



The Children and Youth Empowerment Centre (CYEC), Nyeri. The Centre is located approximately 175 kilometers north of Nairobi on the outskirts of Nyeri town, the administrative headquarters of both Nyeri East District and Kenya's Central Province. CYEC is an initiative of the national program for street dwelling persons and is intended to play a central role in the innovation of holistic and sustainable solutions for the population of street dwelling young people in Kenya.

The Pennsylvania State University has been involved with the CYEC since 2009. Students from both the Berks and Main campuses of Penn State have focused on areas including bio-medical engineering, architectural engineering, teaching/literacy, and agriculture to help the CYEC. At the Center we have participated in constructing a green house, a drip irrigation center, creating books for the children, conducting various types of research, and much more.



*The undeveloped Eco-Village site
(2010)*

In 2010 the CYEC asked if Penn State would focus on the creation of an Eco-Village in Lamuria, a sustainable and eco-friendly village where the street children could go once they have reached adulthood to work and participate in a community environment and economy. Under the direction of Janelle Larson and Sjoerd Duiker, the 497C Agricultural Systems in East Africa class was

created at the Main campus. Our class consisted of only six students (five of whom were able to travel to Kenya)

and met once every other Friday for two hours. This specific course focused on conducting research on agricultural production in semi-arid regions of east Africa, culminating with an

opportunity for application through on-site assessment work in Kenya. According to our syllabus created by Janelle Larson, the main objectives of our research were:

- To investigate the agro-ecological environment of Lamuria, Kenya and socio-economic conditions and agricultural practices in the Rift Valley and Central Province.
- To identify soil management technologies and practices appropriate for a semi-arid environment and crops suited for such an environment, with an emphasis on castor and aloe.
- To develop a community assessment tool for the Lamuria community to understand their practices and attitudes. While in-country, students will participate in this assessment.
- To conduct secondary research on markets available for the crops identified (or value-added processing of these crops), and while in-country, to complete this analysis.
- To develop or compile learning materials for the Children and Youth Empowerment Centre relating to appropriate agricultural production practices.
- To gain a greater understanding of and appreciation for Kenyan culture and history.

By the end of the semester we had produced a hefty report, with all of our research and curricular materials to share with the CYEC.

We spent three weeks in Kenya. Our first few days were spent visiting several agricultural research institutes and universities in Nairobi, including Kenya Agricultural Research Institute (KARI), the Kenya Forest Research Institute (KEFRI), and Jomo Kenyatta University of Agriculture and Technology (JKUAT). There, we had the opportunity to learn current agricultural practices and learn about local markets for several products we had been researching. We were also able to collaborate with the students at JKUAT who agreed to assist in our project and be our eyes and ears while we are back at home.

After touring institutes and universities in Nairobi, we went to stay at the CYEC with the children for our remaining two-and-a-half weeks. While there we spent a few days meeting and collaborating with the CYEC staff to create an agricultural program curriculum. Amazingly, we were able to use both the resources we brought, as well as books provided by the



A student with some of the CYEC children

Kenyan Ministry of Agriculture – *and* a basic outline of the whole year in just three days! Should our luck continue, with the proper staffing and enthusiasm we are hoping that our curriculum will be put to use starting in January of 2011.

We also traveled back and forth between Nyeri and Lamuria often. We surveyed the land of the EcoVillage site using a handheld GPS and also scouted the indigenous flora and fauna. We found planted castor (the land is currently rented out for small farming) and an unknown species of aloe growing wild. We sent photos of the aloe to KEFRI, who was able to identify it. We also took several soil and water samples on-site and sent them to KARI to be tested, the results of which will tell us what the soil and water composition is, and what plants are suitable to grow under such conditions. They will also tell us what nutrients the soil has or is lacking, allowing villagers to know what fertilizers to use. Overall, we found the site to be very promising for the production of castor, aloe, and hay.

Apart from looking at and testing the land, we also spoke with the people of Lamuria.



Students scouting the Lamuria site accompanied by local children

The site is located on the outskirts of an existing community. We wanted to learn what practices the community was already using, and what concerns Lamurians have, both in farming and as a community. We wanted to know what could be improved regarding these matters and how CYEC and the future EcoVillage could help. Through focus groups, we found out that growing hay is very profitable in the area and doesn't require much water (a major problem in Lamuria), and also that there is an unmet demand for honey. We had the opportunity to

Speak with a local beekeeper who was kind enough to agree to train two of the older boys from the CYEC in beekeeping. The CYEC intends to lease the equipment from an existing but abandoned honey production plant, and buy raw honey from local farmers. Those trained in beekeeping can help produce and process the honey for selling. We also learned just how profitable rabbit farming is in Kenya. One can purchase a bunny for about 100 Ksh (just over a dollar) and in two months can sell the fryer for 1,500 Ksh (about eighteen dollars). With help from one of our students, the CYEC was able to design and purchase materials for building a

proper rabbit hutch. Since our return the 10-cage hutch has been fully constructed and the CYEC is looking to invest in rabbits, both for consumption by the children and for sale.

While our class accomplished quite a bit both during the semester and in our three-week stay, there is still much to be done. We must continue to monitor and aid in our past projects, but also move forward with the EcoVillage. This coming school year we will begin land use planning for the EcoVillage site, seek out more information and possibilities regarding EcoTourism, and determine the logistics of construction and use. Student will also be aiding in the grant-writing process to find more funding for the CYEC and EcoVillage process. We hope to be able to bring our vision of sustainable development and living in Kenya to fruition with the help of students and donors. We are confident that many others will join us in our efforts, and we look forward to witnessing the good that we can bring to the people we continue to serve.