rhinos and dogs were mentioned by many of the groups, but other more 'common' animals also formed part to the highlights of the trip for example:

"An ostrich, I have never seen an ostrich."

"It was the first time for me to see the warthog. I thought the animal would be very dangerous but he came and wanted some kind of friendship with me, something I did not expect."

Four of the seven groups also discussed the benefits of the National Park possibly being a source of employment in the future and in bringing in vital tourist revenue.

"Also the people can get employment at the National Park."

"Rhinos attract tourists and when they come to see the rhino, the government earns some foreign currency."

The teachers felt that awareness of Mkomazi was low amongst their students and, not surprisingly, students very much enjoyed the experience of visiting the National Park and seeing the animals. Teachers felt aspects of the teaching and what the students observed would help them in their studies in school. Seeing the animals and helping to bring learning to life were seen as benefits to the students. Teachers observed that they had heard students telling their peers in school about the trip in a positive way. For teachers, the disadvantage was that too few students had the opportunity to make the trip. One group talked in detail about the need for a hostel on site so pupils could stay the night to make more of the opportunity to see wildlife.

Pupils' Personal Meaning Maps: On the same occasion as when the teachers participated in focus groups, pupils were invited to complete Personal Meaning Maps (PMMs). 117 maps were completed and 29 (25%) were randomly selected for translation into English.

Pupils were asked to list the animals they could remember seeing on their trip to Mkomazi. Rhinos and wild dogs clearly are the two that are cited most often. In terms of quantity, the number of animals named on PMMs was between zero (three PMMs) and eight (one PMM), with the average number (mean) per PMM being just over three (3.14). The animal named most frequently was the rhino (20), followed by wild dog (15), gazelle (11), elephant (6), birds (5), warthog and giraffe (5), dik dik (4), ostrich and kudu (3), impala and hare (2) and then finally baboon, cheetah, cats and francolin (1 each). Analysis of the PMMs revealed five emerging themes:

- Misconceptions about what goes on inside Mkomazi (34.5%)
- New awareness of conservation action (82.8%)
- Noticing the quality of the environment (62.1%)
- Commenting on threats to wildlife (64.3%)
- The value pupils attributed to interaction with staff in the Park (39.3%)

Anecdotal evidence: Elisaria and Semu also note down things that participants on the trips tell them. Community leaders have told Elisaria how their perception of Mkomazi has changed because of their meeting with TANAPA management and GAWPT personnel, seeing the work in the field and becoming part of Rafiki wa Faru. A few of them admitted that their family members had been poachers. Many of them are astounded at what they see on their trip. Some have been filled with regret that their families had been involved with poaching. One leader asked if he could become an informer to TANAPA. One old gentleman was moved to tears when he saw one of the Mkomazi rhinos.

Conclusion

To sum up: If you are thinking of Environmental Education Programmes in terms of 'throwing sweets over the fence' – deliver some education outside your reserve, that will create goodwill, and then you can get on and do your real jobs – that will not work. You have to start from the understanding that EEPs, done properly, will help you to deliver your programme's conservation goals. You need to ask the six key questions, as Mkomazi did:

- What is your conservation goal?
- What is your Environmental education goal? (What difference do you want to make?)
- What messages do you want to deliver?
- Who do you want to reach with these messages?
- How do you deliver these messages to those people?

You keep it manageable and sustainable. You can always expand it later. And then, you must ask:

- How do you know it is working?

Running an EEP like Rafiki wa Faru is an ongoing cycle:

- Consolidate the programme (refine message, delivery methods and, if necessary, audience)
- Resource the programme (develop teaching materials, provide vehicles, train staff)
- Monitor and evaluate the programme (putting systems in place, collecting data and evaluating it). Are they making that difference?
- Strengthen the identity of the programme (building the brand and defining relationship with other stakeholders)

Do those things and you have the makings of a great Environmental Education Programme that will help you to deliver your conservation goal.

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