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Engaging Undergraduates in an Interdisciplinary, International Collaboration for Development

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Selected Paper prepared for presentation at the Agricultural & Applied Economics Association's 2013 AAEA & CAES Joint Annual Meeting, Washington, DC, August 4-6, 2013.

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Since 2009, faculty and students from the Pennsylvania State University College of Agricultural Sciences (CAS) have partnered with the Children and Youth Empowerment Centre (CYEC), a program for street-dwelling children in Kenya. This partnership has resulted in initiatives and programming related to food production, youth development and entrepreneurship, including the creation of a youth cooperative through which vulnerable youth can work, save and further develop their skills. A key component of this collaboration has been the participation of undergraduate students through a multidisciplinary course, *Issues in Economic, Community and Agricultural Development in Kenya* (a course cross-listed in Agroecology, and Community, Environment and Development). This program has dual objectives of fostering student learning and growth, as well as helping the CYEC meet their goals of youth and enterprise development.

Background and Rationale

As noted by the 1999 Kellogg Commission Report, *Returning to Our Roots: The Engaged Institution*, challenges in the 21st century call for land grant universities to leverage their expertise to address contemporary issues differently than had been done in the past. Addressing societal issues effectively requires a multi-disciplinary response and the integration of teaching, research and engagement. 'Engagement' connotes a relationship of mutual respect in which both the community and the university set the research and teaching agenda. To this end, faculty members in the Pennsylvania State University College of Agricultural Sciences have collaborated with the CYEC to establish a partnership that uses university research in the service of the CYEC's objectives through undergraduate students. This partnership is developing solutions to the challenges faced by organizations working with vulnerable children in Africa,

including program sustainability and the successful reintegration of these young people into society.

Why The Children and Youth Empowerment Centre

Street-dwelling children in Africa are a highly visible symptom of changes in the macro-economic structures, poverty and family break-down. In Africa, children make up more than half the population, and some 50 million children are orphaned or abandoned. While the exact numbers are not known, in the late 1990s there were an estimated 135,000 street-dwelling children in Kenya and more than 600,000 living in extremely difficult situations (Ayuku et al., 2004). These young people are vulnerable to extreme poverty, disease, exploitation and crime, but more importantly have potential to be a phenomenal resource for growth. Many of these youth are disillusioned and disenfranchised, and their potential must be harnessed to meet the goals of social, economic and political growth.

In response to these needs, the Children and Youth Empowerment Centre (CYEC) was founded in 2006 as a model centre for the national program for street-dwelling families in Kenya. As a public-private initiative, the CYEC was charged with addressing three significant challenges in the care and rehabilitation of these young people:

1. Program sustainability – how the program can generate resources to operate and grow;
2. Exit strategy – to ensure that graduates of the program are able to take care of themselves and fully integrate into the broader society as productive and well-adjusted individuals, and
3. Prevention – to reduce the risk of children and youth ending up on the street.

Because of this mandate, the CYEC is an innovative residential and educational organization with programs in entrepreneurship, arts, agriculture and athletics. A youth co-op was created by the CYEC to serve as a launch pad for young people transitioning out of the CYEC and other highly vulnerable youth. Given Kenya's high unemployment rate (estimated to be 40%, CIA Factbook, 2008), it is very difficult for these young people to find employment even if they have completed vocational skills programs. The Centre has access to two sites with agricultural land which could be developed as eco-villages for the youth co-op, one in Lamuria, a semi-arid region and another in Othaya, a sub-humid region, both within an hour's drive of Nyeri, where the CYEC is located. In addition, the CYEC has roughly five acres for horticultural and livestock production at its primary site.

The CYEC was created to serve both as a replicable model facility for the national program and as a hub for training, research and development in the sector. It provides a space for individuals with expertise in different aspects of children and youth empowerment (education, the creative arts, psycho-social development, vocational skills training, etc.) to come together for the purpose of providing a comprehensive range of support services for the program's target population. This makes it an ideal partner for a university as the CYEC actively seeks expertise in the development and assessment of programs, and models developed there can be replicated, extending their impact.

Why Penn State's College of Agricultural Sciences

While graduates of Penn State's CAS have strong technical skills in their fields of study, they have had limited opportunities to learn about agriculture in other parts of the world or to apply what they have learned in a real-world, multidisciplinary environment. In addition, it is difficult to extend university expertise to development organizations in Africa. This initiative has

addressed gaps in the curriculum of Penn State's CAS and better prepares Penn State's graduates to meet global challenges of food production in a resource poor environment, and youth and community development. It promotes students' understanding and appreciation of the complexities of rural development and the role agriculture has to play in the global issues of hunger and food security, as well as the need to develop viable livelihood options for the next generation of African youth. It also seeks to create, through the partnership with the CYEC, an effective model to engage universities in sustainable community development.

Review of Literature on Experiential Service Learning

Through experiential service learning, this initiative not only builds global competencies but also strengthens the agricultural curriculum for these students more generally. Building on the work of Dewey and other experiential learning theorists from the early 20th century, who believed that learning occurs through a combination of action and reflection, Furco (1996) found that service-learning stimulated students' curiosity and motivation to learn more. Recently, cognitive scientists have found students often do not transfer knowledge learned to new situations. In traditional didactic education, students often have trouble applying knowledge in complex, unfamiliar circumstances even when the problem entails material learned in the classroom (Bransford, 1993). However, well-designed service-learning activities that provide opportunities for students to apply and integrate academic content with provision for discussion and reflection on how the service experiences relate to theory have been found to increase learning (Eyler and Giles, 1999).

Eyler and Giles (1999) surveyed 1,500 college students from more than 20 colleges and universities across the country, followed by intensive interviews with 66 students from seven

institutions, both before and after a semester of service-learning. A majority of students indicated they learned more and gained a deeper understanding of both the subject matter and the complexity of social issues in service-learning classes compared to traditional classes. Students attributed this greater learning and retention to higher levels of engagement and curiosity as they applied academic content in their service activities and learned directly from their activities in the community. In addition to enhancing learning, service-learning was found to enhance higher-level thinking skills among college students. Eyler and Giles found the "Integration of service and learning that included both reflection and application was a consistent predictor of student performance on problem analysis outcomes such as complexity of analysis and quality of strategic thinking, as well as critical thinking…" (p171). Through application and working with students and faculty from different academic programs, students' understanding of their own discipline is enhanced.

As noted by Bransford *et al*. (2000) students are motivated when they feel they are contributing. This initiative also creates the type of learning environment Bransford *et al.* found most conducive to learning – one that is learner centered by building on students' existing knowledge; knowledge centered by reinforcing important concepts within the discipline; assessment centered by making the thought process visible through the framing of meaningful questions, journaling and regular feedback, and community centered, as the students work in in interdisciplinary teams to explore real-world issues.

In addition to strengthening learning in their academic field of study, this opportunity for international service learning also enhances students' understanding of their role as a global citizen. Recent scholars have sought to define global citizenship. Kahn (2010) notes a global citizen has a sense of humility and employs this quality when engaging different cultures. Also, a

global citizen thoughtfully and intentionally considers his or her position relative to the community and its needs. In addition, a global citizen acts ethically – considering carefully how to treat others despite cultural differences (Kiely and Hartman, 2010). Finally, a global citizen is informed, critical and prepared to act in order to improve society (Riley, n. d.).

Others note that the nature of the collaboration with the community or the population served matters. Morton (1995) reports that when engaged in community partnerships, faculty may view the partnership as a form of charity with the distribution of a surplus or resource from one community to another as opposed to one of justice, or as mutual resources shared among those in the same community. The charity model tends to be more hierarchical, elitist and one-dimensional rather than collegial, cooperative and democratic (Bringle and Hatcher, 2002). Recent scholars argue that in addition to advancing student civic, personal and social development, global service learning should involve intentional and meaningful collaboration with diverse stakeholders from the community or the host country where service is taking place (Kiely and Hartman, 2010).

Activities of the Collaboration

In 2008 and 2009, Penn State University faculty members met with CYEC senior staff, and faculty from Jomo Kenyatta University of Agriculture and Technology and the University of Nairobi, both in Kenya and the US to build this collaborative relationship. While some research relationships have developed with the academic institutions, this paper will focus on the teaching and engagement activities undertaken with the CYEC.

An interdisciplinary course, AGECO/CED 499 *Issues in Economic, Community and Agricultural Development in Kenya* (a course dual-listed in Agroecology, and Community,

Environment and Development) was developed and first offered in 2010. During the spring semester, students in this three credit course investigate both agroecological and socioeconomic issues relevant to agricultural production and community development for the CYEC and its eco-villages.

This interdisciplinary course builds on the expertise of the faculty involved as well as the interests and background of the students. The foundation of the course remains fairly constant (with annual assessment and improvement), but specific topics tackled by the students evolve with the needs of the youth cooperative and the CYEC. Each year the course includes both biophysical and socioeconomic issues, such as readings, presentations and discussions of issues in international agricultural development, an overview of farming systems in Kenya, water and soil management in tropical regions, identification and development of entrepreneurial opportunities in a resource poor environment, issues related to the causes and consequences of youth poverty, youth development and methods of community assessment. In addition, assessment of the prior year's work is used to provide insight into the CYEC and the eco-villages and inform topics for the course the following year. At the end of the semester, they spend three weeks in Kenya conducting fieldwork, visiting universities and research institutes, and working on the development of the projects they worked on during the semester. Throughout the program they collaborate with staff and youth at the CYEC. As suggested by the service-learning literature, students meet to discuss and reflect on their learning experience (Honnet and Poulson, 1989) during the time in Kenya.

Since the course was first offered in 2010, 39 students, six extension personal, and five different faculty members have been involved in the course. The collaboration has also provided the platform for two master's theses and an honor's thesis. As noted above, the specific activities

to be developed for implementation are determined jointly by staff at the CYEC each year. In 2010, students in the class developed a production plan for the eco-village site in Lamuria, a semi-arid region. While in Kenya they visited research institutes and universities, and carried out a community assessment to get feedback on their plan. Similarly in 2011, the class developed production plans for the eco-village site in Othaya and at the CYEC itself.

Later in 2011 the CYEC established the youth cooperative, so in 2012 the primary task of the class was to conduct a series of workshops on entrepreneurship with youth in the cooperative, then Penn State students partnered with the youth to create business plans for their existing or planned enterprises. Some students also worked on improving agricultural production at the Centre, while another researched micro-finance programs in East Africa and helped the CYEC develop policies and guidelines for their micro-finance program.

In 2013 the class again focused on support of the youth cooperative. Development at Othaya had recently started, so students in the class led the youth through a two-day Asset-Based Community Development workshop to provide the opportunity for all the youth to understand the goals of the eco-village, provide input on development of the eco-village and to have a greater sense of ownership of the process. Students also worked with existing youth enterprises in agriculture, apiculture and charcoal briquetting to improve production, record keeping and marketing. Other projects included the development of a peer-mentoring program for the children and youth at the Centre. Training for this program was completed and an assessment plan was developed.

Student Outcomes

Consistent with theory, student feedback indicates a greater appreciation of the complexities of food security, the application of content from other courses and enhanced research skills. They also value the opportunities to work with students from other disciplines and develop enhanced team-working skills. On a more personal level, students are immersed in Kenyan culture, working closely with Kenyan age-peers at the CYEC throughout the program, providing them with a depth of cultural perspective not often obtained in a typical academic experience. They also develop a sense of agency and efficacy.

Specific comments from students include:

> "I really appreciate the chance to work with students from other majors and other colleges. I think it is crucial for a project like this to involve multiple areas of study to get a broader perspective. It can be a little frustrating at times to work with everyone's opinions, but it certainly works to a larger overall goal."

> "This course has allowed me to use a lot of the information that I have learned in my horticulture classes and also the soils class that I took. It has also allowed me to work with CED (Community, Environment and Development) majors."

> "This course has provided me with practical experience in food security issues. It has put perspective on the issue for me. What I've mainly learned is how individual of a circumstance food security actually is and how complicated agriculture can be. I feel learning these things are important because food security is normally discussed on a very macro scale with a focus on policy, not necessarily people."

"… this course has not only encouraged me to do more international development work, but has also helped me realize my interest in agriculture."

"This class has now geared my mind to helping not only people in our home country, but those world-wide. I used to forget that there were even other countries out there. I am not the only who thought that way. This is the major benefit of this class. It helped to educate me on the global issues around the world and use my knowledge base to help enable a solution to better those people's lives."

CYEC Outcomes

Resource limitations have slowed development at the two eco-village sites, so the plans developed by the class in 2010 and 2011 are only partially implemented. However, those aspects that have been developed (especially in hay-making) have been successful. Three youth are supporting themselves with the hay business, providing the service of cutting and baling hay, and selling manual balers that they build themselves. They also received a grant through the Global Knowledge Initiative to provide training to youth in Uganda. Other enterprises developed from the plans including dairy goats, bee-keeping, rabbits and horticultural production are making slow but steady progress.

The youth cooperative has benefited from the development activities carried out in 2012 (it is too soon to determine the effects of those done in 2013). Many of the youth enterprises are using the record-keeping skills taught in the workshops and several have received small loans to develop their enterprises. They have recently been approved to receive micro-financing through Kiva.

Like the Penn State students, the children and youth at the CYEC also benefit from the personal relationships developed among the young people. By getting to know foreign college students, young people at the Centre learn about the world beyond Kenya and receive mentoring and motivation. They are exposed to new perspectives and encouraged in their personal and academic pursuits.

Lessons-learned and Conclusion

It is important to have a long-standing relationship between the university and the community partner rather than a 'one and done' approach. To be successful (especially for the community), these collaborations require trust and open communication. Because the goals and objectives for the course are set jointly by the CYEC and the PSU faculty, the appropriateness and sustainability of the class activities are increased. It is also helpful for the Penn State students to learn from the experiences of prior years' classes. They learn that while they may not (almost certainly shall not) see change or progress over a three-week period, there is a positive progression over the years.

Funding is also a challenge, for both Penn State and the CYEC. Students pay for most of their own expenses, while the College of Agricultural Sciences and a grant from Penn State's Alliance for Education, Science, Engineering and Development in Africa helps pay travel expenses for faculty and a graduate student. The faculty involved teach the course as an uncompensated overload, so the model relays on a high level of intrinsic motivation. Finances and staffing at the CYEC are limited so we have to ensure that the programs developed and recommended by Penn State are realistic and sustainable.

Preliminary assessments indicate positive outcomes for both students and the community partner. Students report higher levels of learning through application and increased motivation as well as a greater appreciation of their role as global citizens. The CYEC has benefited from the technical advice of Penn State faculty and the programs developed and implemented by Penn State students. Additional assessment currently in progress will be used to provide feedback to faculty leaders.

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