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## Formal Environmental Education in The Gambia

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Here in the United States, people are aware of the environment and the issues that threaten her protection and conservation. In saying this, I do not mean that everyone is informed of the most up-to-date research concerning the rate of depletion of the ozone layer, or the exact status of an endangered local bird. In general, people understand that in order for future generations to enjoy a healthy, beautiful, and diverse environment, one must take certain steps in order to play a small part in conserving what presently exists. This understanding is the result of many years of awareness campaigns that focus on teaching the population about issues, and what each person can do to help. Whether we are aware of it or not, the slogan Reduce, Reuse, Recycle is present somewhere in our minds, and may actually have an effect on our daily habits. The result of all of these campaigns is an aware society whose habits have slowly changed to become more environmentally friendly.

In the United States, this process has been supported by the government, schools many private businesses and organizations, and has been ongoing for a number of years. However, many other nations around the world have struggled to mobilize the support that is necessary to fund and promote environmental awareness campaigns, or are in the beginning phases of educating their people about the issues that face the environment.

When deciding what type of project I could work on while in The Gambia, I was aware that this area of Africa is currently struggling with a number of pressing environmental issues, including desertification, and that efforts to increase awareness are just beginning to take root. As a biology major, I was interested in the natural world which is home to Gambians, and which is so different from my own surroundings. So, my original intentions were to study an environmental issue, and trace previous efforts to educate people about the issue.

In The Gambia, environmental education is generally thought of in two ways. The first is integrated into the formal school curriculum, and based on awareness on the national and international level. The information taught to students is very broad, covering



*Widespread deforestation leads to increased rates of erosion, compounded by increased soil and river water salinity.*

a variety of environmental topics and terms that the average American student would also be familiar with. However, the focus remains on those topics that directly affect The Gambia, such as deforestation, erosion, and desertification. The second type of formal environmental education is a more grassroots type of experimental education that is often organized by Peace Corps Volunteers in their communities. These efforts focus on projects in which communities can participate, directly helping both the environment and the community. In order to learn about both of these efforts, and to look at their effectiveness in both the classroom and the community, it was necessary to approach each method individually.

In The Gambia, there are many issues of environmental concern from which to choose, such as rapid population growth, coastal erosion, deforestation, rapid urbanization, groundwater degradation, and loss of fish stock. Due to the postponement of The Gambia's National Environment Week, my original idea gradually changed into a project that focuses on formal environmental education.

### The National Environment Agency

The institution that is responsible for implementing environmental education into the curriculum in The Gambia's public schools is The National Environment

Agency (NEA). The NEA was created in 1993 and has been responsible for a large number of programs and projects relating to the environment, including participation in the National Environment Management Council. The programme officer of Environmental Education and Communication, Ms. Ndey Sireng Bakurin, has helped integrate environmental education into previously existing curriculum. This is done from the first year of school, and continues on through all levels of formal schooling. The subject matter for study comes from a manual that was created in 1992 by the NEA called The Gambia Environmental Action Plan. The Environmental Action Plan covers the topics of the physical environment, environmental health, the urban and coastal environment, physical planning, energy, important current issues, and existing programs and institutions. This information is incorporated into existing curricular areas such as social and environmental studies, health, and biology. Integrating the material, rather than developing a separate curriculum for environmental education alone, has many benefits. It encourages the integration of knowledge, avoids competition with other subjects for time and materials, and allows students to be exposed at every age level.

### **Environmental Education in the Schools: Creating a Program that Works**

The integration of environmental education into other subject areas creates the need for additional teacher training. The Gambia has been battling this issue due to the increase in the number of primary, junior, and senior secondary schools over the past



*The entrance to Gambia College near Brikama. The college has recently increased its admission rates in order to accelerate training of Gambian teachers.*

six years. However, beginning this upcoming school year at The Gambia Teacher Training College in Brikama, all students will take a mandatory class in environmental education. The curriculum for this class was developed in part by the NEA and consists of six units. These units include general environmental management in The Gambia, natural resource management, environmental health, energy, environmental economics, and environmental impact assessment. After having completed this class, a graduate will be expected to be well prepared to teach any environmental topics that have been integrated into the school curriculum.

An additional program that the NEA had been involved with is an international program called GLOBE. Developed by former vice-president Al Gore, the program provides students from selected countries around the world the opportunity to collect data about their environment. These data are then compiled, and can be shared and used by students and scientists all around the world. Students conduct an array of observations ranging from basic weather parameters to more sophisticated measurements as they advance through school, improving their mathematics and science capabilities while learning more about the environment (GLOBE Information Booklet). In The Gambia, The GLOBE program has been in schools since 1996, and currently has 15 schools participating. In May of 2000, a 15-day course for teachers and Peace Corps Volunteers to become GLOBE-certified was given to help increase the number of schools and students participating in The Gambia.

### **Peace Corps The Gambia**

The Peace Corps has been working in The Gambia for many years, and has helped Gambians to learn to deal with environmental issues that apply more directly to their day-to-day lives. In 1992, the Peace Corps responded to the need for formal environmental education by encouraging all volunteers (PCVs) to work on environmental education projects. In addition to several months of pre-service language culture and technical training, volunteers were given in-service environmental education training to provide them with resources and ideas to enable them to become involved. Since then, environmental education has been regarded as a cross-sectoral program, meaning that all volunteers should incorporate either formal, or informal environmental education into their work during the course of their two years in The Gambia. Associate Peace Corps directors (APCDs) in the fields

of Public Health, Education, and Natural Resources aid the volunteers in developing and carrying out these projects. Some informal projects have included building fences to help keep livestock from wandering, and an up-and-coming radio show that promotes environmental awareness.



*Tristan (shown at right) with two Peace Corps volunteers in Dankunku village where she learned about the Peace Corps' program in a rural school.*

Formal environmental education has taken the form of after-school activities, environmental clubs, programs such as clean-up days, and participation in the classroom. In any form, Peace Corps environmental education has five objectives: to promote awareness, increase knowledge, change attitudes, develop skills, and encourage participation. Once these objectives have been met, volunteers rely on the diffusion of information as a means of spreading knowledge. For example, a group of students who have learned about an issue would hopefully take the information home to their parents. This information would then be shared with the rest of the compound, and eventually with the entire village. Some of the environmental education projects that volunteers have taken on include bush fire prevention, woodlot and orchard planting, recycling and battery drive programs, and fuel-efficient mudstove building workshops.

## Methodology

A disadvantage to integrating formal environmental education into existing curricular areas is that the process of assessing the amount of knowledge that students are taking away from the classroom is very difficult. Questions concerning environmental issues must be integrated into exams in other subject areas,

and students must be able to separate previously integrated information in order to answer direct questions about the environment.

The age level I assessed was fifth and sixth grade boys and girls, who are nearing the end of their primary schooling. At this age, many of the students have a good understanding of English and are confident enough in their schooling to participate in class activities. Classrooms also have a comparable ratio of boys to girls, yet beyond this age many girls are taken out of school. I had the opportunity to visit both a rural and urban primary school. The rural school, Sofanyama Primary outside of Dankunku village, has had a PCV working with the fifth and sixth grade classes for the past two years. The urban school, Bakau-Newtown Primary, is well known for its strength in environmental education, and was the recipient of the 1994/95 National Environment Award (given annually by the NEA), as well as the third-place winner of the NEA's Millennium Award given this past summer. In the classrooms I was able to visit, I asked the students a series of questions about their environment, such as what issues they knew about and how the issues affected their lives. I also asked what activities the school has provided to teach them how to help the environment, and if the students have taken any of these activities home. At Sofanyama, I also asked the kids to create an environmental map of their village, illustrating any sections that are of environmental concern, or areas where the environment has been changed for the better.



*In order to reach Dankunku, Tristan had to change taxis where the road washed out after a heavy rain. Locals said the destruction was caused by a nyinkinanka, Mandinka for a magical dragon-like creature.*



## Findings

### Sofanyama Primary

I first went to Sofanyama Primary, a small school enrolling 258 students. I went with a second-year environmental PCV named Alicia Drydahl, also known as Amie Camara to her students, family and friends in The Gambia. For the past two years, Amie has spent part of her time teaching lessons twice a week in the fifth and sixth grade classes of two area primary schools. Her lessons have been a mix of biology, earth science, and environmental studies. When I showed up on her doorstep, she was more than willing to have me come and work with her on a lesson, and we worked out some questions about the environment we could ask the students.



*Amie Camara, aka Alicia Drydahl, in front of the class at Sofanyama Primary school.*

I arrived at the school, a half-hour bike ride away from Dankunku, and met with the headmaster and many of the teachers, who were excited to have me (and my digital camera) visit for the day. We finally headed for the fifth grade class, consisting of 20 students. We presented the kids with the questions, and were met with nothing but uncomprehending stares. Amie struggled to reword some of the questions for a while, probing the kids' memories for knowledge retained from lessons taught in weeks past, and after about fifteen minutes, a few timid hands hung in the air. "Rain hurts houses," one student offered. We decided to push that idea, and with encouragement, the students were able to come up with an issue: erosion. When probed, the students have a fairly clear understanding of environmental problems such as erosion, deforestation, and desertification.

However, they did not know, or remember, the terms. The students were much better at recalling activities that they had done with the school, such as planting mango trees and a garden, and building mudstoves. A few students have even planted mango trees or gardens in their village after having learned how in school. However, no one has built an efficient mudstove at home, even after doing exercises in class calculating the increased efficiency of the school stove. The class then worked together with their teacher, in their local language Mandinka, on creating a village map. The map includes a designated litter area, new trees that had been planted, soil erosion on the road, and a well that had been built to water a new woodlot.

Amie and I headed right to the sixth grade class, consisting of 19 students. We asked the questions, and the students' hands were in the air immediately. "Not enough rain," one enthusiastic girl tells me, "or enough trees." When asked why not, they could tell us why, which the fifth grade class was unable to do without Amie encouraging them. Like the fifth grade class, the students did not know the terms right away, but clearly understood the issues nonetheless. The next questions, concerning activities the school has done, or what the students have taken home, gave some promising answers. In school, the students have performed a



*Tristan learns how hard Gambian women work to make lunch. Here she is helping to pound grain for the midday meal.*

drama about the efficient mudstoves, formed a Red-Cross club that promotes a clean environment, and planted trees (each girl has her own tree in school to water). At home, many girls from the Red-Cross club say they help keep their compounds clean, and many students say they have planted mango trees at home. One boy shyly admitted to having built a mudstove for his mother. Amie was delighted to hear about the mudstove. The students, coming from five area villages, then drew individual village maps. The maps, without the aid of a teacher, were less detailed than the fifth grade map, but nonetheless showed many areas of environmental interest in each village.

Overall, the students surprised me first with how little English they can understand. Then I became surprised at the amount these students have learned considering their limited English. Although they don't know many terms, most of the students have an awareness of many national environmental issues, and have a clear understanding of the small actions and practices that help the environment.



*Tristan (at right) with her Peace Corps hosts in Dankunku.*

### **Bakau-Newtown Primary**

A week later, I returned to Bakau-Newtown Primary School after having previously met with the headmistress, Mrs. Jallow. I was given a tour of the school, which had a GLOBE weather station set up, and was then introduced to a sixth grade teacher, Jumu Wally. Mr. Wally's class consisted of 21 students, thirteen of whom were girls. Environmental education is integrated primarily into Social and Environmental Studies (S.E.S.), and Mr. Wally listed the topics that he has covered in his class, which include the physical



*The headmistress' office at Bakau Newtown Primary School.*

environment, international and national environmental organizations, interdependence between plants and animals (deforestation and conservation were covered in this unit), natural resources, and erosion. I then asked the students the questions I had presented to the Sofanyama classes. They responded enthusiastically, telling me about deforestation, soil and water erosion, desertification and the water cycle, air, water, and land pollution, and bush fires.

Mr. Wally, noting my amazement with their answers, encouraged the students to explain what must be done to help solve some of these issues. Students then began to explain the need for terracing land to prevent erosion, and that deforestation leads to desertification, which leads to erosion, and how planting trees stops this process early. Students understood terms and processes, and were able to connect ideas in order to develop and understand solutions. I was astounded by the amount of knowledge these students had acquired, and believe that in this area of study Mr. Wally's students rival American students of the same age. I then inquired about what activities the school has done, and what they have taken home. The entire class was eager to tell a story about planting a tree, or helping to clean their compound. One student pointed to a poster on the whitewashed concrete classroom wall which read, "If you nurture the environment, you nurture yourself. We are interdependent" A list of vows relating to the environment followed, and the poster finished with, do this practically more than words. I was told that self. We are interdependent" A list of vows relate this was the class pledge for the new millennium, and it means that each student must act out what they learn, and help others to do so as well. One girl then told me that the pledge was why she taught





*Students at Bakau Newtown Primary School relax for this photo.*

her sisters how to pick up litter, and that the girls now show others by example.

The lifestyles of those who live in an urban area are very different from those who live in rural villages. In order for a student's education to be practical, it must be suited to the lifestyle of the student. Many of the students from Bakau-Newtown probably will one day work in jobs that will require a more technical education. Hopefully, many will have the option of eventually going to college, either in The Gambia or outside. The students from Sofanyama, especially the girls, will probably not have as many options. Most will stay in the village, so their education is directed at bettering village life. However, a clear discrepancy exists concerning the quality of education received from an urban school as opposed to a rural school. Much of this has to do with the need to learn English before lessons can really begin in many rural schools. Amie told me as we biked home after class, it would just be so much easier if they could teach in Mandinka instead.

### **Interpretations of Findings & Conclusions**

The students that I was able to talk with at both Sofanyama and Bakau-Newtown Primary Schools showed true enthusiasm for learning about their environment and a willingness to help the environment in the ways they had been taught. A definite struggle to efficiently teach children in Sofanyama, and presumably

other rural school throughout The Gambia, exists due to a language barrier between the students and their teachers. This barrier presents a problem in teaching all subjects, not just in integrating environmental education. However, with the recent push to integrate environmental education in all schools and at every age level, the students currently in school will soon provide a base in Gambian society of environmentally aware men and women. The steps to create an environmentally aware population have been taken, and with time and some adjustments that would enable teachers to convey information more efficiently, I believe that Gambians will be able to take control of, and eventually solve, the environmental issues that currently face the nation.

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*The fire lily appears only at the beginning of the rainy season. We saw many on our way to and from Dankunku.*

Mr. Jumu Wally's Sixth Grade Class. Bakau-Newtown Primary School. Interview conducted on 5 July 2000.

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*On the day she left for Dankunku, Tristan chose which barracuda we would buy for our farewell party the following week.*





*The sun feels even more intense upriver. A Bajakunda man uses an umbrella to protect himself in the middle of the day.*



*Many Gambians help to 'spread' the environmental message in their idiom.*