Higher Education for Development Annual Progress Report

October 1, 2013–September 30, 2014

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Executive Summary

Funded by U.S. Agency for International Development (USAID) and the U.S. Department of State, Higher Education for Development (HED) mobilizes the expertise and resources of the higher education community to address global development challenges by facilitating and managing higher education partnerships. Using higher education as the vehicle to address development challenges, HED partnerships carry out a range of activities to promote educational effectiveness (e.g. teaching, curriculum design, research), strengthen institutional systems and organizational development, and facilitate strategic alliances among higher education institutions, government, and other entities. Enhancing these aspects of higher education results in shared knowledge and a competent workforce that can lead to innovation and policy change to advance broader human and social development goals in society.

In FY 2014, HED managed 42 active partnerships in 32 host countries. Between October 1, 2013 and September 30, 2014, HED partners:

- Provided access to academic programs for 5,230 individuals from disadvantaged and/or underserved groups, 65% of whom were female;
- Reported implementation of 255outreach/extension activities;
- Carried out 59 joint research projects;
- Applied, replicated, or took to market 22 research projects;
- Revised or developed 44 curricula, of which 29 were revised/developed with public/private sector input and/or on the basis of market research;
- Adopted 11 new institutional policies promoting access to higher education; and
- Supported 1.449 individuals affiliated with host-country institutions to enroll in or complete long-term training programs to strengthen their qualifications.

In addition to documenting partnership development results, this report highlights HED's performance management and its learning about higher education in development. In FY 2014 HED focused its performance management improvement activities on developing a sustainability capacity planning workbook, as a prelude to an orderly closeout of the program. The sustainability workbook includes guidance on facilitating sustainability planning processes, a survey, and some additional worksheets to help partners evaluate their preparedness and prospects for sustainability. HED piloted this tool with 13 partnerships during a series of monitoring visits in Jordan, Morocco, Colombia, and Peru. These pilot sessions provided HED with an opportunity to gather useful information about the tool, feedback on the process of using the tool, and the applicability of the tool in diverse contexts. HED found that the tool provides the partners with a more comprehensive understanding of diverse perceptions about the program and provides a foundation for having critical, honest reflection about the efficiency and effectiveness of management higher education projects that have long-term, positive impact. HED also found that the tool provided partners with a vehicle to safely explore sensitive topics and issues that may have arisen ad a result of cultural differences and other misunderstandings. Having these discussions paved the way for realistic appraisal of the prospects for further collaboration.

This report also discusses responses to some of the daunting challenges of the social and political environments faced by partners. For example, in Tunisia, a high-level visit by HED and partners was necessary to re-scope the partnership and re-align activities among Colorado University Boulder and Instituts Supérieurs d'Enseignement Technologique (ISETs) of Medenine, Sidi Bouzid, and Tataouine. This was particularly important because the partnership was developed before the Arab Spring. With the revolution unfolding and multiple changes in leadership within the ISET system, several challenges to implementation emerged. Once it was possible to get all parties to sit and discuss each other's concerns, HED quickly laid out a plan of restructuring the program budget to accommodate the expressed needs of the Tunisian partners, achieve some sustainable results, and bring the program to an orderly closure. Other challenges included the deteriorating situation in South Sudan and USAID's suspension of operations there, the emerging Ebola crisis in Liberia, and the changes in leadership in Egypt, resulting in the suspension of U.S. government programs in the host country.

HED and Its Performance Objectives

About HED

Higher Education for Development (HED) was founded in 1992 by six major U.S. higher education associations[1] to advance the engagement of the higher education community in addressing development challenges around the world. HED does this by managing innovative partnerships that join U.S. universities and colleges with higher education institutions in developing countries. HED's model is based on its theory of change, which posits that higher education institutions are key to economic growth and the advancement of societies. Higher education contributes to creating new bodies of knowledge and bringing innovative solutions to market, engaging active and emergent leadership, and building a competent workforce. By promoting a culture of continuous learning and improvement within and outside the walls of the institutions, these elements can support policy changes and create enabling environments to facilitate development.

HED receives funding from USAID's Bureau for Economic Growth, Education and Environment, Office of Education (E3/ED) through a Leader with Associates (LWA) cooperative agreement, from USAID's functional and regional Bureaus and worldwide Missions, and from the U.S. Department of State. Under the LWA Cooperative Agreement and at the request of USAID, HED also designs and establishes higher education partnerships through Associate Awards. In such cases, E3/ED may elect to match funds from USAID Missions and Bureaus to catalyze investments. Associate Awards may support complex HED consortia partnerships in a country or region, clusters of partnerships that more address a more narrowly defined development challenge, or the traditional partnership approach involving a single U.S. and single host-county institution of higher education institution.

For more information on Higher Education for Development, please visit www.acenet.edu/hed.

Strategic Alignment with USAID

USAID Education Strategy

HED partnerships further the U.S. government's foreign assistance goals by directly contributing to the achievement of Goal 2 of the USAID Education Strategy for 2011–2015: Improved ability of tertiary and workforce development programs to produce a workforce with relevant skills to support country development goals by 2015. All HED partnerships actively contribute to the sub-results under Goal 2 (see Appendix A).

USAID Forward

Launched in 2010, the USAID Forward initiative "aims to reform and revitalize USAID's strategic policy, planning and evaluation capabilities, and to redefine how USAID will engage with host-country partners. These reforms are key to implementing the aid effectiveness principles of the Paris Declaration and the Accra Agenda for Action while ensuring more effective programming and closer collaboration with local actors in education and other sectors." (USAID Education Strategy, page 5)

HED's results-based management approach helps build management capacity of the higher education institutional partners to operate with efficient and effective processes and systems. HED encourages partnerships to emphasize local ownership through proactive leadership, defining objectives, and

[1] These six higher education associations include the American Council on Education (ACE), the American Association of Community Colleges (AACC), the American Association of State Colleges and Universities (AASCU), the Association of American Universities (AAU), the Association of Public and Land-grant Universities (APLU), and the National Association of Independent Colleges and Universities (NAICU).

prioritization of activities. Consequently, HED partnerships contribute both to achieving development results and ensuring the realization of USAID Forward.

HED Performance Objectives

ACE/HED's LWA Cooperative Agreement (AEG-A-00-05-007-00) outlines the following seven performance objectives:

- **Objective 1—**HED will work with higher education institutions and USAID Missions, Bureaus, and technical sectors to design Request for Applications resulting in 10 or more collaborative partnerships (four to eight solicitations annually—Leader and Associate Awards).

- **Objective 2—**HED will widely distribute RFAs and conduct fair and transparent application review, and nomination processes for partnership selection resulting in broad participation from the U.S. higher education community.

- **Objective 3—**Partnerships between U.S. and host-country higher education institutions will result in improved institutional capacity to offer technical assistance for addressing development goals in host countries.

- **Objective 4—**Partnerships between U.S. and host-country higher education institutions will result in improved human capacity of higher education professionals to address teaching, research, and public service resulting in measurable effects on regional and national development goals.

- **Objective 5—**HED will secure advisory assistance/expertise from the higher education community to support USAID Bureaus, Missions, and technical sectors' strategic objectives.

- **Objective 6—**HED will sponsor/promote a series of research studies, roundtables, and conferences related to global development issues resulting in state-of-the-art research and practices shared with USAID and the higher education community worldwide, shared innovations in development practice, and opportunities for international development collaboration among USAID, Non-government organizations (NGOs), higher education, foundations, and other relevant organizations.

- **Objective 7—** HED will design and implement performance management processes, evaluations, and impact assessments that support USAID's education strategy and policy.

HED ensures effective performance management by instilling a culture and practice of evidence-based decision-making and reflective learning among partners throughout the partnership lifecycle. During implementation HED and its partners are committed to monitoring of implementation and data quality verification processes that maintain a focus on evidence-based management. Detailed information on these processes and results related to these performance objectives are outlined herein and a complete list of all indicators used to track progress towards the performance objectives outlined in the LWA Cooperative Agreement is presented in Appendix B. Explanations for variances between FY 2014 target data and FY 2014 actual performance data are provided for standard indicators in Appendix C. All performance data presented in this report underwent a thorough data quality verification process and are considered final for FY 2014.

Overview of Partnerships Supported in FY 2014

This section presents a snapshot of higher education partnerships profiles at the portfolio level as well as trends of partnership profiles over the past several fiscal years.

Number of Partnerships and Institutions Supported

In FY 2014 for the reporting period of October 1, 2013–September 30, 2014, HED managed 42 active partnerships in 32 host countries. These 42 partnerships involved a total of 96 institutions of higher education of which 56 were host-country institutions and 40 were U.S. institutions. Eight of the 40 U.S. partner institutions (20%) participated in more than one HED partnership. By comparison, five host-country institutions receiving support through HED's partnerships (9%) benefitted from more than one award. Data on indicators used to track number of partnerships and higher education institutions supported as part of progress towards Objective 1 are presented in Table 1. Refer to Appendix D for a complete list and description of the 42 HED partnerships that were active in FY 2014.

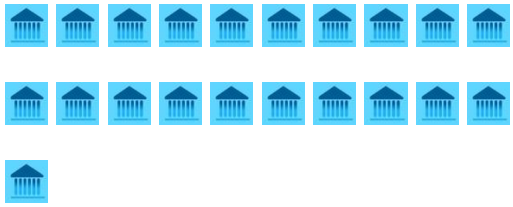
Table 1. FY 2014 Higher Education Partnerships and Institutions Supported

LWA Cooperative Agreement Indicators	FY 2014 Results
Custom Indicator: Number of collaborative partnerships funded	42
Custom Indicator: Number of higher education institutions supported through HED	56 Host-country Institutions 40 U.S. Institutions 96 Total Institutions

Half of the partnerships (*n* = 21) that were active in FY 2014 were complex consortia involving multiple higher education institutions from either the United States or host country (see Figure 1). Consortia increase the potential for development impact by bringing together into one partnership multiple institutions to jointly address a specific development problem. This type of collaboration enables higher education institutions to share knowledge to collectively address development problems that are more complex or larger in scope or scale, thereby increasing the potential for innovation.

An example of consortium-based partnership is the University of Minnesota – Medellín Human Rights Law School partnership in Colombia among five higher education institutions: University of Minnesota Twin Cities, Universidad de Medellín, Universidad de Antioquia, Universidad Pontificia Bolivariana, and Universidad Católica Del Oriente. This partnership works to strengthen the capacities of the four Colombian partner law schools to teach, research, and provide clinical legal representation toward the promotion of international human rights and the rule of law in the Antioquia region in central Colombia.

Figure 1. HED Partnership Models in FY 2014

One-to-One	1 Host-country Institution and 1 U.S. Institution (21 partnerships)	
Consortia: Higher Education Institutions	2 or More Host-country Institutions and 1 U.S. Institution (10 partnerships)	
	1 Host-country Institution and 2 or More U.S. Institutions (6 partnerships)	
	2 or More Host-country Institutions and 2 or More U.S. Institutions (2 partnerships)	
Consortia: Higher Education and Other Institutions	U.S. Institutions and Host-country Government entities; U.S. Institutions and No Host-country Partner; U.S. and Host-country Institutions and NGO Partners (3 partnerships)	

Partnership Funding

Of these 42 partnerships 21 were funded solely under HED's LWA Cooperative Agreement. Nineteen of the partnerships were funded through Associate Awards with USAID Missions and Bureaus. One partnership was funded through both an Associate Award and the LWA. The U.S. Department of State's Western Hemisphere Affairs Bureau of Energy and Climate Partnership of the Americas also funded one partnership under a cooperative agreement with ACE/HED.

Partner Transfers

A partnership award originally made to North Dakota State University (NDSU) to partner with Makerere University (MAK) as a part of the Africa-U.S. Higher Education Initiative was transferred to Mississippi State University (MSU), because the U.S. partnership director started a new position at MSU. This transfer was made in consultation with NDSU, MSU, and MAK and was authorized by USAID/Uganda due to the partnership director's significant leadership and involvement in the program. The performance period for the partnership between NDSU and MAK was February 2011–November 2013. A new subaward with MSU to partner with MAK began on March 1, 2014 and will continue through June 30, 2015.

Also, due to the May 2013 suspension of all USAID-funded activities in Bolivia, the partnership between University of Florida (UF) and Universidad Amazónica de Pando ICAA ceased. Subsequently, HED and partners pursued a new, creative approach to mobilize the expertise and resources of the University of Florida to support local and regional development challenges related to the maintenance of the Andean

Amazon Biome in Brazil and Peru. As a result, UF led efforts to continue activities with Universidad Nacional Amazónica de Madre de Dios (UNAMAD) in Peru and Universidade Federal do Acre (UFAC) in Brazil. UF submitted to HED a draft proposal outlining ideas for re-programming of activities. After review from USAID and ACE/HED, UF identified in-country coordinators for the newly proposed activities in Peru and Brazil, developed new partnership M&E documents, developed a budget, oversaw identification of participating faculty at both universities, and organized a baseline assessment in February 2014. UF, UNAMAD, and UFAC began implementation of activities for the new partnership in May 2014.

Partnerships Closed

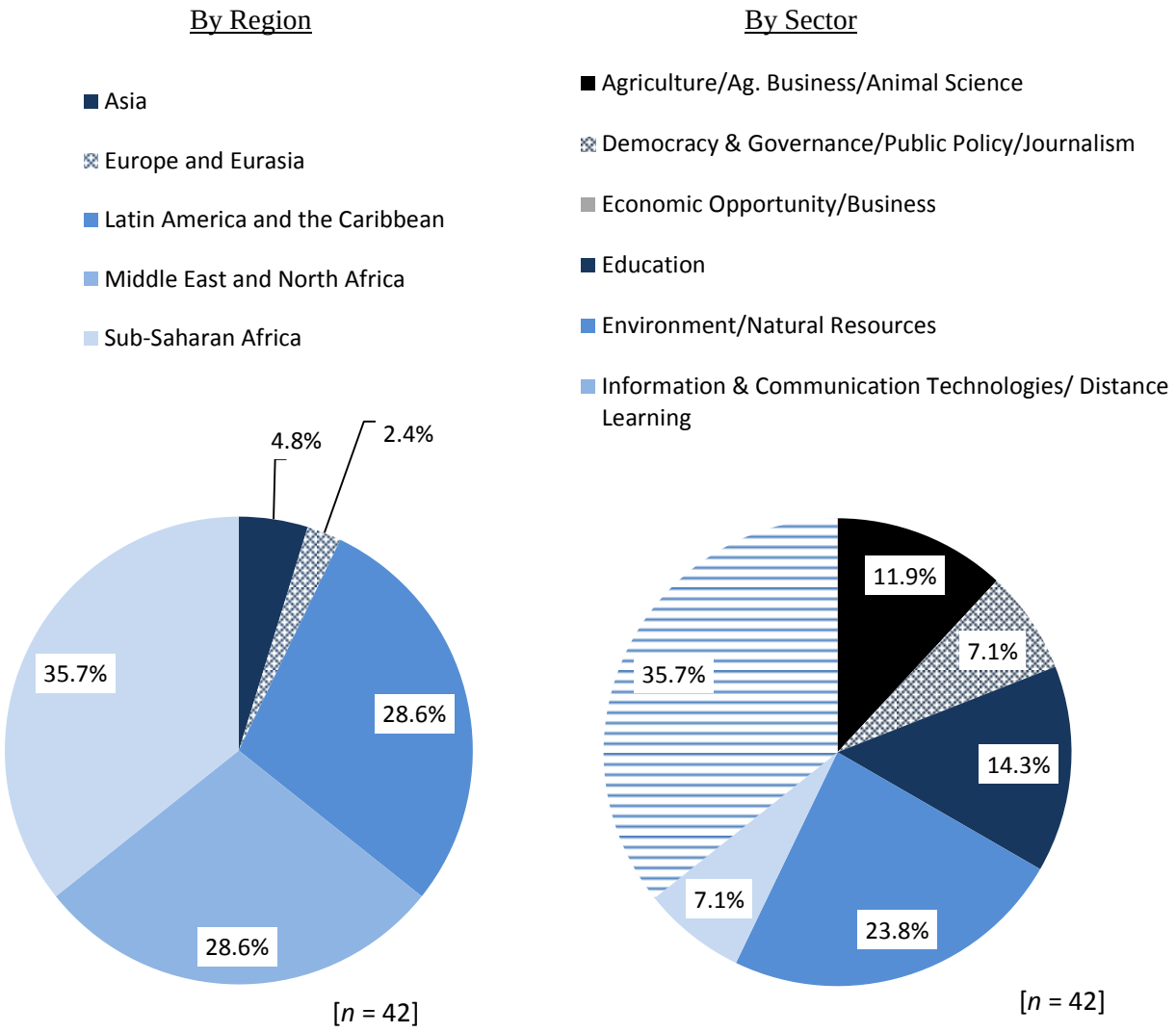
In addition to these partnership transfers, 11 partnerships completed their implementation activities and were closed in FY 2014. Of these, six partnerships were located in sub-Saharan Africa, three in the Broad Middle East and North Africa, and one in Latin America and the Caribbean and in Asia. The partnerships that closed involved the following institutional partners:

- Partnerships in Sub-Saharan Africa region closed in FY 2014:
    - Fairfield University and Université Alioune Diop de Bambey (Senegal)
    - Michigan State University and University of Malawi (Malawi)
    - North Dakota State University and Makerere University (Uganda)
    - Syracuse University and Kenyatta University (Kenya)
    - Tuskegee University and International Institute for Water and Environment Engineering (Burkina Faso)
    - Virginia Polytechnic Institute and State University, University of Juba, and Catholic University of South Sudan (South Sudan)
- Partnerships in the Middle East and North Africa region closed in FY 2014:
    - Eastern Iowa Community College District, Tulsa Community College, and Sana'a Community College (Yemen)
    - Central Community College and Bahrain Polytechnic (Bahrain)
    - Gateway Technical College, Ecole Supérieure de Technologie Oujda, and Université Mohammed I Oujda (I) (Morocco)
- Partnerships in the Latin American and the Caribbean region closed in FY 2014:
    - Indiana University and University of the West Indies (Barbados)
- Partnerships in the Asia region closed in FY 2014:
    - California State University Fullerton, Fatimah Jinnah Women University, and Sardar Bahadur Khan Women University (Pakistan)

Partnerships by Geographic Region and Primary Sector

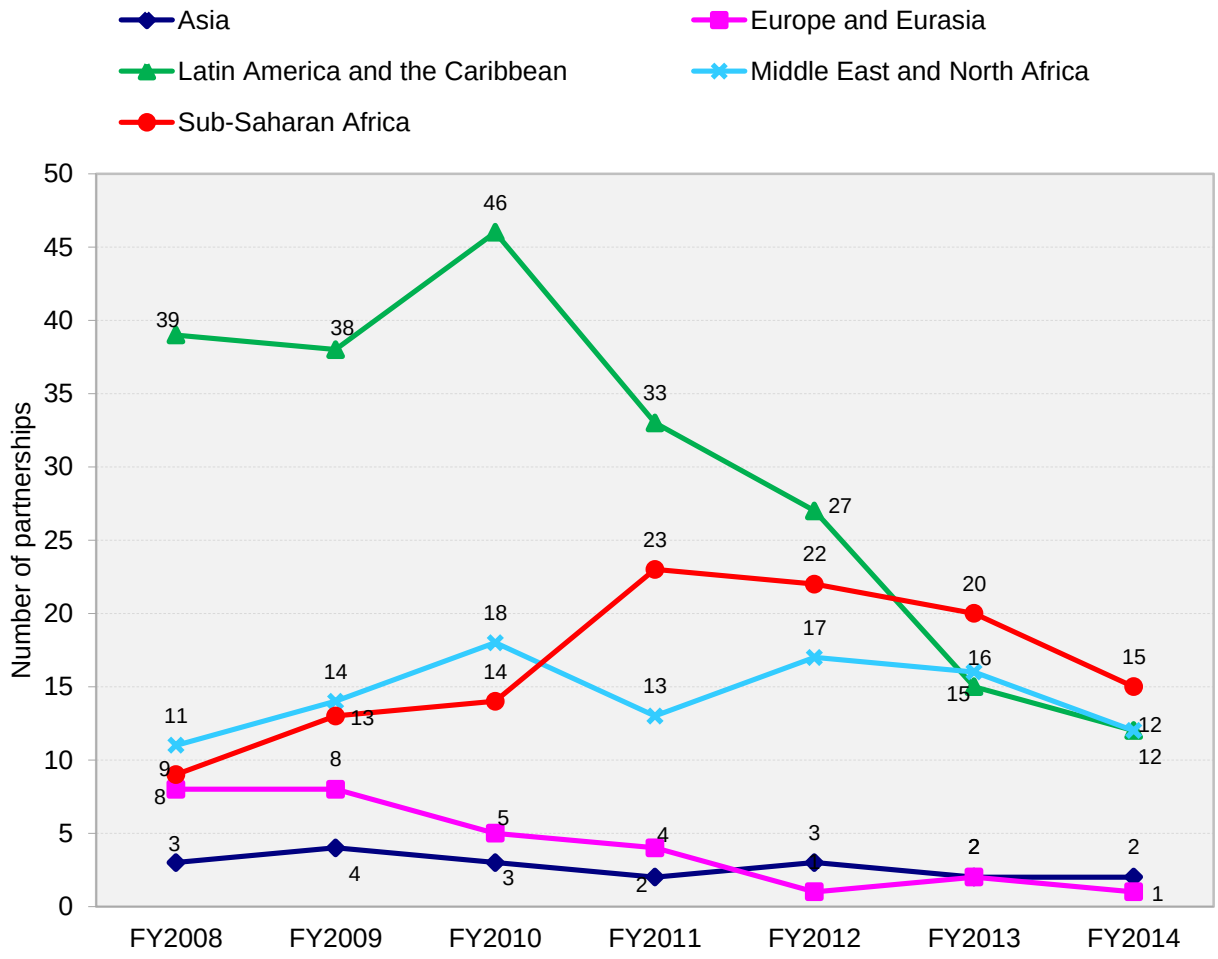
In FY 2014, HED managed active partnership awards in diverse sectors in all five regions of the world where USAID provides assistance (see Figure 2). Most active partnerships were in sub-Saharan Africa (36%; *n* = 15), while the majority of HED active partnerships focused on workforce and entrepreneurship development sector (36%; *n* = 15).

Figure 2. HED Partnerships by Geographic Region and Primary Sector in FY 2014 (*n* = 42)



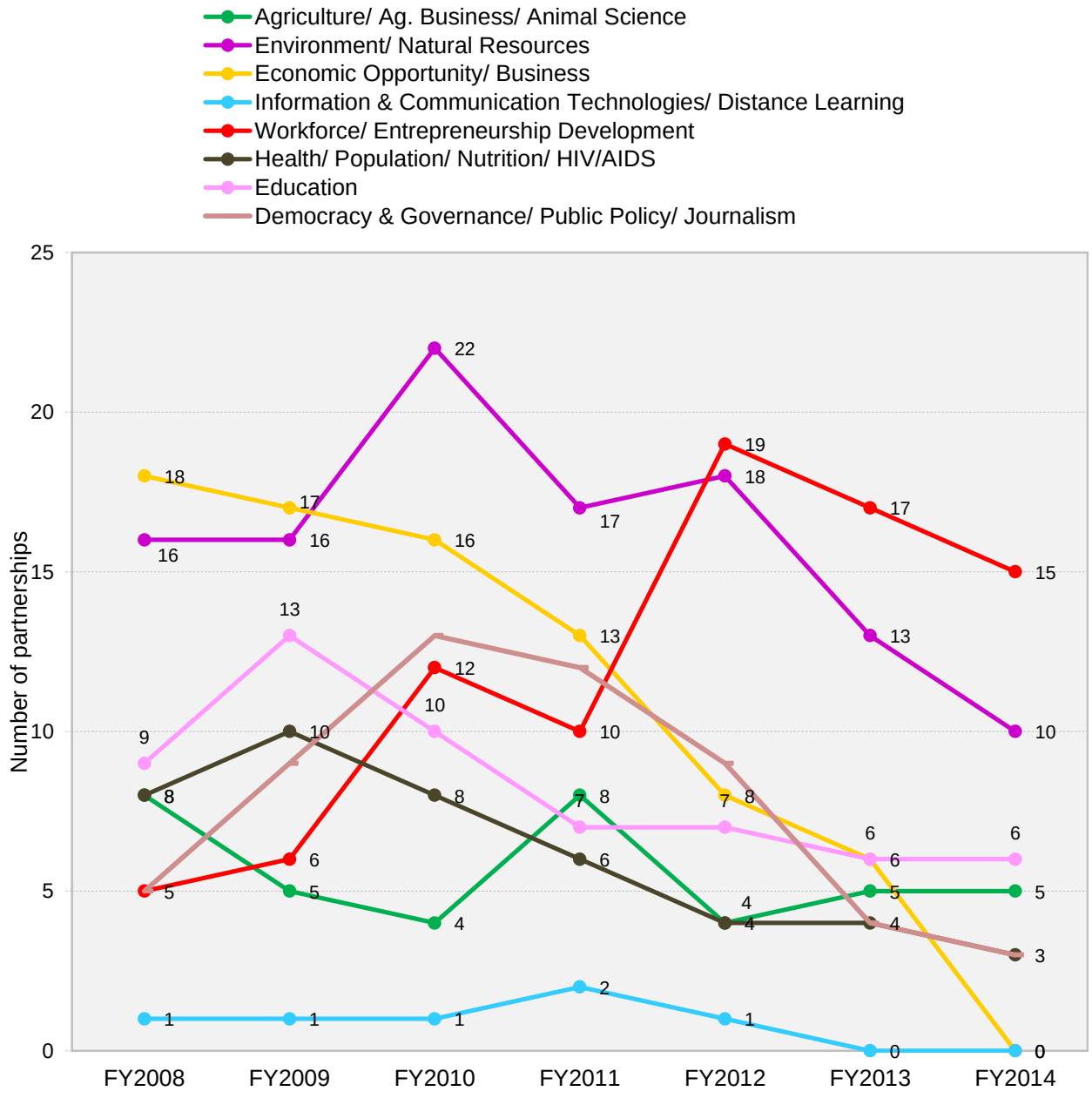
The number of partnerships that HED has managed in sub-Saharan Africa has increased by 177% since FY 2008, from 13 partnerships to 36 partnerships. By comparison, the number of active partnerships in Latin America and the Caribbean has decreased by 48% since FY 2008, from 56 partnerships to 29 partnerships, mainly due to the closeout in FY 2013 of the Associate Award with USAID/Mexico for the Training, Internships, Exchanges, and Scholarships (TIES) program. Figure 3 shows how the distribution of active partnerships by global region over time since FY 2008.

Figure 3. HED Partnerships by Global Region between FY 2008 and FY 2014



The primary sector in which partnerships work also has changed since FY 2008 (see Figure 4). The number of partnerships in the economic opportunity/business sector has decreased by 100%, from 18 partnerships in FY 2008 to no partnership in FY 2014. By comparison, the proportion of partnerships focusing on workforce/entrepreneurship development has increased by 200% during the same timeframe, with 5 partnerships in FY 2008 and 15 partnerships in FY 2014.

Figure 4. HED Partnerships by Primary Sector between FY 2008 and FY 2014



Development Results

Each higher education partnership that HED manages contributes to Goal 2 of the USAID Education Strategy for 2011–2015, which is the improved ability of tertiary and workforce development programs to generate workforce skills relevant to a country's development goals**.** In this section partnership results are presented by the sub-results for the USAID Education Strategy Goal 2: Increased access to education for underserved and disadvantaged groups, improved quality of tertiary education and research, and improved relevance of workforce development programs. Narratives describing accomplishments of individual HED partnerships are available in Appendix E. Success stories highlighting exceptional partnership achievements are provided in Appendix F.

Increased Access to Vocational/Technical and Tertiary Education and Training for Underserved and Disadvantaged Groups

HED partnerships work to ensure that individuals from underserved and disadvantaged groups have equitable access to tertiary education and training. Partnership activity that advances access to tertiary education and training is tracked primarily using two indicators:

- Indicator 3.2.2-38: Number of USG-supported tertiary education programs that adopt policies and/or procedures to strengthen transparency of admissions and/or to increase access of underserved and disadvantaged groups; and

- Indicator 3.2.2-41: Number of individuals from underserved and/or disadvantaged groups accessing tertiary education programs.

FY 2014 performance data for these two indicators are presented in Table 2.

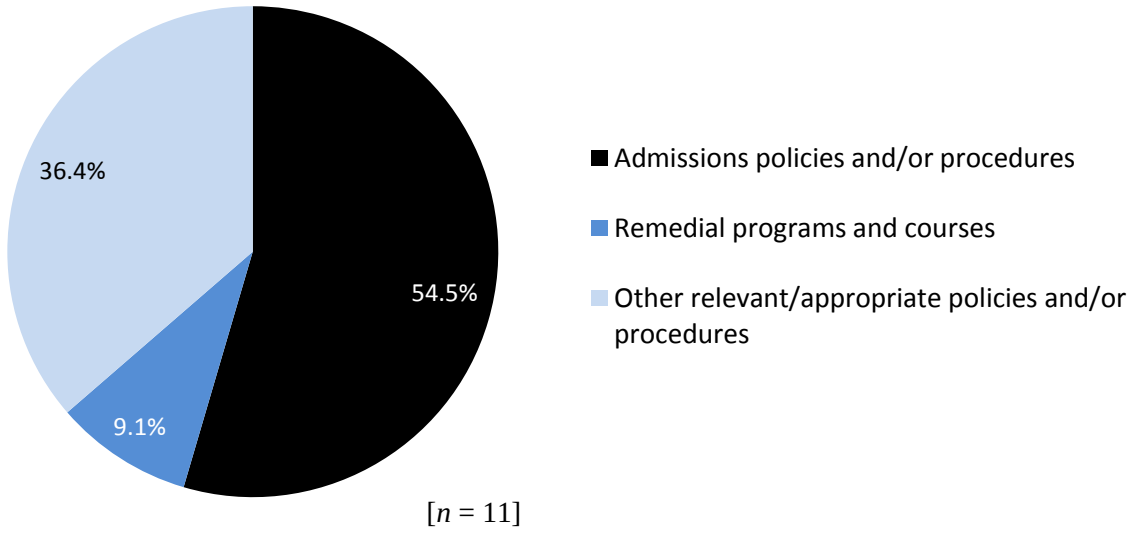
Table 2. FY 2014 Progress Results Toward Increased Access to Vocational/ Technical and Tertiary Education and Training for Underserved and/or Disadvantaged Groups

LWA Cooperative Agreement Indicators	FY 2014 Results
Indicator 3.2.2-38: Number of individuals from underserved and/or disadvantaged groups accessing tertiary education programs (LWA Objective 4)	3,422 Female 1,808 Male 5,230 Total Individuals
Indicator: 3.2.2-41: Number of USG-supported tertiary education programs that adopt policies and/or procedures to strengthen transparency of admissions and/or to increase access of underserved and disadvantaged groups (LWA Objective 3)	4 Partnerships 11 New/revised Policies/procedures

Access Policies

In FY 2014, four partnerships reported that the host-country partner implemented new or improved policies and/or procedures that support increased access by individuals of underserved and/or disadvantaged groups to certificate and/or other academic degree programs. To be considered as an implemented policy or procedure, the policy or procedure must be written in official institutional documentation. The four HED partnerships that reported progress toward this result adopted a total of 11 new or revised policies and/or procedures in FY 2014. As shown in Figure 5, most of these policies address admissions (55%, $n = 6$).

Figure 5. Policies and/or Procedures Developed in FY 2104 to Strengthen Transparency of Admissions and/or to Increase Access of Underserved and Disadvantaged groups by Type of Policy/Procedure (*n* = 11)



These new/revised access policies and procedures for underserved or disadvantaged groups were often developed through a substantial process that included brainstorming meetings, self-reflection, and data analyses. For some partners who were not familiar with the concept of underserved/disadvantaged individuals, considerable realizations included buy-in from all stakeholders as well as the coherent institutionalization of such policies inscribed, for example, through the institution's strategic plan.

Examples of partnership efforts to develop or enhance policies/procedures that increase underserved and disadvantaged groups' access to tertiary education include the following:

- In Paraguay, partners at the **National University of Asunción** (UNA) are collaborating with the **University of Florida** to promote women leaders in the agriculture sector. During FY 2014, the partners developed two new policies to promote access to higher education for students from groups that the partnership identified as underserved: family farmers, urban farmers, and peri-urban farmers. According to the partners, these populations are often ignored by society and lack the means to access higher education. Through the development of these new policies, the partnership hopes to highlight the significance of these two groups' contribution to the socio-economic sustainability of rural and peri-urban areas. In addition to these two new policies, UNA modified five admissions policies to not only increase underserved groups' access to the university, but also increase these students' retention and graduation rates. The policies were officially adopted by the Board of Directors of UNA's Faculty of Agricultural Sciences in FY 2014.

- In Lebanon, a partnership between **Nassau Community College** (NCC) and **Al-Kafaàt University** (AKU) expanded student services in FY 2014 through the newly-organized Center for Students with Disabilities (CSD). The CSD developed new policies to ensure equal access to entrepreneurial education and provides services for around 130 disabled students at the Al-Kafaàt Foundational Schools system. The dissemination of the CSD's new brochure helps the center promote awareness of disabilities and education not only on campus and during orientation, but also to the public at large.

Individuals from Underserved/Disadvantaged Groups Accessing Tertiary Education Programs

In FY 2014, HED host-country partner institutions offered admission to academic programs to 13,553 individuals, of which 5,230 were individuals from disadvantaged and/or underserved groups (39%). (See

Table 3.) Of these individuals from underserved or disadvantaged groups that were offered admission to tertiary education programs this year, approximately two-thirds were female (65%, *n* = 3,422).

Among all individuals offered admission in programs that were impacted by HED partnership activity in FY 2014, most individuals were offered admission to associate and bachelor degree programs (46%, *n* = 6,189 and 43%, *n* = 5,815, respectively). Likewise, the majority of individuals from underserved/disadvantaged groups who were offered admission in FY 2014 accessed programs at the bachelor and associate degree levels (43%, *n* = 2,264 and 39%, *n* = 2,029, respectively).

Further, one third of all individuals offered admission in FY 2014 were female (38%, *n* = 5,117), whereas two thirds of individuals from vulnerable/disadvantaged groups offered admission in FY 2014 were female (65%, *n* = 3,422). In addition, while males from underserved/disadvantaged groups tended to pursue bachelor degrees at a higher rate (64%, *n* = 2,264) compared to other degree types, their female counterparts pursued associate degrees at a higher rate (49%, *n* = 1,666).

Table 3. All Individuals Offered Admission in FY 2014 and Individuals from Disadvantaged and/or Underserved Groups Offered Admission by Type of Program

Type of Program		All Individuals Offered Admission	Individuals from Disadvantaged and/or Underserved Groups Offered Admission	Individuals from Disadvantaged and/or Underserved Groups Offered Admission among All Individuals Offered Admission
		(N)	(n)	(%)
Certificate	Female	148	148	100.0
	Male	373	373	100.0
	Total	521	521	100.0
Associate	Female	2,051	1,666	81.2
	Male	4,138	363	8.8
	Total	6,189	2,029	32.8
Bachelor	Female	2,627	1,339	51.0
	Male	3,188	925	29.0
	Total	5,815	2,264	38.9
Master's	Female	266	229	86.1
	Male	671	92	13.7
	Total	937	321	34.3
PhD	Female	25	40	160.0
	Male	66	55	83.3
	Total	91	95	104.4
Overall	Female	5,117	3,422	66.9
	Male	8,436	1,808	21.4
	Total	13,553	5,230	38.6

Partnerships define underserved and/or disadvantaged groups based on the context in the host country and community that the host-country institution serves. As a result, definitions of underserved and/or disadvantaged vary across partnerships. Some partnerships include individuals with low income or skills deficiencies in their definition of underserved and or/disadvantaged; others base their definition on demographic variables such as gender, ethnicity, or rural/urban origin. In some instances, an entire student body at the host-country institution is considered underserved.

Significant examples that highlight the scope of partnership contributions to reach out and extend access to individuals from underserved or disadvantaged groups are as follows:

- Through a partnership between the **University of Liberia** (UL) and **Indiana University**, the Center for Excellence in Health and Life Sciences (CEHLS) was established at UL in 2012. The purpose of the center is twofold: 1) to build the capacity of UL's academic programs to address a national shortage of health workers; and 2) to effectively deliver health and life sciences curricula to individuals who come from diverse socioeconomic and cultural backgrounds, as well as from diverse rural and urban locations. In FY 2014, 159 individuals (77 female and 82 male) from underserved or disadvantaged groups were offered admission to bachelor and doctorate degree programs in health- and science-related fields through CEHLS.

- In Burkina Faso, the **International Institute for Water and Environmental Engineering** (2iE) is committed to increasing access to higher education programs for underserved and/or disadvantaged groups by providing special scholarship awards for females entering postsecondary programs at 2iE. In FY 2014, 2iE collaborated with its U.S. partner **Tuskegee University** to support access for underserved populations by admitting 421 females across the bachelor's, master's, and doctorate degree program levels.

Improved Quality of Tertiary Education and Research in Support of Country Development Strategies

HED partnerships contribute to improving the quality of tertiary education and research by promoting innovation and cooperative research to effectively address host countries' development priorities, enhancing knowledge and skills through training for individuals affiliated with host-country institutions, and fostering direct engagement in the host-country community through collaborations with higher education institutions and other stakeholder groups.

Partnership activity in each of these areas—development research, human capacity development, and community outreach/extension—is tracked primarily using the following indicators:

- Development research indicators:
    - Indicator 3.2.2-35: Number of U.S.–host country joint development research projects; and
    - Indicator: 3.2.2-40: Number of academic research initiatives whose findings have been applied, replicated, or taken to market.

- Human capacity development indicators:
    - Indicator 3.2.2-42: Number of tertiary institution faculty or teaching staff whose qualifications are strengthened through USG-supported tertiary education partnerships;
    - Custom Indicator: Number of host-country individuals (excluding faculty) who completed USG-funded long-term programs resulting in academic degrees or professional or technical certificates;
    - Custom Indicator: Number of host-country institution faculty and/or teaching staff who enrolled in long-term training programs for qualifications strengthening; and
    - Custom Indicator: Number of host-country individuals who completed USG-funded short-term training or exchange programs involving higher education institutions

- Community outreach/extension indicator:
    - Custom Indicator: Number of higher education institution outreach/extension activities in the host-country community.

Development Research

FY 2014 results on development research are presented in Table 4.

Table 4. FY 2014 Progress Results Toward Improved Quality of Tertiary Education and Research in Support of Country Development Strategies (Innovation and Cooperative Research)

LWA Cooperative Agreement Indicators	FY 2014 Results
Indicator 3.2.2-35: Number of U.S. - host country institution joint development research projects (LWA Objective 3)	59
Indicator 3.2.2-40: Number of academic research initiatives whose findings have been applied, replicated, or taken to market (LWA Objective 3)	22

Research – Joint

In FY 2014, 14 partnerships implemented 59 joint research projects—the majority of which took place in sub-Saharan Africa (59%, *n* = 35). According to the definition of this indicator, joint research projects must be designed to contribute to the host country's local and/or national development goals and should be beyond the stage of proposal development.

Examples of joint research projects include the following:

- In the Philippines, **Southern Christian College** (SCC) faculty members initiated five joint research projects with their partner institution in the United States, **University of Hawaii**. These research projects aim to develop and administer a comprehensive market study utilizing the products featured in the business plans of select out-of-school youth. Conjoint choice analysis for market research of agricultural added-value goods was utilized so as to better enable SCC faculty to increase their capacities related to market study development and administration.

- In Kenya, a key achievement of **Kenyatta University** (KU), collaborating with **Syracuse University**, was the completion of six collaborative research projects resulting in six papers submitted for publication. These research studies also resulted in 11 policy briefs directed to KU administrators and other stakeholders, including USAID/Kenya officials, Ministry of Education officials, other school of education deans, and secondary school principals. The six papers submitted for publication discussed topics such as instructional practices and challenges faced in English language teaching in secondary schools in Kenya; teachers' and school administrators' preparedness in handling students with special needs in inclusive education; factors affecting Kenyan secondary teachers' technology integration; Kenyan secondary teachers' and principals' perspectives and strategies on teaching and learning with large classes; improving student teaching for quality teacher preparation at the university level; and teacher mentoring for effective teacher training and development.

- In Colombia, **University of Florida** (UF) and **Universidad del Norte** (UN) partners collaborated on three joint research projects on human rights topics in the context of the Colombian conflict. UN will publish this research in a book that includes the following three themes: sexual violence used by the paramilitaries against lesbian, gay, bisexual, transgender, and intersex (LGBTI) population; socio-legal study on how palafítico (stilt) communities have evolved outside of state services as a result of forced displacement l; and survey of conflict resolution measures available to small businesses subject to the Colombia – U.S. North American Fair Trade Agreement.

- The **American University** and **Pontificia Universidad Javeriana Cali** (PUJC) partnership embarked on a joint research project with the Americas Regional Division of International Detention Coalition (IDC). A team of students from PUJC's Human Rights Clinic undertook the research

project focusing on migratory detention and its alternatives within the Colombian context. The research project culminated in an accepted request for a thematic hearing before the Inter-American Commission on Human Rights which took place in August 2014.

Research – Applied, Replicated, Taken to Market

Six partnerships reported that the findings from 22 academic research initiatives undertaken as part of the partnership were applied, replicated, or taken to market in FY 2014. According to the definition of this indicator, research must be structured to establish novel facts, solve new or existing problems, prove new ideas, or develop new theories using a scientific method to be counted. Of the 166 research initiatives undertaken since partnership inception, 13% were applied, replicated, or taken to market in FY 2014 (see Table 5).

Table 5. All Research Initiatives and Initiatives Applied, Replicated, or Taken to Market in FY 2014

All Academic Research Initiatives Since Partnerships Inception	Academic Research Initiatives Applied, Replicated, or Taken to Market in FY 2014	
(N)	(n)	(%)
166	22	13.3

The type of research that was applied, replication and taken to market varied widely across partnerships. Some research findings were utilized to directly improve the social conditions of host-country communities. Other efforts included incorporating findings into policy briefs, developing prototypes and advancing technology, or supporting local industries and the private sector.

The following are several examples of research initiative whose findings were applied, replicated, or taken to market in FY 2014:

- In the Philippines, partners at **Southern Christian College** (SCC) and **University of Hawaii** worked on a set of five research initiatives that were applied to existing businesses focused on out-of-school youth (OSY) in the host country. Faculty members developed and administered a market study utilizing the products of select OSY business plans (on banana chips, coffee, peanut butter, coco sugar, and coconut oil) that included focus group discussions within the respective city center, development and training of market survey administration, and conducting the surveys in various locations of Cagayan de Oro and Midsayap. As part of these research initiatives, faculty received training in the topic of conjoint choice analysis for market research of agricultural added-value goods in addition to relevant related tools such as market study development and administration. These research results were further disseminated to the global public via international conferences, including a poster at the 12th Annual Value Added Conference (Baltimore, Maryland) and a scientific research symposium at the 2014 International Food and Agribusiness Management Association (Capetown, South Africa). In addition, the results were shared with and applied to the existing related OSY business products to expand or enhance their businesses.

- In Tunisia, four applied research projects were conducted under the partnership between **Institut Supérieur Des Etudes Technologiques de Sidi Bouzid** (ISET Sidi Bouzid) and the **University of Colorado at Boulder** (UCB), involving both faculty and students. Two of these research projects were developed in joint collaboration with UCB, including the design of an automated solar water pumping system for agricultural irrigation and a solar dryer for agricultural produce. These research projects aim at identifying entrepreneurial solutions to local agricultural problems in the surrounding community.

- In Tunisia, six applied research projects have been initiated involving faculty and students at **Institut Supérieur Des Etudes Technologiques de Medenine and Tataouine**, including four projects that were presented to the public. In addition, two joint research projects with the **University of**

Colorado at Boulder (UCB) have been developed: the design of an optimal cogeneration system for a brick manufacturing facility and the design and construction of a solar concentrator for waste water evaporation in oil drilling applications. These research projects identify entrepreneurial solutions for industrial issues in the surrounding community.

Human Capacity Development

FY 2014 partnership results on capacity strengthening for host-country institution individuals are presented in Table 6.

Table 6. FY 2014 Progress Results Toward Improved Quality of Tertiary Education and Research in Support of Country Development Strategies (Enhanced Knowledge and Skills for Host-country Institution Individuals)

LWA Cooperative Agreement Indicators	FY 2014 Results
Indicator 3.2.2-42: Number of tertiary institution faculty or teaching staff whose qualifications are strengthened through USG-supported tertiary education partnerships (LWA Objective 4)	11 Female 10 Male 21 Total Individuals
Custom Indicator: Number of host-country individuals (excluding faculty/teaching staff) who completed USG-funded long-term programs resulting in academic degrees or professional or technical certificates (LWA Objective 4)	648 Female 758 Male 1,406 Total Individuals
Custom Indicator: Number of host-country institution faculty and/or teaching staff who enrolled in long-term training programs for qualifications strengthening (LWA Objective 4)	9 Female 34 Male 43 Total Individuals
Custom Indicator: Number of host-country individuals who completed USG-funded short-term training or exchange programs involving higher education institutions (Short-term qualifications strengthening—all individuals) (LWA Objective 4)	2,770 Female 3,161Male 5,931 Total Individuals

Long-term Training – Enrolled (Faculty)

In FY 2014, seven HED partnerships supported the enrollment of 43 faculty members and/or teaching staff in tertiary education programs lasting at least six months in duration. The majority (79%, n = 34) of these faculty members were male. Nine of them (21%) were female. Most faculty members who enrolled in FY 2014 began their doctorate or master's degree programs (21%, n = 21, each). Table 7 provides data on faculty enrollment in long-term degree programs disaggregated by program type and sex. To be counted under this indicator, enrollment had to be supported through partnership full or partial financial support.

Faculty/teaching staff started long-term trainings in the host-country itself, at the U.S. partner institution, or in a nearby developing country. Faculty long-term studies were sometimes funded in part of in full through the partnership, via fellowships or scholarships. However partnership support went beyond financial support. Programs of study sometimes included mentoring and coaching with U.S. partners advisors that were interested in helping them build their capacity as researchers and students.

Table 7. Host-country Institution Faculty and/or Teaching Staff Who Enrolled in Long-term Training Programs in FY 2014 by Type of Program

Type of Program	Host-country Institution Faculty and/or Teaching Staff Who Enrolled in Long-term Training Programs in FY 2014		
	Female (n)	Male (n)	Total (N)
Certificate	0	0	0
Associate	0	0	0
Bachelor	0	0	0
Master's	5	16	21
PhD	3	18	21
Other	1	0	1
Overall	9	34	43

In FY 2014, highlights of faculty member enrollment in long-term programs of study include the following:

- In Colombia, the partnership between **Universidad de Antioquia** and **University of Minnesota** supported the enrollment of four Colombian faculty members (one female and three male) into higher education degrees. Three of them enrolled into the Master's of Law degree program at the University of Antioquia (UDEA) and of one of them enrolled into the Master's in Human Rights and Democracy at the Facultad Latinoamericana de Ciencias Sociales (FLASCO) in Mexico.

- In Ethiopia, the partnership between **Addis Ababa University** and **University of Connecticut** supported the enrollment of 19 faculty members from the host-country partner institution or surrounding universities (two of whom were female and 17 were male) into the master's and PhD degree programs in Water Resources Engineering and Management or the PhD degree program in Water and Public Health, at Addis Ababa University.

Long-term Training – Completed (Faculty and/or Teaching Staff)

In FY 2014, six partnerships reported that 21 faculty/teaching staff affiliated with host-country institutions completed long-term training programs to strengthen their qualifications. These long-term trainings lasted at least six months in duration and encompassed certificate programs, associate degree programs, bachelor degree programs, master's degree programs, PhD degree programs, or other long-term programs. Slightly more than half of the faculty members who graduated were female (52%, n = 11). Host-country institution faculty and/or teaching staff represented 2% of all individuals who completed long-term training programs through HED partnerships-support.

Table 8 provides data on long-term degree completion for faculty/teaching staff disaggregated by program type and sex. The vast majority of faculty graduated with a master's degree (76%, n = 16). Fewer graduated from a doctorate degree program (19%, n = 4, each) or another type of long-term degree program (5%, n = 1).

Table 8. Host-country Institution Faculty and/or Teaching Staff Who Completed Long-term Training Programs in FY 2014 by Type of Program

Type of Program	Host-country Institution Faculty and/or Teaching Staff Who Completed Long-term Training Programs in FY 2014		
	Female (n)	Male (n)	Total (N)
Certificate	0	0	0
Associate	0	0	0
Bachelor	0	0	0
Master's	8	8	16
PhD	2	2	4
Other	1	0	1
Overall	11	10	21

In FY 2014, achievements that illustrate partnership efforts to help host-country institution faculty and teaching staff successfully complete their long-term programs of study are as follows:

- In Pakistan, the partnership between **Sardar Bahadur Khan Women's University** SBKWU) and **California State University at Fullerton** supported one female faculty member from SBK in obtaining her master's degree in Science from Karachi University in FY 2014. Since then, she has joined SBKWU as a faculty member.

- In Liberia, the partnership between **University of Liberia** and **Indiana University** supported five faculty members (three female and two male) in completing their graduate degree programs in public health-related or chemistry fields at Indiana University or at Kwame Nkrumah University of Science and Technology in Ghana. Support encompassed tuition reductions, tutoring and mentoring, onsite supervision of practicum, research advising, and support to attend professional association meetings. Upon graduation, these faculty members or instructors returned to their host-country institution.

- In Kenya, through the partnership between **Kenyatta University** (KU) and **Syracuse University**, two female faculty members completed long-term degree programs and subsequently returned to KU's Department of Educational Communication and Technology as staff members. One of the two graduates completed a Ph.D. program in India and the other one completed her research post-doctoral studies at the University of Witswaterand in South Africa.

Long-term Training – Completed (Individuals Other Than Faculty/Teaching Staff)

In FY 2014, 16 partnerships reported that 1,406 students and administrative/other staff affiliated with host-country institutions completed long-term training programs to strengthen their qualifications. Males and females completed long-term training opportunities in nearly equal proportions (53% male, n = 758 and 46% female, n = 648). Host-country institution students and administrative staff represented approximately 99% of the total number of individuals who completed long-term training programs, the others being students. These long-term trainings lasted at least six months in duration and encompassed certificate programs, associate degree programs, bachelor degree programs, master's degree programs, or PhD degree programs.

Table 9 provides data on long-term degree completion for students and administrative/other staff disaggregated by program type and sex. The vast majority of students graduated with a bachelor degree (59%, n = 834) or other types of long-term programs, which could be research-focused (21%, n = 297). By comparison, the two administrative/other staff graduated with other types of long-term programs (100%, n = 2).

Table 9. Host-country Institution Students and Administrative/Other Staff Who Completed Long-term Training Programs in FY 2014 by Type of Program

Host-country Institution Individual	Type of Program	Host-country Institution Students and/or Other Staff Who Completed Long-term Training Programs in FY 2014		
		Female (n)	Male (n)	Total (N)
Students	Certificate	0	0	0
	Associate	53	192	245
	Bachelor	485	349	834
	Master's	10	14	24
	PhD	1	3	4
	Other	97	200	297
	Subtotal	646	758	1,404
Administrative/ Other Staff	Certificate	0	0	0
	Associate	0	0	0
	Bachelor	0	0	0
	Master's	0	0	0
	PhD	0	0	0
	Other	2	0	2
	Subtotal	2	0	2
Overall		648	758	1,406

Students and other staff completed long-term programs in their host country, at the U.S. partner institution, or both as part of a dual degree program. Support provided through the partnership was multifaceted and included scholarships, research grants, coaching and mentoring of future graduates, and provision of applied learning opportunities such as internships or laboratory practical experiences.

FY 2014 achievements that illustrate partnerships' efforts to help host-country institution students and other staff successfully complete their long-term programs of study, so that their strengthened knowledge and skills make them competitively qualified on the labor market, are as follows:

- In Ethiopia, representatives of UNICEF, Pact Ethiopia, International Water Management Institute, Save the Children, and the World Health Organization were among those celebrating the achievements of 20 graduates as they received their master's degrees from the Ethiopian Institute for Water Research, a part of Addis Ababa University**.** Eighteen of them were graduates of the Water, Sanitation and Hygiene master's degree program launched during the 2012–13 academic year through the partnership between **Addis Ababa University** and **University of Connecticut**; another two of them were graduates of the Water Resources and Environmental Management program supported through the partnership.

- In Burkina Faso, 12 students (including two females) out of a class of sixteen graduated from a master's degree program in mining management developed through the partnership between the **International Institute for Water and Environmental Engineering** (2IE) and the **University of Mississippi**. This new program includes a required internship for experiential learning. The remaining four students in the cohort are expected to graduate in FY 2015.

- In Senegal, this fiscal year marked the inaugural graduating class for the associate degree program in agroecology developed by the **Université Gaston Berger** in partnership with **Ohio State University**. In the spring of 2014, 66 graduates (21 female and 45 male) completed the two-year program with the training and hands-on experience they needed for employment at local agribusinesses, government agencies, and non-profit organizations.

- In Lebanon, the English language program developed through the partnership between **Nassau Community College** (NCC) and **Al-Kafaàt University** (AKU) was updated to meet emerging market-driven vocational needs and implemented across AKU's EUROPA Campus of Technology (ITK). The LINK (English-language Immersion at ITK) program, modeled after the Language Immersion Program at NCC, provides English instruction in a student-centered learning environment, leading to more authentic language production and greater fluency. This year, the program graduated 283 students, preparing students' English proficiency for work in vocational areas such as business, computer science, mechanics, electronics, printing, graphic design, cosmetology, interior design, and hospitality management.

- In Jordan, 36 students graduated from the Solar Energy Technology (SET) program developed at **al-Huson University College** (HUC) through its partnership with **Red Rocks Community College** (RRCC). As the only associate's degree program in solar energy technology in Jordan, graduates have found opportunities in employment at Jordan's largest solar energy company, starting their own solar businesses, as well as bridging to Jordan's premier university engineering program. HUC's SET program has already established a strong reputation, with a total enrollment of 152 students for the 2014-2015 academic year.

- In Morocco, 81 students graduated from the four programs of the **Ecole Supérieure de Technologie Oujda** (ESTO) developed in partnership with **Gateway Technical College**. All four programs are offered in the Engineering, Industrial Maintenance, Electronics and Industrial Computing, Electrical Engineering/Renewable Energy, and Mechatronics department. Fifteen faculty members that were trained in automotive diagnostics through the partnership taught students in all four programs. Additionally, eighteen students have been offered internships with independent automotive industry representatives this fiscal year.

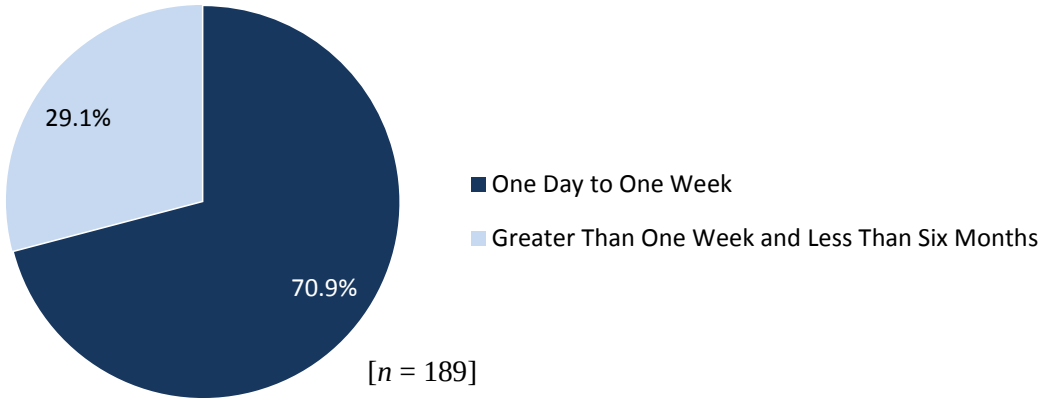
Short-term Qualifications Strengthening

In FY 2014, HED partnerships provided numerous short-term training options of less than six months duration to host-country individuals. Precisely, 31 partnerships reported that they offered 189 short-term training opportunities to individuals affiliated with the host-country institution. A total of 5,931 host-country institution individuals (faculty, teaching and administrative staff, and students) completed these trainings. Slightly more than half of the trainees were male (53%, n = 3,161).

To understand the scope and significance of short-term training opportunities offered through HED partnerships, trainings are tracked by their relative duration: trainings that are longer than one week and less than six months in duration as well as trainings that last between one day and one week. As shown in Figure 6, a majority of short-term trainings offered through HED partnerships in FY 2014 (71%, n = 134) lasted between one day and one week.

The short-term trainings conducted in FY 2014 focused on increasing staff's capacity to respond to immediate needs (such as improving curricula), organizing training-of-trainers opportunities with scalability as a core focus, participating in practical applications in their areas of expertise, or improving their English-language skills. Partners generally designed and planned the short-term trainings to include interactive and participatory methods, as well as balance both sharing theoretical knowledge and promoting hands-on skills. The trainings were intensive and generally used a variety of tools through short courses, presentations, workshops, small-group discussions, and field work.

Figure 6. Short-term Trainings That Individuals Affiliated with Host-country Institutions Completed in FY 2014 by Training Duration (*n* = 189)



In FY 2014, examples that highlight partnerships' achievements in short-term human capacity-enhancing activities included the following:

- As part of the collaboration between the **Universidad Nacional de Asunción** (UNA) in Paraguay and the **University of Florida**, 342 students from the College of Agrarian Sciences attended workshops on gender equality held at the host-country institution. The workshops focused on acknowledging the importance of gender in the study and application of agrarian sciences and increasing the participants' awareness of gender inequalities in society.

- The **University of Malawi**, in partnership with **Michigan State University**, held four short-term trainings that directly benefitted a total of 152 host-country faculty and students, as well as local stakeholders from the nonprofit sector (e.g., Kusamala Institute of Agriculture and Ecology, Coordination Unit for Rehabilitation of Environment, and Agricultural Research and Extension Trust), the business community (Auctions Holdings Limited and Electricity Supply Corporation of Malawi), other Malawian tertiary education institutions, and the public sector.

- In Colombia, 906 students and faculty members from **eight higher education institutions**[2] in three regions of the country attended short-term trainings through the Colombia-U.S. Human Rights Law School Partnership Program, in collaboration with **University of Minnesota**, **American University** and **University of Florida**. The trainings, courses, and workshops focused on topics related to human rights law, legal education, and enhancement of students' lawyering skills.

- The partnership between the **University of Rwanda** and the **University of California Los Angeles** focused on building the human capacity of the College of Education staff and that of faculty and staff in Teacher Training Colleges (TTCs) through six trainings that reached out to a total of 167 individuals. These trainings focused on gender research to enable participants to expand their knowledge and skills with regards to data collection, data management, and data use for more efficient planning and management. Another workshop also focused on mentoring techniques so that faculty members who administer mentoring programs gain advanced skills in counseling and advising students on both academic and personal matters.

- In Jordan, **Al Quds College** (AQC) and **Eastern Iowa Community College** adapted their original Entrepreneurship Certificate Program into an institution-wide rollout of entrepreneurship coursework at AQC. Collaboration with the International Youth Foundation provided AQC with a Microsoft-developed "Build Your Business" (BYB) royalty-free software for use in the classroom to enhance

[2] Pontificia Universidad Javeriana Cali, Santiago de Cali, Universidad de Antioquia, Universidad Católica del Oriente, Universidad del Magdalena, Universidad de Medellín, Universidad del Norte, and Universidad Pontificia Bolivariana.

instruction. This new semester-long course has gradually been adopted as a graduation requirement, and 630 students completed the short-term course and developed a business plan in FY 2014.

- In Jordan, **Al Quds College** (AQC) and **Washtenaw Community College** held a formal launch event for the business incubator on campus, the first at a community college in Jordan. The business incubator provides students with five physical workspaces and support services to develop their business ideas. During FY 2014, the business incubator provided capacity-building trainings and business plan development services for 17 students. In addition to the business incubator, the partnership hosted a multitude of entrepreneurial training activities at AQC, such as intensive, four-day entrepreneurial boot camp trainings to 72 host-country institution participants.

Community Outreach and/or Extension

FY 2014 results on partnership outreach and extension efforts are presented in Table 10.

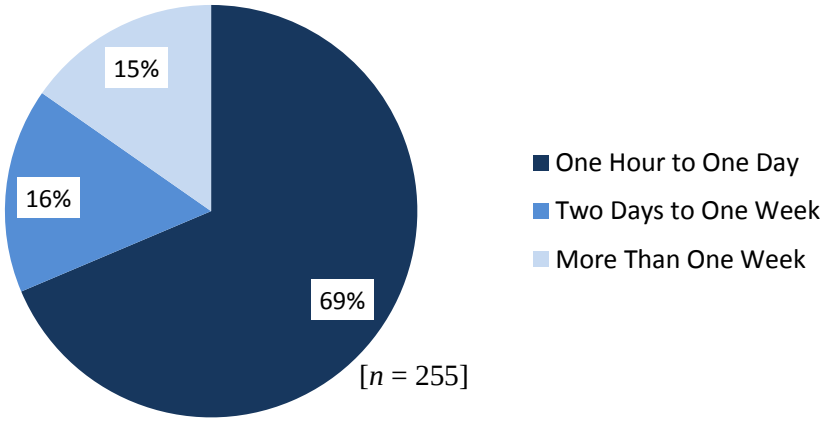
Table 10. FY 2014 Progress Results Toward Improved Quality of Tertiary Education and Research in Support of Country Development Strategies (Direct Engagements in the Host-country Community)

LWA Cooperative Agreement Indicator	FY 2014 Results
Custom Indicator: Number of higher education institution outreach/extension activities in the host-country community (LWA Objective 3)	255

In FY 2014, 29 HED partnerships reported having conducted 255 outreach/extension activities in the host-country community. In all, these activities reached approximately 38,000 individuals in the host countries. According to the definition for this indicator, outreach/ extension activities bring the work, experience, knowledge, information, inventions, etc., of the higher host-country higher education institution into its community with the purpose of extending knowledge to address local needs.

To understand the scope of outreach/extension activities offered through HED partnerships, activities are tracked by their relative duration: one hour to one day, two days to one week, or more than one week. As showed in Figure 7, most outreach/extension activities offered through HED partnerships in FY 2014 lasted one day or less (69%, *n* = 175).

Figure 7. Outreach/ Extension Activities Held in the Host-country Community in FY 2014 by Duration (*n* = 255)



Outreach and extension activities included short trainings and hands-on workshops, forums and conferences, launch events, visits at local schools, direct activities to improve communities living conditions, consultations with local businesses, community meetings, and expert consultations. Some events reached out

to local villagers while other events involved international actors. The activities engaged a mosaic of community members including professionals, community members, and experts as well as individuals from governments, the nonprofit sector, public sector, and other institutions of higher learning.

In FY 2014, examples of how local needs have been addressed by partner institutions through community extension and outreach included the following:

- In Peru, students at **Universidad Nacional de Ucayali** (UNU) completed a nine-week field course focused on engaging with indigenous communities in remote areas of the host country. UNU, in collaboration with the **University of Florida**, developed a range of extension activities led by students, including workshops on biodiversity conservation, climate change, soil degradation and resource management. This applied field component of the interdisciplinary environmental certificate program developed by the partners produces research results which are shared with participating communities and organizations.

- In Ethiopia, **Addis Ababa University**, in partnership with the **University of Connecticut** conducted a summer outreach program related to public health and sanitation in collaboration with other partner universities (Mekelle, Arbaminch, Hawassa, and Bahir Dar). The project engaged 96 undergraduate students in community development and action research. The students teamed up to visit local communities and educated more than 12,000 individuals about the importance of hand washing, then completed research projects on their findings with the goal of improving future outreach efforts.

- In Kenya, the Center for the Study of Dryland Ecosystems and Societies (CSDES), an institute of the **University of Nairobi** (UoN) in partnership with **Colorado State University**, held three research feedback workshops for stakeholders in three dryland counties (Isiolo, Marsabit, and Laikipia), reaching more than 80 state, not-profit, and community leaders. The workshops initiated dialogue with county officials around opportunities for partnership and collaboration between CSDES/UoN and county governments, as well as with other development partners. The feedback workshops have been widely applauded by the respective partners, leading to increased demand for similar forums in the counties, particularly at the community level.

- In Paraguay, 66 women from three agricultural cooperatives and agricultural high schools from the San Pedro region participated in the second Forum for Women Leaders and Farmers. The **National University of Asunción** and the **University of Florida** hosted the forum with the Project for Formation of Clusters of Agricultural Cooperatives—a collaboration between the Japan International Cooperation Agency, the National Institute of Cooperatives, and the Federation of Cooperative Producers. USAID/Paraguay's Program to Improve Agricultural Value Chains in the Northern Zone also provided support for this activity. The forum aimed to develop leadership attitudes, increase gender awareness, improve administrative skills, and promote the exchange of experiences among different groups of women to enrich the learning process.

- In Tunisia, the **Institut Supérieur des Etudes Technologiques** (ISET) **Sidi Bouzid** is gaining recognition as a resource and knowledge center for innovation in the areas of water resources and energy efficiency. Through its partnership with the **University of Colorado at Boulder**, a Sustainable Solutions Center (SSC) was established at ISET Sidi Bouzid. The SSC engages local businesses and communities and in FY 2014 conducted four outreach activities, including seminars, short courses, workshops, and needs assessments. These activities have promoted awareness and efficient practices in renewable energy, water management, and entrepreneurship to primary schools and local farmers.

- The **Florida International University** partnership with the **Pontificia Universidad Javeriana** and the **Universidad de la Amazonia** had 20 students participate in a field course on conservation in the Colombian Amazon. The field course was guided by various universities and government agencies. Through lectures, discussions, field outings, and group work, participants examined social and

environmental issues to gain a comprehensive understanding of the Amazonian context for conservation.

Improved Relevance and Quality of Workforce Development Programs

HED's partnerships efforts toward USAID Goal 2 by promoting demand-driven tertiary education programs. Results are tracked using three indicators:

- Indicator 3.2.2-33: Number of USG-supported tertiary education academic degree programs that include experiential and/or applied learning opportunities for learners;
- Indicator 3.2.2-36: Number of USG-supported tertiary programs with curricula revised with private and/or public sector employers' input or on the basis of market research; and
- Indicator 3.2.2-39: Number of new USG-supported tertiary education programs that develop or implement industry-recognized skills certification.

FY 2014 performance data for these indicators are presented in Table 11.

Table 11. FY 2014 Progress Results Toward Improved Relevance and Quality of Workforce Development Programs

LWA Cooperative Agreement Indicators	FY 2014 Results
Indicator 3.2.2-33: Number of USG-supported tertiary education academic degree programs that include experiential and/or applied learning opportunities for learners *(for the first time)* (LWA Objective 3)	15 Partnerships 48 Programs with New Experiential/applied Learning Opportunities
Indicator 3.2.2-36: Number of USG-supported tertiary programs with curricula revised with private and/or public sector employers' input or on the basis of market research (LWA Objective 3)	9 Partnerships 29 Curricula New/revised
Indicator 3.2.2-39: Number of new USG-supported tertiary education programs that develop or implement industry-recognized skills certification (LWA Objective 3)	6 Partnerships 16 New Programs

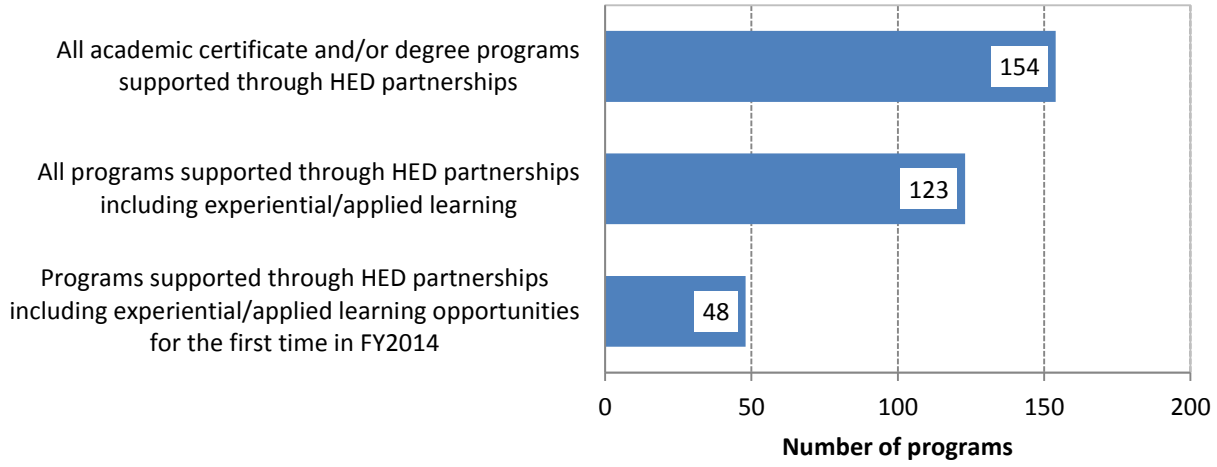
Experiential/ Applied Learning Opportunities

In FY 2014, 15 HED partnerships reported having implemented new/enhanced experiential and/or applied learning opportunities for the first time at host-country institutions. In all, these 15 partnerships reported that new/enhanced experiential and/or applied learning opportunities benefited 48 academic certificate and/or degree programs supported (i.e., certificates and associate, bachelor, master's, and PhD degree programs). According to the definition for this indicator, experiential learning is an educational practice of supplementing the classroom setting with work experience in the real world. Applied learning provides opportunities to apply classroom knowledge and skills to real world situations. Both require some structured work experience integrated with classroom learning and aim at increasing participants' readiness to enter the labor market upon completion of the program.

To understand the scope and significance of the experiential/applied learning opportunities developed and implemented through HED partnerships, additional data are tracked on programs supported and experiential/applied opportunities. As showed in Figure 8, a total of 154 academic certificate/degree programs were supported through HED partnerships in FY 2014, of which 123 had experiential/applied

learning opportunities (80%). Of these, 48 had new/enhanced experiential/applied learning opportunities in FY 2014 (39%), regardless of the actual number of experiential opportunities first offered.

Figure 8. Academic Certificate/Degree Programs Supported through HED Partnerships and Experiential/Applied Learning Opportunities First Offered in FY 2014



In FY 2014, examples that highlight partner institutions' achievements in bringing experiential/applied learning opportunities into the academic certificate/degree programs that they support included the following:

- In Colombia, partners at **Universidad Santiago de Cali** (USC) and **American University** developed new experiential learning opportunities through short courses on human rights into USC's post-graduate Constitutional Law and Criminal Law degree programs. The latter degree program formerly had a classic civil law syllabus with lecture-based teaching style; however, at the request of the Dean at USC's Law School, the program's human rights module was revised to include experiential/applied learning methodologies. The first module provided a conceptual introduction to human rights history, principles, and norms. The second module examined the United Nations (UN) Human Rights System and the domestic implementation of international human rights laws in Colombian domestic jurisprudence. These first two modules built upon one another and culminated in the final module, which included an interactive simulation in which students worked in small groups and participated in simulated hearings before UN treaty bodies, with each group focusing on an individual right of their choice.

- In Jordan, partners from **al-Huson University College** (HUC) and **Red Rocks Community College** established a Solar Energy Technology associate degree program. In addition to the hands-on training provided at HUC using photovoltaic equipment and a solar technical laboratory, 42 students participated in internships with local solar energy companies in Jordan. These internships provided students with direct and relevant work experience, increasing students' prospects to find employment after graduation.

- In Rwanda, the **University of Rwanda** (UR) held its first student internship research exchange this fiscal year with a group of nineteen students from UR, **Michigan State University**, and **Washington State University**. In May 2014, three Washington State graduate students and three Michigan State graduate students formed teams with upper-level undergraduate students from the University of Rwanda's Bachelor of Science in Agribusiness program. The teams conducted joint research on the economics of the coffee sector in Rwanda. This internship program will be a regular part of the Master's Degree of Science in Agribusiness program once it is launched at UR in FY 2015.

Curricula New and/or Revised

In FY 2014, 12 HED partnerships amended or newly developed a total of 44 curricula. Out of these, 9 partnerships revised 29 curricula with private and public sector employer input or on the basis of market research (66% of all curricula revised this year, see Table 12). A curriculum is a set of all courses that a student must complete in order to obtain an academic certificate or degree offered at a host-country institution.

Table 12. Curricula Newly Developed and/or Revised in FY 2014

All Curricula New/Revised in FY 2014	Curricula New/Revised with Input or Based on Market Research in FY 2014	
(N)	(n)	(%)
44	29	65.9

In FY 2014, notable examples that highlight the involvement of public and private sector in the curriculum revision process included the following:

- In Jordan, partners from **Al Quds College** (AQC) and **Washtenaw Community College** enhanced the capacity of AQC faculty and staff through faculty exchanges; WCC faculty visited Jordan in January, and AQC faculty visited Michigan in February. As a result of these exchanges, faculty have jointly developed 54 teaching toolkits to enhance entrepreneurial concepts and applied learning in 10 courses across four academic disciplines (Business, Media Arts, Information Technology & Engineering, and Culinary & Hospitality).

- In Jordan**, al-Huson University College** (HUC) and **Red Rocks Community College** worked collaboratively with private sector partner Consolidated Contractors Company (CCC) to develop a new comprehensive health, safety, and environment (HSE) associate degree program. The HSE curriculum was created to not only meet international standards in occupational health, safety, and environment but was also strategically selected in an effort to fill the demand for HSE workers in Jordan by training and preparing students to enter into this field. Currently, 35 students are enrolled in the first year of HSE degree program, which begins with theoretical training at HUC, and 30 students have continued into the second year of practical training at the newly refurbished Hassib Al-Sabbagh Academy. This facility was provided by **Al Balqa Applied University** (BAU) and renovated and equipped through funds from CCC, who will offer a significant number of jobs to HSE students after completion.

- In Morocco, **Ecoles Normales Supérieures de l'Enseignement Technique** (ENSETs) **of Rabat and Mohammedia**, and **Middlesex Community College** partners newly developed or revised 14 curricula to integrate entrepreneurship components into the course content. ENSET Rabat added four new engineering programs while ENSET Mohammedia added five new programs and revised five existing programs to include an entrepreneurship module. This development further strengthens curriculum content and inculcates an entrepreneurial mindset at the two ENSETs. These changes were approved by the National University Curriculum Approval Process in Morocco; now accredited, these offerings can be offered continuously for at least five years. Currently, 18 faculty members from both ENSETs are teaching courses with an entrepreneurship component.

Programs – New

In FY 2014, six HED partnerships reported the development and administration of 16 new academic degree programs. According to the definition of this indicator, an academic certificate and/or degree program is a structured course of study, based on defined curricula in a specific discipline, resulting in a granting of a postsecondary degree or certificate. Nearly half of the new programs are bachelor degrees (44%, $n = 7$) and almost one-third (31%, $n = 5$) certificates, while four of these new programs (25%) were master's degrees (see Table 13).

Table 13. Programs Newly Developed and Implemented in FY 2014

Type of Academic Certificate/degree Programs Newly Developed in FY 2014	Number	Percent
Professional licensure/certificate programs	5	31.3
Associate degree programs	0	0.0
Bachelor degree programs	7	43.8
Master's degree programs	4	25.0
PhD degree programs	0	0.0
Overall	16	100.0

The degree programs newly created in FY 2014 implement novel approaches for preparing students to meet the needs of the labor market as well as a practical focus with practicums or applied experiences in the community. Delivery modalities also vary: face-to-face instruction, online only, or a combination of both. Some of these programs were launched to the public and also elicited great media interest. The collaboration of multiple stakeholders to develop these new programs as well as their official institutionalization, which often also necessitated government approval, together contributed to a more organic integration of the offerings at the host-country institutions.

Below are some examples of partnerships that implemented new academic certificate or degree programs in FY 2014:

- In Colombia, the **Universidad del Magdalena** (UM), in partnership with **University of Florida**, developed a diplomado/certificate for law students. Entitled Human and International Humanitarian Rights in the Caribbean Context, this new diplomado/certificate provides a foundational understanding of interpretations of human rights. It was also offered as a course to train professors at UM, educators in the district's public school system, community leaders, members of the Colombian civil defense, national police, Ombudsman representatives, and Women's Network members and provide them with basic concepts in human rights and teaching to promote, disseminate, and protect fundamental rights and achieve an inclusive education system.

- In Barbados, partners at the **University of the West Indies** and **Indiana University** collaborated to develop and launched to the public a new master's degree in entrepreneurship and innovation degree at the Cave Hill School of Business. This new, three-phased graduate program was designed with a heightened practical focus. It aims to take an entrepreneur or aspiring entrepreneur through the development of a real project business, building upon foundational courses on the entrepreneurial ecosystem as well as strategy and innovation-centered courses.

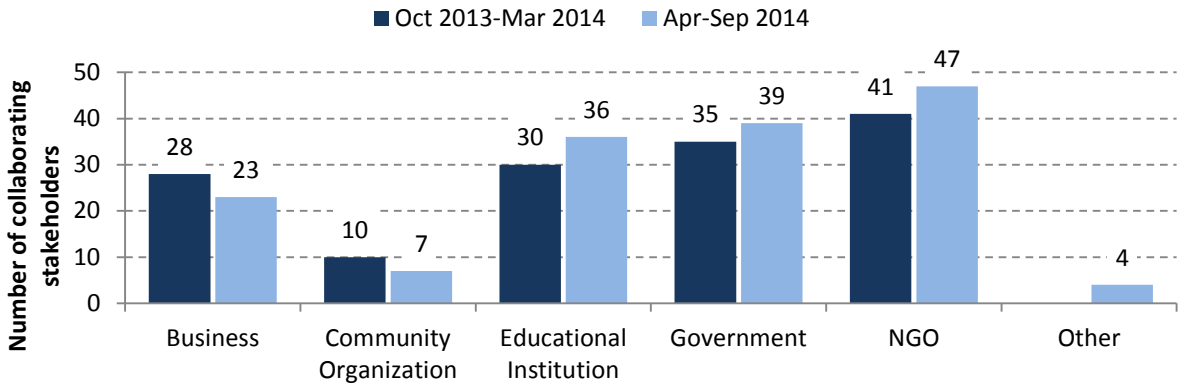
- In Ecuador, at the **Universidad San Francisco de Quito** (USFQ), the master's in ecology degree program with specialization in Amazonian studies was officially approved by the Ecuadorian government and was launched in August 2014. Twelve students were granted scholarships this fiscal year to attend this new graduate program developed through a partnership between USFQ and **University of North Carolina**. In 2013, as the delay in approval for the master's degree continued, the partners had started teaching the four main planned courses as certificate courses: Individuals (students and professionals) completing all four courses would receive a General Certificate in Amazonian Studies. Those individuals earning the four-course certificate who subsequently apply for admission to the master's in ecology degree program could then receive official academic credit retroactively for the four courses taken in the certificate program.

- As a result of the partnership between **Red Rocks Community College** and **Al Huson University** in the United Arab Emirates, the first matriculation of 37 students into the Occupational Safety and Health program at **Al Huson University College** occurred in FY 2013. In FY 2014, 20 of the 37 students returned for a second year. The program now also has its own building to house its applied labs, equipment, and classrooms.

Involvement of Other Collaborating Stakeholders

In FY 2014, HED higher education partnerships expanded their partnerships beyond the primary partner institutions by engaging diverse groups of stakeholders. Stakeholders involved included individuals and groups from businesses, community organizations, other educational institutions, government agencies, and NGOs. In FY 2014, partnerships worked with a total of 300 stakeholders. During the first half of the year, 34 HED partnerships reported collaborations with 144 stakeholders and during the second half of the year, 36 HED partnerships reported collaborations with 156 stakeholders (see Figure 9).

Figure 9. Types of Other Collaborating Stakeholders Involved in HED partnerships in FY 2014



Though HED partnerships collaborated with different types of stakeholders, stakeholders tended to be involved in similar activities across the different partnerships. Stakeholder involvement occurred primarily in internship placement, mentorship and network development, curriculum design, outreach, applied learning, and training. Examples are provided below.

Internship Placement: In FY 2014, several partnerships enlisted outside stakeholders to help students find internships. For example, the **University of Florida** partnership with the **Universidad Nacional de Asunción** has agreements with two NGOs, Federation of Production Cooperatives and Agricultural Cooperative Development International/Volunteers in Overseas Cooperative Assistance, that provide internships annually in forestry and agricultural production for at least five students. In FY 2014, the partnership established agreements with two additional NGOs and one tobacco business that will provide new internship opportunities for students in FY 2015. Those NGOs and businesses are: Fundacion Ayuda en Acción, Servicio Ecuménico de Promoción Alternativa, and Compañia Agrotabacalera del Paraguay S.A.

Mentorship and Network Development: Partnerships also engaged stakeholders to provide mentorship and network development opportunities for students and faculty members. For instance, through the **University of Hawaii** and **Southern Christian College** partnership in the Philippines, four teachers from Alternative Learning System in Esperanza work as advisors for student business teams. They provide feedback on the students' business plan ideas, share their existing network of contacts, and facilitate linkages among the students and local government agencies that support local entrepreneurs. Additionally, the **University of Liberia** and **Indiana University** worked with the Ministry of Health in Liberia to facilitate mentorship of students in the certificate of public health by clinic staff and district workers.

Curriculum Design: Curriculum design and development has also been a common area for collaboration with stakeholders. By involving outside groups, tertiary education programs are better designed to meet market needs and address existing knowledge and skills gaps among potential workers in a particular sector. In Colombia, **Florida International University** is collaborating with Patrimonio Natural, an NGO that focuses on protecting and conserving Colombia's natural areas, and Parques Nacionales Naturales de Colombia, a government agency that works to guarantee the conservation of Colombia's biosphere and ecosystems, to develop a professional certificate program for individuals working in fields related to biodiversity conservation. In Liberia, the Ministry of Health and Social Welfare worked with the **Indiana University** and **University of Liberia** partnership to develop and implement a certificate in public health.

Outreach: In FY 2014, collaborating stakeholders have been integral in helping partnerships reach out to their communities, either for raising awareness, dispersing information, or helping to increase civic participation. The partnership between **American University** and the **Pontificia Universidad Javeriana Cali** (PUJC) in Colombia worked closely with the Municipal Ombudsman's Office of the City of Santiago de Cali on two high profile initiatives during the first half of FY 2014. On January 31, 2014, PUJC's human rights clinic and the Ombudsman launched a jointly sponsored student competition to raise awareness of and interest in local human rights issues. In an effort to raise awareness about Ombudsman's annual report on the current state of human rights in Cali, the Ombudsman and PUJC partnered to host a student competition asking students across the entire university to read the report in full, critically analyze one of the human rights issues highlighted in the report, and submit a proposal for resolving that issue. The competition received 70 proposals from teams of two students from across the university.

Applied Learning: Stakeholders were essential in helping university partnerships apply their learning in real world situations. For instance, the **University of Hawaii** and **Southern Christian College** in the Philippines forged relationships with various businesses to help students produce and sell their products. In addition, V Motril Foods, a business that exports dried fruit internationally, has signed a memorandum of understanding under the partnership to help market student banana chips. The business has also provided technical advices that lead the student banana chip team to venture into additional banana plant varieties. Manna's Alternatives, a produce and food establishment in the Philippines, has also agreed to sell student products, including banana chips, ice cream, and sweet potato chips. Relationships with local government officials, such as Rene Falconitin, a local government unit leader in Barangay, have helped students obtain certified workspace in which to produce products that meet government food safety requirements.

Training: HED partnerships provided outside stakeholders with training opportunities or collaborated with them to provide training opportunities to other groups. The **University of Florida** and **Universidad Nacional de Asunción** in Paraguay worked with the Ministry of Women to organize training workshops on gender-based violence and reproductive health for high school students in agricultural areas and female students in the agricultural sciences department. The **University of Richmond**'s partnership in Peru leveraged its relationship with various NGOs to provide trainings on forest management, land tenure, climate change, conservation, and indigenous communities to undergraduate student cohorts.

Partnership Performance Management

HED uses results-based management principles and an information management system (Partnership Results and Information Management Engine, or PRIME) to manage the performance of higher education partnerships through a structured process of periodic and regular monitoring activities, performance reviews, and data quality checks. To track its efforts toward performance management, HED collects and reports data on three indicators:

- Custom Indicator: Number of monitoring visits across HED portfolio;
- Custom Indicator: Number of updated and/or new HED performance management processes; and
- Custom Indicator: Number of new technical resources or other related documents and materials that HED creates for the higher education community.

Performance data for HED's results-based management achievements during the reporting timeframe are presented in Table 14.

Table 14. FY 2014 Progress Results in the Area of Results-based Management

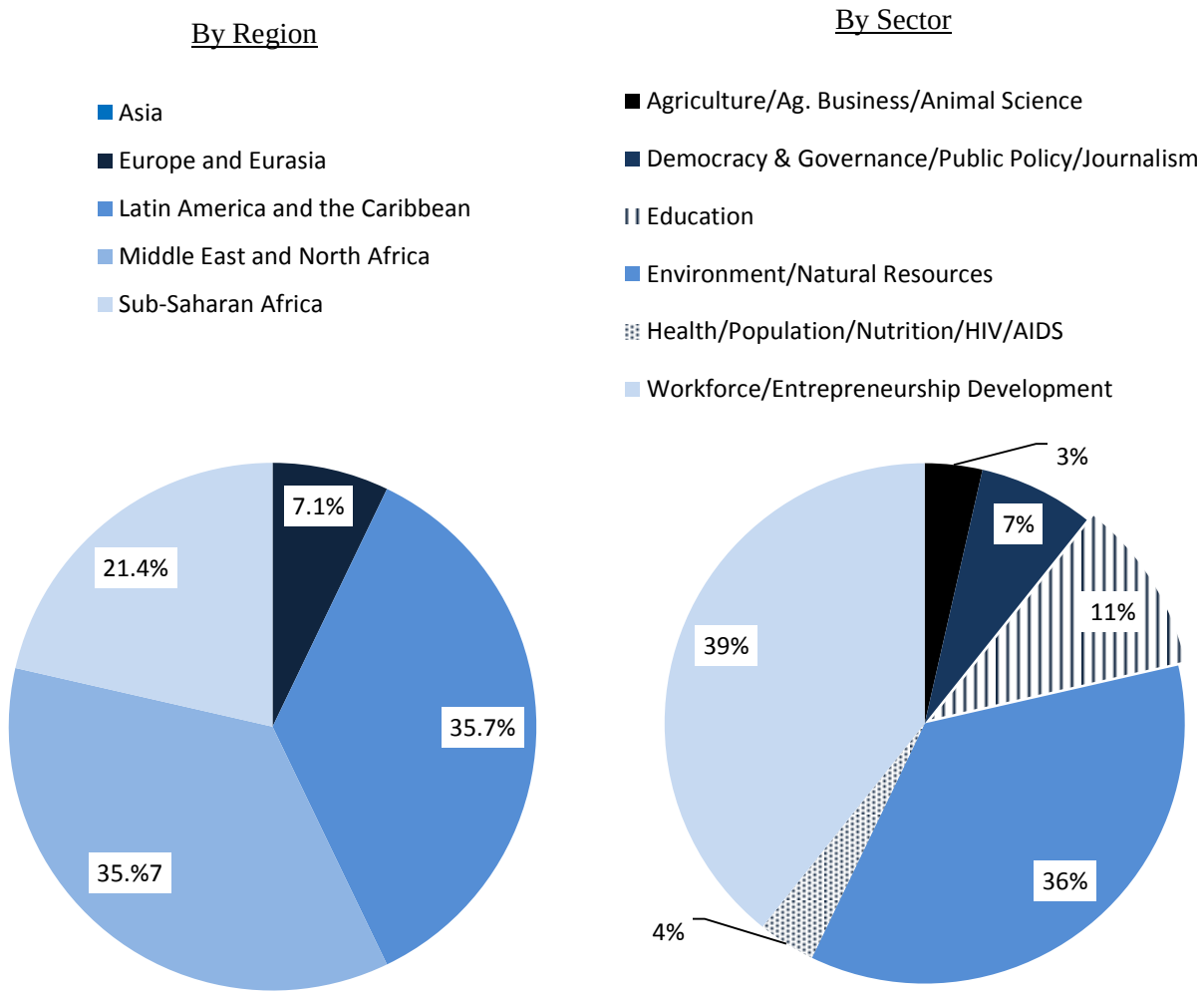
LWA Cooperative Agreement Indicators	FY 2014 Results
Custom Indicator: Number of monitoring visits across HED portfolio (LWA Objective 7)	28
Custom Indicator: Number of updated and/or new HED performance management processes (LWA Objective 7)	5
Custom Indicator: Number of new technical resources or other related documents and materials that HED creates for the higher education community (LWA Objective 6)	0

Monitoring Site Visits

In FY 2014, HED staff completed 28 monitoring site visits to both U.S. and overseas partner institutions. The purpose of these visits is for HED and partners to discuss progress toward partnership objectives, updates on programmatic activities, and potential challenges in implementation. Monitoring visits are an opportunity for HED not only to review progress towards meeting partnership objectives, but also to facilitate reflection among the implementing partners about how partnerships results have contributed to the USAID Education Strategy, Goal 2. HED also uses these visits as opportunities to assess the quality of data collection processes and systems that partners have been using, initiate the sustainability planning process, and address any other implementation, monitoring or evaluation concerns, as needed. As many partnerships have begun their final year of implementation in FY 2014, HED has dedicated much time during monitoring visits this year to facilitate sustainability planning so that the partnerships and the development results endure after the award funding has ended.

Most of the 28 monitoring visits conducted in FY 2014 were to partnerships implementing activities in the Middle East and North Africa ((36%, n = 10) and Latin America and the Caribbean (36%; n = 10), as reflected in Figure 10. Most partnerships visited (39%, n = 11) were focused on the workforce/entrepreneurship development sector.

Figure 10. Monitoring Visits Conducted in FY 2014 by Geographic Region and Primary USAID Sector



Some examples of monitoring visit activities in FY 2014 are presented below.

Baseline Assessments: This fiscal year, HED traveled to the field to provide technical assistance to partners in the startup phase. HED worked with the **University of Florida**, **Universidad Nacional Amazónica de Madre de Dios**, and **Universidade Federal do Acre** partners in Peru and Brazil, to finalize their baseline assessment and M&E documents. HED held additional baseline discussions in Burkina Faso and Uganda for **Tuskegee University** – **International Institute for Water and Environmental Engineering** and **Tulane University** – **Makerere University** partnerships who have received funding to carry out phase II activities.

Sustainability Pilot and Discussions: Sustainability is of great interest to HED's partners, and it was one of the most often discussed topics during monitoring visits this reporting period. Generally, partners and HED made an effort to design partnerships with the strategic goal of positioning partners for post implementation sustainability. To that end, HED has developed a tool that will help partners evaluate their preparedness and prospects for sustainability. HED piloted this tool during a series of monitoring visits in Jordan and Morocco. This was an opportunity for HED to test the instrument and gather useful information about the tool, the process of using the tool, and the applicability of the tool in diverse contexts.

Data Quality Assessments (DQA): HED conducted three DQA-focused monitoring visits in FY 2014. In each visit, the DQA examined USAID F indicators, program-level indicators, and custom indicators. Each DQA revealed different as well as shared challenges to data collection. The findings allowed for constructive discussions with partners covering the following themes:

- Approaches to count the total number of participants when attendance variances occur during multi-day events
- Best ways to cap [n = 28] reated activities and outputs which were not [n = 28] ticipated
- Strategies to address needed changes in data collection methodologies and indicator definitions (To what extent can those definitions and methodologies be interpreted by the implementers? To what extent can the language be adjusted? Etc.)
- Sufficiency of program-level indicators for providing appropriate and adequate measurements for a partnership's outcomes

Review of Objectives: Having established implementation processes and activities, partners in the final year of implementation are in a position to reflect on changes that happened during implementation and the context in which they have occurred. In a series of monitoring visits and meetings with partners in the Middle East, HED staff and partners have reviewed outcomes and objectives not only in terms of progress, but also had discussions on the linkages between the objectives, the context in which they are achieved, and USAID's higher education strategy.

A review of the partnerships' objectives and their related activities has revealed that in some cases, partnerships that were meeting, or even exceeding targets still encountered difficulties in fulfilling their vision. **Red Rocks Community College** – **Al-Huson University College** partnership in Jordan, for example, established a state of the art career center for students who participate in a solar energy certificate program which offers them internships with companies as part of the program. The partners have been successful in meeting their target numbers for training and preparing students for the market. However, the solar energy certification program is technologically ahead of the market and the partners are not securing employment for as many students as they had hoped. A similar example that demonstrates another contextual factor that affects the partnerships' achievements comes from the same partnership. Red Rocks Community College has also been developing a Health, Safety, and Environment (HSE) certification program whose graduates have a good chance of finding employment, as the Jordanian law requires a HSE officer for every 20 employees. If enforced, the partners expect a market demand for at least 5,000 positions.

In other cases, the partners observed that, as they are approaching the final year of implementation, they are able to see institutional changes occurring among host-country institution individuals. The partners from **Al Quds**

College in Jordan, for example, who have been collaborating with **Washtenaw Community College**, started using toolkits in their classes to connect entrepreneurship theory to practice. While this was met at first with resistance by faculty, the partners noted that over time, the use of toolkits in the classroom signaled a pedagogical shift from lecture based teaching to experimental learning, which helped the partners get buy-in from the students.

Working with USAID Missions: HED met with USAID Missions on every monitoring trio to provide implementation progress updates, clarify implementation issues, discuss remaining activities, and share sustainability plans. These discussions also helped both HED staff and Mission representatives continue to build on the working relationship between HED and USAID and clarify any questions about HED, its mechanism, and the role of HED in managing these partnerships.

One example of the value-added that HED monitoring trips bring to partnerships and the respective concerned government entities overseeing these partnerships is that of the monitoring trip to Tunisia. HED and partners from Colorado University Boulder and Instituts Supérieurs d'Enseignement Technologique (ISETs) of Medenine, Sidi Bouzid, and Tataouine met with U.S. Embassy and USAID representatives in Tunisia to review results and to strategize about the best approach for realigning partnership objectives with broader U.S. Government and ISET goals for Tunisia. This was particularly important because the partnership was developed before the Arab Spring. With the revolution unfolding and multiple changes in leadership within the ISET system, several challenges to implementation emerged. Thus, the primary purpose of the monitoring visit was to visit all 3 ISET partner institutions to understand their concerns and needs before facilitating a collaborative review and reflection upon current implementation results and the program design of the Tunisia JOBS partnership. Once it was possible to get all parties to sit and discuss each other's concerns, HED quickly laid out a plan of restructuring the program budget to accommodate the expressed needs of the Tunisian partners, achieve some sustainable results, and bring the program to an orderly closure.

Performance Management Processes

In FY 2014, HED continued utilizing and refining the performance management processes that have been in place since FY 2012. Performance management is the systematic process of monitoring the achievements of program activities; collecting and analyzing performance information to track progress toward planned results; using performance information and evaluations to influence decision-making and resource allocation; and communicating results to advance organizational learning and share performance information with stakeholders. HED has developed a comprehensive and robust set of policies, processes, and tools to facilitate the results-based management of partnerships throughout their entire life cycle. This system enables HED and partners to ensure that results they intend to achieve are properly identified, performance data is effectively tracked, and the objectives are ultimately achieved.

HED developed and implemented five new performance management processes in FY 2014, described below.

Data Quality Assessment (DQA) Protocol and Template: The DQA protocol and template establishes standards for data quality and outlines the process that HED and partners should follow in assessing a project's data management system. The DQA protocol and template guides HED and partners in reviewing elements of the five USAID-recommended data quality standards (validity, integrity, precision, reliability, and timeliness) to determine whether a partnership's data collection systems are set up to generate quality data over time. The DQA is comprehensive in scope and examines indicators at all levels, including: USAID standard indicators, program-level indicators, and custom indicators.

The DQA protocol and template is set up as a learning exercise for both HED and partners, who closely collaborate throughout the entire process. During a DQA visit, HED staff ensures that a partnership's performance management plan (PMP) captures performance as needed by reviewing data sources and collection methods. Following the DQA, a set of recommendations and an action plan are agreed upon by HED and

partners. The follow-up to the DQA is a crucial part of the DQA process. Upon completion of the DQA, the PMP is revised, if necessary, to reflect the current reality of the partnership's data collection systems and identify which features, tools, and/or methods need improvement.

Addendum to Monitoring Protocol: During the summer of 2013, HED conducted an impact assessment of closed HED partnerships in Eastern Europe. The impact assessment interview questionnaire was organized around the HED Theory of Change and examined the partnerships' internal and external relationship dynamics and systems. Valuable data were collected using this questionnaire, which prompted HED staff to apply some of the questionnaire's approaches in capturing information on how structures and relationships potentially influence performance progress during implementation. This newly developed addendum to HED's monitoring site visit protocol is composed of open-ended questions articulated around five themes: relationship-building, institutional and external conditions, collaboration with other stakeholders, contribution to strategic context, and sustainability. It is not mandatory that HED staff use these supplementary discussion questions during a monitoring visit. The questions are for guidance purposes and their use depends on the nature of the visit and the partnership's context; for example, the questions may be tailored to each monitoring site visit's purpose, stage in implementation, or the issues and opportunities identified for a particular partnership.

Associate Award Report Template: Following an in-depth review and comparison of reporting requirements in Associate Award contractual agreements between USAID Missions and HED, HED developed a template for its staff to write semiannual progress reports to the Missions. This template is significant because it represents a shift in how performance information has traditionally been communicated. The template guides HED and partners in presenting information by performance objective, so that the report is neither driven by activities nor performance indicators. By presenting evidence of a partnership's performance status by objective, a report is more aligned with the partnership's performance-based management plan and the theory of change outlined in the award.

Closeout Budget Assessment: In April 2014, HED developed a financial management tool to conduct an assessment of partnership spending and projected balances at the end of each subaward agreement. The tool allows HED staff to maximize the managing for results approach by verifying if partner projections are realistic and achievable given approved work plans. The tool can be shared with the partners who wish to conduct the assessment on their own. The findings revealed by the tools fostered productive conversations between HED and its partners that ensured orderly partnership closeouts.

Standards for Quality Partnership Data Reporting: When partners report complete data on time, sufficient information is available to guide the planning and management of desired results. Partners and HED are also able to share information on performance at the portfolio and partnership levels with funding agencies in compliance with HED's Cooperative Agreement (LWA). When partners do not report performance data in a timely or complete manner, HED's ability to comply with the terms of its Agreement and demonstrate its partnerships' contributions to USAID's education goals is jeopardized. To address this risk, HED developed standards for quality partnership data reporting.

The standards for quality partnership data reporting describe the step-by-step procedures that HED staff should adopt in case of partnership reporting non-compliance. Two topics are covered in this overview: 1) communication on reporting requirements and expectations, and 2) contacting and negotiating with partners regarding incomplete reports. The section on contacting and negotiating with partners also includes steps for sending follow-up notifications and including other staff members at the U.S. institution.

Technical Resources

In FY 2014, HED did not finalize any new technical resources for the higher education community. Nonetheless, throughout FY 2014 HED worked to develop a Sustainability Tool that will be finalized in FY 2015. The

Sustainability Tool is a comprehensive, collaborative resource that partnerships can use to plan for and evaluate the long term sustainability of their results.

Learning and Sharing Knowledge

USAID's ADS Chapter 203, Assessing and Learning, states that "learning is fundamental to an adaptive approach to development." Learning also contributes to advancing the knowledge and tools available to the broader community of development experts, researchers, and decision-makers. To track performance on HED's efforts to generate and disseminate learning, data are collected and reported on three custom indicators:

- Custom Indicator: Number of technical presentations given or organized by HED staff at higher education and international development conferences and/or institutions/organizations;
- Custom Indicator: Number of new technical resources or other related documents and materials that HED creates for the higher education community; and
- Custom Indicator: Number of evaluations or impact assessments carried out whose findings have been published or widely distributed.

These indicators fall under HED's LWA Performance Objectives 6 and 7. Performance data for these indicators during FY 2014 are presented in Table 15.

Table 15. FY 2014 Progress Results in the Area of Learning and Sharing Knowledge

LWA Cooperative Agreement Indicators	FY 2014 Results
Learning:	
Custom Indicator: Number of evaluations or impact assessments carried out whose findings have been published or widely distributed (LWA Objective 7)	4
Sharing Knowledge:	
Custom Indicator: Number of technical presentations given or organized by HED staff at higher education and international development conferences and/or institutions/organizations (LWA Objective 6)	3
Custom Indicator: Number of roundtables and/or conferences organized by HED (LWA Objective 6)	2

Please note that HED's LWA PMP was modified (Modification Number 24 took effect in March 2014) in compliance with USAID's decision to reduce HED's budget for the final two years of the program and to focus on partnership management activities. As a result, HED will no longer provide USAID Bureaus and Missions with short-term technical assistance or program design assistance in FY 2014 and FY 2015. Similarly, HED is no longer required to conduct research activities or to organize roundtables, meetings, seminars, and workshops. Consequently, HED is no longer collecting and reporting data on the following performance indicators:

- Custom Indicator: Number of technical assistance requests from USAID Missions and/or Bureaus received;

- Custom Indicator: Number of technical assistance field visits to USAID Missions (by team members/composition);
- Custom Indicator: Number of research activities conducted by HED; and
- Custom Indicator: Number of roundtables and/or conferences organized by HED.[3]

As a further outcome of Modification 24, HED is no longer engaging in strategic outreach activities in relation to higher education development initiatives. In previous performance reports, such information included highlights of HED's activities for publicity assistance to USAID, public relations, publications, social media, and branding and marking.

Learning

Number of Evaluations or Impact Assessments Carried Out Whose Findings Have Been Published or Widely Distributed

HED managed three external final evaluations and conducted one internal mid-term evaluation in FY 2014. HED views external evaluations as learning opportunities. HED also recognizes the need to apply an evaluation scope that not only considers established criteria across its portfolio but also one that, in each evaluation, provides an opportunity to focus the research questions on how higher education can contribute to the subject matter of a given partnership and capture meaningful lessons learned.

This fiscal year, HED has systematized the process of designing and managing external evaluations for its partnerships. The process involves the development of a detailed scope of work (SOW), a comprehensive recruiting process for external evaluators, and a thorough evaluation methodology and criteria. This approach will allow HED to manage evaluations systematically in FY 2015, applying a standardized methodology to different types of evaluations and assessments.

Learning from Partnership Evaluations

Final Evaluation of the Partnership between Indiana University Kelley School of Business (IU-KSB) and the Cave Hill School of Business at the University of the West Indies (CHSB-UWI): USAID's Job Opportunity for Business Scale-up (JOBS) is an initiative aimed at promoting post-secondary skills training in entrepreneurship through partnerships among U.S. and developing country institutions of higher education.

The Barbados JOBS partnership between the **Indiana University**'s Kelley School of Business (IU-KSB) and the Cave Hill School of Business at the **University of the West Indies** (CHSB-UWI) focused on the growth of an entrepreneurial culture and diversifying the service-oriented economies in Barbados and neighboring countries. Precisely, the partnership worked to establish the Cave Hill School of Business Centre for Enterprise and Entrepreneurship at the University of the West Indies as a hub for innovative business training and growth in the Eastern Caribbean by concentrating on two objectives: (1) To enhance CHSB's institutional capacity to serve as an entrepreneurship center for excellence in Barbados and the Organization of Eastern Caribbean States (OECS); and (2) To strengthen entrepreneurship knowledge and skills among diverse stakeholder groups in Barbados and the OECS through outreach and engagement.

Overall, evaluation findings supported the partnership's contributions toward its strategic objectives through examination of USAID standard indicators as well as custom indicators, in addition to the enhancement of CHSB's institutional capacity and strengthening of entrepreneurship knowledge and skills to better serve Barbados and the OECS. Recommendations for sustainability included exploring opportunities for collaboration with Barbados Community College; continuing to track the progress of the JOBS project participants; and routinely re-calibrating the entrepreneurship curriculum

[3] Although USAID no longer requires HED to organize conferences and/or roundtables organized, HED has conducted such activities in FY 2014 and is reporting on these in this section.

Final External Evaluation of the Partnership between Georgia State University (GSU) and Cairo University (CU): The partnership between **Georgia State University**'s Andrew Young School of Policy Studies (AYSPS) and **Cairo University** (CU) Department of Economics (DOE) and Faculty of Economics and Political Science (FEPS) aimed at increasing the capacity of FEPS faculty to conduct economic research and outreach, and as such for it to serve as a regional hub for research, teaching, and technical economic assistance.

The purpose of the evaluation was three-fold: to assess end-of-partnership performance, focusing on the partnership's articulation of its theory of change; to evaluate the extent to which intended outcomes were accomplished and to capture lessons learned; and to provide recommendations on strategies and actions to ensure the achievement of the host-country institution's long-term objectives.

The key findings of the evaluation showed that institutional capacity was enhanced through the partnership as both institutions were engaged in building a long-term collaborative research agenda. Also, short courses offered by AYSPS faculty at FEPS were an effective way to introduce faculty, staff, and colleagues from other institutions to new ideas and techniques in economics and policy analysis. Faculty visits to AYSPS further contributed to enhance human capacity through exposure to resource-rich libraries, collegial discussions, and observations of pedagogical innovations. The evaluator recommended deepening the long-term relationships between the partners through continuation of joint projects as well as faculty and students exchanges. It was also highlighted that there is also a need to ensure the sustainability of this investment in human and institutional capacity, by securing resources that would encourage continuous faculty development.

Final External Evaluation of the University of Texas at San Antonio (UTSA) and the Small Business Development Center (SBDC) Grant #1 in Latin America: The Small Business Development Center (SBDC) network is the largest and most successful network of assistance to small and medium-size enterprises (SME) in the United States. Expanding the SBDC model throughout the Americas aims to link countries committed to democracy and open markets in an effort to promote inclusive growth and prosperity. In such context, the partnership had the goal of creating national SBDC networks in Central America, based on the proven U.S. SBDC model. To that effect, **University of Texas at San Antonio** (UTSA) has developed a process to support countries in establishing their own SBDCs (CREAPYMES in Costa Rica and CDE-MIPYMES in Honduras).

The purpose of the evaluation was to determine the extent to which SBDC grant #1 has achieved its objectives and make recommendations that could be adopted for the ongoing implementation of grant #2, and in general, in future SBDC activities. Key findings have shown that the partnership addressed a real need and responded to policy considerations of major program stakeholders from the municipal level, proceeding through national governments, and Central America multilateral organizations. Additionally, the partnership showed high efficiency in carrying out its activities. UTSA, with HED support and CENPROMYPE's collaboration, was an actively engaged, leading, and committed implementer. Finally, the findings have demonstrated that the partnership sought to create and develop centers, associations, networks, collaborations, staff, and information systems, but that it lent little attention to the demand side of the business development services market.

The evaluators recommended that the partnership seek a better balance between the initial stages of implementation and the final ones. A greater stakeholder involvement also is needed in the model adoption process to help improve the effectiveness of the implementation as well as its consolidation and internationalization processes. Moreover, particular attention should be granted to the adaptation process as it changes across countries with differing political, legal, organizational, administrative, and cultural conditions. In relation, UTSA should develop in-house expertise to deepen its understanding the LAC region and to enrich its capacity-building skills.

Mid-term Evaluation of the Colombia Human Rights Law School Partnership Program: The partnership between **three U.S. law schools** and **eight law schools in Colombia** supports the ongoing initiative of the Government of Colombia and USAID/Colombia to promote respect for and protection of human rights. The initiative seeks to strengthen the capacities of Colombian law schools in the outlying areas of the country and to

enable law school graduates, civil society groups, and Colombian government agencies to better serve marginalized and vulnerable populations.

The purpose of this evaluation was to provide comprehensive evidence on and recommendations to strengthen the program's effectiveness and efficiency via course corrections for the remainder of the program. The evaluation findings showed that all three program objectives have remained relevant to key audiences of the three partnerships. While the overall recommendations varied across partnerships based on diverse institutional and regional contexts, the findings highlighted the importance of reflecting on past experiences to facilitate future activities, maintaining high-level institutional buy-in from university administrators, strengthening services to vulnerable communities, and enhancing relationship building across the three Colombian regions as well as between the institutions.

Learning from Partnership Implementation

In addition to external evaluations, HED continually assesses challenges identified and documented by partners in their reporting to HED. HED asks partners to provide information in their annual report on major challenges that surfaced during the fiscal year and to describe how they addressed those challenges. Once submitted, HED analyzes the information to identify thematic issues in the challenges and the actions that were taken to address them.

This fiscal year HED's analysis revealed five themes related to challenges across its portfolio. Challenges were coded into the following categories: contextual challenges, stakeholder engagement challenges, partnership design challenges, resource challenges, and systems challenges. Table 16 presents a brief description of these themes.

Table 16. Themes and Descriptions of Partnership Challenges in FY 2014

Theme	Description of Challenge
Contextual	Challenges related to external or internal factors to partnership activities and unit of analysis, which affect implementation of activities.
Design	Challenges related to elements in the original partnership design that have become irrelevant as a result of changing conditions.
Stakeholder engagement	Challenges related to processes, strategies, and activities that are designed to optimize the engagement of stakeholders with of partnership content and activities.
Resources	Challenges related to resources allocated to partnership activities. Those include, but are not limited to fund, personnel, facilities, etc.
Systems	Challenges related to the systems in place that are designed to increase implementation efficiency. Those systems include, but are not limited to reporting systems, administrative systems, communication systems, and financial systems

Contextual Challenges

In FY 2014, HED partners reported having experienced implementation interruptions that were caused, among other reasons, by security issues, strikes, public riots, the Ebola outbreak, and anti-gender equality campaigns. Other contextual challenges were related to the institutional environments in which partners have implemented their activities. Those included a merger of institutions at the host country, a change of partnering institutions, and different academic calendars between partnership institutions. Overall, these institutional conditions did not bring implementation activities to a halt, but did create delays in implementation and institutional environment of uncertainty.

Philippines

- *Challenge:* Continued and unpredictable security events in Mindanao have caused delays and logistical difficulties in implementation or training to out-of-school youth for the partnership between **University of Hawaii** and **Southern Christian College**. Security considerations made it difficult for partners not only to organize training activities in safe locations ahead of time, but also to coordinate activities for the geographically dispersed out-of-school youth.
- *Action Taken:* The partners' flexibility allowed the continuation of activities, but required additional expenses of efforts and resources. Teams have continuously kept up to date on local security conditions and have also been in communication with key local officials to obtain most recent, behind the scenes information in order to ensure maximum security for all activities. For example, on the day of travel to a training location in Lake Sebu, partnership drivers were given specific driving instructions and directions on the safest routes to the training destinations, which led to the successful delivery of training activities to two cohorts with no security problems.

South Sudan

- *Challenge:* The civil war in South Sudan has had a major impact on **Virginia Polytechnic Institute and State University**, **University of Juba**, and **Indiana University**, the partners of the Women's Leadership Program (WLP) in South Sudan. Following a joint U.S. Embassy and USAID joint program review, the decision was reached for an early closeout in August 31, 2014 of the Virginia Polytechnic Institute and State University - University of Juba partnership, with all on-the-ground activities to cease by March 31, 2014.
- *Action Taken:* After repurposing, reprograming and re-budgeting partnership activities, it was decided by the partners that the partnership would continue with long-term master's training carried out in Indiana, but with a cessation of all in-country activities in South Sudan.

Armenia

- *Challenge:* The anti-gender campaign in Armenia which started in 2013 has continued and gained momentum in Armenia. Yerevan State University's Center for Gender and Leadership Studies (CGLS) has been accused through public media of supporting homosexuality and sexual perversions in the country.
- *Action Taken:* The partners at **Yerevan State University** and **Arizona State University** have continued with their implementation strategy of engaging and being active in various state and civil society networks. At the same time they also changed the format of the programs' one-on-one mentorship activities into group mentoring activities, which gave an opportunity to all mentees to actively participate in the discussions, questions-and-answers sessions and interact with all the mentors. This approach has allowed the partners to address this challenge collectively while highlighting activities and studies that are considered less controversial in the current public environment.

Liberia

- *Challenge:* The Ebola epidemic in Western Africa has significantly affected implementation activities in Liberia. With school closures, the outbreak has limited partners' ability to introduce new programs and courses. The partners were also unable to travel for a strategic planning meeting which was originally scheduled for August of 2014, and was cancelled due to Center for Disease Control recommendations to restrict non-essential travel to and from Liberia.

- *Action Taken:* The partners at **University of Liberia** and **Indiana University** attempted to stay in touch via telephone and e-mail on a regular basis in order to be ready to resume implementation as soon as circumstances stabilize. Additionally, the partners re-allocated their time and reprioritized their activities by working on activities scheduled for the next fiscal year. University of Liberia has created an Executive Committee as well as working groups to continue the strategic planning through weekly phone calls

Paraguay

- *Challenge:* Partners at the Women's Leadership Program in Paraguay (WLPP) noted that professional development was needed among staff to address complexities of gender mainstreaming in course curricula. The partners reported that there were limited opportunities for gender discourse, professional development, training, and discussions with faculty at the institutional level on gender equality.
- *Action Taken:* The WLPP team has appealed to top administrators including Academic Program Directors and requested their support in encouraging faculty to participate in partnership activities relevant to gender and its incorporation in the curriculum. The partners have also used the advice of a gender specialist who encouraged a collaborative process with individual faculty members.

Program Design Challenges

Development projects are often implemented in unpredictable, rapidly changing environments. It is therefore not uncommon for partners to discover during implementation that aspects of the initial design are no longer applicable or relevant, and implementation course correction might be needed.

Armenia

- *Challenge:* The partners at **Yerevan State University** (YSU) and **Arizona State University** noted that the development of the curriculum for a master's degree program had not been planned at the design phase in the beginning of the project, and the decision to create it was made only in early 2014. The partners realized that the 12 courses that have been prepared by the in-residence scholars were not enough to develop the master's degree program. Additionally, in 2014 YSU has made a decision to include the specialization in gender studies in the master's degree program in sociology. According to the partners, this has caused additional and unexpected workload in developing curricula, modifying objectives and learning outcomes.
- *Action Taken:* In order to meet the needs required to develop the new master's degree program, the partners worked during the summer of 2014 and recruited more professors from YSU and other universities in Armenia to teach in the new program. In a short period of time, the Center for Gender and Leadership Studies Director and staff revised the entire curricula, objectives and learning outcomes, to include courses on sociological theory and methodology.

Barbados

- *Challenge:* The partners at **Indiana University** and **University of the West Indies** have reported difficulties implementing activities related to the development of Community of Practice for weather forecasting and water management in the Caribbean, which were part of the original design of the partnership. The partners realized that as is, those activities would duplicate current resources and practices in region, would not provide a significant added value to stakeholders and would not be sustainable beyond the lifetime of the project.
- *Action Taken:* The partners invested extensive efforts to define community of practice that could be implemented with regional support in a way that could be sustained beyond the length of the project. However, they reach to the conclusion that the pace of COP development with potential collaborating stakeholders in the region did not match the timeframe of the project. After thorough discussions of alternative options with key stakeholders, the decision was made to discontinue the COP activity in the partnership, and to reallocate related funds to the tailoring and technical development of short course material into the formal course curriculum.

El Salvador

- *Challenge:* The **Illinois Institute of Technology – Cleaner Production Consortium** partners in El Salvador have noted that students of the chemical engineering program lacked knowledge that was essential for skill development. Additionally, the course which covered several disciplines required an additional organizational effort to ensure that all teams have adequate and balanced coverage of the knowledge and experience needed to perform projects audits and economic analysis. This additional component was not as envisioned at the design phase of the partnership.
- *Action Taken:* The partners created bridging programs to compensate the gap in knowledge and skills that they had identified among students. These programs included introductory workshops, additional technical training, and structured guidance to research teams.

Stakeholder Engagement Challenges

Several partnerships have reported difficulties this fiscal year in engaging stakeholders through partnership activities. These challenges were mainly related to inadequate processes and approaches, limited appropriate networks, and lack of resources.

Latin America and the Caribbean

- *Challenge:* The **Illinois Institute of Technology – Cleaner Production Consortium** partners in Latin America noted that developing a fruitful engagement between universities and small, local enterprises has proven challenging this fiscal year across the program in Latin America. Faculty members had limited time to engage fully with companies for recruiting purposes prior to their practicum. In addition, some companies did not respond to the recruitment solicitations, which required faculty to seek new companies in the middle of the semester.

- *Action Taken:* Faculty members in institutions across the region have made effort to get more than the required number of companies ready to participate in their practicum, through personal contacts and informal meetings. The partnership directors emphasized the importance of faculty involvement as critical for the sustainability of the project during company visits and follow-ups. However, engaging companies still remains a challenge. The partners also created a practicum guide to standardize activities and reporting, and to improve the quality of recommendations to the local companies.

Philippines

- *Challenge:* Partners from **Southern Christian College** (SCC) and **Hawaii University** noted challenges in setting up consultations and meetings outside a conference that was held in Baltimore, Maryland, because of insufficient existing relationships and networks. The partners also reported that engaging individuals in the field to participate in the trainings offered was logistically difficult because of the remote location of the activity as a result of safety considerations in the Philippines.
- *Action Taken:* SCC built partnerships with some key municipal stakeholders. These linkages have allowed the partners to increase communication with existing stakeholders and out-of-school youth in order to maintain relations and accountability, and to build stakeholder networks.

Resource Challenges

This fiscal year, several partners experienced implementation challenges related to the availability of resources, mainly regarding funding and personnel. Shifts in staffing key personnel during implementation may not only cause delays but also create uncertainties and concerns among partnership stakeholders regarding continuation of activities. Reductions in HED LWA funding and delays in transfers of funds from U.S. to host-country institutions, have also had an effect on program implementation.

Colombia

- *Challenge:* In August 2014, the Dean of **Universidad Santiago de Cali** (USC) Law School, in a partnership with **American University**, unexpectedly announced his resignation from the position he has

held for more than three years, which has left the USC partnership team feeling uncertain about the program's future at the law school. The USC partnership team was unsure as to who would assume the top law school leadership role, as the advancement of many partnership activities at USC have depended on the Dean's support.

- *Action Taken:* Trying to determine how best to address and anticipate potential adverse effects from the Dean's departure the partners have developed a few strategies: (1) Arranging meetings with the incoming law dean early in his or her tenure so that USC partnership staff may have the opportunity to get the new Dean's attention early on and to raise awareness within Dean's Office; (2) Planning a potential visit to American University Washington College of Law (AUWCL) in Washington, DC to strengthen institutional buy-in and support; and (3) Requesting the proactive assistance of supporters from across the faculty who have participated in, or benefitted from partnership activities

Jordan and Burkina Faso

- *Challenge:* Several partnerships (Gateway Technical College (Entrepreneurship) – Ecole Supérieure de Technologie Oujda in Morocco and Tuskegee University – International Institute for Water and Environment Engineering in Burkina Faso) whose design relied on continuation of activities through a no-cost extension, were not able to continue certain activities, or had to modify them to be accommodated to the new funding restrictions.
- *Action Taken:* The partners in Morocco and Burkina Faso have been proactive in revising and developing plans to use the remaining time and resources efficiently, and have informed colleagues and stakeholders of these changes in order to manage their expectations. Whenever possible the partners also attempted to bridge funding gaps by leveraging resources from other partnering organizations in the region.

Systems-related Challenges

The level of efficiency of management systems determines the pace, productivity, and quality of a given activity. Some of the challenges that partners mentioned this year related to partnerships' management systems. Those included reporting, administrative, communications, and financial systems.

Philippines

- *Challenge:* The **University of Hawaii** reported difficulties in monitoring and tracking out-of-school youth (OSY), the target beneficiaries in its partnership with **Southern Christian College**. OSY's mobility, dynamic lifestyle, and limited accountable resources for monitoring tend to make it more difficult to track their activities. For example, while most of OSY have mobile phones at the onset of the training many change numbers frequently. In addition, other external factors such as seeking employment, marriage, family obligations, and other circumstances have also caused number of OSY engaged in training activities to decrease attending the training offered by the partnership. These factors have made it difficult to develop a system that would track OSY trainees efficiently and effectively. Another system-related issue was noted by the partners related to PRIME, HED's reporting platform, which can only contain a limited amount of entries for the indicator which tracks outreach and extension activities.
- *Action Taken:* The partners continue to search for innovative ways to monitor and engage OSY, including training existing OSY participants to be helpers in subsequent trainings, providing transportation incentives to attend activities, and tightening linkages with local officials.

Rwanda

- *Challenge:* The **Michigan State University** – **University of Rwanda** partners faced challenges around the merger of five public institutions at the University of Rwanda. The new administrative structure was not clearly defined, causing confusion regarding personnel responsibilities, in addition to lack of clear policies on administrative and operational procedures. The climate of institutional uncertainty discouraged university employees from making decisions regarding key project components, and internal political struggles have created a complex institutional environment in which to work.

- *Action Taken:* The partners have addressed the unstable institutional environment through persistence in seeking answers regarding policy clarifications, seeking leverage through higher authorities within the university structure and outside of it and finally, maintaining complete neutrality and a utilitarian approach to the work in order to avoid getting involved in political struggles.

Paraguay

- *Challenge:* The partners at **University of Florida** and **Universidad Nacional de Asuncion** noted a lack of coordination within the Extension Division at the University of Florida, who agreed to allow extension credit to peer mentors and agro-leaders. The number of Extension credits granted to peer-mentors was not clearly defined, causing confusion and diminishing the mentors' enthusiasm and causing rescheduling of partnership activities.
- *Action Taken:* The partners worked closely with the Extension Division Director on developing and establishing standardized criteria for the assignment of extension credits to mentorship and Agro-leadership program members. The partners also created a Leadership Specialist position that would be responsible for coordinating the mentorship and Agro leadership programs, and made the date for training sessions for mentors and agro-leaders more flexible.

Sharing Knowledge

This fiscal year, HED has shared its knowledge of and lessons learned from higher education partnerships and their contribution to development around the world through a range of venues in the United States and beyond, and to a variety of audiences beyond higher education institutions.

Technical Presentations

In FY 2014, HED staff gave three technical presentations on the role of higher education in development. These presentations were given at the 2013 Energy Africa Conference, the 2014 Association of International Education Administrators Conference, and the Cleaner Production Third Annual Partners Meeting.

2013 Energy Africa Conference (November 7-8, 2013, Colorado): The purpose of the conference was to create a venue for fostering innovative ideas in the area of energy technology as it relates to sustainable development on the African continent. During this presentation titled *Higher Education Partnerships: Experiences in Strengthening Human and Institutional Capacity*, HED staff discussed the crucial role of education and training for host-country individuals in relation to energy-related projects. Through education and training, local populations gain the ability to design, develop, engineer, procure materials, execute, and maintain over time such projects, rather than relying on professionals from other countries to provide the expertise that is needed. Capacity building in the form of education and training in the relevant technical and business subject matters is critical to the long-term sustainability of any efforts to bring energy access to all in Africa.

Association of International Education Administrators 2014 Conference (February 16-19, 2014, Washington DC): This year's annual theme for the Association of International Education Administrators (AIEA) conference, *Universalizing Global Learning in the 21st Century Academy*, focused on the need for institutionalized global learning at institutions of higher education. In a session titled *Measuring Contributions to Global Learning and Workforce Development through Higher Education Partnerships*, HED staff discussed HED's Broader Middle East and North Africa (BMENA) - United States Community College Initiative and Job Opportunities for Business Scale-ups (JOBS) higher education partnerships.

The presentation elaborated on how these partnerships are bridging the gap between the classroom and student employment in six Middle Eastern countries, the Philippines, Tunisia, and Barbados. The presenters discussed the common themes in HED's experience that are the elements of global engagement in higher education, the key of which is deciding what to measure to demonstrate results, and using a balanced approach in choosing funder-driven, standard indicators, and recipient-driven custom indicators. The example of HED's BMENA and JOBS partnerships has shown that it is difficult to measure access with the absence of institutional systems, and

that partners were able to use custom indicators to measure important results such as increase in knowledge and skills among faculty and students, effectiveness of alliances, and knowledge gained through extension and outreach activities.

Cleaner Production Third Annual Partners Meeting (August 6-8, 2014, Lima, Peru): This year's meeting aimed to identify and share best practices in key activity areas across the Latin American host countries involved in the Cleaner Production program, discuss increasing the impact of partnership activities in each country, and develop plans for sustaining the partnership activities beyond the official end of the project. The presentation, titled *HED: Higher Education Partnership and External Actor Collaboration*, examined various ways in which higher education institutions may collaborate with governmental and private sector actors to address local development issues. Participants also discussed the skills students need to be competitive in the labor market and highlighted the importance of practical experience, innovation-driven mind frame, and networking abilities.

Conference and Roundtables

In FY 2014, HED organized two conferences and/or roundtables—the Colombia Human Rights (CHR) Partners Meeting in Santa Marta, Colombia in April 2014 and the HED ICAA Annual Partners Conference in Amacayacu National Park in Colombia, June 2014.

Colombia Human Rights (CHR) Partners Meeting: This meeting held in Santa Marta Colombia in April 2014 convened 36 key faculty and partnership personnel from the eight Colombian partner institutions and three U.S. partner institutions, two USAID/Colombia representatives, and five HED staff members. The meeting enabled implementers of the three CHR partnerships to exchange lessons learned and best practices on diverse human rights topics, establish critical connections for partners to further collaborate at the institutional and professional levels going forward, and reflect on possible strategies to increase the program potential for regional and national impact. Substantive discussions about clinical work and human rights curriculum also take place during the meeting. Partnership-specific working groups also began developing a sustainability plan. This meeting encouraged meaningful collaboration at the program-level, particularly with regards to ensuring that the final year of implementation for the three partnerships is focused on achieving high-impact results and on ensuring that the foundations are established to maintain key components of the partnerships after program closeout.

HED ICAA Annual Partners Conference: Nine ICAA partners, four USAID staff, and three HED staff members took part in this three-day meeting in Amacayacu National park in Colombia in June 2014. Upon discussing their progress to date toward accomplishing their respective partnerships' performance objectives, partners participated in one-on-one meetings with HED and USAID to discuss implementation updates, strategies for maximizing impact prior to award close out, and respective higher education contributions to ICAA objectives at the outcome level. Discussions also took place around the program's impact on biodiversity conservation in the Andean Amazon overall, reviewing the ICAA results chains with a focus on three inclusive questions: How to measure impact? What evidence is there that information products generated under this results chain are being disseminated? What evidence is there that information products disseminated under this results chain is having an effect on other results chains?

Moving Forward

The HED Program will achieve an orderly closeout in FY 2015, wrapping up a twenty-year engagement of U.S. higher education with USAID focused on capacity building to address critical development challenges. As HED enters the final year of the program, ACE/HED is managing twelve Federal Awards: the Leader with Associates (LWA) Cooperative Agreement, ten Associate Cooperative Agreements, and one Cooperative Agreement with the U.S. Department of State. In total, these awards will support 32 higher education partnerships. Of these, four

partnerships will close in December 2014, two will end their periods of performance at the end of March 2015, and the remainder (26 partnerships) will close June 30, 2015.

HED will conduct final monitoring visits that will focus on partnership sustainability: twenty-one of thee will be overseas visits and 6 will be domestic visits to U.S. partner institutions. A meeting of partners in the BMENA Community College partnerships in December 2015 will result in a compilation of partnership case studies examining collaboration of U.S. community colleges with technical tertiary institutions in the BMENA region. HED has contracted with teams of external evaluators for six final evaluations involving nine partnerships in the Philippines, Barbados, Armenia, Rwanda, Paraguay, and Colombia. Findings from these evaluations will be included in HED's final reports on the Women's Leadership Program, the Colombia Human Rights Program, and the JOBS initiative in the Philippines.

Technical meetings for USAID are also planned as an additional mechanism for sharing program learning with USAID during the closeout process.

Appendices

Appendix A: HED's Culture of Evidence-based Decision Making and Reflective Learning, USAID's Education Strategy and HED, and USAID Forward and HED

HED's Culture of Evidence-based Decision Making and Reflective Learning

HED ensures effective project management by fostering a culture of evidence-based decision making and reflective learning among partners throughout the partnership life cycle:

- **Design**–Prior to project start-up and with its donors' strategic interests in mind, the program carefully studies country contexts and assesses specific local and higher education institutional needs. HED draws from its network of contacts within the higher education community, as well as its own expert staff, to assemble an assessment and project design team with relevant regional, sectoral, and programmatic experience. Using HED's comprehensive assessment tools, this team collects information to develop a project design, which includes a theory of change and a results-based management framework.

- **Partner Selection**–HED releases an RFA and solicits proposals to bring the best of academia's know-how to deliver the project. In response, interested higher education institutions propose implementation strategies for achieving the results identified in the design. They also propose a monitoring and evaluation plan to measure those achievements. HED then convenes a peer review panel to select the institutional partners through a fair, transparent, and merit-based competition.

- **Start-up**–After institutional partners have been selected and an award agreement has been finalized, HED facilitates the partnership start-up. A key objective of this phase is to establish a collaborative relationship among all partners. During this 90-day period, partners collect baseline data, which are used to validate the proposed implementation strategy and to finalize the results-based management framework. Partners also develop and agree on management plans. The project start-up enables the implementing partners to ground their strategies in the reality of the local context and donor requirements while establishing a productive working relationship.

- **Implementation**–HED supports the partners as they implement partnership activities. Collecting and analyzing performance data through the course of the partnership funding period is the centerpiece of HED's results-based management approach. The results framework guides implementing partners to provide data on the achievement of results. HED facilitates the process of using these data for evidence-based implementation and decision-making. In addition to this technical assistance to implementing partners, HED is able to disaggregate, analyze, and report results on a portfolio of projects by funding mechanism and across multiple categories, which may include sectors, geographic areas, entire portfolios, or individual projects, at the institutional and individual beneficiary levels.

- **Evaluation**–As partnerships are completed, HED manages an external evaluation. Evaluations are designed to answer research questions about the core educational offerings that have been developed, about institutional strengthening, and the alliances formed between the higher education institutions and key partners. In this way, HED is able to assess the overall contribution of its partnerships to new bodies of knowledge, competent workforce, and leadership development.

USAID's Education Strategy and HED

All HED partnerships actively contribute to the sub-results under Goal 2 of the USAID Education Strategy:

- **Goal 2, Result 2.1: Increased access to vocational/technical and tertiary education and training for underserved and disadvantaged groups—**HED partnerships contribute to increasing access to education for underserved and disenfranchised groups through interventions focused on ensuring equitable and transparent admissions policies, by providing remedial and college preparation programs, and reaching out to communities to address cultural and/or other barriers to access to education by specific population groups. The results of these efforts are tracked throughout the portfolio of partnerships and reported annually to demonstrate progress toward this goal.

- **Goal 2, Result 2.2: Improved quality of tertiary education and research in support of country development strategies—**HED partnerships' strategies are anchored in host countries' strategic goals and plans, promoting ownership and alignment with other development initiatives. Through relevant education and applied research and strategic outreach and extension programs, HED partnerships advance institutions and individuals' ability to address national development issues.

- **Goal 2, Result 2.3: Improved relevance and quality of workforce development programs—**HED partnerships help prepare skilled workforce through the acquisition of sets of knowledge, skills, and abilities that respond to labor market demands. To achieve this, alliances are made between tertiary institutions and public and private partners to ensure relevant and high-quality educational offerings that result in increased employability of graduates.

USAID Forward and HED

HED partnerships are managed to conform to the following core principles of USAID Forward:

- **USAID Forward Principle #1: Deliver results on a meaningful scale through a strengthened USAID—**HED's results-based system comprises a set of policies, procedures, and information solutions that help identify, track, report, and reflect on partnerships' desired results. HED provides technical assistance and has developed and made available training opportunities and manuals to help partners become familiar with its results-driven system. As part of that effort, each new or recently established partnership has a Results Framework (RF) displaying its theory of change represented in a chain of intended results; a Partnership Management Plan (PMP) describing performance data definitions and collection methods for the indicators associated with the desired results; and a Partnership Implementation Plan (PIP) connecting results with planned activities. These three M&E tools allow partnerships to determine which results they intend to achieve, and how these will be measured and carried out. In addition, HED's partnership management information system called Partnership Results and Information Management Engine (PRIME) is a centralized data repository that allows partners to provide and access their performance data electronically. Performance monitoring also allows for regularly checking that partnerships are on track to achieve their intended results and if they are not, to adjust the strategy or implementation plan as needed.

- **USAID Forward Principle #2: Promote sustainable development through high-impact partnership—**HED's work is grounded in institution-to-institution partnerships. Partnership configuration may vary depending on the nature of the development issue to be addressed, the institutional expertise available, and sustainability prospects. HED partnerships are designed based on the theory of change that is grounded in the reality of the local context and developed with leadership and guidance of the host-country stakeholders. This forms the foundation for meaningful and long-term impact. Partnerships' theories of change articulate how working toward immediate, tangible results such as training individuals, developing new curricula, or conducting outreach activities would lead to these high-level changes. To adequately measure lasting impact, each new partnership completes a baseline assessment to gather evidence and document the local context before implementation begins, forming the basis for ongoing tracking and measurement of the value-added of partnerships' development efforts.

- **USAID Forward Principle #3: Identify and scale up innovative, breakthrough solutions to intractable development challenges—**Evaluation is paramount to HED's results-driven principles and tools. Mid-term and final evaluations and impact assessments contribute to enhancing the body of knowledge on partnerships, and their effectiveness and innovative practices. This allows HED to learn about the effectiveness of programmatic interventions and offer evidence to successfully replicate promising practices and bring them to scale.

Appendix B: FY 2014 Targets and Actuals, and FY 2015 Targets for HED's LWA Cooperative Agreement Objectives 1–7

HED LWA Cooperative Agreement Performance Objectives	Performance Indicators	FY 2014 Targets	FY 2014 Actuals	Variance	FY 2015 Targets	Rationale for FY 2015 Targets
Objective 1: HED will work with higher education institutions and USAID Missions, bureaus, and technical sectors to design RFAs resulting in 10 or more collaborative partnerships (4-8 solicitations annually--Leader and Associate Awards.	Number of RFAs designed	0	0	**0%**	0	Because HED's LWA will end in 2015 and HED partnerships typically are three years in duration, HED does not anticipate releasing any RFAs in FY 2015.
Objective 2: HED will widely distribute RFAs and conduct fair and transparent application review, and nomination processes for partnership selection resulting in broad participation from the U.S. higher education community.	Number of contacts through which RFA was advertised	0	0	**0%**	0	Because HED does not anticipate releasing any RFAs in FY 2015, HED will not be conducting RFA outreach activities.
	Number of applications received	0	0	**0%**	0	Because HED does not anticipate releasing any RFAs in FY 2015, no applications will be received.
	Number of peer reviews organized and completed	0	0	**0%**	0	Because HED does not anticipate releasing any RFAs in FY 2015, no peer reviews will be organized.
	Number of peer reviewers	0	0	**0%**	0	Because HED does not anticipate releasing any RFAs in FY 2015, no peer reviews will be organized.
	Number of applications recommended for funding	0	0	**0%**	0	Because HED does not anticipate releasing any RFAs in FY 2015, no applications will be recommended for funding.
	Number of collaborative partnerships funded	41	43	**+5%**	31	This number reflects projections based on HED's tracking of partnerships and their status in FY 2015. Of the 43 partnerships that were active in FY 2014, 11 have finished their implementation cycle in FY14 and another partnership (ICAA Bolivia) was transferred to Brazil and Peru in FY 2014.
Objective 3: Partnerships between U.S. and host country higher education institutions will result in improved **institutional capacity** to offer technical assistance for addressing	**3.2.2-33 F INDICATOR: Number of USG-supported tertiary education programs that include experiential and/or applied learning opportunities**	24 partnerships	15 partnerships (48 programs with new/revised experiential/	**-38%**	17 partnerships	This number reflects projections for numbers of new/enhanced policies in FY 2015 as planned by partners.

HED LWA Cooperative Agreement Performance Objectives	Performance Indicators	FY 2014 Targets	FY 2014 Actuals	Variance	FY 2015 Targets	Rationale for FY 2015 Targets
development goals in host countries.			applied learning)			
	3.2.2-35 F INDICATOR: Number of U.S.-host country joint development research projects	121	59	**-51%**	42	This number reflects projections for numbers of new/enhanced policies in FY 2015 as planned by partners.
	3.2.2-36 F INDICATOR: Number of USG-supported tertiary programs with curricula revised with private and/or public sector employers' input or on the basis of market research	24 partnerships	9 partnerships (29 new/revised curricula)	**-63%**	13	This number reflects projections for numbers of new/enhanced policies in FY 2015 as planned by partners.
	3.2.2-38 F INDICATOR: Number of USG-supported tertiary education programs that adopt policies and/or procedures to strengthen transparency of admissions and/or to increase access of underserved and disadvantaged groups	22 policies/procedures	4 partnerships (11 policies/procedures)	**N/A**	5 partnerships	This number reflects projections for numbers of new/enhanced policies in FY 2015 as planned by partners.
	3.2.2-39 F INDICATOR: Number of new USG-supported tertiary education programs that develop or implement industry-recognized skills certification	9 partnerships	6 partnerships (16 new programs)	**-33%**	9 partnerships	This number reflects projections for numbers of new/enhanced policies in FY 2015 as planned by partners.
	3.2.2-40 F INDICATOR: Number of academic research initiatives whose findings have been applied, replicated or taken to market	32	22	**-31%**	55	This number reflects projections for numbers of new/enhanced policies in FY 2015 as planned by partners.
	Number of higher education institution engagement/ outreach activities in community	262	255	**-3%**	169	This number reflects projections for numbers of new/enhanced policies in FY 2015 as planned by partners.
Objective 4: Partnerships between U.S. and host country higher education institutions will result in improved **human capacity** of	**3.2.2-41 F INDICATOR: Number of individuals from underserved and/or disadvantaged groups accessing tertiary education programs**	4,581	5,230	**-14%**	4,121	This number reflects projections for numbers of new/enhanced policies in FY 2015 as planned by partners.

HED LWA Cooperative Agreement Performance Objectives	Performance Indicators	FY 2014 Targets	FY 2014 Actuals	Variance	FY 2015 Targets	Rationale for FY 2015 Targets
higher education professionals' to address teaching, research, and public service resulting in measurable effects on regional and national development goals.	**3.2.2-42 F INDICATOR: Number of tertiary institution faculty or teaching staff whose qualifications are strengthened through USG-supported tertiary education programs**	50	21	**-58%**	11	This number reflects projections for numbers of new/enhanced policies in FY 2015 as planned by partners.
	Number of host-country individuals (EXCLUDING faculty) who completed USG-funded long-term programs resulting in academic degrees or professional or technical certificates (Long-term qualifications strengthening - EXCLUDING faculty/teaching staff)	4,856	1,406	**-71%**	1,006	This number reflects projections for numbers of new/enhanced policies in FY 2015 as planned by partners.
	Number of host country individuals who completed USG-funded short-term training or exchange programs involving higher education institutions (Short-term qualifications strengthening - ALL individuals)	2,797	5,931	**+112%**	2,387	This number reflects projections for numbers of new/enhanced policies in FY 2015 as planned by partners.
	Number of host-country institution faculty and/or teaching staff who enrolled in long-term training programs for qualifications strengthening [Training - Long Term (Enrolled)]	19	43	**+126%**	3	This number reflects projections for numbers of new/enhanced policies in FY 2015 as planned by partners.
Objective 5: HED will secure advisory assistance/expertise from the higher education community to support USAID Bureaus, Missions and technical sectors' strategic objectives.	Number of technical assistance field visits to USAID missions (by team members/composition)	0	0	**0%**	0	Technical assistance visits and support were eliminated from HED's budget in FY 2014 at USAID's request.
	Number of technical assistance requests from USAID missions and or Bureaus received	0	0	**0%**	0	Technical assistance visits and support were eliminated from HED's budget in FY 2014 at USAID's request.
Objective 6: HED will sponsor/promote a series of research studies, roundtables, conferences related to global development issues.	Number of technical presentations given by HED staff at higher education and international development conferences and/or institutions/organizations	2	3	**+50%**	5	Planned for FY 2015: 3 presentations at AEIA conference; 1 presentation at AAU conference; 1 presentation at CCID conference.

HED LWA Cooperative Agreement Performance Objectives	Performance Indicators	FY 2014 Targets	FY 2014 Actuals	Variance	FY 2015 Targets	Rationale for FY 2015 Targets
	Number of roundtables and/or conferences organized by HED	0	2	**+200%**	1	Planned for FY 2015: 1 Final MENA Partners Workshop in Morocco
	Number of new technical resources or other related documents and materials that HED creates for the higher education community	5	0	**-100%**	2	Planned for FY 2015: 1 sustainability capacity assessment tool; 1 external evaluation package
Objective 7: Results based management, ongoing monitoring and Impact studies/research	Number of evaluations/impact assessments carried out whose findings have been published or widely distributed	7	4	**-43%**	7	Planned for FY 2015: 1 EE impact evaluation; 1 Colombia HR final evaluation; 1 JOBS Philippines final evaluation; 1 WLP Paraguay final evaluation; 1 WLP Rwanda final evaluation; 1 WLP Armenia final evaluation; 1 CRCA Barbados final evaluation.
	Number of monitoring visits across HED portfolio	35	28	**-20%**	27	Based on FY 2015 implementation and travel plans, HED anticipates conducting 21 international and 6 domestic monitoring visits in FY 2015.
	Number of updated and/or new HED performance management processes	5	5	**0%**	2	Planned for FY 2015: 1 award and subaward closeout process (and associated templates); 1 indicator reconciliation process.
	Number of research activities conducted by HED	1	0	**-100%**	0	Research activities were eliminated from HED's budget in FY 2013 at USAID's request.

Please note the following important information regarding the data displayed in the table above:
• HED completed its Data Quality Verification (DQV) process and these data are considered final for this fiscal year.
• A variance justification is provided only when the percent variance between the result and target exceeds + or – 10 percent.
• HED set targets for FY 2015 at the portfolio level based on a review of activities anticipated by partners and HED.
• For any indicator that captures information on the "number of U.S. Government-supported tertiary education programs," the unit of measurement is a partnership and not an academic degree program, nor a partnership activity or other program.

Increased Access to Vocational/Technical and Tertiary Education and Training for Underserved and Disadvantaged Groups

Indicator 3.2.2-38: Number of individuals from underserved and/or disadvantaged groups accessing tertiary education programs

Several partnerships have exceeded their annual targets this fiscal year. Nine new programs developed at the Ecoles Normales Supérieures de l'Enseignement Technique of Rabat and Mohammedia—in partnership with Middlesex Community College—were approved by the Moroccan Ministry of Education earlier than expected, which resulted in a number of enrollees larger than anticipated (targeted 780, achieved 1231). University of Minnesota – Antioquia University partners have also exceeded their targets, as a result of admissions policies and definitions of vulnerable populations that identify larger audiences, including human rights defenders, journalists, community leaders, teachers, trade unionists, women, children, indigenous and Afro-Colombian leaders, displaced persons, and paramilitaries' victims. This broader definition allowed the partners to capture a larger number of individuals than originally anticipated (targeted 239, achieved 645). In Burkina Faso, the International Institute for Water and Environmental Engineering has negotiated special scholarship awards for female enrollees with their US partners, which also resulted in exceeding FY 2014 targets (targeted 5, achieved 412). Other partnerships that exceeded their target numbers include Eastern Iowa Community College District – Al Quds College (targeted 65, achieved 616) and American University – Valle de Cauca (targeted 110, achieved 371).

This fiscal year there was also a number of partnerships that did not meet their annual targets. Early termination of the partnership between Virginia Polytechnic Institute and State University and the University of Juba has significantly affected partnership activities across the board at the host country (targeted 550, achieved 0). In Morocco, Gateway technical College – Ecole Supérieure de Technologie Oujda partners were not able to substantiate their numbers through supporting documentation, which resulted in a significant reduction of the actual number which was reported initially (targeted 800, achieved 66). Another example of a partnership that did not meet its annual targets is the Indiana University – University of Liberia (UL) partnership. Due to particularly large class sizes, high attrition rates, and low levels of academic proficiency, the university did not accept new enrollees unless they meet approved cut-off scores for admissions, which resulted in not a single admission in the 2013-14 academic year. Following protests, a compromise was arranged for students to be admitted to UL on the basis of a probationary agreement. Since, class sizes have gone down and new students are required to take and pass remedial mathematics and English courses before beginning their programs of study (targeted 475, achieved 159). For the University of California, Los Angeles – University of Rwanda partnership, delays in approval of degree program and commencement of online program has resulted in pushing enrollment into these program to January 2015 (targeted 150, achieved 0). The partners at the University of Florida, Universidad del Magdalena, and Universidad del Norte in Colombia have had difficulties in tracking students without an appropriate human resources system at the host-country institutions (targeted 267, achieved 103).

Indicator: 3.2.2-41: Number of USG-supported tertiary education programs that adopt policies and/or procedures to strengthen transparency of admissions and/or to increase access of underserved and disadvantaged groups

A number of partnerships did not meet their targets for this indicator in FY 2014. Delays associated with administrative turnover and bureaucratic challenges have slowed down the process of policy development for the American University – Valle de Cauca partners (targeted 1, achieved 0). Al-Kafaàt University and Nassau Community College partners also did not meet their targets, but anticipate meeting their target in FY 2015 (targeted 2, achieved 0). Partnership activities were suspended for the partnership between Bahrain Polytechnic and Central Community College (targeted 1, achieved 0). Conflict in South Sudan has drastically affected

partnership activities for Indiana University in the host country, which moved activities to Indiana (targeted 6, achieved 0). Changes to the higher education system in Rwanda have caused delays for Michigan State University – University of Rwanda (targeted 1, achieved 0). Michigan State University – University of Malawi partners have been researching and working on new policies, but have not finalized them yet (targeted 1, achieved 0). North Dakota University was replaced by Mississippi State University as the partner institution with Makerere University in Uganda. The transfer has caused subsequent delays in activities, including the development of access policies (targeted 2, achieved 0). Activities for the partnership between University of California, Los Angeles and University of Rwanda were delayed as a result of modifications to administrative processes occurring within University of Rwanda's College of Education (URCE). The partners have started the discussions, but final policies are not written yet, and will be reported next fiscal year. University of Connecticut – Addis Ababa University partners have already completed developing and implementing a new admissions policy earlier, in the previous reporting period (targeted 1, achieved 0). No new policies or procedures have been put in place by the University of Florida – Caribbean Coast partnership, but the partners have identified a budget for admissions scholarships for FY 2015 (targeted 1, achieved 0).

University of Florida – University of Asuncion partners exceeded their targets by developing two new admissions policies and revising five existing policies. The partners have identified changes that were needed in those policies in order to guarantee access to postsecondary programs as well as improve retention and graduation (targeted 1, achieved 7). Similarly, no new or revised policies were planned for FY 2014 for partners at Syracuse University and Kenyatta University; however the partnership did develop a policy brief with details and recommendations on the training supporting students with visual impairments through the use of assistive technology.

Improved Quality of Tertiary Education and Research in Support of Country Development Strategies

Development Research

Indicator 3.2.2-35: Number of U.S.–host country joint development research projects

Eight partnerships over-targeted for this indicator in FY 2014. The ongoing conflict in South Sudan has led to programmatic challenges which had repercussions across all the Indiana University – University of Juba partnership's objectives and associated performance indicators. Due to these challenges, this indicator has been removed from the current version of the approved results framework (targeted 5, achieved 0). The North Dakota University (NDU) – Makerere University (MAK) was reassigned to Mississippi State University (MSU) when the partnership director was hired at the latter institution. The target was increased from 3 joint research projects under NDU to 5 under MSU. The students have continued working on their research in this fiscal year, but will not be able to complete them until FY 2015 (targeted 5, achieved 0). Tulane University – Makerere University (OHCEA) mistakenly targeted 7 research proposals that were to obtain funding in this fiscal year. The 7 projects are currently under implementation, but will not be completed and consequently reported under this indicator until FY 2015 (targeted 7, achieved 0). The University of Connecticut – Addis Ababa University partnership underwent eleven revisions to its M&E plan over the past three years and there are discrepancies between the latest version of the M&E plan and submitted targets. The partners and HED are in the process of aligning the targets across the M&E plan and submission to the USAID Mission (targeted 52, achieved 20). The University of Richmond – Universidad Nacional de Ucayali partnership misinterpreted the reporting frequency for this indicator as reported when "research is completed" rather than when "research implementation begins". In actuality, the partnership began implementing 5 joint research projects this fiscal year, although they formally reported 0 (targeted 9, achieved 0). Other partnerships that fell below their targets include University of Florida – Universidad del Magdalena and Universidad del Norte (targeted 11, achieved 3) and Colorado State University – University of Nairobi (targeted 9, achieved 0).

Three partnerships exceeded their targets this year, including Indiana University – University of the West Indies (targeted 3, achieved 6), Syracuse University – Kenyatta University (targeted 0, achieved 6), and University of Hawaii – Southern Christian College (targeted 0, achieved 5).

Indicator: 3.2.2-40: Number of academic research initiatives whose findings have been applied, replicated, or taken to market

Five partnerships did not meet their targets in FY 2014. The Colorado State – University of Nairobi partnership completed and disseminated research, however, partners had difficulty ascertaining whether findings were replicated or applied by stakeholders (targeted 5, achieved 0). The Indiana University – University of the West Indies partnership accidentally set targets for this indicator although it is not relevant to its results framework (targeted 4, achieved 0). In the case of Mississippi State University – Makerere University, students have not yet completed their research projects, but are expected to apply their research in several areas when it is completed in FY 2015 (targeted 5, achieved 0). The data for six studies under the Syracuse University – Kenyatta University partnership were analyzed and written up for publication during FY 2014. However, the partnership was limited in time for having its research findings applied, replicated, or taken the research to market (targeted 6, achieved 0). Lastly, research projects (including one project for a de-fluoridation vessel currently under review) conducted by partners at University of Connecticut and Addis Ababa University experienced delays this fiscal year but will be completed and are scheduled to be applied, replicated, or taken to market in FY 2015 (targeted 3, achieved 0).

Three partnerships exceeded their targets for FY 2014: University of Colorado at Boulder – Instituts Supérieurs des Etudes Technologiques of Tataouine and Medenine (targeted 1, achieved 3), University of Hawaii – Southern Christian College (targeted 0, achieved 5), and Florida International University – Pontificia Universidad Javeriana and Universidad de la Amazonia sede Florencia (targeted 1, achieved 5).

Human Capacity Development

Custom Indicator: Number of host-country institution faculty and/or teaching staff who enrolled in long-term training programs for qualifications strengthening

The variance for this indicator was mainly caused by two partnerships who underestimated the number of faculty members and/or teaching staff first enrolling in long-term training programs this fiscal year. The two partnerships are Mississippi State University – Makerere University (targeted 0, achieved 11) and University of Connecticut – Addis Ababa (targeted 6, achieved 19).

Indicator 3.2.2-42: Number of tertiary institution faculty or teaching staff whose qualifications are strengthened through USG-supported tertiary education partnerships; and Custom Indicator: Number of host-country individuals (excluding faculty/teaching staff) who completed USG-funded long-term programs resulting in academic degrees or professional or technical certificates

The large variance between FY 2014 target and performance actual data at the portfolio level is mainly caused by a clerical error in entering the Syracuse University – Kenyatta University partnership's yearly target for this indicator. According to the partnership's target-setting documentation, the correct target should have been 3, but was incorrectly entered into the data management system as 3,000 (targeted 3,000, achieved 2).

There were also a number of partnerships that significantly over-targeted for this indicator. The Eastern Iowa Community College District – Al Quds College partnership redesigned its results framework in FY 2014, removing long-term training as one if its anticipated achievements (targeted 300, achieved 0). The University of California at Los Angeles – University of Rwanda partnership experienced delays in launching an online curriculum—but will do so in the new fiscal year—which consequently affected the number of students who completed this long-term program (targeted 150, achieved 0). The Central Community College – Bahrain Polytechnic partnership was suspended and could not meet its intended results (targeted 43, achieved 0). Four additional programs over-targeted their results under this indicator: University of Connecticut – Addis Ababa

University (targeted 29, achieved 10), University of Colorado at Boulder – Institut Supérieur des Etudes Technologiques of Sidi Bouzid (targeted 68, achieved 0), Nassau Community College – Al Kafaàt Foundation Schools (targeted 350, achieved 283), and University of Minnesota – Universidad de Medellin, Universidad de Antioquia, Universidad Pontificia Bolivariana, and Universidad Catolica del Oriente (targeted 778, achieved 621).

The Ohio State University – Université Gaston Berger partners under-targeted because of a misunderstanding of the indicator definition. The program manager thought that the indicator was limited to doctoral training in the United States (targeted 0, achieved 67). Two additional partnerships also surpassed their FY 2014 targets for this indicator: Gateway Community College – Ecole Supérieure de Technologie Oujda (targeted 0, achieved 81) and University of Florida – Universidad del Magdalena and Universidad del Norte (targeted 0, achieved 194).

Custom Indicator: Number of host-country individuals who completed USG-funded short-term training or exchange programs involving higher education institutions (Short-term qualifications strengthening—all individuals)

About half (53%) of partnerships have exceeded their short-term training targets this fiscal year. In general, partnerships that exceeded their targets have experienced an increased demand at the host-country institutions for short-term training activities. Partners have also noted that they have underestimated the number of students and teaching staff who would be able to participate in short-term training activities.

Eastern Iowa Community College District – Al Quds College partners have exceeded their targets, reporting students for completing activities that were originally planned as long-term training activities but eventually have instead lasted four months, a time period captured under the short-term training indicator (targeted 28, achieved 668). The Illinois Institute of Technology – Cleaner Production Consortium has incorporated a new organization (Universidad Rafael Landívar in Guatemala) and revamped activities in another (Universidad Nacional Autónoma de Honduras), which contributed to an increase of short-term training activities and participants (targeted 107, achieved 836). Many individuals participating in short-term training activities offered through the Michigan State University – University of Rwanda partnership have taken several trainings throughout the fiscal year and were reported each time individually, following the definition for this indicator, which resulted in the partners exceeding their anticipated target (targeted 30, achieved 121). University of California, Los Angeles – university of Rwanda partners have also reported high numbers of participation in such activities (targeted 38, achieved 167).

Other partnerships that exceeded their short-term training target numbers this fiscal year include Colorado University Boulder – Institut Supérieur des Etudes Technologiques Sidi Bouzid (targeted 28, achieved 302), Colorado University Boulder – Institut Supérieur des Etudes Technologiques Medenine and Tataouine (targeted 26, achieved 219), University of Connecticut – Addis Ababa (targeted 50, achieved 257), University of Florida – Caribbean Coast (targeted 60, achieved 396), University of Hawaii – Southern Christian College (targeted 20, achieved 111), and University of North Carolina – Universidad San Francisco de Quito (targeted 30, achieved 70).

Partnerships who did not meet their target this fiscal year included the following three. Virginia Polytechnic Institute and State University – University of Juba mentioned the impact of early termination on performance for this indicator (targeted 250, achieved 0). Mississippi State University (MSU) – University of Makerere partners noted the transition from North Dakota University to MSU negatively affected performance (targeted 100, achieved 46). Tulane University – Makerere University (OHCEA) indicated that the limited amount of funding available may have contributed to hindering performance for short-term training activities (targeted 402, achieved 74).

Custom Indicator: Number of higher education institution outreach/extension activities in the host-country community

Overall, a total number of 255 out of 262 (97.3%) targeted outreach and extension activities have been carried out across the HED portfolio. Some partnerships have experienced delays that affected partnership activities

adversely, and in other cases, partnerships exceeded their annual target for this indicator. Partnerships that exceeded their targets include Arizona State University – University of Yerevan (targeted 3, achieved 27) and American University – Valle de Cauca (targeted 3, achieved 11).

Instability in South Sudan has drastically affected partnership activities this fiscal year for the Indiana University – University of Juba partnership (targeted 20, achieved 6). Personnel changes and delays in financial reporting experienced by the University of California, Los Angeles – University of Rwanda partnership have cause postponements in activities, which are now planned to be carried out during FY 2015 (targeted 10, achieved 4). The Central Community College – Bahrain Polytechnic partners did not meet their target as a result of program suspension (targeted 4, achieved 0).

Improved Relevance and Quality of Workforce Development Programs

Indicator 3.2.2-36: Number of USG-supported tertiary programs with curricula revised with private and/or public sector employers' input or on the basis of market research

The Illinois Institute of Technology – Cleaner Production Consortium provided conflicting data (targeted 13, achieved 1). Although the partnership's stated target was 13 for FY 2014, partners only reported one new/revised curriculum; however, documentation submitted supports revisions to a total of ten programs.

Seven partnerships over-estimated the number of new or revised curricula for this fiscal year. Partners at Arizona State University and Yerevan State University are currently in the process of developing a new master's degree program in gender studies that is scheduled to be finalized in FY 2015 (targeted 5, achieved 0). The North Dakota University (NDU) – Makerere University partnership was transferred from NDU to Mississippi State University (MSU), which caused the partnership to set targets twice. Although NDU reported 0 new/revised curricula in FY 2014, MSU reported 3 new/revised curricula this fiscal year (targeted 3, achieved 0). The American University – Pontificia Universidad Javeriana Cali (PUJC) and Universidad de Santiago de Cali (USC) partnership has been able to make inroads in terms of enhancing graduate-level curricula; however obtaining private or public sector employers input has been difficult without the necessary administrative backing. As a result, no enhancements based on market research were made this fiscal year at USC. Further, USC's law school underwent a curricular reform immediately prior to the start of the partnership. As a result, administrators are reluctant to formalize curricular revisions or enhancements prior to the next time they are required to do so by the Ministry of Education. The second host-country institution under this partnership, PUJC, is currently undergoing a protracted process of curricular evaluation and reform, as required by the Ministry of Education. Due to timing issues, these developments or revisions have not taken place in FY 2014. The anticipated results under this indicator are now expected to occur in FY 2015 (targeted 3, achieved 0). Given the current political instability in Egypt and halt in communication between the partner institutions over the past several months, a number of key activities have had to be postponed for the Highline Community College – Mataria Technical College partnership, which had an effect on progress on this indicator, (targeted 2, achieved 0). Three additional partnerships fell below their annual targets in FY 2014: Gateway Technical College – Ecole Supérieure de Technologie Oujda (targeted 3, achieved 0), Indiana University – University of Liberia (targeted 2, achieved 0), and Virginia Polytechnic Institute and State University – University of Juba (targeted 9, achieved 0).

Two partnerships exceeded the targets they had set for FY 2014: Red Rocks Community College – Al-Huson University College (targeted 0, achieved 2) and Florida International University – Colombia (targeted 0, achieved 1).

Indicator 3.2.2-39: Number of new USG-supported tertiary education programs that develop or implement industry-recognized skills certification

Activities were suspended for the Bahrain Polytechnic and Central Community College partnership, which resulted in partners not meeting their annual target for this indicator (targeted 4, achieved 0). Al-Kafaàt University and Nassau Community College partners did not meet their target either, but anticipate meeting their target in FY 2015 (targeted 2, achieved 0). Similarly, the University of Rwanda and University of California, Los

Angeles partners experienced delays in curriculum reviews (targeted 1, achieved 0). Early termination of the partnership between Virginia Polytechnic Institute and State University and the University of Juba has drastically affected partnership activities at the host country, including the development or revision of new academic programs (targeted 2, revised 0).

Other partnerships were able to have programs approved sooner than expected, such as Middlesex Community College – Ecole Normale Supérieure de l'Enseignement Technique of Rabat and Mohammedia, whose nine new and revised programs received approval from the Moroccan Department of Education this fiscal year (targeted 0, achieved 9). The partners at University of Florida, Universidad del Magdalena, and Universidad del Norte in Colombia have also exceeded their target with two new programs for Human and International Humanitarian Rights and Human Rights and International Humanitarian Law in the Caribbean Context (targeted 0, achieved 2).

Indicator 3.2.2-33: Number of USG-supported tertiary education academic degree programs that include experiential and/or applied learning opportunities for learners (for the first time)

Four partnerships exceeded their target for this indicator in FY 2014. The four academic programs supported by the Florida International University – Pontificia Universidad Javeriana and Universidad de la Amazonia sede Florencia partnership already included experiential and applied learning components at the onset of FY 2014. As a result, partners did not expect to further enhance the applied/experiential learning opportunities offered through those programs in FY 2014; however, the partnership created a field course that enhanced the experiential learning opportunities of four programs (targeted 0, achieved 4). This indicator was not originally the Washtenaw Community College – Al Quds College partnership's results framework, and was thusly under-targeted (targeted 4, achieved 7). This indicator is not part of the Indiana University – University of the West Indies partnership results framework; however, related activities this fiscal year resulted in relevant results (targeted 0, achieved 1). Lastly, the American University – Pontificia Universidad Javeriana Cali and Universidad Santiago de Cali partnership also slightly exceeded its targeted for enhanced experiential and applied learning (targeted 1, achieved 2).

Six partnerships significantly fell below their targets this reporting period. The Arizona State University - Yerevan State University partnership has produced a new master's program with a strong emphasis on experiential and applied learning; however the program is still undergoing approval (targeted 5, achieved 0). The University of Connecticut Addis Ababa University partnership has already integrated experiential and applied learning into all programs supported by the partnership, and did not further enhance those components in FY2015 (targeted 5, achieved 0). The Gateway Technical College – Ecole Supérieure de Technologie Oujda partnership completed its experiential and applied learning improvements in FY 2013 and was not able to make additions in the fiscal year (targeted 4, achieved 0). The Illinois Institute of Technology - Cleaner Production Consortium partnership was not able to supply documentation for students who completed internships in this fiscal year, thus falling short of their target (targeted 10, achieved 7). The Colorado State University – University of Nairobi partnership has incorporated experiential components into at least two of its programs, however none of courses with experiential components were offered in FY 2014 because approval is still pending (targeted 3, achieved 0). The Gateway Technical College – Ecole Supérieure de Technologie Oujda partnership improved the experiential and applied learning components of several programs in previous reporting periods, thusly this result was not a primary focus for the partnership this reporting period (targeted 3, achieved 0).

Seven additional partnerships did not meet their targets for this indicator in FY 2014. They are: Indiana University – University of Liberia (targeted 5, achieved 3), Central Community College - Bahrain Polytechnic (targeted 2, achieved 0), Highline Community College – Mataria Technical College (targeted 2, achieved 0), Middlesex Community College – Ecoles Normales Supérieures de l'Enseignement Technique de Rabat and Mohammedia (targeted 2, achieved 0), Ohio State University – Université Gaston Berger (targeted 2, achieved 0), Nassau Community College – Al-Kafaàt Foundation Schools (targeted 2, achieved 0), and Virginia Polytechnic Institute and State University – University of Juba (targeted 2, achieved 0).

Appendix D: FY 2014 Active Awards under the Leader Award, Associate Awards, and Cooperative Agreements

Funding Mechanism	Federal Award Description	Region	Country	U.S. Institution(s)	Host-country Institution(s)	Partnership Title	Primary Sector	Effective Date	End Date	Subaward Amount
Associate Award	Philippines JOBS	Asia	Philippines	University of Hawaii	Southern Christian College	University Partnership Linking Out-of-school Youth to Agri-Entrepreneurship Development to Promote Job Opportunities for Business Scale-up for Mindanao (UPLOAD JOBS for Mindanao)	Workforce/ Entrepreneurship Development	6/22/2012	6/30/2015	$1,070,495
Associate Award	Amazon Basin - ICAA II	Latin America and the Caribbean	Colombia	Florida International University	Pontificia Universidad Javeriana, Universidad de la Amazonia sede Florencia	Strengthening Local Capacity for Prioritizing Conservation Research and Action in the Colombia Andean-Amazon: A Networked Approach	Environment/ Natural Resources	12/1/2012	6/30/2015	$749,961
Associate Award	Amazon Basin - ICAA II	Latin America and the Caribbean	Bolivia; Brazil, Peru	University of Florida	Universidad Amazónica de Pando, Universidad Autónoma de Gabriel Rene Moreno, Instituto Boliviano de Investigación Forestal (Bolivia); Universidad Nacional Amazónica de Madre de Dios, Universidade Federal do Acre (Peru, Brazil)	Strengthening Higher Education Capacity for Environmental Monitoring and Forest Biodiversity Conservation in the Bolivian Amazon (Bolivia); The Andes-Amazon Rim Consortium (AARC) (Peru and Brazil)	Environment/ Natural Resources	12/1/2012 (Bolivia); 4/25/2014 (Brazil and Peru)	6/30/2015	$749,880
Associate Award	Amazon Basin - ICAA II	Latin America and the Caribbean	Ecuador	University of North Carolina (Chapel Hill)	Universidad San Francisco de Quito	Improving University Education and Outreach on the Ecuadorian Amazon	Environment/ Natural Resources	12/1/2012	6/30/2015	$749,915
Associate Award	Amazon Basin - ICAA II	Latin America and the Caribbean	Peru	University of Richmond	Universidad Nacional de Ucayali	Building Conservation Capacity for a Changing Amazonia	Environment/ Natural Resources	12/1/2012	6/30/2015	$749,998
Associate Award	Barbados JOBS	Latin America and the Caribbean	Barbados	Indiana University	University of the West Indies	Barbados: Supporting Entrepreneurs through the JOBS Initiative	Workforce/ Entrepreneurship Development	2/28/2011	6/30/2014	$1,349,692
Associate Award	Colombia Human Rights	Latin America and the Caribbean	Colombia	American University	Pontificia Universidad Javeriana Cali, Universidad Santiago de Cali	Human Rights Teaching and Research Partnership Program	Democracy & Governance/ Public Policy/Journalism	10/19/2012	6/30/2015	$1,000,000
Associate Award	Colombia Human Rights	Latin America and the Caribbean	Colombia	University of Florida	Universidad del Magdalena, Universidad del Norte	Building Human Rights Capacity in the Colombian Caribbean	Democracy & Governance/ Public Policy/Journalism	10/19/2012	6/30/2015	$757,179

Funding Mechanism	Federal Award Description	Region	Country	U.S. Institution(s)	Host-country Institution(s)	Partnership Title	Primary Sector	Effective Date	End Date	Subaward Amount
Associate Award	Colombia Human Rights	Latin America and the Caribbean	Colombia	University of Minnesota (Twin Cities)	Universidad de Medellin, Universidad de Antioquia, Universidad Pontificia Bolivariana, Universidad Catolica del Oriente	UMN-Medellin Human Rights Law School Partnership Program	Democracy & Governance/ Public Policy/Journalism	10/19/2012	6/30/2015	$1,250,000
Associate Award	Ethiopia (Africa Initiative)	Sub-Saharan Africa	Ethiopia	University of Connecticut	Addis Ababa University	Sustainable Water Resources: Capacity Building in Education, Research, and Outreach	Environment/ Natural Resources	1/14/2011	6/30/2015	$2,456,285
Associate Award	Kenya - NAIROBI (Africa Initiative)	Sub-Saharan Africa	Kenya	Colorado State University	University of Nairobi	Centre for Sustainable Drylands: A University Collaboration for Transforming Higher Education in Africa at the University of Nairobi	Environment/ Natural Resources	4/1/2011	10/31/2014	$1,422,000
Associate Award	Kenya - KENYATTA (Africa Initiative)	Sub-Saharan Africa	Kenya	Syracuse University	Kenyatta University	Capacity through Quality Teacher Preparation	Education	4/1/2011	8/14/2014	$1,122,210
Associate Award	Liberia (Africa Initiative)	Sub-Saharan Africa	Liberia	Indiana University, University of Massachusetts	University of Liberia	Center for Excellence in Health and Life Sciences (CEHLS)	Health/Populatio n/Nutrition/ HIV/AIDS	10/1/2011	6/30/2015	$2,703,260
Associate Award	Malawi (Africa Initiative)	Sub-Saharan Africa	Malawi	Michigan State University	University of Malawi	Agro-Ecosystem Services: Linking Science to Action in Malawi and the Region	Environment/ Natural Resources	4/5/2011	5/30/2014	$1,140,000
Associate Award	Senegal (Africa Initiative)	Sub-Saharan Africa	Senegal	Ohio State University	Université Gaston Berger	Development of Agronomy and Crop Production Academic Programs, Research, and Need-based Extension Programs for Sustainable Food Production in Senegal	Agriculture/Ag. Business/Animal Science	12/21/2010	6/30/2015	$1,555,876
Associate Award	South Sudan (Africa Initiative)	Sub-Saharan Africa	South Sudan	Virginia Polytechnic Institute and State University	University of Juba, Catholic University of South Sudan	Rebuilding Higher Education in Agriculture to Support Food Security, Economic Growth and Peace Efforts in South Sudan	Agriculture/Ag. Business/Animal Science	2/7/2011	5/31/2014	$2,800,892
Associate Award	South Sudan WLP	Sub-Saharan Africa	South Sudan	Indiana University	n/a	South Sudan Higher Education Initiative for Equity and Leadership Development	Education	3/1/2013	6/30/2015	$3,283,212
Associate Award	Uganda (Africa Initiative)	Sub-Saharan Africa	Uganda	North Dakota State University	Makerere University	Capacity Building in Integrated Management of Trans-boundary Animal Diseases and Zoonoses	Health/Populatio n/Nutrition/ HIV/AIDS	2/15/2011	11/30/2013	$1,100,000

Funding Mechanism	Federal Award Description	Region	Country	U.S. Institution(s)	Host-country Institution(s)	Partnership Title	Primary Sector	Effective Date	End Date	Subaward Amount
Associate Award	Uganda (Africa Initiative)	Sub-Saharan Africa	Uganda	Mississippi State University	Makerere University	Capacity Building in Integrated Management of Transboundary Animal Diseases and Zoonoses (CIMTRADZ)	Agriculture/Ag. Business/Animal Science	3/1/2014	6/30/2015	$905,804
Associate Award; LWA	Armenia WLP; Leader AEG	Europe and Eurasia	Armenia	Arizona State University	Yerevan State University	Advancing Gender Equality and Women's Empowerment in Armenia	Education	9/1/2012	6/30/2015	$1,305,000
Cooperative Agreement	Cleaner Production (U.S. Dept. State Coop. Agr.)	Latin America and the Caribbean	Costa Rica; Dominican Republic; El Salvador; Guatemala; Honduras; Nicaragua; Peru	Illinois Institute of Technology, New York Institute of Technology	Instituto Tecnológico de Costa Rica, Instituto Tecnológico de Santo Domingo, Universidad Centroamericana José Simeón Canas, Universidad San Ignacio de Loyola, Universidad Nacional Autónoma de Honduras, Universidad Nacional de Ingeniería	Pathways to Cleaner Production in the Americas: Educating Future Professionals	Environment/ Natural Resources	6/15/2012	6/14/2015	$1,114,991
LWA	Leader AEG	Asia	Pakistan	California State University (Fullerton)	Fatimah Jinnah Women University, Sardar Bahadur Khan Women University	Partnership for Women in Science and Technology in Pakistan	Education	3/7/2008	12/31/2013	$199,999
LWA	Leader AEG	Latin America and the Caribbean	Colombia; Peru	University of Texas at San Antonio	Government of Colombia, Government of Peru	Central & South American Small Business Development Center Partnership Program: Adapting and Replicating the Small Business Development Center (SBDC) Model throughout the Americas	Workforce/ Entrepreneurship Development	11/30/2012	11/30/2014	$1,270,000
LWA	Leader AEG	Latin America and the Caribbean	Barbados	Columbia University	University of the West Indies	Building Capacity to Manage Climate Risk and Water Resources in the Caribbean	Environment/ Natural Resources	7/15/2012	6/30/2015	$1,484,697
LWA	Leader AEG	Latin America and the Caribbean	Paraguay	University of Florida	Universidad Nacional de Asuncion	Women's Leadership Project in Paraguay (WLPP)	Agriculture/Ag. Business/Animal Science	10/1/2012	6/30/2015	$811,363
LWA	Leader AEG	Middle East and North Africa	Yemen	Eastern Iowa Community College District, Tulsa Community College	Sana'a Community College	Economic Empowerment Through Entrepreneurship (E3)	Workforce/ Entrepreneurship Development	1/1/2013	11/30/2013	$448,907

Funding Mechanism	Federal Award Description	Region	Country	U.S. Institution(s)	Host-country Institution(s)	Partnership Title	Primary Sector	Effective Date	End Date	Subaward Amount
LWA	Leader AEG	Middle East and North Africa	Bahrain	Central Community College	Bahrain Polytechnic	Bahrain Entrepreneurship Project	Workforce/ Entrepreneurship Development	4/1/2012	6/30/2014	$350,000
LWA	Leader AEG	Middle East and North Africa	Morocco	Gateway Technical College	Ecole Supérieure de Technologie Oujda, Université Mohammed I Oujda (I)	Collegiate Entrepreneurship and Collaborative Strategies	Workforce/ Entrepreneurship Development	3/1/2012	9/30/2014	$461,575
LWA	Leader AEG	Middle East and North Africa	Jordan	Red Rocks Community College	Al-Huson University College, Al-Balqa Applied University	Expanding Jordan's Green Collar Workforce: Career Pathways in Solar Technology, Worker Safety Management, and Water Quality Management	Workforce/ Entrepreneurship Development	8/1/2010	12/31/2014	$511,113
LWA	Leader AEG	Middle East and North Africa	Morocco	Middlesex Community College	Ecole Normale Supérieure de l'Enseignement Technique of Rabat, Ecole Normale Supérieure de l'Enseignement Technique of Mohammedia	Linkages for Entrepreneurship Achievement Project (LEAP)	Workforce/ Entrepreneurship Development	1/1/2012	12/31/2014	$460,853
LWA	Leader AEG	Middle East and North Africa	Jordan	Washtenaw Community College, The William Davidson Institute at the University of Michigan	Al Quds College	Community College Entrepreneurship: Integration to Incubation	Workforce/ Entrepreneurship Development	1/1/2012	12/31/2014	$446,938
LWA	Leader AEG	Middle East and North Africa	Jordan	Eastern Iowa Community College District (Muscatine Community College)	Al Quds College	Economic Empowerment through Entrepreneurship	Workforce/ Entrepreneurship Development	7/1/2010	3/31/2015	$491,399
LWA	Leader AEG	Middle East and North Africa	Morocco	Gateway Technical College	Ecole Supérieure de Technologie Oujda	Automotive Diagnostics Partnership and Scale-Up	Workforce/ Entrepreneurship Development	8/15/2010	3/31/2015	$537,246
LWA	Leader AEG	Middle East and North Africa	Egypt	Highline Community College	Mataria Technical College	Leveraging Community College Workforce Development Expertise: Creating Educational Pathways to High Skills Employment at Mataria Technical College	Workforce/ Entrepreneurship Development	9/1/2010	3/31/2015	$558,719

Funding Mechanism	Federal Award Description	Region	Country	U.S. Institution(s)	Host-country Institution(s)	Partnership Title	Primary Sector	Effective Date	End Date	Subaward Amount
LWA	Leader AEG	Middle East and North Africa	Lebanon	Nassau Community College, Monroe Community College, North Country Community College	Al-Kafaat Foundation Schools	SUNY Community College Consortium	Workforce/ Entrepreneurship Development	1/1/2012	6/30/2015	$561,151
LWA	Leader AEG	Middle East and North Africa	Tunisia	University of Colorado Boulder, University of Hawaii, Colorado State University	Institut Supérieur Des Etudes Technologiques de Sidi Bouzid	Promoting Water Management, Energy Efficiency, Renewable Energy Technologies in the Agricultural Sector of Tunisia	Workforce/ Entrepreneurship Development	6/1/2012	6/30/2015	$500,000
LWA	Leader AEG	Middle East and North Africa	Tunisia	University of Colorado Boulder, Colorado State University	Institut Supérieur des Etudes Technologiques de Tataouine, Institut Supérieur des Etudes Technologiques de Médenine	Promoting Sustainable Energy Technologies in the Industrial Sector of Tunisia	Workforce/ Entrepreneurship Development	6/1/2012	6/30/2015	$500,000
LWA	Leader AEG	Sub-Saharan Africa	Senegal	Fairfield University	Université Alioune Diop de Bambey	Use of ICT and Service Learning to Develop Health Curricula	Education	10/1/2010	12/15/2013	$231,131
LWA	Leader AEG	Sub-Saharan Africa	Burkina Faso	Tuskegee University	International Institute for Water and Environment Engineering	Africa-US Network of Centers of Excellence in Water and Environmental Science and Technology	Environment/ Natural Resources	3/15/2011	7/31/2014	$1,274,370
LWA	Leader AEG	Sub-Saharan Africa	Uganda	Tulane University	Makerere University	One Health to Address Human, Animal, and Ecosystems Health in Central and Eastern Africa	Health/Populatio n/Nutrition/ HIV/AIDS	8/10/2013	12/31/2014	$505,427
LWA	Leader AEG	Sub-Saharan Africa	Rwanda	Michigan State University	University of Rwanda	Rwanda Women's Leadership Program in Agriculture	Agriculture/Ag. Business/Animal Science	11/1/2012	6/30/2015	$1,280,000
LWA	Leader AEG	Sub-Saharan Africa	Rwanda	University of California (Los Angeles)	University of Rwanda	Rwanda: Promoting Gender Equity and Female Empowerment	Education	11/1/2012	6/30/2015	$1,079,996

Appendix E: FY 2014 Partnership Narrative Reports for LWA and Associate Awards

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Entrepreneurship and Workforce Development

TUNISIA Job Opportunities for Business Scale-up (JOBS)

As part of the Tunisia Job Opportunities for Business Scale-up (Tunisia JOBS) initiative, the University of Colorado Boulder is partnering with three Tunisian Institut Supérieur des Etudes Technologiques (ISETs) to provide education for resource management. The partners are developing new courses in water management, energy efficiency, and renewable energy, enabling graduates to contribute more effectively to the economic development of their communities. Each of the ISETs is launching a sustainable solutions center to build linkages and provide extension services to surrounding communities.
Managed under the Leader Award, USAID/E3/ED provided funding support for the partnership between the University of Colorado Boulder and Institut Supérieur Des Etudes Technologiques de Sidi Bouzid, and the U.S. Embassy provided funding support for the partnership between the University of Colorado Boulder, Institut Supérieur des Etudes Technologiques de Médenine, and the Institut Supérieur des Etudes Technologiques de Tataouine.

1. TUNISIA: Institut Supérieur Des Etudes Technologiques de Sidi Bouzid /University of Colorado Boulder/University of Hawaii/Colorado State University: Promoting Water Management, Energy Efficiency, Renewable Energy Technologies in the Agricultural Sector of Tunisia

Managed Under Leader Award AEG-A-00-05-00007-00
Partnership Award Amount: $500,000
Partnership Period of Performance: 6/1/2012 – 6/30/2015

Partnership Overview:
The University of Colorado Boulder (UCB) and Institut Supérieur Des Etudes Technologiques de Sidi Bouzid (ISET Sidi Bouzid) are collaborating to create a series of courses at ISET Sidi Bouzid that will enhance the ISET's current curriculum in a variety of agriculture-related areas. The new courses will provide students and professionals in agricultural disciplines with practical information and procedures in design, evaluation, and implementation of appropriate technology for agriculture in this arid area. These courses will lead to the development of advanced academic training programs at ISET Sidi Bouzid that will focus on water management, energy efficiency for agriculture, and renewable energy. With the overall goal of preparing ISET Sidi Bouzid graduates to meet the economic demands of the local community, the partnership has three objectives:

- Enhance the capacity of ISET Sidi Bouzid faculty to develop and offer advanced academic programs related to water management and energy efficiency in the agricultural sector;
- Strengthen applied research capacity at ISET Sidi Bouzid and enhance offerings in advanced academic programs in the areas of water management and energy efficiency in the agricultural sector; and
- Develop ISET Sidi Bouzid's role as are cognized resource and knowledge center for innovation in the areas of water resources and energy efficiency.

FY2014 Results Highlights:
Three faculty members from ISET Sidi Bouzid traveled to the University of Colorado at Boulder for training in entrepreneurship, water management, and renewable energy technologies. As one outcome of this and previous faculty exchanges, ISET Sidi Bouzid offered two new courses during the fall of 2013. Newly-trained faculty offered a course on Renewable Energy Technology to 44 students and Water Management to 43 students. In addition, UCB faculty taught two courses on Renewable Energy Entrepreneurship and Energy Efficiency at ISET Sidi Bouzid for 72 and 31 faculty and students, respectively. These trainings and new curricula support the creation of a new Department of Energy Efficiency at the ISET, anticipated to receive approval in 2015.

ISET Sidi Bouzid is gaining recognition as a resource and knowledge center for innovation in the management of water resources and energy efficiency. The partners created a Sustainable Solutions Center (SSC) at ISET Sidi Bouzid, and a new director for the center was recruited and trained during the reporting period. The SSC is now engaging local businesses and communities through a series of outreach seminars, short courses, workshops, and needs assessments. Some outreach activities have included promoting awareness and efficient practices in renewable energy, water management, and entrepreneurship to primary schools and local farmers. The SSC also assists students with the final project required for graduation, supporting students with developing prototypes and using simulation and statistical software. The SSC organizes a student competition to recognize the best projects. Four applied research projects have also been developed under this initiative involving ISET faculty and students, including two joint research projects with UCB designing an automated solar water pumping system for agricultural irrigation and a solar dryer for agricultural produce.

2. TUNISIA: Institut Supérieur Des Etudes Technologiques de Tataouine, Institut Supérieur Des Etudes Technologiques de Médenine/University of Colorado Boulder/Colorado State University: Promoting Sustainable Energy Technologies in the Industrial Sector of Tunisia

Managed Under Leader Award AEG-A-00-05-00007-00
Partnership Award Amount: $500,000
Partnership Period of Performance: 6/1/2012 – 6/30/2015

Partnership Overview:
The University of Colorado Boulder, the Institut Supérieur des Etudes Technologiques de Médenine (ISET Médenine), and the Institut Supérieur des Etudes Technologiques de Tataouine (ISET Tataouine) are collaborating to enhance the ISETs' curriculum and professional training by creating a series of courses that will provide students and professionals with practical information on the design, evaluation, implementation, and financing of energy efficient and renewable energy projects for the industrial sector. These courses will lead to the development of advanced academic training programs at the ISETs.

The partnership has three objectives:

- Enhance the capacity of ISET Médenine and ISET Tataouine faculty to develop and offer advanced academic programs related to renewable energy and energy efficiency in the industrial sector;
- Strengthen applied research capacity at ISET Médenine and ISET Tataouine and enhance offerings in advanced academic programs in the areas of renewable energy and energy efficiency in the industrial sector; and
- Develop ISETs Médenine and Tataouine roles as recognized resource and knowledge centers for innovation in the areas of renewable energy and energy efficiency technologies suitable for the industry.

FY2014 Results Highlights:

UCB faculty taught three courses on Renewable Energy Entrepreneurship, Energy Efficiency, and Industrial Refrigeration at ISET Medenine and Tataouine, reaching a total of 159 faculty and students. Thirty-six students also received additional applied training on solar water heating and PV systems, and 21 students in an industrial maintenance class visited a ceramics company to simulate an industrial infrared inspection. These activities are supporting the ISET in the creation of a new Department of Renewable Energy, anticipated to receive approval in 2015.

The partners have established Sustainable Solutions Centers (SSC) at ISET Medenine and Tataouine, and are developing a reputation as a resource and knowledge center for renewable energy and energy efficiency in the industrial sector. The SSC engages local businesses and communities through a series of outreach seminars, short courses, workshops, and needs assessments. Some outreach activities have included understanding solar energy production, community assessments of energy use, renewable energy, energy efficiency in buildings, and new equipment and measurements for conducting energy audits (such as a blower door test kit, a power analyzer, and data loggers measuring air temperature, indoor lighting levels, and relative humidity). These outreach activities have reached 82 community members outside of the ISETs. The SSC also assists students with graduation projects, supporting students with developing prototypes and using simulation and statistical software such as HOMER. The SSCs also organize competitions to recognize the best student projects.

Six applied research projects have also been initiated by ISET faculty and students, including four projects that were presented to the public. In addition, two joint research projects with UCB faculty have been initiated: the design of an optimal cogeneration system for a brick manufacturing facility in Tunisia, and the design and construction of a solar concentrator for waste water evaporation in oil drilling applications.

Due to challenges in program implementation arising from the rapid changes in the political and social landscape of Tunisia and resulting successive changes in the leadership of Tunisian higher education, activities of both partnerships were suspended in the summer of 2014 at the request of the US Embassy and USAID. HED staff members traveled to Tunisia with CU-Boulder in September 2014 to negotiate a resumption of activities. HED developed a new action plan to restart the program and secured approval by all parties. HED is working on the revised budget and scope of work for FY15 to ensure successful management and sustainable results.

SMALL BUSINESS DEVELOPMENT CENTERS (SBDCs)

HED has supported two SBDC partnerships led by the University of Texas at San Antonio in Costa Rica, Dominican Republic, Honduras, Panama, Colombia and Peru. The partnerships seek to adapt and replicate the highly successful SBDC model by sharing best practices and connecting their clients with international trade opportunities to foster the development of micro and small enterprises, thus addressing some of the underlying issues that fuel regional challenges. The first award focused on Costa Rica, Dominican Republic, Honduras and Panama, and closed in FY13.

3. COLOMBIA and PERU: Government of Colombia/Government of Peru/University of Texas San Antonio: Central and South American Small Business Development Center Partnership Program: Adapting and Replicating the Small Business Development Center (SBDC) Model throughout the Americas

Managed Under Leader Award AEG-A-00-05-00007-00
Partnership Award Amount: $1,270,000
Partnership Period of Performance: 11/30/2012 – 11/30/2014

Partnership Overview:
Building on the previous HED award to expand the SBDC model in Central America, the University of Texas at San Antonio (UTSA) is working with the Centro Regional de Promoción de la MIPYME (CENPROMYPE) and the governments of Colombia and Peru to replicate the SBDC model in South America. Through this partnership, UTSA is continuing to deliver customized training in the four Central American countries where SBDCs have been established, in addition to enhancing SBDC efforts in Colombia and Peru in South America, with the goal of expanding the SBDC model throughout Latin America.

Partnership objectives:

- To ensure stakeholder participation and commitment to the implementation of the SBDC model in the host country;
- To increase small business human capacity in the host country with the implementation of the SBDC model; and
- To establish systemic, structural program quality and sustainability in SBDC centers at the host country.

FY2014 Results Highlights:
A long-time HED partner, the University of Texas at San Antonio's International Trade Center, won the prestigious 2014 Small Business Development Center of the Year award from the U.S. Small Business Administration. The UTSA International Trade Center has been a partner on four separate HED awards since 2013, promoting small business development education in Colombia, Costa Rica, the Dominican Republic, Guatemala, Honduras, Mexico, Panama and Peru.

In 2014, UTSA offered its four-part SBDC Counselor and Director Certificate Training in Lima, Peru which provides training and support for budding SMEs and is a foundational training critical to the successful establishment of SBDCs. The training session had 120 participants representing the public, private and higher education sectors. Peru is the second country in South America to receive the Counselor and Director Certificate training and now looks forward to establishing the country's first pilot SBDCs.

Partners also completed the four-part SBDC Counselor and Director Certificate Training in the cities of Bogota and Cali, Colombia. The economy of Colombia is the third largest in Central and South America and is poised to be a leading trade partners with the U.S. since the advent of the U.S.-Colombia Free Trade Agreement which went into effect in May of 2012. The training sessions included 190 participants and from various sectors and will help benefit Colombia's ability to adopt the U.S. SBDC model.

In July, partners lead a delegation of 33 high-level government officials and business development professionals from several Central and South American countries on visits to San Antonio and Washington, DC. Visiting delegates observed first-hand SBDC operations and learned about SBDC network administration and MSME policy creation. Partners strategically host these visits on an annual basis to ensure stakeholders are sharing experiences and resources so as to further solidify the SBDC network in the Americas.

HED recently provided partners with a four month no-cost extension through March 31, 2015 to provide direct benefits to Colombia and Peru and to facilitate a Colombian transition through a period of uncertainty due to presidential elections. The extension of activities will provide UTSA with sufficient time to work with their partners to consolidate and build sustainability of the SBDC networks beyond the pilot stage. In turn,

this additional support will amplify the reach of small business owners to new markets throughout the Americas and increase competitiveness.

BMENA-U.S. Community College Initiative Partnerships

The Broader Middle East and North Africa–U.S. Community College Initiative is managed under HED's Leader Award and composed of four partnerships under the Broader Middle East and North Africa–U.S. Community College Small Grants Initiative (BMENA I) and six partnerships under the Broader Middle East and North Africa–U.S. Community College Entrepreneurship Grants (BMENA II). These partnerships are addressing the endemic regional challenge of high youth unemployment by developing academic pathways at BMENA community and technical colleges that will provide students with the skills and opportunities needed to meet the demands of prioritized regional sectors and industries. Partnership interventions are focused on increasing institutional capacity to offer relevant academic programs that are aligned with regional workforce demands, enhancing faculty professional expertise to effectively design and deliver those programs, and equipping students with advanced technical and entrepreneurial skills and knowledge, as well as the support services needed to successfully bridge the gap between the classroom and employment. The initiative spans six countries in the region and involves community and technical colleges from nine U.S. states.

BMENA I: SMALL GRANTS INITIATIVE

The Broader Middle East and North Africa – U.S. Community College Small Grants Initiative (BMENA I) partnerships grew out of four short-term small grants managed by HED beginning in 2010. Despite their initial short performance period, the grantees in Egypt, Jordan, and Morocco accomplished major objectives and laid the ground work for expansion and curriculum development opportunities in workforce development areas such as solar technology, entrepreneurship, automotive diagnostics, and business plan development. BMENA I partnerships were later scaled up for expanded implementation during the second quarter of the 2012 fiscal year. Originally funded by the U.S. Department of State with the involvement of the U.S. Department of Education, the partnership expansions are now funded solely by USAID.

4. JORDAN, BMENA SCALE-UP Partnership 1: Al Quds College/Eastern Iowa Community College District – Muscatine Community College: Economic Empowerment through Entrepreneurship

Managed Under Leader Award AEG-A-00-05-00007-00
Partnership Award Amount: $491,399
Partnership Period of Performance: 7/1/2010 – 3/31/2015

Partnership Overview:
The partnership between Al Quds College (AQC) and Eastern Iowa Community College District (EICCD) titled, "Economic Empowerment through Entrepreneurship (E3)," is focused on the promotion of quality entrepreneurship training at AQC through courses, workshops, exchanges and a certificate program. The overall goal is to provide AQC students with the skills needed to launch their own small businesses and to contribute to the economic growth of Jordan. The partnership objectives are:

- To develop capacity-building policies and strategies that result in faculty professional development; and
- To develop and implement programs of study that provide career and technical education and training linked to employment for Jordanian students.

FY2014 Results Highlights:
The introduction of the partnership's Entrepreneurship Certificate Program has been adapted and applied as an institution-wide rollout of entrepreneurship coursework at AQC starting fall 2013. An unanticipated collaboration with the International Youth Foundation has provided AQC with a Microsoft-developed "Build Your Business" (BYB) royalty-free software, for use in the classroom to enhance instruction. This new semester-long course has gradually been implemented as a graduation requirement, and 630 students completed the course and developed a business plan during the last year. Participation has gone from just a few students to engaging an entire student body with new entrepreneurial concepts, and has led to the creation of a Business Advisory Board.

To assist with the expansion of entrepreneurship training, partners conducted the second annual AQC Great Teachers Workshop. During the workshop, 28 AQC faculty members were trained in entrepreneurship, teaching and learning techniques, and practical approaches for the Jordanian classroom. Faculty also completed professional development plans, as part of a wider initiative to integrate faculty development into AQC.

Partners contributed to the second objective with the second cohort of the International Future Entrepreneur Exchange, which brought 10 AQC students, including 6 female students, who successfully completed the partnership's BYB class to EICCD in Iowa. During the exchange, AQC students visited local small businesses tailored to the student's own business plans, and attended several workshops and seminars in entrepreneurship, culture, and business development.

5. JORDAN, BMENA SCALE-UP Partnership 2: Al-Huson University College/Al-Balqa Applied University/Red Rocks Community College: Expanding Jordan's Green Collar Workforce: Career Pathways in Solar Technology, Worker Safety Management, and Water Quality Management

Managed Under Leader Award AEG-A-00-05-00007-00
Partnership Award Amount: $511,113
Partnership Period of Performance: 8/1/2010 – 12/31/2014

Partnership Overview:
The partnership between Al-Huson University College (HUC) and Red Rocks Community College (RRCC) titled, "Expanding Jordan's Green Collar Workforce: Career Pathways in Solar Technology, Worker Safety Management, and Water Quality Management," is creating of relevant degree programs at HUC tailored to the needs of industry and the private sector. The overall goal is to develop paraprofessional pathways aligned with regional priorities to improve the employability of Jordanian youth. The partnership works toward the following objectives:

- To create and enhance degree programs in the paraprofessional sectors (solar energy technology, health and occupational safety, and water quality management) at HUC;
- To increase the capacity of HUC to cultivate and maintain employer connections; and
- To increase the capacity of HUC to conduct outreach to expand the interest in paraprofessional careers.

FY2014 Results Highlights:
During this reporting period, 36 students graduated from the partnership-introduced Solar Energy Technology (SET) degree. In addition to the hands-on training provided at HUC by PV equipment and a solar tech lab, 42 students participated in internships with local solar energy companies in Jordan. After installing a wind turbine on campus, partners revised the SET degree program to include a new hybrid energy course. As

the only associate's degree program in solar energy technology in Jordan, the partnership positioned HUC to receive $15 million in funds to install a solar garden capable of providing energy for the entire campus, set to open in 2015. HUC's SET program has already established a strong reputation, with a total enrollment of 152 students for the 2014-15 school year.

Partners also worked collaboratively with industry experts on the development of a new comprehensive Health, Safety and Environment (HSE) degree program at HUC. The HSE degree program was created to not only meet international standards in occupational health, safety and environment but was also strategically selected in an effort to fill the demand for HSE workers in Jordan by training and preparing students to enter into this field. Currently, 35 students are enrolled in the first year of HSE degree program, which begins with theoretical training at HUC, and 30 students continued into the second year of practical training at the newly refurbished Hassib Al-Sabbagh Academy. This facility was provided by Al Balqa Applied University (BAU) and renovated and equipped through funds from private sector partner Consolidated Contractors Company, who will offer a significant number of jobs to HSE students after completion.

Partners completed a feasibility study aimed at establishing a new program in waste water management. This feasibility study has been used to inform and create a full curriculum for a two-year technician degree in waste water management, which currently is pending ministerial approval and anticipated to be implemented in 2015. Partners are also working on a joint research project on waste water in Jordan between RRCC and BAU faculty.

6. MOROCCO, BMENA SCALE-UP Partnership 3: Ecole Supérieure de Technologie Oujda/Gateway Technical College: Automotive Diagnostics Partnership and Scale-up

Managed Under Leader Award AEG-A-00-05-00007-00
Partnership Award Amount: $537,246
Partnership Period of Performance: 8/15/2010 – 3/31/2015

Partnership Overview:
The "Automotive Diagnostics Partnership and Scale-up" between Ecole Supérieure de Technologie Oujda (ESTO) and Gateway Technical College (GTC) is focused on the integration of ESTO's curriculum with industry recognized trainings and certifications in the fields of automotive diagnostics, energy and transportation. With the overall goal of strengthening the capacity of ESTO to become a regional leader in the automotive diagnostics, transportation and renewable energy technologies, the partnership works toward the following objectives:

- To enhance the capacity of faculty in automotive diagnostics at ESTO to increase the depth and breadth of subject matter expertise along with an introduction to technologies in faculty's teachings;
- To enhance the institutional capacity of ESTO by establishing and implementing protocols to integrate industry endorsed diagnostic, multimeter, and torque certifications into current and future programming while introducing potential technologies and enhancing experiential learning; and
- To increase the governance structure and regional reach of ESTO through the engagement of additional BMENA partner institutions in the areas of automotive diagnostics, transportation and renewable energy technologies.

FY2014 Results Highlights:
Through the partnership, 69 faculty from Morocco and the Middle East & North African region and 92 students from ESTO received certification in Solus Pro or Solus Ultra from the National Coalition of Certification Centers (NC3), increasing ESTO's reputation as a regional center of excellence in the field of automotive diagnostics training. Further training and certification in Torque and MultiMeter equipment is

taking place to expand into the fields of mechatronics, industrial maintenance, and precision measurement. In addition, significant progress has been made in the construction of a new automotive lab opening in early 2015 in Oujda, Morocco.

The partnership has developed a two-year automotive diagnostics curriculum, trained faculty, and equipped training labs with Snap-On diagnostic tools. With about 50 students enrolled, the new automotive degree has established linkages with automotive dealers and centers for curriculum input and to provide students with internships. Over the past year, 18 students from EST Oujda have been offered internships indicating that local employers value the hands-on training the students are receiving and the skills they bring to the workplace.

7. EGYPT, BMENA SCALE-UP Partnership 4: Mataria Technical College/Highline Community College: Leveraging Community College Workforce Development Expertise: Creating Educational Pathways to High Skills Employment at Mataria Technical College

Managed Under Leader Award AEG-A-00-05-00007-00
Partnership Award Amount: $558,719
Partnership Period of Performance: 9/1/2010 – 3/31/2015

Partnership Overview:
The partnership between Mataria Technical College (MTC) and Highline Community College (HCC) is focused on building the teaching and entrepreneurship capacity of MTC faculty and cultivating relationships at MTC with businesses and industry. With the overall goal of developing entrepreneurship training models for MTC students that connect them to career and employment pathways, the partnership works toward the following objectives:

- To improve teaching methodology practiced by faculty at MTC so that students demonstrate entrepreneurial thinking and self-employment skills relevant to industry demands;
- To develop entrepreneurship capacity among identified pilot groups of MTC students; and
- To increase capacity of MTC to expand relationships with business and industry.

FY2014 Results Highlights:
Implementation was suspended in FY14. Political instability and unrest made travel to and from Egypt and partnership activities impossible. A U.S. Department of State travel warning was in place throughout FY14. As of October 2014, Highline is awaiting authorization from the Egyptian Ministry of Higher Education to continue their institutional partnership with MTC. A visit to Egypt by HED and Highline is proposed for November 2014. It is hoped that implementation can restart in FY2015.

BMENA II: ENTREPRENEURSHIP GRANTS

The six Broader Middle East and North Africa – U.S. Community College Entrepreneurship Grants (BMENA II) partnerships grew out of six-month proposal development grants managed by HED beginning in 2011. Following a competitive peer-review process, BMENA II partnerships in Bahrain, Jordan, Lebanon, Morocco, and Yemen were awarded longer-term implementation grants during the second quarter of the 2011 fiscal year. These partnerships strengthen the capacity of BMENA partner institutions through the promotion of entrepreneurship. Originally funded by the U.S. Department of State with the involvement of the U.S. Department of Education, the longer-term partnerships are now funded primarily by USAID. The BMENA II partnership in Bahrain is supported with U.S. Department of State funding, through HED's cooperative agreement with USAID.

8. BAHRAIN, BMENA ENTREPRENEURSHIP Partnership 1: Bahrain Polytechnic/Central Community College: Bahrain Entrepreneurship Project

Managed Under Leader Award AEG-A-00-05-00007-00
Partnership Award Amount: $350,000
Partnership Period of Performance: 4/1/2012 – 6/30/2015

Partnership Overview:
With funding provided from the U.S. Department of State through USAID, Bahrain Polytechnic (BP) is collaborating with Central Community College to create a center of entrepreneur development – the Bahrain Polytechnic Enterprise Development Center (BPEDC) – to encourage and support student enterprise development through innovation and entrepreneurship. With the overall goal of promoting entrepreneurship in Bahrain, the partnership works toward the following objectives:

- Establish BP as a national academic center for enterprise, innovation and entrepreneurship;
- Increase human capacity among BP's students to align with market demands for entrepreneurship; and
- Increase the BP faculty's understanding of the potential for integrating the teaching of entrepreneurship in the classroom and of international trends in entrepreneurship teaching and research

FY2014 Results Highlights:
Despite numerous attempts on the part of the institutional partners and Higher Education for Development (HED) over nearly two years to initiate activities between Central Community College (CCC) and Bahrain Polytechnic, this partnership was stymied by the difficult social and political situation in Bahrain. Bahrain Polytechnic's Board of Trustees decided to suspend the partnership activities when it learned in August 2013 that USAID might close the HED Program as soon as December 2013. This further delay in project implementation led to the failure to reach agreement over the terms of the agreement between the partners. In June 2014, the partners reached a mutual agreement that their partnership was not viable at this time. Ultimately, the subaward agreement in support of the partnership was terminated as of June 30, 2014.

9. YEMEN, BMENA ENTREPRENEURSHIP Partnership 2: Sana'a Community College/Eastern Iowa Community College District/Tulsa Community College: Economic Empowerment through Entrepreneurship (E3)

Managed Under Leader Award AEG-A-00-05-00007-00
Partnership Award Amount: $448,907
Partnership Period of Performance: 1/1/2013 – 6/30/2015

Partnership Overview:
With the goal of stimulating small business development and growth to develop the economy of Yemen, Eastern Iowa Community College District (EICCD), Tulsa Community College (TCC), and Sana'a Community College (SCC) began working in partnership toward objectives to foster an entrepreneurial mindset among SCC students and to develop institutional capacity at SCC to offer entrepreneurship and business skills training. Partners planned to work with local business leaders to develop and set the foundation for an entrepreneurship certificate program for students and a modularized entrepreneurship certificate program for owners of existing small and medium-sized businesses.

FY2014 Results Highlights:
This partnership experienced delays and setbacks exacerbated by the unfavorable political and security situation that prohibited the U.S. team from receiving institutional approval to travel to Yemen. After more than a year's delay in implementation and multiple discussions, partners determined that they would be unable to accomplish meaningful results in the time remaining in the award. They further determined that changing objectives and activities to create a more manageable scope of work for a truncated period of performance would compromise the integrity of the partnership. In light of this assessment, partners made a mutual determination to close the partnership in the first quarter of FY2014.

10. MOROCCO, BMENA ENTREPRENEURSHIP Partnership 3: Ecole Supérieure de Technologie Oujda/Université Mohammed I Oujda/Gateway Technical College: Collegiate Entrepreneurship and Collaborative Strategies

Managed Under Leader Award AEG-A-00-05-00007-00
Partnership Award Amount: $461,575
Partnership Period of Performance: 3/1/2012 – 9/30/2014

Partnership Overview:
The partnership between Ecole Supérieure de Technologie, Oujda (ESTO) and Gateway Technical College (GTC) titled, "Collegiate Entrepreneurship and Collaborative Strategies," aims to position ESTO as a lead institution in the Eastern Region of Morocco for entrepreneurial and economic development by developing the capacity of GTC faculty and students and deploying technological innovations in the classroom. The partnership works toward this goal through the following objectives:

- Improved ability by ESTO faculty have to teach students and advise local citizens in critical components of entrepreneurial and enterprise development;
- Strengthened capacity of ESTO students to launch and operate their own business and/or measurably enhance existing small and medium sized enterprises by creating internships and other experiential learning opportunities; and
- Developed and deployed technological innovations at ESTO that improve instruction and integrate technology and classroom practices to meet local needs.

FY2014 Results Highlights:
Partners from Gateway and ESTO have developed a rapid prototyping course in the mechatronics lab in which Moroccan students design products and produce them on 3D printers at ESTO. Students have created new prototypes such as dental implants, prosthetics, a water turbine, and a robotic arm, to help support local entrepreneurship and business development while also gaining employable technological skills. This entrepreneurial focus is further showcased through the Biz Squad - a collaborative, multi-disciplinary course linking students in Morocco and Wisconsin through video technology. Moroccan and American students are gaining experiential learning opportunities through the Biz Squad program by providing consultative services to businesses in both Wisconsin and Morocco.

To highlight some of these achievements, ESTO and Gateway hosted a communitywide open house in Oujda to showcase the entire entrepreneurial project at the Ecole Superieur de Technologie. During the event, students provided testimonials as to how their experiential studies will impact their professional futures. Attendees included USAID, HED, regional and academic dignitaries, local businesses, students, and community leaders.

11. MOROCCO, BMENA ENTREPRENEURSHIP Partnership 4: Ecole Normale Supérieure de l'Enseignement Technique of Rabat/Ecole Normale Supérieure de l'Enseignement Technique de Mohammedia/Middlesex Community College: Linkages for Entrepreneurship Achievement Project (LEAP)

Managed Under Leader Award AEG-A-00-05-00007-00
Partnership Award Amount: $460,852
Partnership Period of Performance: 1/1/2012 – 12/31/2014

Partnership Overview:
Middlesex Community College (MCC) and secondary partner Bristol Community College (BCC) are working with Ecole Normale Supérieure de l'Enseignement Technique (ENSET) of Rabat and ENSET of Mohammedia to promote entrepreneurship, workforce, and economic development in Morocco through institutional and human capacity building at the two Moroccan technical colleges.

Partners are achieving this goal through the following objectives:

- Building capacity of faculty at the ENSETs to teach students the critical components of entrepreneurial and enterprise development;
- Creating an educational curriculum framework that will succeed in delivering high quality, experiential learning opportunities to strengthen the capacity of students to launch and operate their own businesses; and
- Increasing the capacity of ENSETs to carry out extension and outreach activities.

FY2014 Results Highlights:
As a result of the work of LEAP partners for the past two years on entrepreneurship curriculum development, fourteen new and revised programs were approved by Morocco's University Curriculum Approval Process. The new programs at Rabat and Mohammedia include both Bachelors and Masters degrees and integrate experiential opportunities, such as simulation software, work-based experiences, and student business plan development.

The ENSETS have also established a new Global Entrepreneurship Week under a supportive network of the advisory board, comprised of local business, NGO, and industry leaders. Activities during Global Entrepreneurship Week include student business plan competitions and outreach to local high school students through ENSET student presentations about entrepreneurship.

Finally, as a consequence of faculty training in "GoVenture" software, students at both ENSETs displayed mastery of the entrepreneurship simulation software during their business plan competition, far exceeding expectations of the LEAP program team. The knowledge exhibited by the students showed that faculty training sessions had successfully translated into innovative classroom pedagogy.

12. LEBANON, BMENA ENTREPRENEURSHIP Partnership 5: Al-Kafaàt Foundation Schools/Nassau Community College/Monroe Community College/North Country Community College: SUNY Community College Consortium

Managed Under Leader Award AEG-A-00-05-00007-00
Partnership Award Amount: $461,151
Partnership Period of Performance: 1/1/2012 – 12/31/2014

Partnership Overview:
The State University of New York (SUNY) Community College Consortium, comprised of Nassau, Monroe, and North Country community colleges, and Al-Kafaàt Foundation Schools (AKFS) in Lebanon are collaborating to foster business education and entrepreneurship in Lebanon. Partners are achieving this goal through the following objectives:

- To develop capacity-building activities that provide AKFS faculty with knowledge and skills resulting in their improved ability to teach students and advise local citizens in critical components of entrepreneurial and enterprise development;
- To train future entrepreneurs by creating and/or strengthening existing curricula, modules, courses, workshops, and/or certificate programs, based on international "promising practices" in entrepreneurship; and
- To support the establishment of local business start-ups and measurably enhance existing small and medium-sized enterprises.

FY2014 Results Highlights:
The partnership has expanded beyond its original scope of work, moving from an initial focus on entrepreneurial education development to embrace organizational transformation. With the support of the State University of New York, AKU has appointed an accreditation team and begun the initial phase of an institutional self-study to seek U.S. accreditation through the Southern Association of Colleges and Schools (SACS). Members of AKU attended the SACS annual conference to further their knowledge of U.S. accreditation requirements. Partners continue to support the accreditation development through developing guidance on utilizing the accreditation standards to demonstrate institutional effectiveness, developing a systematic, ongoing assessment process, evaluating current practices, and conducting a mock site visit. This will allow for greater and more holistic sustainability of all partnership efforts.

Student services at AKU were expanded through partnership-supported development in the Student Learning Center and the Center for Students with Disabilities. The Student Learning Center supports faculty professional development and fosters student academic success and career development, through a walk-in and referral system. The newly-organized Center for Students with Disabilities (CSD) ensures equal access to entrepreneurial education and services for around 130 students at AKFS. A new brochure developed and disseminated by the CSD is promoting awareness of disabilities and education not only on campus and during orientation, but also to the public.

The partnership's English program was updated to respond to market-driven vocational needs and implemented across Al-Kafaàt's EUROPA Campus of Technology (ITK). The LINK (English-language Immersion at ITK) Program was adapted from the Language Immersion Program at Nassau Community College. It provides English instruction in a student-centered learning environment, leading to more authentic language production and greater fluency. With 490 students enrolled in classes, the program is preparing students for work in vocational areas such as business, computer science, mechanics, electronics, printing, graphic design, cosmetology, interior design, and hospitality management.

Partners also increased their use of SUNY COIL [4], an online collaborative platform to provide Al-Kafaàt faculty with continual virtual access to training and new teaching strategies without the need for physical travel of SUNY partners to Lebanon. The addition of the COIL platform will also help faculty members from across the partner institutions remain in better communication, and can be expanded to other areas of the partnership as well, such as connecting students virtually in the classroom.

[4] COIL: Collaborative Online International Learning http://coil.suny.edu/

13. JORDAN, BMENA ENTREPRENEURSHIP Partnership 6: Al Quds College/Washtenaw Community College/The William Davidson Institute at the University of Michigan: Community College Entrepreneurship: Integration to Incubation

Managed Under Leader Award AEG-A-00-05-00007-00
Partnership Award Amount: $446,938
Partnership Period of Performance: 1/1/2012 – 12/31/2014

Partnership Overview:
The partnership between Al Quds College (AQC) and Washtenaw Community College (WWC) titled, "Community College Entrepreneurship: Integration to Incubation," is developing an entrepreneurial mindset among students at AQC, increasing awareness of entrepreneurship and building the capacity of AQC faculty and students.

The partnership works toward this goal through the following objectives:

- Build the human and institutional capacity of faculty at AQC to teach and advise students and recent graduates in critical components of entrepreneurial and enterprise development;
- Provide AQC students and recent graduates the tools and opportunities to incubate a small business; and
- Create a clear pathway to entrepreneurship as a means of self-employment and career development for AQC students.

FY2014 Results Highlights:
A highlight of FY14 activities was the formal launch of the business incubator on the AQC campus, the first at a community college in Jordan. The business incubator provides students with five physical workspaces and support services to develop their business ideas. Around 150 people from AQC and the community attended the event, showcasing the services and students involved in the incubator. The partnership has enabled AQC to establish a reputation as an academic center of excellence for entrepreneurship training, affirmed by high-level visits from Jordanian Queen Rania and the U.S. Ambassador. During FY2014, the business incubator provided capacity-building trainings and business plan development services for 17 students.

In addition to the business incubator, the partnership hosted a number of entrepreneurial events at AQC in FY14, including an intensive, four-day entrepreneurial boot camp training for 72 participants. Other activities included a successful entrepreneur speaker series, "quick pitch" competitions, business model competitions, roundtable discussions, and other entrepreneurial trainings that reached 530 students.

The capacity of AQC faculty and staff was enhanced through faculty exchanges; WCC faculty visited Jordan in January, and AQC faculty visited Michigan in February. Through these exchanges, faculty have jointly developed 54 teaching toolkits to enhance entrepreneurial concepts and applied learning in 10 courses across four academic disciplines (Business, Media Arts, Information Technology & Engineering, and Culinary & Hospitality).

14. BARBADOS: University of the West Indies-Cave Hill School of Business/Indiana University: Barbados: Supporting Entrepreneurs through the JOBS Initiative

Managed Under an Associate Award with USAID/Barbados No. AID-538-LA-11-00001
Partnership Award Amount: $1,349,692
Partnership Period of Performance: 2/28/2011-6/30/2014

Partnership Overview:
The partnership between Cave Hill School of Business (CHSB) in Barbados and Indiana University's Kelley School of Business focuses on supporting the growth of an entrepreneurial culture and diversifying the service-oriented economies in Barbados and the Organization of Eastern Caribbean Countries (OECS) region. The partnership seeks to create new business opportunities and to foster entrepreneurship, especially among young adults.

The partnership's objectives are to:

- Strengthen Cave Hill's institutional capacity by improving its faculty's ability to teach students and advise emerging entrepreneurs on critical components of entrepreneurial and enterprise development and by developing and enhancing degree programs, course curriculum and applied research techniques on entrepreneurship; and
- Enhance the outreach capacity of Cave Hill to offer quality entrepreneurship training and services to foster entrepreneurship across the OECS; as well as youth program initiatives to more effectively engage young adults in entrepreneurship practice.

FY2014 Results Highlights:
During FY14, as they concluded program activities, the partners worked to enhance the capacity of Cave Hill faculty related to applied research techniques. The partners also disseminated promising practices on entrepreneurship through the development of case studies and working papers; completed the development of a virtual incubator portal that will serve entrepreneurs and incubators managers in Barbados and the OECS region; strengthened CHSB capacity to offer short-term programs such as the LeanLaunchpad workshop and a High Technology Entrepreneurship course; and provided experiential learning opportunities to students in the area of entrepreneurship through the second iteration of the MBA Student Engagement and graduate assistantships. Highlights of partnership results during this reporting period include:

- The virtual incubator portal was completed and the partnership finalized branding and marking requirements and added relevant materials before its official launch in May 2014;
- Cave Hill incorporated "LeanLaunchpad workshops" (innovative training programs in entrepreneurship) into CHSB's short term programs offerings;
- Two case studies on entrepreneurship were submitted for publication and an additional case study was finalized during this period by the partnership;
- Three working papers exploring key aspects of entrepreneurship in Barbados and the OECS were initiated with partnership support;
- A third set of training materials for a short-term program designed to enhance skills and knowledge of entrepreneurs was completed. The courses will be offered in May and June 2014;
- Eight UWI students completed experiential learning opportunities on entrepreneurship through the partnership and five Barbadian businesses were directly benefited by receiving expert entrepreneurship solutions as a result of the engagement; and
- Two UWI students completed graduate assistantships on entrepreneurship as part of the experiential learning opportunities made possible by the partnership.

15. PHILIPPINES: Southern Christian College/University of Hawai'i: University Partnership Linking Out-of-School Youth to Agri-entrepreneurship Development to Promote Job Opportunities for Business Scale-up for Mindanao (UPLOAD JOBS)

Managed Under Associate Award with USAID/Philippines # AID-492-LA-11-00002
Partnership Award Amount: $1,070,495

Partnership Period of Performance: 6/22/2012 – 6/30/2015

Partnership Overview:
Southern Christian College (SCC) is collaborating with the University of Hawai'i (UH) and related organizations in Central Mindanao to improve the livelihoods of out-of-school youth (OSY) and others in the community through training programs and activities in agricultural entrepreneurship and rural workforce development tailored to the employment skills needs of OSY in the region.

The objectives of the UPLOAD JOBS partnership are to:

- Support and foster community-led strategies that optimize profit potential through agricultural entrepreneurship and farmland management;
- Mobilize government, NGO, and private sector stakeholders to work with SCC to promote entrepreneurship and enhance rural workforce development, skills, and opportunities for OSY;
- Develop an entrepreneurial component to SCCs educational offerings targeted at improving livelihoods and incomes among OSY and micro/small scale rural workers; and
- Enhance SCC's capacity for training and workshop delivery.

FY2014 Results Highlights:
Partners engaged in a number of activities that contributed to achieving the program's objectives relating to human and institutional capacity development at Southern Christian College (SCC). In 2014, the partnership hosted its first Annual Colloquium and Tradeshow at SCC's campus in Midsayap. With 383 attendees from academia, government, the private sector, and non-UPLOAD JOBS OSY, the gathering not only provided a tradeshow forum for OSY businesses to sell their products but also enabled SCC faculty to participate in a seminar on using conjoint choice analysis for conducting market research. Partners note that the event was an ideal setting to forge opportunities and linkages with local government and businesses.

Partners offered five entrepreneurship modules as part of the Agri-Entrepreneurship Training Program for Cohort III of OSY participating in this program, to complete and become SCC-certified. Offered in Lake Sebu, parts I and II of the training consisted of five modules and a business plan competition. During this training, partners expanded their geographic reach to the province of Sultan Kudarat, thereby increasing the partnership's total count of OSY participating in the Agri-Entrepreneurship Training Program to 158 since the initial offering in 2012. A total of 41 OSY received Agri-Entrepreneurship Certificates for successfully completing all modules and 12 new business ventures were established.

The National Department of Trade and Industry (DTI) provided a short-term course at SCC on food product development and packaging for interested UPLOAD JOBS OSY businesses focusing on producing and selling food items. SCC's Center for Agricultural and Farmland Entrepreneurship will be working with DTI on a proposal to create a DTI Common Service Facility center that will bring food processing equipment to SCC, thereby making it an official food-processing site. Prospects for this center are promising as SCC will be able to make products certified by the Bureau of Food and Drugs.

Partners continued to confront the unpredictability of the political situation in and around Cotabato that resulted in having to reconsider what areas and communities of OSY to engage in project activities. As a result, partners have had to relocate specific trainings from Cotabato to the University of Philippines at Los Banos. Although the partnership team from Mindanao had to travel three days to arrive to Los Banos, partners note that SCC staff were able to strengthen and renew relations with UPLB, which is one of Asia Pacific's leading agricultural universities.

Agriculture

1. SENEGAL: Université Gaston Berger/Ohio State University: Development of Agronomy and Crop Production Academic Programs, Research, and Need-based Extension Programs for Sustainable Food Production in Senegal

Managed Under Associate Award with USAID/Senegal # 685-A-00-11-00023-00
Partnership Award Amount: $1,555,876
Partnership Period of Performance: 12/21/2010 – 6/30/2015

Partnership Overview:
This collaboration between Université Gaston Berger (UGB) and Ohio State University (OSU), in partnership with national research institutions, NGOs, and other stakeholders will create long-term professional capacity to solve agricultural management challenges in the fragile northern Senegal and Sahelian ecosystems. The partners have developed an innovative agronomy and crop production Associate degree program, adapting the U.S. Land Grant model. UGB has established the University of Gaston Berger Agricultural Research and Development Center (UGB-ARDC) based at UGB in St. Louis, Senegal, in collaboration with OSU. The graduates from the program are trained to address the ecological and agricultural challenges of this fragile, semi-arid environment and provide the human capacity to serve the emerging food export industry.

The objectives of the partnership are to:

- Improve human capacity at UGB in the Department of Agricultural Sciences, Aquaculture, and Food Technology.
- Provide effective applied research and extension service through a pilot integrated research and outreach program.

FY2014 Results Highlights:
Toward developing the human capacity at UGB, two faculty members were enrolled in PhD programs, one at OSU and one at the University Cheik Anta Diop. The first UGB faculty member is in his second year of the PhD degree program at OSU in agricultural engineering. The second completed his PhD degree program at the University Cheik Anta Diop in Senegal and elected not to continue his studies in weed sciences at the University of Florida.

The Agroecology Associate Degree program developed by the partners through USAID support, graduated 66 students in its inaugural class in FY 2014. These students are poised to take jobs in local agribusinesses, government agencies and NGOs, contributing toward the Sustainable Food Production goal of the partnership.

Seven research projects, all with a potential to strengthen UGB research capacity, were developed and proposals submitted for funding. Six of those seven proposals received funding from Periperi University and USAID and the seventh is pending approval from the Ministry of Higher Education in Senegal. In addition to developing research, the partnership collaborating with two new stakeholders, Institut Senegalais de recherches agricole and GIE Agritech, to pilot a mechanical transplanter with small holder farmers in the Senegal River Valley.

2. KENYA: University of Nairobi/Colorado State University: Centre for Sustainable Drylands: A University Collaboration for transforming Higher Education in Africa at the University of Nairobi

Managed Under Associate Award with USAID/Kenya # AID-623-LA-11-00004
Partnership Award Amount: $1,422,000
Partnership Period of Performance: 4/1/2011 – 9/30/2014

Partnership Overview:
This partnership has established a Centre for Sustainable Dryland Ecosystems and Societies (CSDES) at the University of Nairobi (UoN) to address the challenges of sustaining Kenya's underdeveloped drylands.

The objectives of the partnership are to:

- Improve the coordination of interdisciplinary education, research and outreach for drylands in Kenya;
- Increase the capacity of students and faculty to address the problems of dryland ecosystems and societies;
- Strengthen the research capacity and policy-relevance, and resource directions and innovations appropriate for Kenyan drylands; and
- Increase participation in higher education by pastoralists, especially women, resulting in the development of more appropriate innovations for dryland systems.

FY2014 Results Highlights:

Partners made significant progress towards improving coordination of education and outreach for the drylands areas of Kenya. CSU and UoN/CSDES engaged faculty team members from both institutions to develop an e-course entitled, "Sustainable African Dryland Ecosystems and Societies." The online course will be hosted by USAID's RMPortal, and will be accessible to students, practitioners, and other interested parties. Partners also facilitated the review of the curriculum of the Ph.D. in Dryland Resource Management.

CSDES outreach included three Stakeholder Feedback Workshops with community members from Isiolo, Marsabit and Laikipia Counties to engage and receive feedback directly from the communities where the dryland research took place. Furthermore, in partnership with Christian Impact Missions (CIM), CSDES conducted a field assessment and community training for farmers in Yatta, Machakos County to increase agricultural productivity and food security in the region.

Partners increased research capacity and raised awareness of the Kenyan drylands through CSDES publications, proposals, and presentations. UoN-CSU developed and submitted thirteen proposals (both research and development) as well as expressions of interest during FY14. They also produced 15 publications and 15 policy briefs on a range of topics including natural resource management, sustainability of ecosystems, food security, pastoral livestock production systems, wildlife conservation, and the dynamics and resilience of rangelands and pastoral peoples around the globe. CSDES leadership continued to promote the work of the Center through involvement in regional conferences and by improving the usefulness of the CSDES website.
Partners strengthened the skills and knowledge of faculty and students to address problems in dryland societies through a series of short-term trainings and seminars. Partners implemented several short courses (*Introduction to GIS, Collaborative Research Methods and Integrated Social and Ecological Field Methods,* etc.) benefiting a total of 92 UoN faculty, students, and stakeholders during FY14. They also hosted a seminar series at UoN where practitioners presented on natural resource management issues to faculty and students and discussed policy implications. The forums ignited interest around policy issues and provided an avenue for county governments and development partners to explore investment opportunities in drylands as well as

partnership opportunities with CSDES/UoN. Finally, partners organized a student-led conference attended by 300 students, faculty, staff, and community stakeholders to discuss critical issues in dryland research.

3. MALAWI: University of Malawi/Michigan State University: Agro-Ecosystem Services: Linking Science to Action in Malawi and the Region

Managed Under Associate Award with USAID/Malawi # 674-A-00-11-00030-00
Partnership Award Amount: $1,140,000
Partnership Period of Performance: 4/5/2011 – 5/30/2014

Partnership Overview:
The partnership focused on agro-ecosystem services (AgESS) to support agriculture-led economic growth. The Lilongwe University of Agriculture and Natural Resources (LUANAR) and Chancellor College partnered with Michigan State University (MSU) to develop AgESS-related courses and modules, provide faculty development and enhance library resources, including online library access. The partners also strengthened outreach, connecting with AgESS-related businesses, NGOs, government agencies, and extension agents.

The partnership objectives are:

- Increased human capacity in AgESS-related fields at Chancellor College and LUANAR;
- Improved institutional capacity for development and delivery of AgESS programs at Bunda College and LUANAR;
- Enhanced capacity in AgESS related topics to obtain and manage outside research funding
- Strengthened college ability to engage with external stakeholders and provide outreach services to AgESS-related government, business and non-governmental organizations and natural resource extension training colleges; and
- Strengthened institutional environment for women faculty, administrators and students.

FY2014 Results Highlights:
Partners conducted mentoring workshops at LUANAR and Participatory Action Research short course during FY14. The mentoring workshops produced key changes in advising policies at the university and ignited an important discussion around the full range of students' needs on campus. The Participatory Action Research (PAR) short course was well attended and the participants provided positive feedback on its organization, delivery, and content.

The Participatory Action Research (PAR) short course held at Lilongwe University of Agriculture and Natural Resources (LUANAR) was facilitated by four faculty members—one from each partnering institution (MSU, LU, LUANAR, and Chancellor College-UNIMA). Forty three (11 female) participants attended the training, including faculty members from LUANAR and UNIMA as well as representatives from local NGOs (Kusamala Institute of Agriculture and Ecology, Coordination Unit for Rehabilitation of Environment (CURE), and Agricultural Research & Extension Trust), business (Auctions Holdings Limited and Electricity Supply Corporation of Malawi (ESCOM)), other Malawian tertiary education institutions, and the public and private sectors. Participants learned about participatory action research methods in a hands-on environment that would facilitate easy incorporation into their teaching, research, or professional positions. The PAR short course was the third and final short course in a series of short courses related to AgESS content.

Chancellor College held a workshop that provided training to 31 (9 female) faculty members about general mentoring practices and different approaches to mentoring students. The one-day course was held on-site and was facilitated by a faculty member from the education department.

LUANAR held mentoring workshop for students to share their mentoring needs and for faculty to gain a better understanding of how to address their needs. Forty-eight students (19 female) attended the workshop, which was facilitated by the Dean of Students and other LUANAR faculty members. The workshop for faculty explored various approaches to mentoring students. Thirty (9 female) faculty members attended the workshop, which was facilitated by the Dean of Students. The tandem approach allowed facilitators to understand mentoring challenges from the perspectives of both students and faculty.

4. SOUTH SUDAN: University of Juba/Catholic University of South Sudan/Virginia Polytechnic Institute and State University: Rebuilding higher Education in Agriculture to Support Food Security, Economic Growth and Peace Efforts in South Sudan

Managed Under Associate Award with USAID/South Sudan # 650-A-00-11-00303-00
Partnership Award Amount: $2,800,892
Partnership Period of Performance: 2/7/2011 – 5/31/2014

Partnership Overview:
Virginia Polytechnic Institute and State University (Virginia Tech), the Catholic University of South Sudan (CUoSS) and the University of Juba (UoJ) are collaborating to restore higher education curriculum and research capacity in agriculture in South Sudan, supporting this post-conflict country's efforts to resolve its severe food security challenges.
The objectives of the partnership are:

- Enhanced agricultural research, education and training;
- Improved delivery of agriculture and natural resources academic programs;
- Generation of knowledge through relevant, quality research; and
- Creation of a natural-resources management outreach program that addresses the unique food security and long-term agricultural and natural resource management needs of the South Sudan.

FY2014 Results Highlights:

Due to the civil unrest in South Sudan, USAID/South Sudan suspended all partnership activity early in FY14 and required early closeout of all activities in South Sudan. FY14 activities were related to ensuring the safe and orderly closeout of the office at the University of Juba, disposition of equipment, and final reporting.

The civil unrest and conflict which started in mid-December and the political instability that ensued made it impossible for the UoJ/CUoSS-VT partners to achieve results against the indicators established in the partnership results framework for FY14. Higher education institutions in South Sudan were forced to suspend operations as students failed to report back for classes in October 2013.

After a repeated attempt by the partners to revise implementation plans and budget through the months of December 2013 – April 2014, USAID/South Sudan informed HED that the partnership must close by August 2014. On the basis of this instruction from USAID, all activities of the partnerships were suspended as of April 14, 2014. In addition, in order to ensure that the South Sudanese long term trainees could complete their studies beyond September 2015, when the HED program closes, a decision was made by USAID/South Sudan to transfer all long-term trainees in to another project.

Education

1. KENYA: Kenyatta University/Syracuse University: Capacity Through Quality Teacher Preparation

Managed Under Associate Award with USAID/Kenya # AID-623-LA-11-00006
Partnership Award Amount: $1,122,210
Partnership Period of Performance: 4/1/2011 – 8/14/2014

Partnership Overview:
The partnership between Kenyatta University (KU) and Syracuse University has enhanced the capacity of KU faculty, and its educational programs, research, and engagement with stakeholders towards improved secondary education in Kenya. The partnership built capacity of the KU Department of Educational Communication and Technology (ECT) and contributed to the secondary school level through quality teacher preparation across the span of teacher education—from pre-service teacher preparation, to novice teacher induction, to practicing teacher continuing education.

Partnership Objectives:

- To strengthen the capacity of KU teacher education faculty members resulting in improved teacher preparation for the education sector in Kenya;
- To strengthen the research capacity of the KU teacher education programs resulting in improved knowledge that produces more effective education;
- To enhance the KU teacher education program resulting in improved instructional capacity;
- To provide quality service to education stakeholders resulting in improved instruction in secondary schools in Kenya.

FY2014 Results Highlights:
In relation to pedagogy, Kenyatta University facilitated a Curriculum Review Workshop to engage members of the Department of Educational Communication and Technology in the curriculum review process for courses in the Master's and PhD programs. Sixteen faculty members attended the workshop and contributed 96 hours of their time to the discussion of relevant curriculum for future education professionals. At the end of the workshop, 31 courses had been revised.

A key lesson learned during FY14 was to engage faculty in partnership decisions related to professional development. It became clear that faculty understand the needs of the college best, and their perspectives should be utilized to improve learning opportunities for future teachers.

In terms of research, thirteen faculty members participated in research studies related to inclusive, innovative, and integrative education strategies. During two Data Analysis Workshops, joint teams analyzed and wrote collaborative papers in the following areas: (1) Technology Integration in Kenyan Secondary Schools, (2) Teaching Practice, (3) Literacy Benchmarks in Kenyan Secondary Schools, (4) Dealing with Large Classes in Kenyan Secondary Schools, (5) Mentoring Pre-Service Secondary Teachers, and (6) Supporting All Learners in Kenyan Secondary Schools.

SU-KU partners extended the work of utilizing technology (iOS devices) to enhance educational opportunities for individuals with visual impairments at Kenyatta University and at two secondary schools. Partners conducted three successful outreach/extension activities during FY14 to train individuals on the capabilities

of the iPad mini and keyboards to read and create text, send email messages, etc. One KU student who is blind and was previously trained in June 2012 on using an iOS device assisted with the training. Partners have built a solid core of collaborative partners around these activities and it is expected that their relationships with the National ICT Innovation and Integration Center (NI3C) and Thika School for the Blind will continue to develop beyond the close of the award.

Partners developed and strengthened relationships with stakeholders throughout the three-year period of performance, and in July 2014, partners reported on their accomplishments and received feedback for future growth during a widely attended Stakeholder Meeting.

2. SENEGAL: Université Alioune Diop de Bambey/Fairfield University: Use of ICT and Service Learning to Develop Health Curricula

Managed Under Leader Award # AEG-A-00-05-00007-00
Partnership Award Amount: $231,131
Partnership Period of Performance: 10/1/2010 – 12/15/2013

Partnership Overview:
Fairfield University and Université Alioune Diop de Bambey (UADB), (formerly Université de Bambey), have collaborated to integrate service learning, health education for middle school students, and teacher training in educational technology at UADB. Though experience-based learning and service, students at the UADB will contribute to better health in the rural communities surrounding the four campuses of the university.

The objectives of the partnership include:

- Establishing a service learning program at UADB using a train-the-trainer approach;
- Developing French-language written and video materials for service-learning training;
- Developing French-language written and video materials for health education; and
- Providing training for middle school teachers at target Senegalese schools in using technology to deliver health education.

Highlights of Partnership Achievements

This partnership with Fairfield University galvanized two departments of UADB – the Information and Computer Technology Department (TIC) and the Health Sciences Department (SDD). Both departments have updated the curriculum for undergraduate students to integrate service learning. The TIC has identified and works with a community secondary school near the Bambey campus in rural Senegal, where they instruct faculty and students in the use of computer applications on an ongoing basis. UADB will expand this pedagogy as the Economics department (ECOMIJ) implements its plan to work with a farming community near Bambey.

The partnership inspired UADB's Director of Technology to design and negotiate installation of an inter-campus Internet connection, which previously was unavailable to the two satellite campuses of UADB. WiFi is now operational on all three UADB campuses. As a result of this expanded network availability, UADB was able to acquire a videoconference system funded by the HED award. Its success prompted similar devices to be installed at other campuses, and classes can now be offered online. This has represented a great advance for the three very rural small colleges that make up UADB. Another unplanned positive outcome is that UADB, using its own funds, was able to negotiate a replacement of their unreliable and expensive telephone system by an Internet Protocol phone system.

The faculty in the UADB Health Sciences Department (SDD) used training received at Fairfield University to develop teaching materials on public health and sanitation for use by students in their service learning

internships at rural primary and secondary schools. The partners worked with Sacoura Badiane Middle School in Dakar as a pilot site to develop and test the (French language) materials. At the pilot site, partners trained 14 middle school teachers, some who had never used a computer before, in the use of computers to develop classroom materials. Materials developed at the pilot site were used in SDD training sessions for students, schoolchildren and community members in the Bambey. Student-developed health modules were incorporated into the training, bringing the service learning experience full circle.

In addition to training of six UADB faculty at Fairfield University, Dr. Tellis spent a two-month sabbatical in residence at the main campus, offered training sessions to the faculty of UADB's Health SDD and TIC departments and travelling extensively to other campuses as needed. Faculty collaborations resulted in three research papers published in academic journals on aspects of the partnership activity, including SL, networking, and SL in the Health Sciences. Two of the papers had coauthors from UADB.

Health and Nutrition

1. LIBERIA: University of Liberia/Indiana University/University of Massachusetts Medical School: Center for Excellence in Health and Life Sciences

Managed Under Associate Award with USAID/Liberia # AID-669-LA-11-00001-00
Partnership Award Amount: $2,703,260
Partnership Period of Performance: 10/1/2011 – 6/30/2015

Partnership Overview:
This partnership is addressing the challenges faced by the University of Liberia (UL) and its sister public institution, the Tubman National Institute of Medical Arts (TNIMA), in supplying health care workers equipped to address Liberia healthcare needs. The U.S. partners have shared expertise in a variety of ways, from mentoring faculty and students, providing training, and developing proposals seeking additional funding.

The objectives of the partnership are:

- Improved delivery of health and life science programs at UL;
- Improved student access to education in and preparation for health and life science careers; and
- Increased the status and permanence of UL as a leader in the areas of health and life science education.

FY2014 Results Highlights:
UL continues to develop as a center of excellence in of health and life science education. Five individuals completed long-term training in FY14, obtaining Master degrees in the areas of public health, nursing education and analytical chemistry.

UL introduced applied learning opportunities into the curriculum of three programs, namely, (a) General Medicine & Pharmacy, (b) BSc Midwifery program, and (c) Certificate in Public Health practicum. Partners also revised three curricula including Public Health, Chemistry & Biology, and revised twelve courses and syllabi for remedial biology based on basic public health competencies as well as for undergraduate biology and chemistry courses. The partners had completed critical revisions to the life sciences curriculum, but it was very difficult to obtain program approvals through the UL faculty senate and there was only limited ability to hold planned faculty training.

Partners continue to collaborate on sustainability with stakeholders that include thirteen local, regional, and international organizations. Three proposals were developed and submitted for funding to different agencies in FY14.

Faculty and staff skills and knowledge have been improved and strengthened through short-term training sessions covering active learning pedagogical methods, use of test data, and leadership in nursing. The partnership delivered twelve short-term training sessions to a total of 426 participants. These trainings contribute to develop skills and knowledge of faculty members and staff at UL, TNIMA, and JFK in the areas of active learning techniques, use of case studies as an active learning technique; use of test data to improve multiple choice item construction and test reliability; models of leadership in nursing practice; and helping babies breathe techniques. The partners provided mentoring to 48 individuals, to develop skills through co-development of lesson plans and on-going professional exchanges of idea, information, skills, and methodology.

FY2014 was a challenging year for this partnership as they encountered a number of unforeseen implementation challenges including the Ebola outbreak, the resulting closure of the university and a broken generator.

The closure of the university in fall 2014 to prevent the spread of Ebola delayed the academic cycle. The Ebola outbreak disrupted planned teaching trips, visits and activities. CPH students and the Biology Student Association are to be commended for their aid to the country in response to the Ebola outbreak. They were deployed through the Ministry of Health and Social Welfare.

The main generator supplying power to the Engineering and Natural Science buildings on the Fendall campus was inoperable for six weeks in February – March 2014. The loss of power caused obvious disruptions to the faculty's ability to prepare and deliver lectures.

2. UGANDA: Makerere University/ Mississippi State University: Capacity Building in Integrated Management of Trans-Boundary Animal Diseases And Zoonoses

Managed Under Associate Award with USAID/Uganda # AID-617-LA-11-00001
Partnership Award Amount: $905,804
Partnership Period of Performance: 2/15/2011 – 6/30/2015

Partnership Overview:
The CIMTRADZ[5] partnership was implemented by North Dakota State University and Makerere University (MAK) between January 2011 and November 2014 and then transferred to Mississippi State University (MSSU) when the partnership director accepted a new position at that university. The partners are developing a coordinated surveillance system that will enable the assessment of risk and reduction of zoonotic diseases that endanger food security, trade and human productivity in Uganda and surrounding region. The partners will establish centers as focal points for this surveillance system. These centers based at institutions of higher education will conduct research and develop solutions in the area of assessment, communication and response to trans-boundary pandemic zoonotic and vector-borne diseases as well as endemic zoonotic and production-limiting animal diseases that jeopardize food security.

The partnership objectives are to:

- Improve Trans-boundary Animal Diseases and Zoonoses academic programs at Makerere University.

[5] CIMTRADZ – Capacity in Integrated Management of Trans-BoundaryAnimal Diseases and Zoonoses

- Improve human capacity at Makerere University & the ECA Region
- Improve research capacity at Makerere University & the ECA Region to generate & disseminate knowledge in IHM for TADZ.
- Strengthen the center of excellence at Makerere that provides academic, research, and community engagement leadership in IHM for TADZ.
- Improve community outreach and engagement program in the ECA Region.

FY2014 Results Highlights:

Implementation of activities was slowed down between September 2014 and March 2014 due to the transfer of the partnership to MSSU. The partnership revised 3 courses and purchased 113 new books for student and faculty use at MAK. A meeting among representatives of the University of Nairobi, MAK, Sokoine University, Columbus State University, Mississippi State University, University of Rwanda, Mekelle University and University of Saskatchewan was held to collaborate on a review of existing curricula related to the partnership focus. As a result, three courses common to all the partner institutions were revised: Law and Health Ethics, Applied Biostatistics, and Advanced Microbiology.

To address the partnership objective of improving human capacity at MAK and throughout the Eastern Central Africa Region, the partners conducted short-term training programs, and increased the access to tertiary education programs for individuals from underserved and/or disadvantaged groups, contributing toward improved teaching and research skills for TADZ[6] of MAK faculty and staff. The partnership provided ten short-term training sessions benefitting a total of 205 individuals (69 female). One of the partnership's most successful trainings was the E-learning workshop that was attended by 24 research students (9 female and 15 male) and helped the students develop skills to access and utilize online courses. During the workshop, the students were asked to identify potential multimedia assets aligned with their research proposals that could be used in both the online course and in feedback interactions with the farming communities.

Eight junior faculty members from MAK traveled to the MS State and MSU for three month exchange visits. These junior faculty members attended classes and worked with mentors to gain broader knowledge in their selected area of research. After completing these exposure visits, these junior faculty will give a presentation on their learning and cultural experience in the U.S. at MAK in early 2015.

As part of the inaugural summer school at MAK, the partnership conducted seven outreach/extension activities. The summer school students from Uganda, Kenya, Tanzania, Ethiopia, Rwanda and Tanzania traveled to the Eastern and Western regions of Uganda, including the Mbale small holder farmer communities, Bukedea Livestock Traders, Kumi (communal grazing community), Soroti, Kiblae National Park Community, Queen Elizabeth National Park Community, and Lake Mburo National Park Community

3. UGANDA: Makerere University, Schools of Public Health and Veterinary Sciences/Tulane University

Managed Under Leader Award # AEG-A-00-05-00007-00
Partnership Award Amount: $505,427
Partnership Period of Performance: 08/10/2013 – 12/31/2014

Partnership Overview:

With an overall goal of improving regional response capacity to human, animal and ecosystem health challenges in Eastern and Central Africa, the partnership between Tulane University and the One Health

[6] TADZ - Trans-Boundary Animal Diseases and Zoonoses

secretariat at Makerere University will increase problem-solving skills demonstrated by students and faculty, train grant writing and research skills, conduct collaborative research projects, increase self-efficacy among women students, faculty and practitioners in the veterinary and public health field, conduct training in leadership and conduct workshop series for One Health practitioners in the region, namely in Uganda, Tanzania, Ethiopia, Rwanda and Somalia. The One Health approach recognizes that human health, animal health, and ecosystem health are inextricably linked, and that collaboration across the sectors is needed to achieve more rapid, mutually beneficial and effective responses.

The major objectives of the partnership are:

- To build interdisciplinary and community based research skills among faculty and students in the Eastern and Central Africa Region; and
- To increase participation of women students, faculty and practitioners in leadership in Eastern and Central Africa

FY2014 Results Highlights:

The partnership conducted three short-term trainings reaching a total of 74 individuals (35 female) from the participating universities in the region. These trainings were in research skills, grant writing, and women's leadership. The grant writing workshop trained students how to classify different types of research, utilize professional networking and collaboration tools and discuss One Health approaches to research.
The partnership will award and report on seven research grants in FY2015, awarded via competition among those who attended the training. This partnership was granted no-cost extension through June 30, 2015 so that awardees given research grants by the partners could complete their research and prepare preliminary reports.

Human Rights

COLOMBIA HUMAN RIGHTS LAW SCHOOL PARTNERSHIPS PROGRAM

The partnerships under this Associate Award support the ongoing initiatives of the Government of Colombia and USAID/Colombia to improve respect for and protection of human and basic rights. Specific objectives of this program are to:

- Strengthen the institutional capacity of Colombian law schools to train future legal practitioners in human rights by introducing or strengthening curriculum in human rights as well as experiential models of legal education, such as clinics and externships;
- Enhance the outreach capacity of regional law schools to better serve vulnerable populations with limited access to or knowledge of the legal system through the creation of cross-regional law school human rights networks; and
- Equip future legal professionals with an understanding of national and international standards of human rights and the skills to support human rights reform in Colombia.

HED is supporting three partnerships involving eight Colombian law schools in three regions: Antioquia, Valle del Cauca and the Caribbean Coast under this Associate Award. During FY2014, the three partnerships made significant progress towards their objectives through the implementation of activities, resulting in increased capacity building among institutions, strengthen clinical work, and development of new synergies with external actors in pro of the promotion and protection of human rights in Colombia.

1. COLOMBIA: Universidad de Medellín/Universidad de Antioquia/Universidad Pontificia Bolivariana/Universidad Católica de Oriente/University of Minnesota, Twin Cities

Managed Under Associate Award with USAID / Colombia # AID-514-LA-12-00001
Partnership Award Amount: $1,250,000
Partnership Period of Performance: 10/19/2012 – 06/30/2015

Partnership Overview:
The "UMN-Medellín Human Rights Law School Partnership Program" is working to strengthen the capacities of four Colombian law schools to teach, research, and provide clinical legal representation toward the promotion of international human rights and the rule of law.

Objectives of the partnership include:

- To strengthen the institutional capacity of the Antioquia law schools to train future legal practitioners in human rights by expanding the curriculum and developing faculty expertise in human rights and the rule of law;
- To strengthen the capacities of the Antioquia law schools to better serve vulnerable populations in the areas of legal services and human rights litigation; and
- To enable students in the Antioquia law school consortium to be better prepared to protect human rights in Colombia.

FY2014 Results Highlights:

The partners continued to build faculty capacity in key human rights areas through facilitating the enrollment of three Colombian faculty in the Masters of Law program at the University of Antioquia (UDEA) and enrollment of one faculty member in the Masters in Human Rights and Democracy at the Facultad Latinoamericana de Ciencias Sociales (FLASCO) in Mexico. The partnership has also offered courses and workshops to 472 students and faculty on methodology for interviewing vulnerable populations, on forced disappearance and human rights, and on the national and international protection of human rights of women.

The Masters in Law curriculum at UDEA was revised with input from the University of Minnesota (UMN). The revisions highlighted the need to increase content in International Human Rights and Procedure, as well as interdisciplinary research methods and approaches. Human rights instruction and teaching methodologies were also strengthened through thirteen legal references and training materials developed and made available by the partnership in English and Spanish.

The Antioquia law schools' outreach capacity was broaden during this period through collaborations with UMN and initiatives among the clinical programs, civil society groups, international human rights organizations, and the local government. In FY2014, the partnership developed a shadow report on the rights of children in Medellin and Eastern Antioquia. The report was submitted to the relevant United Nations Committee, an engagement that resulted in increased law students' knowledge of national and international human rights standards, high impact advocacy strategies, and enhanced research skills. Furthermore, legal services were provided to vulnerable populations through more than twenty outreach activities conducted this year.

Through the aforementioned activities and faculty training, the partner institutions continue strengthening their clinical work and taking legal actions in both Colombia and international courts. In addition, the Antioquia Law schools have increased their commitment to the partnership by formally incorporating new faculty into the clinics.

Several Colombian students from the four law schools enhanced their lawyering skills and knowledge on human rights through three externships at UMN, and around twenty national and international human rights events and competitions. Such practical experiences enrich Colombian students' understanding of international standards on human rights law and equip them with resources to then contribute to case representation and clinical work.

2. COLOMBIA: Pontificia Universidad Javeriana Cali/Universidad Santiago de Cali/American University

Managed Under Associate Award with USAID / Colombia # AID-514-LA-12-00001
Partnership Award Amount: $1,000,000
Partnership Period of Performance: 10/19/2012 – 06/30/2015

Partnership Overview:
The "Human Rights Teaching and Research Partnership Program" seeks to strengthen the promotion and protection of human rights in Colombia through collaboration between American University (AU), Pontificia Universidad Javeriana Cali (PUJC), and Universidad Santiago de Cali (USC) in the Valle del Cauca region. With the overall goal of strengthening the capacities of Colombian regional law schools in the outlying and frequently conflict-prone regions of the country to provide formal and non-formal training in human rights, the partnership works toward the following objectives:

- To strengthen the institutional capacity of Valle del Cauca law schools to provide access to and train future legal practitioners in human rights;
- To enhance the outreach capacity of regional law schools to better serve Colombian vulnerable populations with limited access to or knowledge of the legal system; and
- To increase access to human rights tertiary education programs and equip future legal professionals with an understanding of national, regional, and international standards of human rights as well as the skills to support human rights reform in Colombia.

FY2014 Results Highlights:

In FY2014, the Valle del Cauca partners capitalized on their strengthened connections with local NGOs and governmental organizations and increased regional visibility as human rights advocates to meet emerging human rights needs across the Valle region. Partnership staff was invited to formally join regional networks such as the *Red ALAS (*the Network on Latin American Scholars), and participate in joint research initiatives with international organizations such as the International Detention Coalition based in Mexico City. Outreach efforts were expanded to vulnerable populations outside Valle's urban areas through legal brigades and workshops, mainly addressing women's rights and domestic violence. USC was able to collaborate with Women's Link International and ASOMUGEVIPAZ, a local women's NGO, in the design of those activities, while PUJC collaborated with the Municipal Government of Cali's Office on Peace Affairs (*Asesoria de Paz*).

The partnership also solidified commitments to strengthen human rights pedagogy, including PUJC's legal clinic formally shifting its focus to actively engage in high impact litigation cases going forward, and USC completing steps to institutionalize their legal clinic. New experiential learning modules and short-courses on human rights were taught for the first time, and human rights materials were shared among institutions and made available to faculty and students.

Capacity was built through forty-seven short-term trainings and two new experiential learning activities. Students were able to strengthen their lawyering skills through the Inter-American Moot-Court Competition in Washington, DC, and faculty reported having increased their skills to teach human rights courses by one hundred percent after completing workshops and trainings at American University Washington School of

Law. In addition, English courses were offer to faculty and students from USC and PUJC, focusing on legal vocabulary and oral language skills related to human rights promotion and protection.

3. COLOMBIA: Universidad del Magdalena/Universidad del Norte / University of Florida

Managed Under Associate Award with USAID / Colombia # AID-514-LA-12-00001
Partnership Award Amount: $757,179
Partnership Period of Performance: 10/19/2012 – 06/30/2015

Partnership Overview:
The "Building Human Rights Capacity in the Colombian Caribbean" partnership is working to establish a Colombian Caribbean Human Rights Center that will serve as the focal point for projects, activities and initiatives related to the partnership. The vision for the center is to become a sustainable and renowned center for building capacity in human rights in the Colombian Caribbean through rigorous interdisciplinary research, excellence in formal and informal education, and effective community service with differential emphasis on serving vulnerable populations.

Objectives of the partnership include:

- To strengthen institutional capacity of the Caribbean Coast law schools for the theoretical and practical training of future legal practitioners in human rights;
- To enhance outreach capacity of regional law schools to better serve Caribbean Coast vulnerable populations in the areas of human rights; and
- To equip future legal professionals at Caribbean law schools with the necessary understanding and skills to support human rights reform.

FY2014 Results Highlights:
The Colombian Caribbean Human Rights Center established through the partnership has been gaining regional recognition as the Universidad del Magdalena (UM) in Santa Marta and the Universidad del Norte (UN) in Barranquilla conduct activities through the center, including a Law & Policy Conference and the 15th Annual Conference of the Americas focused on Human Rights. The Center, housed at UM, was formally incorporated with the functions and by laws of the legal clinic, and UN launched the Center's website[7].

Institutional capacity of the Colombian law schools was also enhanced this year, through practical training programs and key exchanges with University of Florida faculty, including the Levin Visiting Scholar Program focusing on legal education. The three partner institutions have increased their involvement with one another through video conferences, research projects, and two-way visits seeking to support their law programs and other human rights efforts.

Student's skills and knowledge on human rights law were increased this year through a number of short-term trainings, among those a Human and International Humanitarian Rights in the context of the Caribbean *Diplomado,* which was completed by 171 students from UM. Advocacy, sustainable development and human rights, and gender were some of the other topics offered through training activities. This year the partnership reported that 194 Bachelors' degree recipients from UM and UN, received human rights instruction through workshops, experiential opportunities, courses, etc., supported by the partnership's efforts. This cadre of graduating law students will now be able to contribute to human rights awareness in their profession.

[7] http://www.uninorte.edu.co/web/derechoshumanos

In FY2014, the law schools' outreach capacity was fortified through clinical collaborations and legal services. The partnership undertook seven strategic litigation cases and provided legal assistance to 2,893 people from vulnerable populations in the region. Most notably, legal brigades were conducted by students thought the year in marginalized communities and local prisons in the Caribbean region. As a result, solid linkages have been built between UM and UN legal clinics and local organizations and communities.

Gender Equality and Female Empowerment

1. PAKISTAN: Fatima Jinnah Women University and Sardar Bahadur Khan Women University/California State University, Fullerton: Partnership for Women in Science and Technology

Managed Under Leader Award # AEG-A-00-05-00007-00
Partnership Award Amount: $199,999
Partnership Period of Performance: 3/7/2008 – 12/31/2013

Partnership Overview:
The three implementing partners are collaborating to increase access for women in Pakistan to academic opportunities at the undergraduate and master's level in fields related to science, technology, and engineering (STE) and to increase the opportunities open to women to participate in STE research in Pakistan.

The partnership focuses on increasing:

- The number of high school/junior college girls entering universities and choosing fields of STE;
- The capacity of the two partner universities in Pakistan to attract and train more women in the fields of STE;
- Internship and employment opportunities for women graduating in the STE from the partner universities in Pakistan; and
- Research and curriculum development collaboration between California State University Fullerton (CSUF) and the two universities in Pakistan in the fields of STE.

Summary of Results:
Scholarships were awarded to ten women from the Pakistani partner universities for graduate studies in their respective fields of study in STE disciplines. With full financial assistance from the partnership, the ten scholarship recipients, five from each of the two partner universities, have obtained master degrees in their respective STE fields of study. Nine obtained their degrees from premier universities in Pakistan while one obtained her degree from CSUF, United States.

Out of the ten, four have joined FJWU and three have joined SBKWU as faculty members in their parent departments. The two remaining scholarship recipients from SBKWU have been permitted by their parent university to pursue Ph.D. studies, which were supported by the partnership until December 31, 2013. These women, after completing their Ph.D. degrees will also join SBKWU as faculty members. The tenth scholarship recipient, from FJWU, left her parent university after teaching there for one semester.

Although, only seven of the scholarship recipients have joined their parent universities and some of those who have joined have not been given a full-time teaching load, their impact on enhancing the capacity of the two women's universities to admit and educate more women to their STE programs has been significant. According to the analysis of the partners, because of the newly trained faculty joining the universities,

SBKWU and FJWU have enhanced their capacities to admit and educate 16 and 37 additional students per year, respectively, in their science technology and engineering disciplines.

Once all the scholarship recipients start to teach on a full-time basis, each of the partner universities would have increased its capacity to admit and educate an additional 50 women in STE fields every year. This represents an increase of over 20% in the capacity of each of the two partner universities, which is within the target range set by the partnership.

WOMEN'S LEADERSHIP PROGRAM

Under the Women's Leadership Program (WLP), five universities in the United States have been selected to partner with higher education institutions in Armenia, Paraguay, Rwanda and South Sudan to promote gender equality and women's leadership. These five higher education partnerships are promoting curricula and opportunities for women in business, agriculture, and education in the targeted countries, thus supporting key national and local development goals aimed at fostering the advancement of women and girls as articulated in USAID's Gender Equality and Female Empowerment Policy, released in March 2012.

Using a collaborative approach to partnership, the WLP is designed to support access of women to higher education and advanced degrees, strengthen institutional capacity in research and education on women's leadership, and promote women's leadership through higher education extension/outreach efforts in underserved communities. Each partnership is focusing on advancing education in a specific sector area, and gender equity awareness is woven into the process.

Funding for the WLP partnerships has been provided by USAID/E3/ED with matching funds from the Missions. The program in Armenia is split funded between the Leader Award and an associate award with USAID/Armenia, and the program in South Sudan is fully funded by an associate award. The programs in Rwanda and Paraguay are fully funded through the Leader Award.

2. ARMENIA: Yerevan State University/Arizona State University: Advancing Gender Equality and Women's Empowerment

Managed Under Leader Award AEG-A-00-05-00007-00 and
Associate Award with USAID/Armenia # AID-111-LA-12-00001
Partnership Award Amount: $1,305,000
Partnership Period of Performance: 9/1/2012 – 6/30/2015

Partnership Overview:
The partnership between Yerevan State University (YSU) and Arizona State University (ASU) is focused on improving the capacity of YSU to advance women's leadership in Armenia through the establishment of a Center for Gender and Leadership Studies (CGLS) at YSU, curriculum revisions, faculty capacity building in policy research, support for YSU's career development office, and extension and outreach efforts to other nongovernmental organizations and higher education institutions in Armenia. The objectives of the partnership include:

- Enhance students' knowledge and skills and broaden attitudes related to women's leadership and options for career advancement;
- Strengthen the capacity of Yerevan State University to make research-based recommendations, with an emphasis on putting into practice national gender policy;

- Develop YSU's capacity to deliver coursework that addresses women's leadership and gender equality; and
- Promote women's leadership and gender equality through extension/outreach efforts at Yerevan State University.

FY2014 Results Highlights:
Under WLP-Armenia, six YSU faculty members completed "scholar-in-residence" programs at ASU during FY14. Each of the faculty members spent a semester at ASU attending classes, learning the latest research on pedagogy, and working with faculty from the Women's and Gender Studies (WGS) Program at ASU to develop syllabi for at least two courses focused on gender issues. The 13 new courses developed by the scholars-in-residence provided the foundation for the creation of a new master's program focused on gender and women's leadership that is anticipated to start admitting students in Fall 2015.

As part of its outreach efforts, the CGLS conducted two international conferences at YSU in FY14. The first conference took place in October 2013 and focused on gender issues in the labor market. The theme of the second conference, which was held in June 2014, was women's leadership in society. Both conferences included papers by YSU faculty, representatives of Armenia-based NGOs, and international participants.

The CGLS launched a small-grant program at YSU to enhance the capacity of Yerevan State University to make research-based recommendations, with an emphasis on putting into practice national gender policy. Twenty-five small grants (up to $5,000 each) were awarded during FY14. The small grant projects address a wide range of issues in the area of gender relations and women's advancement. Five of the projects were completed and their results were disseminated to stakeholder audiences and policymakers.

In addition, building on a survey of gender attitudes among YSU students that was conducted in 2013, the CGLS launched a large, nationally representative survey on gender-related perceptions and attitudes (the "Gender Barometer Survey"). The survey will greatly enhance CGLS research capacity and reputation and will provide valuable information to policy makers and the general public.

The YSU Career Center and the CGLS continued to conduct training sessions for YSU female and male students aimed at preparing them for success in the job market. During FY14, 73 students received training conducted by the Career Center on the development of management skills and entrepreneurial image and business etiquette. The CGLS also created a mentorship program that connects YSU female students with successful professional women who pass on their career skills to the mentees.

3. PARAGUAY: Universidad Nacional de Asuncion/The University of Florida: Women's Leadership Project in Paraguay

Managed Under Leader Award AEG-A-00-05-00007-00
Partnership Award Amount: $811,363
Partnership Period of Performance: 10/1/2012 – 6/30/2015

Partnership Overview:
As a part of the Women's Leadership Program in Paraguay, the University of Florida and National University of Asuncion (UNA) are collaborating to advance women's leadership and employability skills in the agricultural sector. The partners are offering gender and leadership trainings, incorporating gender-inclusive components and materials into the existing agricultural sciences curriculum, and promoting policies that create a favorable environment for gender inclusion and female access to higher education.

The partnership objectives are to:

- Promote and support women's access to the National University of Asuncion with a focus on developing leadership skills;
- Strengthen institutional capacity of UNA's School of Agricultural Sciences to produce strong female leaders through training in workforce leadership skills; and
- Develop sustainable alliances between UNA's School of Agricultural Sciences, civil society, and the public and private sector that promote the emergence of female leaders.

FY2014 Results Highlights:

In the second year of implementation, the partnership broadened its impact among rural communities in Paraguay by conducting a total of 99 outreach efforts (workshops, trainings, etc.) across 18 thematic activities related to gender and empowerment, women's leadership and entrepreneurship, women farmers, and agriculture. These efforts engaged students from Paraguayan agricultural high schools, women farmers, and members of agricultural cooperatives. Furthermore, as a result of the partnership's mentoring program, which recruited 318 mentors and mentees this year, 29 females (11 of them from underserved populations) were able to gain acceptance to the School of Agricultural Science on partial scholarships provided by UNA.

UF and UNA also continued to conduct trainings, workshops, and professional development sessions on critical topics, including leadership, teamwork, and collaboration; self-esteem and gender; career development; critical thinking and mentoring; public speaking; and digital media and communications. Through these trainings, they were able to reach approximately 1,000 faculty and students. In total 1,708 people directly benefited from the partnership's activities in FY14.

Finally, through strategic alliances established during FY13 with ACDI/VOCA and the Federation of Production Cooperatives (FECOPROD), the partnership was able to offer 5 internship opportunities to 5 FCA students and 4 practical experiences to students members of the UNA mentorship program during this fiscal year. Additional collaborative agreements were initiated during this year that are expected to be formalized and implemented in the first quarter of FY15. Such synergies will help enhance the students' practical experience and contribute to the partnership's long-term sustainability.

4. RWANDA: University of Rwanda - College of Education/University of California, Los Angeles: Promoting Gender Equity and Female Empowerment

Managed Under Leader Award AEG-A-00-05-00007-00
Partnership Award Amount: $1,079,996
Partnership Period of Performance: 11/1/2012 – 6/30/2015

Partnership Overview:

The partnership between the University of Rwanda - College of Education (URCE) and the University of California, Los Angeles is strengthening the capacity of the URCE and its affiliated Teacher Training Colleges to take the lead in promoting gender equity and female empowerment through education. The partnership's objectives are to:

- Increase the number of highly qualified and gender-sensitive female teachers in Rwanda by promoting and supporting women's access to URCE and affiliated Teacher Training Colleges (TTCs);
- Better inform URCE's institutional policies and practices through gender-focused research and capacity building; and
- Improve the capacity of URCE to train in the integration of gender equity in the classroom in order to prepare primary school teachers to address gender equity in the classroom through pedagogy, course content and classroom management techniques.

FY2014 Results Highlights:
During FY14, the WLP Rwanda Education partnership faced administrative challenges that impacted the partnership's implementation as URCE (formerly the Kigali Institute of Education) became part of the University of Rwanda system. The reorganization resulted in two of the partnership's host-country implementation partners (Faculty of Education and Center for Gender, Culture, and Development) being housed in separate colleges. The partnership addressed this challenge by revisiting the program implementation plan, updating the partnership framework to reflect the new situation, and intensifying activities.

The partnership held its launch accompanied by a series of workshops in November 2013. The workshops were designed to provide a foundation for the partnership's gender, mentoring/outreach, and distance learning activities. The sessions were held on URCE's campus and were attended by more than 150 trainees from the TTCs, URCE, private universities and colleges, NGOs, and government institutions. The workshops focused on integrating gender into research and teaching, improving girls' educational performance and outcomes in the classroom, and developing successful outreach and mentoring strategies for underserved populations.

The WLP-Rwanda Education partnership also provided advanced mentoring training to a group of mentors from URCE and TTCs in April 2014. This training was in preparation for the implementation of mentoring programs in their institutions. The mentoring programs will be launched in FY15.

In July 2014, two weeks of Advanced Microsoft Access and Excel training was provided to participants with reporting responsibilities within URCE. The goal of the training was to provide them with the tools needed to expertly use Access and Excel to develop reports and organize information and data. This training also prepared them for a follow-on workshop on enhancing data gathering methods and decision-making processes that was held in August 2014.

In September 2014, a gender-focused research workshop was conducted for senior URCE researchers on incorporating gender into their work. The training provided background on gender research methodology as well as insight into how gender concepts can be incorporated into research in a variety of disciplines. At the end of workshop, a grant competition for URCE faculty to incorporate gender into a research topic was launched with the winners expected to be announced in early FY15.

In partnership with Microsoft and BrainShare (a Ugandan based software company), the partners also developed an online platform for a post-graduate degree program that will be launched during FY15. Microsoft underwrote the devices for this program. In addition, the partners developed a curriculum for a primary education degree targeting those with certificates who are interested in earning a degree. This curriculum is currently under review.

5. RWANDA: University of Rwanda-College of Agriculture, Animal Science and Veterinary Medicine /Michigan State University: Rwanda Women's Leadership Program in Agriculture

Managed Under Leader Award AEG-A-00-05-00007-00
Partnership Award Amount: $1,280,000
Partnership Period of Performance: 11/1/2012 – 6/30/2015

Partnership Overview:
The goal of the WLP Rwanda Agriculture partnership is to strengthen the capacity of the University of Rwanda to advance women's leadership in the field of agriculture. The University of Rwanda's Faculty of

Agriculture is collaborating with Michigan State University to create a gender-sensitive Master of Science in Agribusiness. The MSc will promote women's leadership in agriculture, lead to increased opportunities for export, and train agribusiness professionals with strong analytical and business development skills. The graduate program will prioritize access for women and mid-career professionals through flexible delivery options, incorporate extensive experiential learning and career development opportunities, including internships and a mentoring program, and result in graduates with highly employable knowledge and skills.

Partnership Objectives:

- Strengthen the human and institutional capacity of University of Rwanda in teaching and applied research in agricultural sciences;
- Promote and support women's access to graduate education in agricultural sciences; and
- Extend University of Rwanda's knowledge about, and women's expertise in, agricultural sciences to the community.

FY2014 Results Highlights:

During this reporting period, the partnership strengthened institutional capacity to train women leaders in agribusiness by gaining final approval for the Master of Science in Agribusiness and by preparing the instructors of the program for the first day of classes. In order to achieve this, partners successfully navigated the challenges of the curriculum approval process and prioritized faculty training as a critical component of the master's program's success.

Partners laid a strong foundation for the Master of Science in Agribusiness program by training the program instructors in pedagogy, student advising, e-learning, and gender sensitivity throughout FY14. The e-learning workshop, which was held in April 2014, was particularly successful in terms of introducing the use of e-resources in classroom and research environments. In June 2014, a group of University of Rwanda project personnel and program instructors came to the United States for capacity building in their respective areas of project responsibility. The trip focused primarily on faculty development through pedagogical theory and hands-on learning activities. The workshop topics focused on backward curriculum design, syllabus design, student performance assessment, and experiential learning. Time was also spent addressing gender sensitivity and student development in the classroom.

Finally, partners organized a successful research exchange. The exchange included five MSU researchers and one Washington state researcher as well as five full research teams from UR in the areas of nutrition, coffee value chains, soil health, and animal nutrition. The exchange produced five new research proposals that will be submitted for review and approval.

6. SOUTH SUDAN: University of Juba/Upper Nile University/Indiana University: South Sudan Higher Education Initiative for Equity and Leadership Development (SSHIELD)

Managed Under Associate Award with USAID/South Sudan # AID-668-LA-12-00004
Partnership Award Amount[8]: $3,283,212
Partnership Period of Performance: 3/1/2013 – 6/30/2015

Partnership Overview:

Under the South Sudan Higher Education Initiative for Equity and Leadership Development (SSHIELD) partnership, Indiana University (IU) is increasing the capacity of educational leaders in South Sudan, particularly women, to address the needs of students and teachers in conflict-affected areas. Indiana

[8] The partnership award was reduced to $3,283.212 effective August 1, 2014.

University is providing scholarships to South Sudanese women to complete Master's in Secondary Education degrees and providing visiting faculty appointments to South Sudanese faculty members to adapt courses to the South Sudanese context and engage in co-teaching, research, and mentoring activities.

SSHIELD's objective is to prepare South Sudanese educators to address the needs of educational institutions, teachers, and students in a conflict-affected environment.

FY2014 Results Highlights:

In the first quarter of FY14, SSHIELD conducted the recruitment process for the planned Master's in Education degree program at University of Juba. A recruitment ad was developed and sent to newspapers and state ministries of education. With support from USAID South Sudan, the in-country partners conducted radio interviews to raise awareness about the program and began the process of collecting applications. SSHIELD also refurbished space at the University of Juba, including office space for in-country staff, bathrooms for female students and faculty at the College of Education, and space for a Teaching and Learning Resource Center (TLRC). In addition, SSHIELD conducted three faculty workshops in research, curriculum revision, and mathematics teaching methodology and started making school visits.

In December 2013, South Sudan began experiencing extreme civil unrest that resulted in the cessation of programmatic activities at the direction of USAID. In response, SSHIELD partners proposed to refocus the program to be more responsive to the security situation, concentrating partnership efforts towards social cohesion and peace building goals. They proposed bringing 14 South Sudanese graduate students to the United States for a course of study leading to a master's degree that was specially designed by Indiana University. They also proposed to bring 7-8 South Sudanese faculty members to Indiana University on 6-month visiting faculty appointments.

Beginning in March 2014, with USAID and HED approval, the partners proceeded with this new plan. Admissions tests and interviews of the final Master's in Education program candidates were held in Kampala, Uganda. Twenty women participated in the interviews and workshops, and 14 of the applicants were selected and notified of their acceptance; all accepted.

In July 2014, the 14 master's students began their pre-program preparation with a 5-week English language intensive training and a computer course at Makerere University in Uganda. While at Makerere University, the 14 master's students also took their first master's course taught by IU faculty. In August, the master's students travelled from Uganda to Indiana University and began their Fall semester coursework, including a yearlong seminar on Education for Democratic Citizenship and Peace-building for South Sudanese.

During this time, 12 South Sudanese faculty from 4 universities were recruited and interviewed for the faculty training program, and 8 faculty were selected. These faculty members will travel to Indiana University for their visiting faculty appointments in January 2015.

With SSHIELD's programmatic activities of the SSHIELD program moving to Indiana University, the Juba office was closed in September 2014. The TLRC Lab, including furniture, library reference books, and 12 computers, was left to the University of Juba, College of Education and will continue to be used as a primary training and meeting space for the college's faculty and students.

Climate Change and Adaptation

1. BURKINA FASO: International Institute for Water & Environment Engineering (2IE)/Tuskegee University: Africa-U.S. Network of Centers of Excellence in Water and Environmental Science & Technology

Managed Under Leader Award # AEG-A-00-05-00007-00
Partnership Award Amount: $1,274,370
Partnership Period of Performance: 3/15/2011 – 06/30/2015

Partnership Overview:
Tuskegee University and Burkina Faso's International Institute for Water and Environment Engineering (2iE) are collaborating to establish 2iE as a center of academic, research and outreach excellence in the areas of water, environmental engineering, and climate change in West Africa. The partnership was transferred to University of Mississippi, when the partnership director accepted a new position at that university. The partnership has the following major objectives:

- To increase the competitiveness of academic offerings at 2iE in the areas of water, environmental engineering, energy, minerals and climate change;
- To increase the research capacity of 2iE and partnering institutions in the areas of water, environment, climate change, minerals and renewable energy disciplines; and
- To enhance the capacity of 2iE to conduct outreach activities locally and regionally and identify entrepreneurial opportunities.

FY2014 Results Highlights:
Students from throughout West Africa have benefitted from the institutional capacity developed through this partnership through participation in new MSc programs at 2IE developed through this partnership. Twelve students (two female) out of a class of sixteen completed their MS degree program in Mining Management at 2iE in FY14, including a required internship program for experiential learning. The remaining four students will graduate in FY2015.

One 2iE faculty member is enrolled in a long-term training program and pursuing a PhD on flow process and expected to defend his thesis in February 2015.

Five short-term trainings were offered by the partners on FY14, benefitting five faculty members (1 female), strengthening skills and knowledge of faculty, students and staff at 2iE. The training workshop on fundraising and proposal writing resulted in a successful proposal on West African climate change that was selected for funding under the Future Climate for Africa programme of the EU.

Strengthened institutional research and community outreach capacities of 2iE were evident in five joint research projects including:

- Planted filters and treatment of sludge in the Sahelian climate:
- Biological and sanitation risks assessment linked to reuse of treated waste water and human excreta in gardening agriculture in the Northern Sub-Sahara
- Performance and feasibility in Sahelian conditions of drinking water treatment polluted by arsenic using membranes techniques
- Drainage of Tropical Savannah valley bottoms in order to alleviate iron toxicity of irrigated soils
- Production, characterization and evaluation of biochar for carbon sequestration and soil amendment

The partnership conducted four outreach activities, including the Africa Water Forum and Enterprise Days held at 2iE. Enterprise Days, held in June 2014, is an annual event that brings together students, graduates and potential employers and provides an opportunity for job seekers to meet with recruiters, build a professional network and explore different careers and opportunities.

At a similarly success event, 2iE worked with the government of Burkina Faso to organize the African Water and Sanitation Forum: Africa Water Forum 2014, in partnership with the African Ministers' Council on Water (AMCOW) and the World Water Council. This was an opportunity for higher education expertise to inform the post-Millennial Develop Goals strategy for Africa and to develop a united agenda for the 7th World Water Forum, which will be held in Daegu (South Korea) in April 2015.

2. BARBADOS: University of the West Indies/Columbia University: Building Capacity to Manage Climate Risk and Water Resources in the Caribbean

Managed Under Leader Award # AEG-A-00-05-00007-00
Partnership Award Amount: $ 1,484,697
Partnership Period of Performance: 7/15/2012 – 06/30/2015

Partnership Overview:
The Caribbean Region Climate Adaptation Partnership seeks to foster climate-smart development in the Caribbean region by improving the capacity of the University of the West Indies' (UWI) Centre for Resource Management and Environmental Studies (CERMES) and the Caribbean Institute of Meteorology and Hydrology (CIMH, an independent research and training center affiliated with UWI), to study and manage water resources and climate related risk. Three institutes of Columbia University: the International Research Institute for Climate and Society (IRI), Columbia's Water Center and the Center for New Media Teaching and Learning, are working closely with CERMES and CIMH to improve the capacity of students and professionals to predict, respond, and create policies relating to climate change.

Specific objectives of this partnership are to:

- Improve the institutional capacity of CERMES and CIMH to train professionals and graduate students in issues surrounding climate risk and water resources management;
- Enhance the capacity of Caribbean students and professionals to manage climate and water-related risks; and
- Form and inform a community of practice around water and climate risk management in the Caribbean.

FY2014 Results Highlights:

To improve the capacity of the University of the West Indies (UWI) to train professionals and students about the relevance of climate information for water-related decision-making, the partners continued to offer four Water and Climate Education (WACEP) short courses. Targeting professionals throughout the Caribbean, partners are finding increased demand for the courses and are thus working to institutionalize the offering through the UWI Masters in Sustainable Development track. The courses will focus on Climate Prediction, Water Sustainability and Climate, Climate Information, and Water Policy.

In 2014, partners also offered four key trainings on climate related tools for sustainability planning, adaptation and mitigation in the Caribbean disaster risk management sector. Held in Antigua, Barbados, Jamaica and Trinidad, the workshops taught participants how to use the partnership's recently developed climate impacts database for flood, disaster, and situation monitoring and reporting. These efforts have

strengthened the ongoing collaboration between Caribbean forecasters through early-warning and early detection forecasting.

3. ETHIOPIA: Addis Ababa University/University of Connecticut: Sustainable Water Resources: Capacity Building in Education, Research and Outreach

Managed Under Associate Award with USAID/Ethiopia # AID-663-LA-11-00001
Partnership Award Amount: $2,456,285
Partnership Period of Performance: 1/14/2011 – 6/30/2015

Partnership Overview:
The vision of the partnership is to establish a long-term, mutually beneficial academic partnership between the University of Connecticut and Addis Ababa, Mekelle, Hawassa, Arba Minch and Bahir Dar Universities to train the next generation of professionals and practitioners who can develop and manage Ethiopia's water resources in a sustainable and productive manner.

Between FY11-FY13, partners built capacity in graduate-level education, research, outreach and institutional development in sustainable water resources management. Through the establishment of the Ethiopian Institute of Water Resources (EIWR), partners strengthened academic programs and community outreach related to sustainable water resource management, clean energy production, improved human and environmental health, and the advancement of educational opportunities around food security and socio-economic development.

Starting from FY13, the partnership is focusing on Water, Sanitation and Health (WASH) activities. The partners designed new MSc and PhD degree programs in 'Water & Wastewater Treatment' and 'Water & Public Health.' The partner universities are collaborating to produce skilled professionals who can address development challenges through demand-driven and problem-solving research and community engagement. Community engagement is focused on addressing community challenges in the areas of hand washing and access to clean drinking water. Participation and engagement among women in all activities is a priority for the partnership.

The objectives of the partnership are:

- Increased ability of Ethiopian tertiary educational institutions to offer relevant and high quality education in water and health;
- Enhanced ability of higher education institution to conduct quality research in Water and Health;
- Improved outreach and community engagement; and
- Continued development of Addis Ababa University's EIWR (Ethiopian Institute for Water Resources).

FY2014 Results Highlights:

Partners made substantial progress towards improving outreach and community engagement during FY14. Partners constructed innovative latrines in two schools near Hawassa, in partnership with Hawassa University. Over 3,271 students and teachers benefit from the latrines. They also conducted a large-scale summer outreach activity in consultation and implementation with the five partner universities (AAU, Mekelle, Arbaminch, Hawassa, and Bahir Dar). The project engaged 96 undergraduate students in community development and action research. The students educated up to 12,695 individuals about critical moments of hand-washing and they completed research projects based on their findings. Progress was also made towards building a de-fluoridation vessel, which will be placed at the site of an existing borehole at Kori, in the Afar Region, reducing health risks to the local communities from high levels of fluoride.

Partners offered a series of seminars, workshops, and research activities during FY14. One of the seminar series featured the following relevant topics; *Conversion of Wastewater to Electricity in Microbial Fuel Cells*, *Methods for Landslide Prediction*, and *Climate Change & Human Health*. In line with their objective of developing the Ethiopian Institute of Water Resources, partners enhanced research laboratories and presented research findings to the community.

Additionally, EIWR organized its first annual symposium entitled, 'Water Resources Management'. The symposium provided an opportunity for all 30 PhD students (Water Resource Engineering and Management and Water and Health) to present their research work and receive feedback from community and industry stakeholders.

Partners crossed a significant milestone in terms of strengthening specialized skills within water and health with the graduation of 20 MSc students. Two were from the Water, Resources, and Engineering Management (WREM) program and 18 were from the Water and Health program. Partners held a graduation ceremony that was well attended by community members, industry stakeholders, members of local government, and representatives from USAID. Degree completion is a high priority for the partner institutions and during the past year partners hired research coordinators to guide and monitor graduate students in different educational tracks (MSc, PhD, WREM, WASH) towards degree completion.

Initiative for Conservation in the Andean Amazon (ICAA)

The ICAA Higher Education Partnership Program seeks to further engage and strengthen the capacity of regional universities in Colombia, Ecuador and Peru to promote biodiversity conservation and maintenance of the Andean Amazon Biome. HED and its implementing university partners are working in close collaboration with existing ICAA support units and USAID to address country-specific challenges and work towards the following objectives:

- To strengthen the institutional capacities of local universities in the Andean Amazon region to provide high-quality degree and/or certificate training in fields relevant to biodiversity conservation and resource management;
- To enhance the ability of local universities and organizations in the Andean Amazon region to conduct and disseminate applied research in fields relevant to biodiversity conservation and resource management; and
- To strengthen the ability of local universities and organizations in the Andean Amazon region to work collaboratively and across the region to address key environmental issues and contribute solutions to these issues.

4. PERU, ICAA: Universidad Nacional de Ucayali/University of Richmond: Building Conservation Capacity for a Changing Amazonia

Managed Under Associate Award with USAID/LAC # AID-OAA-LA-11-00005
Partnership Award Amount: $749,998
Partnership Period of Performance: 12/01/2012 - 6/30/2015

Partnership Overview:
Building upon an academic partnership that was initiated five years ago amongst the intuitions, the University of Richmond and Universidad Nacional de Ucayali (UNU) are collaborating to build conservation capacity in the Peruvian Amazon. Utilizing three complementary student-centered approaches, partners are integrating an applied, interdisciplinary, science-based certificate program into the existing undergraduate curriculum at UNU and strengthening faculty expertise; expanding applied, science-based undergraduate student research

theses and internships in collaboration with government and nongovernmental partners; and motivating faculty and student research through creation of an interdisciplinary environmental science journal and editorial structure.

Students are being mentored by NGO leaders (such as the Upper Amazon Conservancy and the Ucayali Regional Organization for Indigenous Peoples) and university faculty. They are conducting field research in the understudied Yurua region of Peru, where relatively intact forests provide an opportunity to assess the impacts of selective logging, alternative land tenure regimes, and other factors impacting on biodiversity. The bottom-up, landscape-scale partnership approach strengthens workforce development by training and working with students and faculty at UNU and encourages community participation in decisions with environmental impacts.

FY2014 Results Highlights:

Partners continue to strengthen the institutional capacity of Universidad Nacional de Ucayali (UNU) in Peru to train professionals in biodiversity conservation by enhancing existing or creating new curricula offerings. A recently established pilot interdisciplinary environmental certificate program continues to witness robust student participation rates. As part of this certificate program, the partnership supported pioneering fieldwork by students in the Yurua district and Purus province of the Peruvian Amazon. The field visits enabled UNU students to conduct applied research focused on varied environmental topics and engage with indigenous communities to learn about the cultural and human-environmental geography of Amazonian forests. Furthermore, the certificate offering has expanded the applied research network of Universidad Nacional de Ucayali to approach regional problems from multiple perspectives. As partners move into the final year of project implementation, Universidad Nacional de Ucayali will be pursuing the possibility of permanently allocating funds to institutionalize the environmental certificate program.

In 2014, partners have also facilitated the creation of an editorial committee for a special edition of the UNU research journal. The committee will review student scientific manuscripts and contribute towards the institution's ability to successfully disseminate student thesis research results. This is a key success given that the university has never before adopted such a rigorous peer review process for journal guidelines.

5. BRAZIL & PERU, ICAA: Universidade Federal do Acre/Universidad Nacional Amazonica de Madre de Dios/University of Florida: Strengthening Alliances between Universities and Other Research Organizations to Build Capacity for Applied Environmental Research in the Andes-Amazon Rim

Managed Under Associate Award with USAID/LAC # AID-OAA-LA-11-00005
Partnership Award Amount: $749,961
Partnership Period of Performance: 12/01/2012 to 6/30/2015

FY2014 Results Highlights:

In 2014, HED approved a revised subagreement approach to mobilize the expertise and resources of the University of Florida to support local and regional development challenges as related to the maintenance of the Andean Amazon Biome in Brazil and Peru.

To develop professional competencies and skills in faculty and students in biodiversity conservation, University of Florida partners offered a series of workshops on publications, featuring data analysis and write-up. The workshop on publishing in international scientific journals was held at Universidade Federal do Acre (UFAC) in Rio Branco, Brazil with attendees from Brazil, Colombia and Peru. Faculty from UFAC's Masters programs in Ecology and Sustainable Regional Development were present and their involvement is critical

given currently insufficient faculty research productivity in terms of publication and indexed scientific journals.

Six small collaborative research projects between Universidad Nacional Amazonica de Madre de Dios (UNAMAD) faculty and students in Puerto Maldonado, Peru also have been developed and the respective teams submitted their methodological protocols for approval. Each project has a highly focused research question and data collection task, and is designed to generate findings relevant to public policy in Peru. UNAMAD is a relatively young institution with limited research experience. As such, the collaborative research strategies are a mechanism to build capacity of individuals at UNAMAD and enable faculty to gain additional research experience to further support UNAMAD as a key entity for production of applied research in Madre de Dios.

6. COLOMBIA, ICAA: Pontificia Universidad Javeriana/Universidad de la Amazonia de Florencia/Florida International University: Strengthening Local Capacity for Prioritizing Conservation Research and Action in the Colombia Andean-Amazon: A Networked Approach

Managed Under Associate Award with USAID/LAC # AID-OAA-LA-11-00005
Partnership Award Amount: $749,961
Partnership Period of Performance: 12/01/2012 to 6/30/2015

Partnership Overview:
Florida International University, the Pontificia Universidad Javeriana and the Universidad de la Amazonia's campus in Florencia are partnering to strengthen the capacity of Colombian higher education institutions to address conservation challenges in the Colombian Andean Amazon and other threats specific to the region. This inter-institutional collaboration (including the participation of non-university partners such as The Field Museum of Natural History) supports biodiversity conservation by strengthening the capacity of Colombian universities to provide high-quality training through curriculum creation and development, the establishment of a network of opportunities to facilitate student research at experiential stations, and professional development and scientific exchange opportunities for faculty members.

With two main centers of operation in Colombia, one located in Florencia and the other in Leticia, the partners are building the capacity of faculty and students to conduct applied research through mentoring opportunities, and developing field research opportunities in the Putumayo and Caquetá River systems. Research will be disseminated through a variety of outlets, including a "citizen science" component based on the highly successful Fairchild Challenge program in which primary and secondary school students develop biodiversity conservation critical thinking skills. A Research Collaboration Network will be organized to assess the state of scientific knowledge, identify pressing research questions, and inspire new proposals on critical conservation issues in the Andean Amazon.

FY2014 Results Highlights:
In 2014, partners continued to contribute towards improved policies within the context of their respective consortium arrangements. Notably, Florida International University and Pontificia Universidad Javeriana have signed a five-year collaboration agreement to increase interdisciplinary and inter-institutional collaboration for biodiversity conservation in the Amazon region. Partners have strategically outlined how to take best advantage of the remaining months of their HED partnership to facilitate strengthened ties amongst the universities and further support biodiversity research and educational programming.

A professional certificate program for professionals working in fields related to biodiversity conservation has been developed by partners in conjunction with stakeholders such as Parques Naturales y Nacionales de Colombia, U.S. Department of Interior, and Patrimonio Natural to address capacity needs and gaps in their respective organizations. These Integrated Amazon Conservation & Sustainable Development diplomado courses will be credited by Pontificia Universidad Javariana's Office of Continuing Education and the U.S. Department of Interior has expressed an interest in incorporating professionals from beyond just Colombia in the courses. Partners have highlighted their efforts to leverage funding support for the certificate offering. The partner institutions are funding all programming as related to the diplomado offering utilizing their own funds.

7. ECUADOR, ICAA: Universidad San Francisco de Quito/University of North Carolina, Chapel Hill: Improving University Education and Outreach on the Ecuadorian Amazon

Managed Under Associate Award with USAID/LAC # AID-OAA-LA-11-00005
Partnership Award Amount: $749,915
Partnership Period of Performance: 12/01/2012 to 6/30/2015

Partnership Overview:
The University of North Carolina and the Universidad San Francisco de Quito (USFQ) are collaborating to strengthen USFQ's capacity to provide high-quality education on the Ecuadorian Amazon, conduct and disseminate applied research relevant to biodiversity conservation and resources management, and work collaboratively with partner institutions also funded by USAID in the Andean Amazon. Of strategic importance is the creation of five new graduate-level courses in Ecology and a specialization in Amazonian studies within the Master of Science in Ecology program at USFQ, which will strengthen Ecuador's capacity to educate, conduct applied research, and thereby develop more sustainable development policies to protect the Ecuadorian Amazon.

Master's degree students (particularly women and those of indigenous descent) are being supported through research scholarships, graduate fellowships, and increased experiential learning opportunities and field trips to USFQ's Tiputini biological research station. Partners are also collaborating on joint-research projects and engaging the larger academic community and the public and private sector in Ecuador as well as the greater Amazon region in presenting research findings and policy recommendations.

FY2014 Results Highlights:
In 2014, the Universidad San Francisco de Quito in Ecuador finally received approval from the Ecuadorian Ministry of Higher Education for five new graduate-level courses in Ecology and a specialization in Amazonian studies designed within the Master of Science in Ecology program. The approval of the new academic offering by the Ecuadorian government ensures continued strengthening of Ecuador's capacity to provide high-quality education on the Amazon and sponsor research leading to policy recommendations to protect the region.

Key partner meetings and workshops have been conducted with Ecuadorian public and private sector stakeholders to generate awareness of and interest in the new Masters of Science in Ecology offering. The partners expect that Amazonian universities such as IKIAM Amazon University in Tena and Universidad Estatal Amazónica in Puyo will serve as feeders into the new Specialization and that the Escuela Politécnica Nacional faculty will mentor Master's thesis students.

SUCCESS STORY

Armenian Partnership Navigates Path to Women's Empowerment

Center for Gender and Leadership Studies Educates Faculty, Students and the Community

Arizona State University/Yerevan State University

Photo courtesy of Andy DeLisle, ASU

Yerevan State University scholars (l-r), Tatevik Sargsyan, Lilit Shakaryan, Anna Gevorgyan, and Ani Kojoyan, prepare for their weekly seminar on research and pedagogy as part of the semester-in-residence program at Arizona State University.

Since 2012, Arizona State University (ASU) and Yerevan State University (YSU) have partnered to develop YSU's capacity to deliver women's leadership education and enhance the quality of information regarding women's leadership and gender issues available to students, faculty, and the local community in Armenia. This higher education project is funded by U.S. Agency for International Development through Higher Education for Development's Women's Leadership Program (WLP).

Although promoting gender equality and female empowerment are part of Armenia's development goals, the higher education partnership's activities including holding seminars, revamping curricula, and planning for a master's degree program in women's and gender studies have not been without challenges. "It's very important to realize it is a really sensitive issue in Armenia," said Victor Agadjanian, a U.S. co-partnership director and professor at ASU. "No one is opposed to women's rights in principle, at least explicitly." However, Agadjanian said, "Some people find that promoting gender equality is not necessary, should not be prioritized, or even that it undermines Armenian families and the traditional roles that women hold in that society."

The partners' establishment of a Center for Gender and Leadership Studies (CGLS) in May 2013 is the cornerstone of women's leadership education and outreach at YSU and provides opportunities for individuals in the academic and non-academic community to discuss and learn about gender and women's leadership. "The center is the most important investment in the project," said Agadjanian.

"Education is a core thing in [a] woman's life which should be fostered actively."

—Ani Manukyan, Yerevan State University

Under the WLP, the CGLS conducts seminars and international conferences, coordinates a professional mentoring program, offers faculty opportunities to carry out applied policy research through a small grant program, conducts various outreach activities, and develops and teaches courses on women's and gender issues. Four YSU scholars, Tatevik Sargsyan, Anna Gevorgyan, Ani Kojoyan, and Lilit Shakaryan, have completed a semester-in-residence program at ASU's Melikian Center, which allowed them to return to YSU with upgraded curricula and modified syllabi. "I have seen what democracy and gender equality look like and I am excited to see them in my country—not only on the level of written laws, but also on the level of unwritten laws during daily life," said Gevorgyan, who is pursuing her Ph.D. in research and created courses on "Women and Islam" and "Women and Religion" during her semester-in-residence at ASU.

Current semester-in-residence scholar Ani Manukyan also serves as the outreach coordinator for CGLS. She plans to develop syllabi on "Women in Transition Periods" and "Women and Leadership in the West and in Post-Soviet Countries." She is studying the history of women's issues in the United States and has begun to notice similarities to today's Armenia. "Education is a core thing in [a] woman's life which should be fostered actively. The establishment of the YSU['s] CGLS became a turning point in the academic and social life of Armenia."

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SUCCESS STORY

Sustainability Centers Offer Tunisians Work Experience at Local Businesses

Institut Supérieur des Etudes Technologiques Médenine, Institut Supérieur des Etudes Technologiques Tataouine, University of Colorado Boulder

Photo: Jeanne-Marie Duval, HED

ISET Tataouine and ISET Médenine in Tunisia are working together with the University of Colorado Boulder to promote energy technologies and create centers for sustainable solutions for the industrial sector.

"[T]eachers and local communities…rely heavily on this partnership, because it gives opportunities for technical skills in energy efficiency and entrepreneurship, improves education in ISET and [helps] find sustainable solutions for local industry by using renewable energy."

- Sami Chibani, Director of Sustainable Solutions Center at ISET Médenine

Creating jobs for residents and providing sustainable development opportunities to the local population are just two of the goals Fathi Guemri says he hopes to achieve as part of a Department of State-funded project between the Tunisian Institut Supérieur des Etudes Technologiques (ISETs) in Tataouine and Médenine and the University of Colorado Boulder. In 2011, Tunisia's unemployment was reported at 18.3 percent, according to data from the World Bank, and this project is designed to lower that high number through revised curricula for ISET students and trainings for faculty members like Guermi.

As part of the project activities, Guermi now directs the Sustainable Solutions Center in Tataouine, one of two in the country established under the partnership, which is funded by the U.S. Department of State through Higher Education for Development (HED).

Both Guemri and Sami Chibani, director of the center in Médenine, spent nearly two months this past summer at the University of Colorado Boulder receiving training on managerial skills for their centers in Tunisia. They agree that the centers' main purpose is to stimulate employment and entrepreneurial opportunities to communities. The centers are expected to benefit a total of 225 students at the ISETS throughout the duration of the partnership. According to Chibani, "[T]eachers and local communities…rely heavily on this partnership because it gives opportunities for technical skills development in energy efficiency and entrepreneurship, improves education in [the] ISET and [helps] find sustainable solutions for local industry by using renewable energy."

Guemri also noted that there has been a positive impact for the students. At one of the sessions, "the ISET students…were able to meet the larger Tataouine community including local business owners and [an] NGO working on economics and development."

Guemri also noted that, "The center hopes to focus its efforts on helping establish micro-enterprises that create local jobs and provide sustainable development opportunities to the local population." In fact, two projects have already started at the center in Tataouine, one involving the Society of Industrial Water Conditioning Mineral and another with Tunisia Telecommunication.

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SNAPSHOT

Technology Links Universities and Advances Human Rights Law Education in Colombia

Partnership offers access to blended technology education in Colombia's Antioquia region

Photo Courtesy of Universidad de Antioquia

Faculty members at the University of Minnesota work closely with Universidad de Antioquia to teach human rights to nearly 30 Master's level students at Universidad de Antioquia using video conferencing.

When the Universidad de Antioquia (UDEA), one of four law schools partnering with the University of Minnesota (UMN) as part of the Colombia-U.S. Human Rights Law School Partnership, requested the involvement of UMN's top faculty in UDEA's graduate seminar, time and travel costs were clear barriers. However, the U.S. Agency for International Development project managed by Higher Education for Development quickly found a sustainable solution through the use of blended technology. Blended technology-based approaches, such as video recorded lectures and electronic text resources, are high-impact, low-cost means to expose Colombian law students to the fundamental theory and practice of human rights.

The partnership mobilized their expertise to develop three modules that included a set of readings on key human rights topics; recorded lectures taught in Spanish or English with Spanish subtitles by UMN faculty Kathryn Sikkink and David Weissbrodt– both prominent human rights scholars – ; and a corresponding question-and-answer video conference, led by Colombian faculty, with the featured UMN professors and the Colombian students. The modules covered topics such as "Latin American Contributions to Human Rights and Transitional Justice," "Introduction to Human Rights, Definitions and Mechanisms," and "Responsibility and Efficacy in Human Rights."

"This method not only facilitated the participation of expert faculty, but it captured their lectures permanently for use by other faculty and students in our partnership," said Barbara Frey, the UMN partnership director. These materials are now available in UMN's online human rights library.

Using technology to advance human rights education was a successful way for the partners to offer access to international expertise in human rights and optimize inter-institutional collaborations without having to spend thousands of dollars from their limited resources for international travel. "The new technologies are a valuable instrument to strengthen our own academic practices at the law school," said Duber Armando Celis Vela, a master's degree student at Universidad de Antioquia. "This methodology provided us with the opportunity to learn of research findings and academic viewpoints regarding the human rights situation in Latin America."

Moreover, these activities provided students—including legal practitioners, judges and public officers – with access to new and innovative research in human rights. Based on these positive results, the partners in Antioquia, Colombia are encouraging the development of additional blended-technology modules to enrich existing curriculum in this area.

Telling Our Story
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SUCCESS STORY

Empowering Kenyan Pastoral Communities to Improve Dryland Conditions

Female Student Inspired to Participate in Higher Education Research

Colorado State University/University of Nairobi

Photo courtesy of the University of Nairobi, CSDES

Fatuma Amin, a master's student at the University of Nairobi presents her personal story of success during a student-led conference in Kenya in May 2013.

The pastoralist communities of Kenya's drylands face marginalization due to drought, climate change, and its effect on natural resources. To help these communities escape the cycle of food insecurity and poverty, Colorado State University partnered with the University of Nairobi through Higher Education for Development (HED) to establish the Center for Sustainable Dryland Ecosystems and Societies (CSDES). The project is funded by the United States Agency for International Development.

Since its inception in 2011, the center's staff has been working to create forums to discuss the role of higher education in international development in Kenya's drylands and engage community members in the planning of the center's research and curriculum development.

In 2011, the center held "Dryland Community Voices: Setting a Joint Agenda in Higher Education and Development from the Ground Up," a collaborative three-day workshop that gave the pastoralist communities a voice, allowing them to critique and help redesign academic programs, improve their own livelihoods, and uplift their communities. More than 45 representatives of dryland communities from across Kenya attended the workshop.

"Inspired by my background, my goal has always been to reduce cultural biases, build resilience and improve livelihoods for community in the drylands, especially women."

— Fatuma Amin, University of Nairobi

"Previous development approaches in Kenya's drylands have been accused of doing little to actively engage communities in drylands in problem identification, planning and implementation of programs targeting them," said Jesse Njoka, partnership director at the University of Nairobi and CSDES director. "By directly engaging the communities in designing CSDES higher education program and research, interventions will be more targeted and hence increase impact."

On several instances, participants observed that issues, such as gender biases prevalent in higher education often originate from ingrained attitudes and problems in primary and secondary education.

Fatuma Amin, a master's student at the University of Nairobi, presented her personal story of success at the workshop. The fifth born in a family of 12, Fatuma was the first in her family to attain a formal education. Fatuma's story is an example of the integral need for higher education opportunities, particularly for women in pastoralist Kenya, but also demonstrates how cultural biases influence academic priorities. In her pastoralist community in northern Kenya, most women are offered few opportunities for economic advancement, often are expected to marry and run a household. Beginning with primary school, already low female enrollment in her community began to diminish further, said Fatuma. Out of her primary school class of more than 50, only nine were female, and of that nine, only two progressed to high school.

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Beating the odds, Fatuma continued her studies past secondary school to complete a bachelor's degree in development studies. Through additional funds leveraged under the HED award, Fatuma was afforded the opportunity to pursue her master's degree in disaster management at the University of Nairobi.

"Inspired by my background, my goal has always been to reduce cultural biases, build resilience and improve livelihoods for community in the drylands, especially women," Fatuma said. With her coursework complete and only her research project left to accomplish, Fatuma is expected to graduate December 2014.

Njoka said the workshop sparked stories similar to Fatuma's and discussions continue to inform education and research priorities at the University of Nairobi. As a result of the positive feedback, more community engagement meetings are set to take place in the next project phase.

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SUCCESS STORY

Visually Impaired Students Find Independence Through Mobile Devices

Assistive Technology in the Classroom Expands Learning and Teaching Opportunities

Syracuse University/Kenyatta University

Photo courtesy of Joanna Masingila

Sammy Luvonga, who lost his sight as a child, uses a computer with a built-in function called VoiceOver to listen to notes or electronic documents being read to him.

"One of the court executives asked me, 'How are you able to do your reports?' and I explained to him how I am using the iPad and he told me 'You are an able man,' and I am because of this assistive technology."

— Silas Opanga, law student at Kenyatta University

Before June 2012, when visually impaired students Sammy Luvonga and Silas Opanga attended classes at Kenyatta University (KU), they would bring a bulky manual brailler machine and expensive paper they purchased themselves. The scarcity of brailler machines on campus and academic materials in Braille, as well as difficulty in getting materials converted to Braille, were huge obstacles.

In the summer of 2012, how Silas and Sammy accessed text changed. They were among a group of four visually impaired KU students to receive an iPod® mobile digital device and a wireless keyboard through a U.S. Agency for International Development-funded, Higher Education for Development managed-project between KU and Syracuse University (SU) focused on improving teacher education for all learners using technology

Today Sammy and Silas are among KU's approximately 50 visually impaired students who have access to computers installed with special software called a screen reader. KU's library has a limited number of these computers and headphones where students can access text in electronic versions via the Internet or other electronic formats such as a PDF. "It was difficult to study for exams because we had to have someone read lecture notes to us," said Silas, a fourth-year law student who became blind at the age of 16. Sammy, a fourth-year education student who lost his sight as a child added, "It was also difficult to think of how we would easily prepare notes for teaching classes during teaching practice and when we become teachers."

An iOS-supported device, like iPod or iPad® mobile digital devices, serves as a screen reader using a built-in function called VoiceOver that reads aloud what is displayed on the screen, displays large or high contrast text, magnifies print, and recognizes and describes colors.

Within a few days of receiving the devices, the KU students were reading and creating documents, checking and sending emails, uploading documents to a learning management system, listening to music, and creating Facebook accounts. "Having the iPod gave me independence. I didn't have to have someone read notes to me. I could listen to notes being read by my iPod or listen to the lecture that I audio recorded," said Silas.

In January 2013, the group of four students replaced the iPod mobile digital devices with the iPad mini™ mobile digital devices and trained 10 more KU students with visual impairments to use iPad minis and keyboards. Later that same year, Sammy used his iPad mini and keyboard to teach students at the Kibos School for the Visually Impaired near Kisumu. "I prepare my notes and scroll through them during class using the keyboard, and listen to the notes using headphones. My students think I have lots of books on my iPad because I find all the information I need there," explained Sammy. During the same time period, Silas completed an educational attachment (internship) at the Thika Law Courts. He explained how the mobile device is invaluable for his work, "For my judicial

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attachment I have to use case law. So, I will go to the Internet, go to the relevant sources so I can apply them when writing that judgment, using my iPad. Then, I will send it to my email and go print it using the printers at the law courts. Then, I will be able to present it to the magistrate. One of the court executives asked me, 'How are you able to do your reports?' and I explained to him how I am using the iPad and he told me 'You are an able man,' and I am because of this assistive technology."

As of January 2014, 20 of the 50 visually impaired students at KU have iPad mini mobile digital devices and are able to work more independently.

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SUCCESS STORY

Entrepreneurship Training Inspires Jordanian Graduate to Design Dream Job

U.S.-Jordan Education Partnership Fosters an Entrepreneurship Mindset Across All Disciplines

Washtenaw Community College and William Davidson Institute at the University of Michigan /Al Quds College

Photo courtesy of Al Quds College

Bilal Salman, a Class of 2013 Al Quds College graduate, shows his excitement about being among the first cohort of Quds Business Incubator tenants in Jordan.

Bilal Salman was a typical student attending Al Quds College (AQC) in Amman, Jordan. He planned to graduate from college with a degree in interior design and find work in the industry. He spent his days studying and in the evenings and on weekends he worked at a local home and furniture store. Bilal demonstrated talent in his field so his teachers recommended him to employers while he was still studying. Soon he began designing window displays for various retailers at Taj Mall in Amman. Through customer word-of-mouth marketing, one window display drew the admiration of customers—who became repeat customers. He began doing design work for weddings, home design, and landscaping. All the appreciation had Bilal hoping for a job offer upon graduation.

By summer 2012, Bilal joined a new program at AQC that Bilal says, "helps students create jobs instead of getting jobs." The program, Community College Entrepreneurship: Integration to Incubation began at AQC in January 2012 from a partnership between AQC, Washtenaw Community College and William Davidson Institute at the University of Michigan, both in Ann Arbor, Michigan. Funded by U.S. Agency for International Development through Higher Education for Development, the program's objective is to teach AQC students the skills necessary to start their own business.

During the 2012-2013 academic year, his final year at AQC, Bilal participated in as many entrepreneurship activities as he could. He attended lectures by local entrepreneurs, joined the student entrepreneur club, took classes in entrepreneurship and, eventually, became one of the first student tenants of the Quds Business Incubator. Bilal, along with five other students, joined the incubator for six months to continue developing their entrepreneurial skills. For Bilal, the entrepreneurial training gave him legitimacy with his peers, family, and customers and ignited other ideas for businesses outside of his major. He developed a business plan for a year-round food court concept with healthy food packaged in an aesthetically pleasing way. His idea gained a lot of attention in the local community, including from funders. Bilal has decided that he doesn't want a donation. Instead, he is dedicated to working in the design field so that he can raise the money necessary to start the food court business. "This business, it's my baby. I want to have the freedom to make decisions and use my imagination to make it the best," he said.
Since his 2013 graduation, Bilal has worked abroad and plans to return to Jordan and start his food court business.

"This business, it's my baby. I want to have the freedom to make decisions and use my imagination to make it the best."

—Bilal Salman, graduate of Al Quds College in Jordan

Bilal's colleagues are sure he will continue to have more entrepreneurial ideas and that he will put those ideas into action. Quds Business Incubator Manager Sara Al-Jabsheh said, "Bilal is a perfect example of the lifelong changes in attitude this program encourages in students." Bilal started college at AQC because he thought it would help him secure a job. Now Bilal is traveling and working for himself with the ultimate goal of starting a business.

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SUCCESS STORY

Prototype Device Faculty Training to Spur Moroccan Business Productivity

Students Gain Employable Skills in Manufacturing Process Rapid Prototyping

Gateway Technical College / Ecole Supérieure de Technologie d'Oujda

Photo courtesy of ESTO, mechatronics class 2014

Faculty and students learned to use rapid prototyping and created plastic models of products using a 3-D printer.

"There is a need for some tools used in surgical operations and they are very expensive. We can achieve them for a low cost using our 3-D printer."

— Jamal Yousfi,
Mechanics teacher at Ecole Supérieure de Technologie d'Oujda, Morocco

Getting a new product idea from the conceptualization phase to a physical model can be a slow and expensive process for entrepreneurs leading start-up companies as well as established businesses. This process can stall business growth but 3-D printing offers a fast-track method to a tangible product. The higher education collaboration project funded by the U.S. Agency for International Development between Gateway Technical College (GTC) and Ecole Supérieure de Technologie d'Oujda (ESTO) in Morocco calls this process rapid prototyping. The project has been training ESTO faculty to use the special printer to support entrepreneurship and business development.

Through a 3-D printing training, more than 30 students and teachers involved in the Higher Education for Development partnership are able to produce their designs or industrial models, initially developed on their computers in design software. They become very motivated to invent and dream of new 3-D models. "The whole team is excited to use the 3-D printer for teaching and student projects," said M. Smail Zouggar, head of the Applied Engineering department at ESTO.

Furthermore, because the plastic-like material that the partners are using is of medical grade, ESTO is beginning to receive proposals to manufacture medical components used directly in human bodies. "By talking to specialists, there is a need for some tools used in surgical operations and they are very expensive, we can achieve them for low cost using our 3-D Printer," said Jamal Yousfi, a teacher of mechanics at ESTO. Other professionals in Oujda, Morocco also expressed interest in rapid prototyping, particularly for complicated prototypes such as pumps or bottles that are locally difficult to make using the conventional prototyping and require more expensive molds.

"In some student projects, some parts are so hard to obtain by [the] manufacturing process; but we can design them easily using 3D CAD software, and then produce them on our 3-D printer," adds M. Mohammed Boughaleb, teacher of rapid prototyping at ESTO.

The next step will be to introduce companies in the region to the technology with the hope of having the students working with the companies on real-world projects. The partners are eager to train new students in these desirable and employable prototyping skills. With a newly skilled workforce and modern equipment, businesses will be able to introduce products to the market faster, allowing them to gain market share thus bringing more business to the area.

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SUCCESS STORY

Scholarship Recipients Support Amazon Region Through Funded Research

Florida International University/ Universidad de la Amazonia

Photo courtesy of Jhonatan Gutierrez Garaviz

Jhonatan Gutierrez Garaviz, scholarship recipient from the Universidad de la Amazonia, sampling for fish in a river near Florencia, Caqueta in Colombia.

The Andean Amazon is the most biologically diverse region in the world. However, due to factors including increased deforestation, informal mining, and unsustainable farming, the Andean Amazon is facing unprecedented change that can lead to its demise. In the Colombian Amazon, landscape transformation is likely to result in loss of species and delicate ecosystems. To protect the region, the U.S. Agency for International Development's Initiative for Conservation in the Andean Amazon supports elevating the level of scientific understanding and defining strategies for its conservation.

To increase the capacity of Colombian faculty and students, conduct and disseminate applied research, and improve available scientific information for the Colombian Andean Amazon, a Florida International University and Universidad de la Amazonia partnership, managed by Higher Education for Development, launched a research and tuition scholarship program.

Many times graduate students and researchers have difficulty finding financial, logistical, or institutional support for their work. By offering scholarships, students and faculty can better understand the Amazon and protect its biodiversity for generations. Jhonatan Gutierrez Garaviz is among the 12 awardees who received a scholarship from the Universidad de la Amazonia in Florencia, Caqueta. He will research trophic chains and freshwater ecosystem management. The conservation of aquatic ecosystems is a priority in new conservation approaches at the watershed level. However, the information available today about these ecosystems is rare and almost nonexistent regarding the foothills of the Colombian Amazon. Jhonatan is posed to change the rarity of that information in Florencia. By giving opportunities to individuals like Jhonatan, the partnership is able to support important conservation science in the Colombian Andean Amazon that could have otherwise gone unstudied.

"Finding partnerships such as yours are vitally important as they support those of us whom are not tied to research groups with good financial support."

— Jhonatan Gutierrez Garaviz, scholarship recipient from Universidad de la Amazonia, Colombia

"As is well known in Colombia, in order for many of us to achieve our dreams and goals, and contribute interesting things to science, many times [the financing] comes out of our own pockets," said Jhonatan about the research funding difficulties. "For this reason, finding partnerships such as [the ICAA Higher Education Partnership Program] is vitally important as they support those of us who are not tied to research groups with good financial support."

Javier Maldonado-Ocampo, co-partnership director from the Pontificia Universidad Javeriana, said, "Their lives have changed because they now have the space and time to dedicate themselves to their academic and professional development." These new opportunities and the recognition from the award reaffirms the student's role in their homeland and allows them to be hopeful about their future and professional development.

6-2014

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SUCCESS STORY

New Solar Energy Technology Program in Jordan Expands Opportunities

Students Gain Employable Skills in Renewable Energy

Red Rocks Community College / Al Huson University College

Photo courtesy of Troy Wanek, RRCC Solar Faculty
Manal Abed Al-Gani, right, works with another student in the Al-Huson SET lab.

Photo courtesy of Troy Wanek, RRCC Solar Faculty
Mosab Malkawi works on the installation of the small wind machine at HUC; May, 2014.

Photo courtesy of Troy Wanek, RRCC Solar Faculty
Sahem Bataah participated in the installation of the multiple solar energy generation technologies at HUC.

Jordan is a country with limited natural resources and a rapidly growing population of young people experiencing a high unemployment rate. Currently 30 percent of Jordan's GDP must be dedicated to the purchase of energy from neighboring countries. The higher education collaboration project funded by the U.S. Agency for International Development (USAID) between Red Rocks Community College in Lakewood, Colorado, and Al Huson University College (HUC) in Irbid, Jordan, is developing new associate degrees in Solar Energy Technology, Health, Safety, & Environment, and Water Management. The partnership has created new job pathways for youth while also addressing long term solutions to the energy and technical training issues facing Jordan.

Since its launch in 2011, around 200 students from underserved regions in Jordan have enrolled in the two-year Associates Degree program in Solar Energy Technology (SET) at HUC. The partnership has supported faculty exchanges and training, curriculum development, and installing hands-on solar energy lab equipment, including 20kW of various solar power generation technologies on campus. Through around $15 million of leveraged funding sources, all buildings on the HUC campus will be powered by solar energy in 2015. These new funders were attracted to Al Huson as a direct result of the USAID project that has made HUC a regional leader in solar energy technology and workforce education. The SET Program has also directly impacted and improved employment options for Jordan's youth.

Manal Abed Al-Gani finished her bachelor's degree in physics. Like 70,000 other Jordanian students who graduates every year, she found herself with no job and very limited prospects. After completing her BA, Manal enrolled in the SET program, where she was one of 12 female students in the first class of 50. Manal now is employed at a large solar energy company as a systems designer, a job usually reserved for engineers. However, because of the integrated lab equipment and practicums added by the USAID project focused in the technical aspects of solar energy generation, Manal's employer found her skills to be well qualified for her new post.

Mosab Malkawi enrolled in the second matriculation of the SET program. Mosab demonstrated a keen passion for renewable energy and the importance the development of this technology has for his country. In his last year of the program, he was successful in recruiting investors to open his own solar energy business. Mosab now owns one of the first businesses in solar energy in the north region of Jordan in Irbid. He has joined the Jordanian Renewable Energy Society (JRES), and his active involvement positions him well to achieve his professional goal of one day becoming the director of the JRES.

Sahem Bataah wants to be an engineer, and he knew without the necessary exam scores after high school his chances were very slim. In fact less than five percent of students each year in Jordan are successful in overcoming the comprehensive exam to bridge to the engineering track after finishing vocational tracks. Sahem entered and completed the SET program at HUC. Since completing the program, he is one of seven SET students who were successful in challenging the comprehensive exam and is now enrolled in an engineering program in one of the best universities in Jordan, Jordan University of Science and Technology.

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Higher Education for Development (HED) Partnerships Closed in FY2014

Eleven partnerships completed their implementation activities and were closed in FY2014. Of these, six partnerships were located in sub-Saharan Africa, three in the Middle East and North Africa, and one in Latin America and the Caribbean and in Asia, each.

Partner Institution(s)	Country	Funding mechanism	Award Number
California State University Fullerton, Fatimah Jinnah Women University, and Sardar Bahadur Khan Women University	Pakistan	LWA	Not applicable
Central Community College and Bahrain Polytechnic	Bahrain	LWA	Not applicable
Eastern Iowa Community College District, Tulsa Community College, and Sana'a Community College	Yemen	LWA	Not applicable
Fairfield University and Université Alioune Diop de Bambey	Senegal	LWA	Not applicable
Gateway Technical College, Ecole Supérieure de Technologie Oujda, and Université Mohammed I Oujda (I)	Morocco	LWA	Not applicable
Indiana University and University of the West Indies	Barbados	Associate Award	AID-538-LA-11-00001
Michigan State University and University of Malawi	Malawi	Associate Award	674-A-00-11-00030-00
North Dakota State University and Makerere University[1]	Uganda	Associate Award	AID-617-LA-ll-00001
Syracuse University and Kenyatta University	Kenya	Associate Award	AID-623-LA-11-00006
Tuskegee University and International Institute for Water and Environment Engineering	Burkina Faso	LWA	Not applicable
Virginia Polytechnic Institute and State University, University of Juba, and Catholic University of South Sudan	South Sudan	Associate Award	650-A-00-11-00303-00

Also, while the subawards for the following four partnerships funded under associate awards closed during FY2013, the awards between USAID Missions and HED ended in FY2014; hence, the closeout reports for these four partnerships are submitted through HED's FY2014 Annual Progress Report:

- Cornell University and Bahir Dar University (Clean Water) (Ethiopia) (Associate Award Number EPP-A-00-09-00005-00)
- Georgia State University and Alexandria University (EMBA) (Egypt) (Associate Award Number 263-A-00-08-00027-00)
- State University of New York-Albany and Makerere University (Clean Water) (Uganda) (Associate Award Number EPP-A-00-09-00005-00)
- University of Cincinnati and University of Cape Town (South Africa) (Associate Award Number 674-A-00-11-00018-00)

[1] The partnership with Makerere University was transferred from North Dakota State University to Mississippi State University in FY2014. The associate award itself is scheduled to end on June 30, 2015. Consequently, the closeout report for the associate award will be included in HED's FY2015 Annual Performance Report.

Final Project Report

Partnership for Women in Science, Technology and Engineering in Pakistan

Performance Period: March 7, 2008 to December 31, 2013

U.S. Institution: California State University, Fullerton

Host Institution:
1. Fatima Jinnah Women University, Rawalpindi, Pakistan
2. Sardar Bahadur Khan Women University, Quetta, Pakistan

Partnership Director: Maqsood A. Chaudhry
Professor of Electrical Engineering
California State University, Fullerton

Funding Amount: US $199,999.00

Cost Share: US $62,464

Date of Final Report: May 12, 2014

Partnership for Women in Science, Technology and Engineering in Pakistan

Summary

Under-participation of women in science, technology and engineering education at the university level in Pakistan is chronic and entrenched. According to some studies, only two percent of all women between the ages 16 and 21 in the country are enrolled in degree programs at the university level. Out of this small percentage, less than 20 percent are enrolled in science, technology or engineering (STE) disciplines. No wonder then that women represent only about 3 percent of all the technical workforce of the country.

The under-representation of women in technical workforce of the country is particularly ironic because women have demonstrated special skills and proficiency in jobs requiring solutions of analytical problems, micro miniaturization, software development, etc. In addition, several United Nations studies have shown that participation of women in high paying technical workforce is a key to reducing poverty, combating crimes and terrorism, alleviating illiteracy and general economic development of any country.

Hence, *to increase participation of women in science, technology and engineering disciplines at the university level in Pakistan,* this *pilot* program was launched in 2008. With a two hundred thousand dollar grant from the United States Agency for International Development (USAID) and over 25% matching funds of its own, California State University, Fullerton (CSUF) established *partnerships* with two women universities in Pakistan: Fatima Jinnah Women University (FJWU), Rawalpindi and Sardar Bahadur Khan Women University (SBKWU), Quetta. To accomplish its goal, the partnership sought to enhance capacities of the two partner universities so that they could admit and educate 20 percent more women in science, technology and engineering disciplines every year.

As the main activity of the partnership, scholarships were awarded to ten women from the partner universities for graduate studies in their respective fields of study in STE disciplines. With full financial assistance from the partnership, the ten scholarship recipients, five from each of the two partner universities, have obtained master degrees in their respective STE fields of study. Nine obtained their degrees from premier universities in Pakistan while one obtained her degree from CSUF, United States. Out of the ten, four have joined FJWU and three have joined SBKWU as faculty members in their parent departments. Remaining two scholarship recipients from SBKWU have been permitted by their parent university to pursue Ph.D. studies, which were also paid by the partnership until December 31, 2013. These women, after completing their Ph.D. degrees will also join SBKWU as faculty members. The fifth scholarship recipient from FJWU left her parent university after teaching there for one semester.

Although, only seven of the scholarship recipients have joined their parent universities so far and some of those who have joined have not been given the full-time teaching load yet, their impact on enhancing the capacity of the two women universities to admit and educate more women to their STE programs has been significant. Our analysis have shown that because of the newly trained faculties joining the universities, SBKWU and FJWU have enhanced their capacities to admit and educate 16 and 37 additional students per year, respectively, in their science technology and engineering disciplines. Once all

the scholarship recipients start to teach on a full-time basis, each of the partner universities would have increased its capacity to admit and educate additional 50 freshmen women in their STE majors every year. This represents over 20% increase in the capacity of each of the two partner universities, which is within the target range set by the partnership.

Other partnership activities included one-time undergraduate scholarships given to 50 freshmen women who chose STE disciplines as their major of study at the partner universities. These women belonged to poor families who, without any financial aid, probably would not have pursued university education. In addition, the US partnership director visited partnership universities regularly to conduct seminars and work with their faculty on collaborative projects.

There were several setbacks along the way. One graduate scholarship recipients left her parent university shortly after completing her graduate degree at CSUF. In addition, visa delays, and other factors which were not in control of the partnership universities, the US scholarship for SBKWU could not be utilized. Despite these setbacks, over 80% of the graduate scholarship recipients have joined or will join their parent universities which is within the target set by the partnership.

The pilot program was a success and had a measurable impact on the two partner universities in Pakistan and enhanced significantly their capacity *to increase participation of women in Science, technology and engineering disciplines.*

Partnership for Women in Science, Technology and Engineering in Pakistan

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Table 1: Data Analysis to Quantitatively Determine Impact on Enrollment Capacity in Science, Engineering and Technology Disciplines at the Partner Universities Directly Attributable to the Partnership Activities

Partnership for Women in Science, Technology and Engineering in Pakistan

List of Acronyms

CSUF	California State University, Fullerton
FJWU	Fatima Jinnah Women University
FTES	Full Time Equivalent Students
HED	Higher Education for Development
SBKWU	Sardar Bahadur Khan Women University
STE	Science, Technology and Engineering
USAID	United States Agency for International Development

Partnership for Women in Science, Technology and Engineering in Pakistan

1. Introduction and Background

1.1 Introduction

Comparison of data for men and women reveals significant disparity in educational attainment in Pakistan. By 1992, among people older than fifteen years of age, 22 percent of women were literate, compared with 49 percent of men. United Nations sources say that in 1990 for every 100 girls of primary school age, there were only thirty in school; among girls of secondary school age, only thirteen out of 100 were in school; and among girls of the third level, grades nine and ten, only 1.5 out of 100 were in school. Slightly higher estimates by the National Education Council for 1990 stated that 2.5 percent of students--3 percent of men and 2 percent of women- -between the ages of seventeen and twenty-one were enrolled at the degree level. Among all people over twenty-five in 1992, women averaged a mere 0.7 year of schooling compared with an average of 2.9 years for men.

The discrepancy between rural and urban areas is even more marked. In 1981 only 7 percent of women in rural areas were literate, compared with 35 percent in urban areas. Among men, these rates were 27 and 57 percent, respectively. Pakistan's low female literacy rates are particularly confounding because these rates are analogous to those of some of the poorest countries in the world.

These statistics are especially ironic since those women who are lucky enough to reach institutions of higher education perform much better than their male counterparts. In 1986 the pass percentage of female students in Punjab University's (Lahore, Pakistan) bachelor degree examination was over 50 percent while it was only 25 percent for male students.

Women representation in the fields of science technology and engineering (STE) is even less. According to statistics collected by the Pakistan Council for Science and Technology, the representation of women in R&D organizations is hardly 2 percent of the existing manpower in these organizations. The number of women graduating from professional colleges is not even 20 percent of the total number of women graduates.

Chronic under-participation of women in science, technology and engineering in Pakistan is particularly ironic because women have demonstrated special skills and proficiency in jobs requiring solutions of analytical problems, micro miniaturization, software development, etc., which are not being utilized.

1.2 Reasons for Under-participation of Women in Science, Technology and Engineering

There are several reasons for the under participation of women in the science and technology fields. One of the factors causing the poor participation of women in these fields is that women students in high schools/junior colleges, especially in rural area high schools, see a wall of economic and social constraints separating them from the careers in science, engineering and technology. Almost all the institutions of higher learning in the areas of science and technology admit both men and women with women representing much smaller percentage of total enrollments and, are located in larger metropolitan areas. Most conservative families living in rural areas and underdeveloped regions of the country are reluctant to send their daughters to faraway colleges and universities to study male dominated disciplines. And those families who are willing to break that taboo are constrained by economic realities. Vast majority of parents living in rural and underdeveloped areas cannot afford to pay the cost of higher education institutions in Pakistan, including the government institutions which are relatively inexpensive.

Another reason of low women student participation in science, technology and engineering education in Pakistan identified by various international agencies and non-governmental organizations as well as the Ministry of Education of Pakistan is the lack of proper counseling and guidance infrastructure at the high school/junior college level and of support and advisement infrastructure at the university level for women.

1.3 Government's Efforts to Increase Women Participation in Science and Technology Fields

To increase their participation in tertiary level educations and to overcome the reluctance of families especially from underdeveloped regions of Pakistan to allow their daughters to attend co-education institutions, the federal government of Pakistan and some provincial governments have opened few women universities in Pakistan. Although quantitative data on the overall increase in the enrollment of women in higher education attributable to the women universities is not available, anecdotal evidence suggests that many women, who would not have pursued tertiary level education if they had to study with men in co-education institutions, are doing so now.

1.4 Why has that Effort Fallen Short?

The women universities, although playing an important role in providing tertiary level education to many women, have had a very limited impact because of several reasons.

First, there are very few of these universities. Only handful women universities have been opened in the entire country since the country became independent, such as Fatima Jinnah Women University, Rawalpindi, (FJWU); Sardar Bahadur Khan Women University, Quetta (SBKWU) and Frontier Women University, Peshawar. Due to lack of resources and other factors, successive governments in Pakistan have failed to sustain efforts to provide higher level education to women and have not opened any new universities. There are other women universities in Pakistan also but those were originally women colleges; their status was simply changed to universities. Most of those universities are offering same

education and degree programs which they were offering before their status was changed and hence have not made any significant additional contributions towards providing higher education to women.

Second, the women universities have not been able to significantly increase enrollment of women in the areas of science, technology and engineering because the universities have a chronic shortage of qualified faculty in these areas. Only a small percentage of women, less than 2 percent by most estimates, complete tertiary level education with far fewer getting their degrees in sciences technology and engineering fields. The percentage of women who get graduate degrees in these fields drops very significantly. Because of a very small pool of eligible women available, the women universities face significant challenges in attracting qualified and dedicated faculty. These universities, hence, have very limited capacity to educate women in science, technology and engineering fields.

Third, the women universities are located in large cities and are not accessible to a large rural population of Pakistan because of the remoteness of the rural communities. And for the most rural families with limited means who do want to educate their daughters, it is not financially feasible to afford tuition and boarding expenses. There are very little financial support provided by the government or the universities to those families who cannot afford to educate their children.

Fourth, most of those women who make it to the universities generally choose liberal arts, social sciences and humanities disciplines over science, technology or engineering disciplines. There are several reasons behind this trend. Women universities, suffering from the shortage of faculty in science, technology and engineering, do not have any outreach programs for high school girls to recruit them in these disciplines. Advising and counseling programs at high school levels are mostly nonexistent or are inadequate to provide high school girls proper career advice and help them choose appropriate discipline for university education. Most girls follow their peers when choosing discipline of study, and with no career goals, they do not choose sciences, technology or engineering majors.

And finally, in a country with mostly male dominated workforce (with the exception of healthcare sector) there are very few women scientists and engineers in key positions who can be role models for younger women. Most women attending universities stay away from career oriented disciplines of sciences and engineering because they believe that they will not be entering the workforce upon graduation and therefore, do not consider employability as one of the factors for choosing a discipline for undergraduate studies.

1.5 How can the Women Universities Increase Enrollment of Women in STE Fields?

There are several ways the women universities can increase enrollment of women in the disciplines of science, technology and engineering.

First, the women universities need to increase their capacity to educate women in these fields. The universities have a chronic shortage of qualified faculty especially in science, technology and engineering fields which limits the universities' ability to admit and educate more women in these fields. Every year, the women universities turn away many deserving applicants seeking admission in science, technology

and engineering majors simply because the lack of qualified teachers in these disciplines. Universities in Pakistan in general and women universities in particular need to recruit better trained women teachers in these disciplines. This is not a budgetary issue; giving more money to the universities so that they can hire more science, technology and engineering faculty is not a solution because problem is more fundamental. The pool of available females qualified to be university teachers in these disciplines is very small. There are not enough women in Pakistan who hold graduate degrees in the areas of science, technology or engineering from premium universities within Pakistan or well reputed universities abroad. Therefore, to significantly increase enrollment of women in these disciplines, more women have to be trained at graduate level.

Second, for continued professional growth of the faculty of sciences and engineering and constant improvements in the curriculum in these areas to keep it abreast with rapid changes and developments in the technological fields, opportunities have to be created for the faculty to establish partnerships and professional relationships with other universities. Through these partnerships, faculty can launch collaborative research projects and prepare and submit joint funding proposals. These partnerships can also lead to mutual faculty exchanges, faculty training and curriculum development.

Third, women universities need to identify those women who are academically eligible to be admitted to undergraduate programs in sciences and engineering, are willing and eager to study at university level but cannot do so because their families do not have enough economic resources to afford the cost of university education. These women need to be offered financial aid in the form of scholarships and other financial incentives so they enroll in undergraduate programs.

Fourth, in collaboration with local employers, women universities must make sustained efforts to help graduates in the areas of science, technology and engineering, find employment. More women graduates entering the technical work force earning respectable salaries will attract additional women towards the fields of sciences and engineering. And with the increase in contribution from women towards the household income, more families, out of necessity, will be willing to allow their daughters to pursue university education even if they have to join co-educational institutions to do so.

2. The Partner Universities

2.1 Sardar Bahadur Khan Women University, Quetta

As we mentioned earlier, less than 2 percent of college age women are attending universities or colleges in Pakistan. The percentage drops dramatically for the province of Baluchistan to less than 0.5 percent. There are several reasons for the low rate of participation of women in the tertiary level of education in this province.

Baluchistan is the largest of the five provinces of Pakistan in area. However, because of its unique geography; mostly arid mountains, high deserts and extreme climate, it is also the least populated of the five. Population is spread over the vast expanse of the province with very few 'large' cities. The tribal

culture prevalent in the province strictly adheres to their conservative values and generally does not value women education and is even hostile to it.

The province borders with Afghanistan and Iran. For the past two decade, the province is embroiled in a three way armed insurgency. First, Bloch nationalists are fighting with the federal government for greater autonomy and often target security personnel, government offices and officials and even soft targets like universities and colleges. Non-Balochs living in the province are often targeted too and many university professors teaching in various universities in the provinces who belonged to other ethnicities have been assassinated. Second, low level war is also raging between religious fundamentalists, mostly Taliban extremists, and the government. Part of this violence is a spillover from neighboring Afghanistan and part is homegrown. Taliban are against women education and are not hesitant to use violent means to stop women from getting education. They have bombed and burned many women schools and colleges. And third, there is an ongoing conflict between two main religious sects in the province, Sunnis and Shiites. This conflict often turns deadly and women and children are also targeted.

Several thousand people have died over the last two decades. The violence hit close to home when in June of 2013, a female suicide bomber blew her up in the middle of the crowded campus of Sardar Bahadur Khan Women University, Quetta, one of the partner universities, killing about 20 and injuring many more students. Although it is a small comfort, but fortunately no one directly associated with the partnership was killed or hurt in the incident.

Poverty level in the province is extremely high and many families who want to educate their children make a deliberate choice not to educate their daughters because they want to use whatever little resources they have for their sons' education.

Lack of higher level women-only educational institutions also contributes to the low level of women participation in tertiary education because many conservative families do not want their daughters studying at co-educational institutions.

Because of the ongoing insurgency, direct violence against women, poverty and cultural taboos, very few women in the province complete tertiary level education.

In this environment, Sardar Bahadur Khan Women University located in Quetta, the capital of Baluchistan province, is playing an extremely vital role in providing tertiary level education to women. Although most of the women enrolled in the university are from the province of Baluchistan, because of its open enrollment policy, it attracts women from all over Pakistan. With limited enrollment capacity in the few women universities in their own provinces, many parents prefer to send their daughters to women universities even if they are in faraway cities rather than sending them to co-educational universities in their own cities.

As we have mentioned earlier, women universities in general suffer from shortage of qualified faculty. The problem is much more severe at Sardar Bahadaur Khan Women University. Because of its remote location in the country, a vast majority of the faculty of the university have neither studied nor

worked in any other university. A quick look at the faculty profile on the university website reveals that almost all of it science faculty obtained their B.Sc. or M.Sc., and often both, degrees from the Sardar Bahadur Khan Women University. Those few who have degrees from other universities have mostly studied locally, in Quetta. Faculty members having degrees from other premier universities of Pakistan are rare and no one on the faculty roster has studied in an overseas university. The faculty has almost no exposure to other premier universities in Pakistan, let alone the international universities. Although the faculty members are engaged in some research, there is no culture of collaboration with other universities.

The university offers undergraduate and graduate degrees in many areas of science, technology and engineering such as chemistry, physics, biology, zoology, computer science, mathematics, etc. University has a capacity to admit about 200 undergraduate students every year in their science, technology and engineering majors.

Because of the important role this university is playing in educating women in the province it was chosen to be one of the two partner universities.

2.2 Fatima Jinnah Women University, Rawalpindi

Fatima Jinnah Women University, Rawalpindi is located near the capital city of Islamabad. Majority of students attending the university come from the cities of Rawalpindi and Islamabad as well as the surrounding villages and small towns. Like Sardar Bahadur Khan Women University, Quetta, this university also suffers from the shortage of well qualified faculty but the problem is not as severe. Large percentage of faculty of the university have graduate degrees from premiere universities of Pakistan and some faculty have degrees from overseas universities.

The university offers undergraduate and graduate degrees in many areas of science, technology and engineering such as chemistry, environmental science, biology, zoology, computer science, computer engineering, mathematics, etc. University has a capacity to admit about 200 to 250 undergraduate students every year in their science, technology and engineering majors.

Being located near the country's capital, it acts like a flagship as well as show case of women education in general and of women universities in particular. New policies and programs designed to improve women education are implemented and tested here first before being implemented in other universities. In addition, because of its location in the country's capital, the university attracts large number of visitors representing foreign countries and philanthropic organizations who want to help boost women education in Pakistan.

For these reason, Fatima Jinnah Women University, Rawalpindi, was chosen to be one of the partner universities for the project.

2.3 California State University, Fullerton

California State University, Fullerton (CSUF) is a comprehensive, regional university with a global outlook, located in Orange County, a technologically rich and culturally diverse area of the United States of America. The university has a student population of over 25000 and a faculty body of over one thousand. The university offers undergraduate and graduate degrees in close to one hundered areas of study. Various disciplines are divided into eight colleges including highly regarded College of Engineering and Computer Science and College of Natural Science and Mathematics (NSM).

Over fifty percent of the university's student body comprises of women. The university attracts students from all over the world, including Pakistan. It has ongoing research and capacity enhancement projects with universities and other organizations in several countries, some of which are funded by the United States Agency for International Development (USAID).

Because it is very highly regarded for its science, technology and engineering education and its worldwide involvement in capacity building partnerships, the California State University, Fullerton has the institutional knowledge, capacity and experience to lead this partnership and work with the partner universities in Pakistan to enhance their capacities to offer science, technology and engineering education to their women students.

3. Partnership Objectives and Implementation Strategies

With this backdrop, we submitted a proposal to establish a three way partnership between California State University, Fullerton, Fatima Jinnah Women University, Rawalpindi and Sardar Bahadur Khan Women University, Quetta, to help the partner universities in Pakistan increase their enrollment in undergraduate programs in the fields of science, technology and engineering by enhancing their faculty capacities in these disciplines.

Following are four main objectives of the partnership. Also described here is methodology we proposed to accomplish each of the stated objectives.

3.1 Objective 1

To increase the capacity of the two partner universities in Pakistan so that they can train more women in the fields of science, technology and engineering.

This was the key objective of the partnership, designed to expand the partner universities' capacities to admit and train higher number of women in the disciplines of science, technology and engineering. Since the present enrollment capacities of the partner universities are limited because of the shortage of well qualified faculty in these disciplines, expanding the faculty capacities is the only effective and sustainable way to increase the enrollment in the science, technology and engineering majors in the partner universities.

We proposed that the faculty capacities of the two partner universities be expanded by about ten to twelve well trained faculties in the areas of science, technology and engineering. Ten women were to be trained in premier universities of Pakistan and two at California State University, Fullerton.

To do so, we proposed that scholarship be offered to ten women to study for graduate (M.Sc.) degrees in their respective fields of study in premier universities in Pakistan. These in-country scholarships were to be evenly divided between the two partner universities and each university was to select five women from amongst their graduates for these scholarships.

In addition, two women, one from each of the two partner universities, were to be selected for US-scholarship to study towards M.Sc. degrees in their respective fields of study in science, technology and engineering disciplines at California State University, Fullerton.

Those women were to be offered scholarships who were either already faculty members or had received bachelor's degree from one of the two universities. The scholarships were to be offered to women, who upon completion of M.Sc. degrees in their respective fields of study were very likely to join their parent university as a faculty member. Preference was to be given to those women who belonged to poor families and without such scholarships, would not have pursued graduate degree programs.

3.2 Objective 2

To increase the number of high school/junior college girls entering universities and choosing the fields of science, technology and engineering at undergraduate level.

Through this part of the proposal, we wanted to increase the enrollment of women from poor households at undergraduate level in science, technology and engineering fields. These women, most likely to be the first in their families attending universities, would enter the workforce upon graduation and will help uplift their families economically. In addition, they would be role models for younger girls in their families and communities and would be motivation to other girls who would also seek university education in sciences and technology disciplines.

To accomplish this goal, we proposed to offer scholarships to high school/junior college girls if they entered the partner universities and chose science, technology or engineering as their disciplines of study. The scholarships were to be offered to women who, because of their economic circumstances, would not have been able to join a university without any financial support.

3.3 Objective 3

To increase research and curriculum development collaboration between CSUF and the two universities in Pakistan

Through this part of the proposal, we wanted to develop culture of continued learning among the faculty at the partner universities by providing the faculty opportunities of collaboration with the faculty

of California State University, Fullerton in research and curriculum development. We believe that the teachers involved in research stay abreast with the latest advances and developments in their fields, and by imparting that knowledge to their students, can provide better education.

This goal was to be accomplished in two ways. First, the US partnership director was to visit the two partner universities in Pakistan to: a) explore areas of research in which California State University, Fullerton and the partner universities could collaborate and prepare joint funding proposals and b) work with the faculty of the partner universities to improve their effectiveness as teachers. Second, the two scholarship recipients, one from each of the partner universities, who were to study towards M.Sc. degrees in their respective fields of study at California State University, Fullerton, were to engage in research and learn best practices to be an effective teachers and researchers.

3.4 Objective 4

To increase internship and employment opportunities for women graduating in the fields of science, technology and engineering

Through this part of the proposal, we wanted to create internship opportunities for students and employment opportunities for graduates of the two partner universities.

This was to be accomplished by bringing students, graduates and employers together in one place. Regular internship and job fairs were to be held at the two partner universities providing students opportunities to meet the employers, submit their resumes and get interview opportunities. The planned job fairs were to benefit all students and recent graduates of the partner universities, but especially those students who may not have enough resources to travel to employers' locations for interview.

4. Achievement of the Objectives: Success and Setbacks

The two partner universities in Pakistan have geographical separation of over 500 miles and serve two geographically distinct constituencies. To achieve the overarching goal of the partnership; *to increase participation of women in science technology and engineering workforce in the country*, we, in effect, established *two* partnerships between California State University, Fullerton and each of the two partner universities in Pakistan and set out to achieve all four objectives and measure their outcomes for each of the two universities separately.

4.1 Fatima Jinnah Women University

4.1.1 Objective 1

4.1.1.1 In-Country Scholarships

With full financial assistance from the partnership, the following four women graduates from Fatima Jinnah Women University, Rawalpindi, completed M.Sc. studies in their respective fields of study

at the National University of Science and Technology, Islamabad, a premier university of Pakistan. After completing their studies, all four have joined faculty ranks of Fatima Jinnah Women University, expanding its capacity to admit and educate more women in science, technology and engineering and are currently teaching there (Appendix 1).

1. Saria Safdar
2. Sobia Khalid
3. Umay-Kalsoom
4. Madiha Wahid

4.1.1.2 US Scholarship

One graduate of Fatima Jinnah Women University, Rawalpindi, Ms. Asma Zahid, was selected for graduate studies at California State University, Fullerton. She completed M.Sc. in Computer Science and after returning to Pakistan, joined the faculty ranks of her parent university. She however, left the university after teaching there for one semester.

As stated in the original proposal, the criterion for the successful achievement of the Objective 1 was that over eighty percent of the scholarship recipients, in-country and US scholarships combined would join the partner university as faculty member. Although, early departure of Ms. Zahid is a setback and a major disappointment, other four scholarship recipients, 80% of all graduate scholarship recipients from that university, have joined the faculty ranks of their parent university, meeting the target set by the partnership.

Therefore, according to our stated criterion, Objective 1 has been satisfactorily met.

4.1.2 Objective 2

Twenty five scholarships were awarded to high school and college graduates belonging to poor families to pursue undergraduate studies in one of the fields of science, technology and engineering in the partner university. Most of the scholarship recipients were first in their families to enroll in a university.

As a result of this activity, objective 2 has been satisfactorily achieved.

4.1.3 Objective 3

During the five year duration of the partnership, the US partnership director visited Fatima Jinnah Women University five times. During the visits, he engaged in the following activities.

1. Monitored implementation and progress of various aspects of the partnership.
2. Worked with the faculty in exploring areas of collaboration in research and curriculum development between California State University, Fullerton, the partner university and other universities in Pakistan.

3. Developed joint funding proposals involving California State University, Fullerton, the partner university and other universities in Pakistan.
4. Conducted seminars for the faculty and students of the partner university.

As a result of these efforts, two joint funding proposals involving California State University, Fullerton, the partner university and two other universities in Pakistan were submitted to international funding agencies. Although, the proposals were not successful, we believe that the experience gained by the faculty of the partner university by participating in collaborative efforts and, developing and submitting the funding proposals is very valuable and faculty can build on it even after the partnership has concluded.

Therefore, objective 3 has been satisfactorily achieved.

4.1.4 Objective 4

It is obvious from the constant stream of news coming from Pakistan that security situation in the country has been consistently deteriorating over the past several years, especially since the start of the partnership. In addition to other soft targets, religious extremists are targeting educational institutions too, especially women schools and colleges. Several schools have been bombed and burned. Few years ago, a major university in Islamabad was attacked and many students were killed. Last year, a powerful bomb exploded inside the campus of Sardar Bahadar Khan Women University which resulted in the tragic deaths of several students with many more injured.

Because of the potential risks involved in bringing large number of employers and their representatives to the campus, it was decided by the university not to hold job and internship fairs. The university keeps a database of employers, job postings and internship opportunities which students regularly utilize for finding employment opportunities.

Because of the deteriorating security situation and safety risks involved, this objective could not be achieved.

4.2 Sardar Bahadur Khan Women University

4.2.1 Objective 1

4.2.1.1 In-Country Scholarships

With full financial assistance from the partnership, the following five women graduates from the Sardar Bahadur Khan Women University, Quetta were selected to pursue masters' studies in their respective fields of study at various prominent universities in Pakistan (Appendix 2).

Three of the women, after completing their M.Sc. studies have joined the Sardar Bahadur Khan Women University. With permission from their university and with financial support from the

partnership, Ms. Nosheen Zaheer and Ms. Humeira Ahmed, after completing their master's degrees have embarked on Ph.D. studies. Upon completion of the doctorate degrees, they will also join the faculty ranks of the Sardar Bahadur Khan Women University.

1. Zainaz Ayesha
2. Shumaila Mazher
3. Adeela Hilal
4. Nosheen Zaheer
5. Humeira Ahmed

4.2.1.2 US Scholarship

Over the course of the partnership, Sardar Bahadaur Khan Women University selected following five women to receive the one US scholarship to pursue graduate studies at California State University, Fullerton. For reasons described below, these women could not avail the scholarship.

1. Ms. Maryam Umar: She applied to the M.Sc. in Chemistry program at California State University, Fullerton but later withdrew from scholarship consideration for personal reasons.
2. Ms. Bushra Qayyum: She was admitted to the M.Sc. in Computer Science program at California State University, Fullerton but later withdrew from consideration for personal reasons.
3. Ms. Rabia Zafar: She was admitted to the M.Sc. in Chemistry program at California State University, Fullerton but later withdrew from consideration and decided to avail another scholarship which supported her studies in Australia.
4. Ms. Rabia Bukhari. At the time of her selection for the scholarship, she was teaching communication courses to the undergraduate students of science, technology and engineering discipline at Sardar Bahadaur Khan Women University. Recognizing the importance of communication for science graduates in finding employment and advancing professionally, and because of the lack of qualified faculty in the university in this area, the university decided to select one current faculty from that discipline for the US scholarship. As a result, Ms. Bukhari was selected to pursue graduate studies in English Communication at California State University, Fullerton. Although, her selection was approved by the Higher Education for Development (HED), after considerable resources had been used to complete necessary requirements for her to start her studies at California State University, Fullerton, USAID abruptly rejected her selection and she could not avail the scholarship. Her case is further discussed in Section 6.1.
5. Ms. Maryam Maqsood (formerly Maryam Umar): She was selected for the US scholarship second time but could not secure admission in graduate program at California State University, Fullerton.

With time running out and deadline to conclude the partnership fast approaching, we modified the work plan. Instead of selecting another candidate for graduate studies in the United States, it was decided by all the partner universities involved that two faculty members from Sardar Bahadur Khan Women

University will spend one semester each at California State University Fullerton as visiting faculty. While at CSUF, they will engage in collaborative research and teaching in their respective disciplines.

After the plan was approved by the Higher Education for Development and USAID, Ms. Maryam Maqsood and Ms. Sehrish Khan Bazai were selected by Sardar Bahadur Khan Women University. California State University Fullerton, the SBKWU, and the two individuals completed all the necessary paperwork and other requirements for required visa to travel the United States and hold visiting positions at California State University, Fullerton. Unfortunately, all the hard work, effort and over a year of wait did not bear fruit. Neither was the visa issued nor any reason given for the unusual delay. Repeated attempts to get answers from the Visa Section of the US Embassy in Pakistan were unsuccessful.

When it became apparent that the two faculty members will not receive their visas in time to successfully complete their visiting assignments at California State University, Fullerton before the closeout date of the partnership, the modified plan was abandoned.

In spite of this setback, five women have completed their Master's studies with full financial support of the partnership, three of which have joined the faculty ranks of their parent university. The remaining two who are now pursuing Ph.D. studies which was also fully financially supported by the partnership until December 31, 2013, will join their parent university as faculty members after completing their Ph.D. studies.

We, therefore, conclude that objective 1 was successfully achieved.

4.2.2 Objective 2

Twenty five scholarships were awarded to high school and college graduates belonging to poor families to pursue undergraduate studies in one of the fields of science, technology and engineering in the partner university. Several of the scholarship recipients were first in their families to enroll in a university.

Objective 2 has been satisfactorily achieved.

4.2.3 Objective 3

During the five year duration of the partnership, the US partnership Director visited Sardar Badur Khan Women University, Quetta, three times. During the visits, he engaged in the following activities.

1. Monitored implementation and progress of various aspects of the partnership.
2. Worked with the faculty in exploring areas of collaboration in research and curriculum development between California State University, Fullerton, the partner university and other universities in Pakistan.
3. Conducted seminars for the faculty and students of the partner university.

Therefore objective 3 has been satisfactorily achieved.

4.2.4 Objective 4

Quetta is the epicenter of low level of insurgencies raging all across the country, especially in the province of Baluchistan. Security situation in the province has been consistently deteriorating over the past several years, especially since the start of the partnership. Religious extremists and separatists do not hesitate to target soft targets such as educational institutions. Women colleges and schools are especially targeted. Several girl schools have been bombed or burned. Last year, a powerful bomb exploded inside the campus of Sardar Bahadar Khan Women University which resulted in the tragic deaths of several students with many more injured.

Because of the potential risks involved in bringing in large number of employers and their representatives to the campus, it was decided by the university not to hold job and internship fairs. The university keeps a database of employers, job postings and internship opportunities which students regularly utilize.

Because of the deteriorating security situation and safety risks involved, this objective could not be achieved.

5. Impact on the Partner Institutions: Quantitative Analysis

5.1 Challenges Involved in Data Collection and Analysis

The most important and key objective of the partnership was, *to increase the capacity of the two partner universities in Pakistan so that they can train more women in the fields of science, technology and engineering*. And since, the remaining three objectives were also designed *to increase the faculty capacities of the two universities in Pakistan;* demonstration of the satisfactory achievement of the first objective would also mean that the remaining three objectives have been satisfactorily met too. The quantitative assessment of the level of attainment of this objective was most challenging and required some innovation.

One obvious way to quantify the level of attainment of this objective is to examine the enrollment data of freshmen women entering the fields of sciences, technology or engineering in the partner universities since the partnership began. And if there is any increase in the enrollment, then by demonstrating that at least part of that increase is the direct result of the partnership activities, one can show that the partnership achieved its objectives. However, we encountered two difficulties with this obviously straightforward approach.

First difficulty was that the analysis of the enrollment data did not show any upward trend.

For instance, enrollment of women in all disciplines at Sardar Bahadur Khan Women University had a significant downward trend over the last three years, from 2010 to 2013. A small increase in 2008 and 2009 could not have been because of the partnership activities because the partnership activities had

just started and those women who received graduate scholarships had started joining the university as faculty members only in the last two years. Even if there was any increase in the enrollment of women in the last two years which could be attributed to the addition of the new faculty and other partnership activities, data did not show it because it was more than offset by other more dominant factors which were responsible for the downward trend.

What were the factors causing the downward trend in enrollment? The following headline sums the reason of the decline in enrollment.

> *Gunmen have attacked a hospital in the western Pakistani city of Quetta, hours after an explosion on a bus killed 14 female university students. Officials say four gunmen were killed during a siege of part of the hospital where the wounded are being treated. Nurses, hospital security personnel and a senior city official were among the 10 others killed in the stand-off. (BBC News, June 15, 2013)*

(The *female university* in the above headline is Sardar Bahadur Khan Women University.)

Because of persistent violence and acts of terrorism, especially against women, many parents have chosen not to send their daughters to colleges and universities and hence fewer women are seeking higher education in that province.

Second difficulty was quantifying contribution of the partnership activities responsible for increase in the enrollment, if there was any.

For instance, Fatima Jinnah Women University showed a slight increase in enrollment of women in the areas of science and technology, especially in the disciplines of Computer Science and Software Engineering. And even though all four graduate scholarship recipients from that university, most of which have now become faculty members there are in those fields, still it was very difficult to quantify or even qualitatively demonstrate that at least part of that increase is the direct result of the partnership activities.

Because of the multiple, often opposing trends affecting enrollment, and, the difficulty of linking any enrollment increase with the partnership activities, we abandoned this approach. Instead we used the following approach.

5.2 Methodology Used and Sample Analysis

We will demonstrate our approach using representative data subset from Fatima Jinnah Women University, Rawalpindi (Appendix 3). Complete analysis on all the data is presented in the next section.

Ms. Sobia Khalid is one of the four women who received in-country graduate scholarships. After completing her M.Sc. in Software Engineering, she started teaching undergraduate classes at Fatima

Jinnah University beginning from Winter 2011 semester. In the three years since then, she has taught a total of 16 courses to a total of 755 students, averaging about $755 \div 3 \approx 251$ students per year.

A full-time study load of a student as defined by the university is five courses per semester. A *Full Time Equivalent Student* (FTES) is a student who takes five courses in one semester. Three students, two taking two courses each and one taking one course; or, five students taking one course each; or any combination of students taking five courses in total are considered equal to one *Full Time Equivalent Student* or one FTES.

Ms., Khalid, therefore, has taught about $251 \div 5 \approx 50$ FTES per year.

Undergraduate education in sciences, including computer science, is a four year program at the university. This means that a student carrying a full-time load will graduate in four years. Therefore, 25% of Ms. Khalid's students, on average, were from any one of the four years, including the freshmen year. This means that $50 \div 4 \approx 12$ of her *Full Time Equivalent Student*s were freshmen, in their first year of four year study program. These twelve students were admitted to the program because there was a qualified faculty, Ms. Sobia Khalid, available to teach them. If Ms. Khalid had not received the in-country graduate scholarship and hence, had not joined the ranks of the faculty at the university, the number of female students entering the undergraduate program in Software Engineering would have been decreased by 12 students.

Because of Ms. Khalid, the university has an added capacity to admit twelve students in a science, technology or engineering programs. This increase is the direct result of the partnership activities.

5.3 Cumulative Quantitative Impact at Each of the Two Universities

Using this approach, we have quantified the *increase in the capacity of the two partner universities* to admit and educate women in science, technology and engineering disciplines at the two partner universities which is directly attributable to the graduate scholarship recipients joining the partner universities after completing their studies. Our analysis is based upon the courses taught in the year 2013 and enrollment in those courses. The 2013 was the last year of the partnership and the number of graduate scholarship recipients who had joined the partner universities as faculty members was the highest for that year among all the five years the partnership existed.

The results are given in the following table. Raw data is given in appendices 3 and 4.

5.4 Comments on the Quantitative Analysis

As we mentioned earlier, out of the five in-country scholarships awarded to SBKWU students only three have joined their parent university as faculty members. And out of the three one will start teaching from Winter 2014 semester. Therefore, only two faculties are included in this analysis.

Although all four in-country scholarship recipients from Fatima Jinnah Women University have joined their parent university, only two are teaching a full load. The other two are teaching less than full load and have the title of 'visiting' faculty while their full-time appointments are going through the formal approval process.

No.	Data Type \ University	SBKWU, Quetta	FJWU, Rawalpindi
1	Number of faculty who have joined the partner universities as of the end of 2013 after completing their graduate studies	3	4
2	Number of faculty included in this analysis who have taught in the year 2013 (Winter (Spring) and Fall 2013 semesters)	2	4
3	Total number of courses taught by the faculty in row 1 as of the end of 2013	12	34
4	Number of courses taught by the faculty in row 2 in the year 2013 (Winter (Spring) and Fall 2013 semesters)	8	18
5	Total number of students taught by the faculty in row 1 as of end of 2013	496	1310
6	Number of students taught in the year 2013 by the faculty in row 2 (Winter (Spring) and Fall 2013 semesters)	332	754
7	Number of *Full Time Equivalent Students (FTES)* taught in year 2013(Winter (Spring) and Fall 2013 semesters) (Row 6 ÷ 5)	66	150
8	Average *FTES* taught from each of the four years of study by the faculty in row 2 (Row 7 ÷ 4)	16	37
9	Increase in enrollment capacity per year directly attributable to the partnership activities of Objective 1	16	37

Table 1: Data Analysis to Quantitatively Determine Impact on Enrollment in Science, Engineering and Technology Disciplines at the Partner Universities Directly Attributable to Partnership Activities.

Once all five faculties at Sardar Bahadur Khan Women University and all four faculties at Fatima Jinnah Women University have joined their universities on a full-time basis, impact on the partnership universities will be significantly greater. We estimate that eventually each of the partner universities will be able to admit 50 new students every year to their undergraduate programs in science, technology and engineering. Based on the past admission numbers ranging from 200 to 250 freshmen per year in each of the two universities in these disciplines, the increase is over 20 %. This increase is the direct result of the partnership activities and meets the target set in the original proposal.

Ms. Asma Zahid, who received US scholarship, has left her parent university and, therefore, was not included in this analysis.

6. Setbacks

6.1 Case of Ms. Rabia Bukhari

While science, technology and engineering graduates are expected to be well grounded in the fundamentals of science and mathematics, they are also increasingly expected to acquire skills in technical communication, especially in English, to succeed in today's global economy. A survey of CEOs conducted in the 1990s by the Business Higher Education Forum found that the quality valued most highly in graduates by the large multinational engineering companies such as Boeing, even above technical knowledge or skills was *the ability to communicate well* (Reference 1).

Many studies have shown that in large engineering companies, engineers and scientists spend only about 10% of their time on hardcore scientific work. Remainder of their time is spent on *communicating* ideas or results in the forms of presentations, reports, technical papers, conversations, e-mails or teleconferencing, etc.

From the beginning of the partnership, officials and faculty at both of the partner universities in Pakistan have stated that their graduates of science, technology and engineering disciplines are at a disadvantage in finding employment because they lack adequate communication skills. Those who do find employment are usually held back at the workplace and are not promoted to managerial or other administrative positions because of the same reason. And, as fewer graduates of these disciplines find employment, fewer incoming students are attracted to these disciplines.

The problem, according to the officials, is more acute at Sardar Bahadur Khan Women University because the university does not have a single well trained faculty to teach technical communication skills to the students of science, technology and engineering. The university officials stated that they preferred to use the US scholarship to get someone trained in the US to teach communication skills to their science students. In the opinion of the university officials, having a US trained faculty in English communication will enhance their faculty capacity by a greater degree to provide better and well-rounded education in sciences compared to having one more faculty in science, technology and engineering area. Addition of a communication faculty will significantly increase employability of their science, technology and

engineering graduates and attract more women towards these disciplines, fulfilling the core purpose of the partnership.

Sardar Bahadur Khan University, subsequently, selected one Ms. Rabia Bukhari for the US scholarship. Ms. Bukhari, at the time of her selection was lecturer of communication for science, technology and engineering students at the university. After completing her graduate studies in English Communication at California State University, Fullerton Ms. Bukhari was to join her parent university and teach technical communication.

Subsequently, Higher Education for Development (HED) officials were contacted and their approval of Ms. Bukhari's selection was sought. Following is my e-mail to Ms. Marilyn Crane of Higher Education for Development and her response approving Ms. Bukhari's selection.

From: Crane, Marilyn [mailto:mcrane@hedprogram.org]
Sent: Thursday, March 25, 2010 1:11 PM
To: Chaudhry, Maqsood
Cc: lttan@fullerton.edu
Subject: Re: Bushra Qayyum

Dear Dr. Chaudhry,

Yes, Ms. Bushra's withdrawal is indeed a disappointment; however I do concur with your assessment that Ms. Bukhari's training would further enhance their capacity in STE education and support her nomination.

With best regards,
Marilyn

From: Chaudhry, Maqsood <chaudhry@Exchange.FULLERTON.EDU>
To: Crane, Marilyn
Cc: lttan@fullerton.edu <lttan@fullerton.edu>
Sent: Thu Mar 25 01:03:46 2010
Subject: RE: Bushra Qayyum

Dear Marilyn

I hope you are doing well. It is regrettable that Ms Bushra Qayyum, because of personal reasons, has declined to accept the scholarship.

This week I had a very lengthy conversation with the Vice Chancellor of the Sardar Bahadur Khan University, Quetta about this matter. The SBK has selected a new candidate, Miss Rabia Bukhari. Ms Bukhari will be pursuing Master in English at CSUF.

Although the goal of the grant is to increase capacity of SBK in Science and Technology area, The Vice Chancellor is of the opinion, and I concur, that English communication skills are vital for science and technology graduates to succeed in the global market. The Vice Chancellor indicated to me that their university does not have adequately trained faculty in the English department to teach written and oral communication skills to their STE students. According to her, a US trained faculty in English will greatly enhance their STE education.

I will wait for your opinion on this matter before I accept their selection. In the meantime, Ms Bukhari has started the CSUF application process.

I thank you, and Lay for unending support and efforts. Bushra's withdrawal is a great disappointment for me, as I am sure it is for you and everyone else involved.

Regards

Maqsood Chaudhry

Surprisingly, after Ms. Rabia's selection had been approved by the Higher Education for Development, she had been admitted in a graduate program at California State University, Fullerton and, she had been interviewed and cleared by the US Embassy officials in Islamabad, USAID Washington abruptly withdrew their approval. This reversal by the USAID was the single biggest setback to the partnership and because of this, Sardar Bahadur Khan Women University lost an opportunity to have a US trained faculty.

6.2 Delays in Visa Processing

There were often unexplained and unanticipated delays in the processing of the visas of the candidates selected for the US scholarship. Some of the candidates selected from Sardar Bahadur Khan Women University, frustrated by the delays and uncertainty of the process, withdrew from scholarship consideration. The visa application for the two faculty members, Ms. Maryam Maqsood and Ms. Sehrish Khan Bazai, selected from the Sardar Bahadur Khan Women University, Quetta for one semester visiting appointment at California State University, Fullerton submitted their visa application in September 2012. After one year of wait, neither were visas issued nor was any clear timeline for the issuance of visas provided.

Eventually, in September 2013, we decided to abandon this activity.

It is to be noted that the women who were selected for the US scholarship often belonged to the poor families. They spent considerable amount of their own financial resources to complete the US visa requirements which included travel to Islamabad for interview with the USAID staff and medical examinations. The partnership could not compensate them as no funds were allocated for visa related expenses. It was a financial hardship and disappointment for those women not to receive their visas. It was also a setback for the partnership because Sardar Bahadur Khan Women University lost a rare opportunity to have their very first faculty with US training.

7. Conclusion

7.1 Overall Evaluation of the Partnership

Despite setbacks, the partnership has satisfactorily achieved its major objectives.

Nine females, five from Sardar Bahadur Khan Women University, Quetta and four from Fatima Jinnah Women University, Rawalpindi have obtained master degrees in their respective areas of study under in-country graduate scholarships provided by the partnership. Two of the females, after completing their master degrees, and with permission from their parent university, have embarked on Ph.D. studies which, until the conclusion of the partnership on December 31, 2013, were paid by the partnership.

One female from Fatima Jinnah Women University has completed M.Sc. in Computer Science from California State University, Fullerton.

Most of these females have joined their parent universities as faculty members and have significantly increased the faculty capacities of the partner universities. Faculty ranks will be further strengthened once the two faculties who are pursuing Ph.D. degrees also join their parent university.

The increased faculty capacities have resulted in a clear and demonstrable increase in the capacity to admit and educate fifty additional female students in the science, technology and engineering disciplines at each of the two universities every year. Our quantitative analysis have shown that after joining of the new faculty, the Sardar Bahadur Khan Women University has an increased capacity of 16 new female freshmen and Fatima Jinnah Women University has an increased capacity of 37 more female freshmen in these disciplines every year. Our analysis further show that these numbers will increase to 50 per year in each of the two universities, a more than 20 percent increase, once remaining faculty, after completing their Ph.D. studies, also join. This increase is the direct result of the graduate scholarships given by the partnership.

This over 20 percent increase in the capacity will be sustained for the foreseeable future, as long as the new faculty remains at the university.

Fifty undergraduate scholarships, 25 at each of the two partner universities, were given at the beginning of the partnership to females from poor families to pursue undergraduate studies in science, technology and engineering disciplines. Although, these scholarships were only a one-time award, 50 students, who without this financial aid would not have been able to attend a university, were able to do so.

Two collaborative funding proposals involving some faculties of the partner universities and California State University, Fullerton were prepared and submitted.

There were also setbacks along the way. Ms. Asma Zahid of Fatima Jinnah Women University, who received the US scholarship, after teaching for one semester there, left the university. In addition, several US scholarship candidates and potential visiting faculty could not come to the United State because, either they withdrew for personal reasons, were not admitted at California State University, Fullerton, were rejected by USAID or were not issued necessary visas by the US embassy in a timely fashion.

Overall, the partnership was a success and it significantly enhanced the capacity of the two partner universities to train more women in science, technology and engineering areas.

7.2 Sustainability

The impact of the nine faculties who have joined or will join their parent universities after completing their in-country graduate studies is going to be significant and sustained over a long period of time as long as the faculties stay at their parent universities. Because of these faculties, universities will be able to admit more women to their undergraduate programs in science, technology and engineering. Having been trained in the premier institutions of Pakistan, the new faculties will provide high quality education to the students of the two universities, and help raise the standing of the universities. The students taught by these faculties, upon graduation, will enter the technical workforce of the country, contributing to the country's economy. Having been trained in science and technology areas, these graduates will earn high wages, economically uplifting their families and becoming role models for other young women in their families and communities.

The impact of the new faculties is particularly significant for Sardar Bahadur Khan Women University, Queatta. The university, because of its location in remote and conflict infested area of Pakistan has not only difficulty attracting new and qualified faculties, especially in science, technology and engineering disciplines but also losing existing faculty, causing faculty shortage.

7.3 Final thoughts

In the original Request for Application (RFA), the partnership was labelled as a *pilot program* implying that after the successful completion of this partnership, call for additional more expanded similar partnerships would follow. Now that the program has successfully concluded, we will eagerly await the new partnership announcements.

Several activities were performed under this partnership. The final goal of all these activities was *to increase the number of women getting university education in science, technology and engineering.* We believe that all of the activities we performed, graduate scholarships, both in-country and US, had largest contribution towards achieving that goal. Future partnerships should allocate major part of their funding to help train more women so that they can become faculty members in science and technology areas. The future partnerships should also train faculty who teach *non-technical* courses, such as English communication, to female undergraduate students studying disciplines of sciences and technology so that after graduation, these females are academically well rounded and can successfully compete with the graduates of other universities in the increasingly global job market.

8. References

1. *Engineering for a Changing World:* A Roadmap to the Future of Engineering Practice, Research, and Education. Project Leader James J. Duderstadt, President Emeritus and University Professor of Science and Engineering, the University of Michigan (page 34)

9. Appendices

9.1 Appendix 1

List of In-Country graduate Scholarship Recipients from FJWU

Although many more are listed in the information provided by the university, only the following four received in-country graduate scholarships from the partnership.

1. Saria Safdar
2. Sobia Khalid
3. Umay-Kalsoom
4. Madiha Wahid

Fatima Jinnah Women University
THE MALL, RAWALPINDI
Tel: 051-9271167 Fax: 92-51-9271168, E-mail: registrar@fjwu.edu.pk

Ref: FJWU/Reg/2014/ 506 January 28, 2014

Mr. Maqsood Chaudhry
Professor
California State University
Fullerton

Subject: Information required

Dear Mr. Chaudhry,

With reference to your e-mail dated January 24, 2014, please find attached herewith the required information for onward transmission to USAID. If you need any further information please do let us know.

Regards,

Dr. Humaira Ahmad
Registrar
Tel: 051-9271170

Fatima Jinnah Women University
THE MALL, RAWALPINDI
Tel: 051-9271167 Fax: 92-51-9271168, E-mail: registrar@fjwu.edu.pk

List of Faculty, Recipients of CSUF Scholarship for MS Degree

Sr.No	Name	Subject	Date of Joining
1	Ms. Asma Zahid	Software Engineering	Service offered-Assumed the charged on 6-7-2011 and left. Case with Legal Advisor
2	Ms. Sobia Khalid	Software Engineering	31-1-2011 on Contract, Regular 22-10-2012 to date
3	Ms. Nelofer	Software Engineering	She is teaching as Visiting Faculty at FJWU.
4	Ms. Benish Fatima	Software Engineering	Data verification is in process
5	Ms. Barkha Javed	Software Engineering	She completed her degree in October 2013 and her request for joining the University is in process.
6	Ms. Saria Safdar	Software Engineering	On Contract 3-9-2012 to date
7	Ms. Natasha Arjumand	Software Engineering	Data verification is in process
8	Ms. Umay-Kalsoom	Computer Science	Have teach as Visiting Faculty in Winter Semester 2013 (18-2-2013 to 14-6-2014) will rejoin after 15-11-2013
9	Ms. Madiha Wahid	Computer Science	Have teach as Visiting Faculty in Winter Semester 2013 (18-2-2013 to 14-6-2014), On contract 28-10-2013 to date

28/1/14

9.2 Appendix 2

List of In-Country graduate Scholarship Recipients from SBKWU

SBK WOMEN'S UNIVERSITY BALOCHISTAN

No. 45/VC:/SBKWU/13/ 112.

Dated: 06/11/2013

Mr. Le Lam
CSU Fullerton Auxiliary Services Cooperation
2600E, Nutwood Suite 275
Fullerton, CA 92831

Subject: **Partnership for Women in Science and Engineering in Pakistan**

Dear Sir,

This is with reference to the above subject. Kindly find enclosed herewith the Invoice No. Fin/84/SBKWU/13/165 dated November 06th 2013, from Sardar Bahadur Khan Women's University for the Payment from CSU Fullerton Auxiliary Services Cooperation along with.

With Warm Regards

Yasir Mir
Principal Staff Officer
To
Vice Chancellor
SBK Women's University
Quetta, 87300
Pakistan
Off: 0092-81-9213301(2)
Fax: 0092-81-9213308
Email: binmir@gmail.com

SBK WOMEN'S UNIVERSITY QUETTA

No. 45/VC:/SBKWU/13/113

Dated: 08/11/113

Mr. Le Lam
CSU Fullerton Auxiliary Services Cooperation
2600E, Nutwood Suite 275
Fullerton, CA 92831

Subject: **Partnership for Women in Science and Engineering in Pakistan**

Dear Sir,

This is with reference to the above subject. The requisite information pertaining to this University as desired is placed as under.

	Names	Universities	Degrees they completed or are completing	Date of completion of degree
1	Zinaz Ayesha	Karachi University Karachi	MS	Sep 2011
2	Shumaila Mazher	Karachi University Karachi	MS	Oct 2013
3	Adeela Hilal	International Islamic University	MS	Oct 2012
4	**Nosheen Zaheer**	**International Islamic University**	**MS leading PhD**	**August 2014**
5	**Humeira Ahmed**	**International Islamic University**	**MS leading PhD**	**August 2014**

With Warm Regards

Yasir Mir
Principal Staff Officer
To
Vice Chancellor
SBK Women's University
Quetta, 87300
Pakistan
Off: 0092-81-9213301(2)
Fax: 0092-81-9213308
Email: binmir@gmail.com

9.3 Appendix 3

Enrollment Data of Classes Taught by FJWU In-Country graduate Scholarship Recipients

Fatima Jinnah Women University
THE MALL, RAWALPINDI
Tel: 051-9271167 Fax: 92-51-9271168, E-mail: registrar@fjwu.edu.pk

List of Courses Taught and Enrolment

Ms. Saria Safdar		
Semester	**Courses**	**Enrollment**
Semester 1: (Fall 2012)	Introduction to Software Development (Taught to two Semesters)	(29 & 39)
Semester 1: (Fall 2012)	Computer Communication and Networks	(42)
Semester 2: (Winter 2013)	Software Construction	(38)
Semester 2: (Winter 2013)	Human Computer Interaction	(38)
Semester 2: (Winter 2013)	Introduction to Software Development	(25)
Semester 3: (Fall 2013)	Software Project Management	(30)
Semester 3: (Fall 2013)	Software Requirement Engineering (Taught to two Semesters)	(30 & 38)
Ms. Sobia Khalid		
Semester 1: (Winter 2011)	Linear Algebra	(65)
Semester 1: (Winter 2011)	Object Oriented Programming (taught to two semesters)	(34 & 39)
Semester 1: (Winter 2011)	Language Fundamentals	(30)
Semester 2: (Fall 2011)	Programming Fundamentals	(43)
Semester 2: (Fall 2011)	Introduction to Computing	(45)
Semester 2: (Fall 2011)	Digital Logic Design	(21)
Semester 3: (Winter 2012)	Object Oriented Programming	

28/1/14

	(taught to two semesters)	(30 & 25)
Semester 3: (Winter 2012)	Linear Algebra	(30)
Semester 4: (Fall 2012)	Visual Programming (taught to two semesters)	(28 & 38)
Semester 4: (Fall 2012)	Data Mining	(18)
Semester 5: (Winter 2013)	Artificial Intelligence	(44)
Semester 5: (Winter 2013)	Data Mining	(29)
Semester 5: (Winter 2013)	Object Oriented Programming	(52)
Semester 6: (Fall 2013)	Operating System (taught to two semesters)	(27 &27)
Semester 6: (Fall 2013)	Artificial Intelligence	(45)
	Ms. Nelofar	
Semester 8th : Winter 2013	Android Application Development **(As Visiting Faculty)**	(35)
	Ms. Umay-Kalsoom	
Winter 2013	Introduction to Computer (As Visiting Faculty)	(40)
Winter 2013	Skills for Research (As Visiting Faculty)	(68)
	Ms. Madiha Wahid	
Fall 2013	Introduction to Computing	(70)
Fall 2013	Programming Fundamentals	(35)
Fall 2013	Computer Organization and Assembly Language	(68)
Winter 2013	Professional Practice in Computer Science (As Visiting Faculty)	(50)

9.4 Appendix 4

Enrollment Data of Classes Taught by SBKWU In-Country graduate Scholarship Recipients

List of Courses Taught and Enrolment

1. **Ms. Humaira Ashraf (PhD International Islamic University) is on study leave till June 2014. She is not teaching any classes**

2. **Ms Nosheen Zaheer (PhD International Islamic University) is on study leave till June 2014. She is not teaching any classes**

3. **Ms Adeela Hilal (MS International Islamic University). She took admission in PhD in ZABITS Islamabad on self-finance. Shortly after her MS, so she did not joined the university and thus taught no classes. Currently enrolled in PhD and on study leave.**

4. **Ms Shumaila Mazhar (MS Karachi University) Joined in 2012 after her MS was complete, Took following classes for two years (2012-13). Currently enrolled in PhD from Jan 2014 under HEC FDP Scholarships in Fatima Jinnah Women's University.**

Semester	No. of Classes Taught	Enrollment
Semester 1: (Fall 2012)	2	45 & 64
Semester 2: (Spring 2013)	2	55 & 70
Semester3: (Fall 2013)	2	40 & 60
On study leave now for her PhD		

5. **Ms Zinaz Ayesha (MS Karachi University) Joined in 2012 and is teaching courses in her parent department.**

Semester	No. of Classes Taught	Enrollment
Semester 1: (Fall 2012)	2	25 & 30
Semester 2: (Spring 2013)	2	22 & 25
Semester3: (Fall 2013)	2	25 & 32
Semester 4: (Spring 2014)	Will start from 1st of March 2014	

ENTREPRENEURSHIP CURRICULUM DEVELOPMENT AND BUSINESS DEVELOPMENT CENTER BAHRAIN POLYTECHNIC

Revised
From:
4/1/12

To:
June 30 2014

Central Community College
Grand Island
Nebraska

Bahrain Polytechnic
Kingdom Of Bahrain

Dr. Eric Jones
Associate Vice President, Virtual Campus
Central Community College

Dr. Hassan Almulla Deputy
Chief Executive Education Services
Bahrain Polytechnic
Kingdom Of Bahrain

Funding
$350,000

Cost Share
$209,024

Final Report August 18, 2014
Revised final August 29, 2014

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Executive Summary

The overarching aim of this project was for Central Community College (CCC) to assist Bahrain Polytechnic (BP) in designing, planning and implementing the *Bahrain Polytechnic Enterprise Development Center (BPEDC)*, a three-year model program to develop a center of entrepreneur development for student success, and to integrate entrepreneurship into the curriculum of the institution.

The first objective was for Bahrain Polytechnic in conjunction with in country partners to develop a entrepreneurship center for students, engage faculty, staff, secondary and external partners and provide comprehensive services to meet the needs of students looking forward to going into business for themselves, in a climate that historically encourages government employment. BPEDC is intended to provide a single point of contact for entrepreneurial support and mentoring services to student participants and leveraging project partner's expertise when needed.

The second objective was to embed entrepreneurship activities, learning objectives and courses throughout the curriculum of BP to foster the development of business innovation.

The third objective was to facilitate staff and faculty exchanges between the partner institutions and provide opportunities for faculty professional development. Faculty and staff were to be given opportunities to participate in exchanges and attend an entrepreneur professional association's annual conference. Additionally, international experts offered workshops, seminars, and webinars to BP faculty in entrepreneurship education.

The project involved all academic program departments at BP and was intended to result in a significant culture shift in entrepreneurship education at BP and in the employment climate of the region.

List of Acronyms

BP	Bahrain Polytechnic
BPEDC	Bahrain Polytechnic Enterprise Development Center
CCC	Central Community College

Section 1 Partnership Achievements

1.1 Results and Performance

Even though funds from this project did not fund the ultimate outcomes, two of the three major projects have been accomplished; establishing the BPEDC, also called the Entrepreneurship Centre, and introducing entrepreneurship throughout the curriculum at BP are now at advanced stages of development, independent of the grant funding.

On April 27th 2014, Bahrain Polytechnic opened its 500M2 Entrepreneurship Incubator Centre at the Women's Entrepreneurship Centre in Aali with its partner, Bahrain Development Bank. The Centre has been established to support the Polytechnic students, entrepreneurs in residence and members of the local communities in their entrepreneurial endeavors.

Entrepreneurship is being introduced into the various curricula and since September 2013, the number of students participating in credit bearing entrepreneurship related courses, electives or projects has doubled to almost two hundred, with this number set to continue to increase, indicating high levels of achievement towards the second objective.

The third objective was to directly support the project objective of providing Bahrain Polytechnic academic staff with professional development opportunities abroad in order to increase academic capacity and to establish a Virtual Enterprise Center through a partnership with Baruch College. This has not been achieved due to ongoing delays in executing the grant, with the consequence that the necessary funds have not been committed to the objective and associated activities.

1.2 Effects on Institutional Systems

Bahrain Polytechnic recently conducted a time and cost analysis to estimate the overall resource commitment versus reward placed into the project since late 2010. The result of this analysis was that over *four thousand hours* have been committed to Skype meetings, internal meetings and project administration, including the negotiation stages, development of the original scope, budgets and baseline development and reporting by BP project team members. The resource cost to BP has been almost three hundred thousand dollars. This figure does not include travel to various meetings at BP's own expense over the past number of years on behalf of the partnership, which has been significant. CCC has made similar time commitments. There has been a high level of commitment by both CCC and BP to the partnership and achievements to date have been realized by that good will.

Fourth, when HED announced in 2012 that the decision had been made by the USAID to reduce the grant by approximately 25%, it necessitated a redevelopment of all the documentation to the satisfaction of all stakeholders. This was a highly labor-intensive and time-consuming task. After much negotiation, the partners finally reached consensus on the documentation in September 2013. At that time, it was publicly announced that USAID and HED were undergoing a difference of opinion on matters outside the BMENA partners' control. As we were "in between contracts," (the sub-award for the reduced grant amount was in the process of being drafted) this situation posed a high risk for all parties. After considering all aspects of that risk, Bahrain Polytechnic's Board of Trustees made the decision to immediately put the partnership on hold until an internal legal review was completed on the revised sub-award. Over the past five months, the review has been conducted, *and* agreement had *been* reached on all but one issue, that being the arbitration clause. Failure to reach agreement on that clause, compounded by the time it has taken to get agreement on the various issues associated with the reduced funding, has effectively terminated the project in all but official terms. Too much time has passed to ensure successful delivery of all three objectives within the timeframe and scope of the project.

Bahrain Polytechnic's mission of producing enterprising and professional work ready graduates provide a strong signal to the community of its commitment to entrepreneurship, a position underpinned by the Kingdom's *Economic Vision 2030,* which is a strategic plan towards economic growth and diversification based on small to medium enterprises within the private sector. Entrepreneurship and innovation are core to the Polytechnic's recently revised strategic goals and will continue to be reflected in future institutional planning. Similarly, Central Community College has a strongly embedded emphasis on entrepreneurship, and it is committed to the goal of internationalization of its activities. Before the project began, Central Community College and Bahrain Polytechnic leadership had strong institutional and personal relationships, and these have been strengthened by working together on this project. Reinforced by their similar institutional goals, both organizations are committed to continuing the relationship between our institutions after this project ends. Efforts such as faculty exchanges and using Internet technologies sponsored by organizations such as Post-Secondary International Network (PIN) provide continuing opportunities for these activities. The organization meets annually in various English countries. The organization is scheduled to meet at Bahrain Polytechnic in October or November 2015.

Section 2 Shared Learning

2.1 Challenges and Solutions

There were many challenges with this project. From the beginning, the organizational goal and objective requirements proved to be very time consuming mostly in fitting within the complex design and reporting tools of the sponsoring organization (HED). Many of the measures (basic and required) were not relevant to the institutional organization or cultural structures of the host country. The statistical reporting tools of Bahrain Polytechnic at the time were not up to collecting the required complex data sets requested.

The time line for visa approvals, approval for international by the participants, also the structure of the data collection in many ways did not reflect the culture or realities of the host-country partners, specifically, data definition of underserved populations. Inordinate amounts of time and energy were spent

collecting base line data when the data elements were not relevant to the institution.

The political and organizational challenges recognized in late 2011 early 2012 with the HED and USAID put the project in question. Neither CCC nor BP realized the personnel resources required to collect the necessary data; and when realized, neither was financially able to commit the dollars to support the necessary personnel to do the data collection. With this frustration and the realization that the project goals were so important to the Bahrain Polytechnic staff and administration, they committed their own dollars to the project and moved outside the grant restrictions to accomplish the stated goals.

Section 3 Sustainability

3.1 Steps Taken Toward Sustainability

Despite the delays and issues of funding, visa, program travel approval Bahrain Polytechnic implemented the project goals and operations. They are committed to the economic development and changes within the country and goals of the national government, and educational organization and youth of the nation.

Bahrain Polytechnic setup, developed partnerships and implemented the business development center with funds from outside this project. They are committed to continuing the center within its and partners' budget. The participating institution will continue to maintain and expand the Entrepreneurship Center.

The curriculum changes at Bahrain Polytechnic have been incorporated within institutional academic programs. The Bahrain Polytechnic is committed to training staff and maintaining the curriculum to match student and partner needs and to meet the economic needs of the country. The institutional plan is to continue to improve curriculum and expand the processes to include them in institutional priorities.

3.2 Factors that May Influence Sustainability

Institutions in Bahrain like the Polytechnic are subject to government and ministry influence. Changes in the political climate may have major influence.

Originally, the Polytechnic was founded with the concept of being subject and guided by its own board of governors. Following a change in leadership of the Polytechnic, the government ministry exercised more influence in its operations. This ministry influence may influence the curriculum but most certainly will influence the business development center future.

Economic Empowerment through Entrepreneurship (E3)
Final Partnership Report

Partners:

Eastern Iowa Community Colleges (Davenport, IA)
Tulsa Community College (Tulsa, OK)
Sana Community College (Yemen)

December 18, 2013

1. Partnership Overview

a) Description of partnership context and partnership objectives

Eastern Iowa Community Colleges (EICC), Davenport, Iowa; Tulsa Community College (TCC), Tulsa, Oklahoma; and Sana'a Community College (SCC), Sana'a, Yemen attempted to work with local business leaders in Sana'a, Yemen to create a partnership to develop and set the foundation for an entrepreneurship certificate across career and technical education (CTE), and a modularized entrepreneurship certificate program for existing small- and medium-size businesses.

The intent of this project was to develop an entrepreneurship curriculum for career and technical students which would have prepared them to contribute to job growth and economic expansion in Yemen. The launching and growing of new businesses would have resulted in job creation and provided needed economic development in the region. As part of the partnership process, faculty members from the U.S. and Yemen were scheduled to travel to their respective counterpart institutions to work on developing the entrepreneurship modules and recommend proper approaches to deliver these modules for the Yemeni context as well as delivery at EICC and TCC.

We at EICC, TCC, and SCC believed that this partnership would have strengthened entrepreneurship programming at all of the partnering institutions, increased the number of graduates capable of successfully running their own businesses, extended ties between Sana'a Community College and the Yemeni business community, and finally created a solid partnership between the U.S. and Yemeni community colleges with long-term impacts.

The goal of this project was to leverage the resources of two American community colleges in partnership with the resources from Sana'a Community College, Yemen, to develop entrepreneurship education for Yemeni and U.S. community college students. The Eastern Iowa Community College District, Iowa (EICC), Tulsa Community College, Oklahoma (TCC), and Sana'a Community College, Yemen (SCC), collaborated on this project in an attempt to provide career and technical students with training and instruction in entrepreneurship as they prepare to develop, launch, and grow their own small business.

Objective 1. The two Primary Objectives of this project were to train future entrepreneurs by creating and/or strengthening existing curricula, modules, courses, workshops, and/or certificate programs, based on international "promising practices" in entrepreneurship. The goals were to create broader relationships between the partners through short-term faculty, administrative, and/or small business leader exchanges, faculty training and development, conference and workshops, advisory board development, and the establishment of a mentorship program.

The partners intended to establish a transnational development panel of faculty to provide direction, guidance, and support to the project. This panel would have been charged with the task of establishing a mutually recognized joint Yemen/U.S. entrepreneurship certificate with portability of credits among all project partners. The certificate would have ultimately prepared SCC, TCC, and EICC students to plan, start-up, operate, and mature their own businesses in their areas of academic concentration. The partners would have implemented a comprehensive entrepreneurship certificate program for career and technical students that would have been supported by all partners. Topics would have included developing an individualized business plan, performing a market analysis, conducting a feasibility study, identifying sources of funding, selecting a location, creating a niche market, and developing financial literacy and customer service strategies.

This project intended to implement an entrepreneurship certificate for students already enrolled in a career and technical field. The development of this project and the offering of the certificate in entrepreneurship

would have allowed career and technical students to build a solid business foundation prior to their entrepreneurship adventure.

The maturation of the partnership was intended to expand ongoing professional assistance and complimentary learning in subject area content, technology in the classroom and online, student-centered teaching methodologies, assessment tools to measure student learning outcomes, student achievement opportunities, and internships.

Objective 2. The second Primary Objective was to establish business and education partnerships that promote entrepreneurship and workforce development through capacity-building at the community colleges. A key component of this project was to receive direct input from the local business community. An advisory council was scheduled to be established for the purpose of vetting the curriculum and course content, identifying outcomes, and providing potential possibilities for internships.

A mentorship program was also to be developed and implemented to connect students with a mentor from the local business community. As the partnership was scheduled to evolve over the next three years, the partners would have provided linkages between institutions, a portal for student exchanges, and an entrepreneurship certificate model that could have been implemented into a variety of CTE programs and fields. This would have allowed interested students to spend time in another country learning the culture and the intricacies of entrepreneurship.

b) **Summary of activities and work over the life of the partnership**

February 24-29, 2012, CCID Annual Conference

Partnership management team Dr. Pickard (EICC), Dr. Price (TCC), and Dr. Nabeel Alsohybe (SCC) traveled to New Orleans, LA to attend CCID's annual conference and to continue project development. This included working on the budget, reporting requirements, results framework, partnership monitoring plan, and partnership implementation plan.

October 29 – November 1, 2012, Broader Middle East and North Africa (BMENA) Regional Higher Education Partners Meeting

HED partners with programmatic and financial management responsibilities attended the results-based management workshop. The event provided practical training to partners; fostered planning for HED's program outcome evaluations; and promoted networking, community-building, and sharing of implementation strategies. Sessions featured interactive presentations regarding results-based partnership management and measuring impact; HED reporting expectations; and requirements for legal and financial compliance, branding and marking, and professional development and training. In addition, participants had ample time for in-person consultations with American Council on Education (ACE) and HED staff.

Partners left the meeting better prepared to manage their HED partnership awards for positive results and impact. The meeting strengthened institutional engagement and collaboration at the technical and administrative levels by the sharing of regional best practices and innovative solutions to contemporary implementation challenges. Dr. Jeremy Pickard and Dr. Doug Price met their new Yemeni partner, Dr. Adel Abdulrahman, for the first time at this meeting. Dr. Abdulrahman was hired after the Dr. Alsohybe was reassigned by the ministry of education.

February 21-26, 2013, CCID Annual Conference

Partnership management team Dr. Pickard (EICC) and Dr. Price (TCC) traveled to Atlanta, GA to attend CCID's annual conference and to work on the budget, reporting requirements, results framework, partnership monitoring plan, and partnership implementation plan. Dr. Abdulrahman was unable to attend.

March 25-26, 2013, SCC visit to EICC

Project director Dr. Pickard hosted Dr. Abdulrahman, Shaker Raweh, Gamil Mohsen, and Maeen Al-Hakimi at EICC for the purpose of meeting business faculty members John Dabeet and Jim Elias, visiting business and entrepreneurship courses, an attending an entrepreneurship student organization meeting.

March 27-28, 2013, Partners' Meeting at HED Headquarters

Partnership contributors Dr. Pickard, Amy Hanzlin, Dr. Price, Dr. Abdulrahman, Mr. Raweh, Mr. Mohsen, and Mr. Al-Hakimi met for the purpose of working on the budget, reporting requirements, results framework, partnership monitoring plan, and partnership implementation plan.

Those who follow the world news are well aware of the political situation in Yemen. The project partners, HED, and USAID were aware of the volatility of the situation when they took on this project but they could not foresee how unstable the political situation in Yemen was and would become. During this project, the president of Yemen was ousted, embassies were closed, drone strikes on Al Qaeda intensified, and there was increased disruption to communications. The challenges of obtaining visas for Yemeni partners to travel to the U. S. and the challenge of allowing U. S. partners to visit Yemen contributed to the lack of progress.

In conversations with HED over the span of the project U.S. partner institutions communicated the instability of the situation including three leadership changes at Sana'a Community College and the inability to send team members to the Great Teacher's Workshop and the National Association of Community College Entrepreneurship Conference. These factors had significant impact on making progress toward the project's goals and objectives. After receiving a clear directive for implementation from HED at our partners meeting (March 2013) in Washington, DC, no significant results were accomplished over the next six months. At that point we were informed of new leadership at SCC and partners began, with a renewed sense of hope, to have conversations of how to move forward on the project.

In an attempt to get the project on track, the partner institutions held multiple conversations through weekly webinars to formulate a strategy for success and advance the project. The partners also spent a significant amount of time covering the pieces that were needed to complete the baseline. After meeting eight times from August 13 to October 8, 2013, it was determined that the lack of progress toward the goals and objectives outlined in the approved M & E plan would not be able to be accomplished in the time remaining. As we attempted to trim the project to be more manageable, the partners felt doing this would compromise the overall integrity of the project. Therefore, termination was our best option.

The partners are in good standing with each other and do not harbor any hard feelings. The partners will continue to seek ways to collaborate with each other at a time when the conditions are more conducive for success. We truly appreciate the support and tenacity of HED to work with us on this project.

Throughout the Duration of the Project

Project partners met regularly via phone conversations and webinars to complete the M & E plan, budget, and scope of work. The number of meetings intensified in the final five months of the project as the partners attempted to resolve significant setbacks and lack of progress for the entire project.

c) **Description of partnership's most significant achievements**

The most significant achievement by this partnership was establishing a relationship between the United States and Yemen. All partners strived to overcome the political, economic, leadership, and communication problems that plagued this project. The partners worked tirelessly to get this project off the ground but with no avail. Outside of developing a partnership between peers and institutions and working on the budget, reporting requirements, results framework, partnership monitoring plan, and partnership implementation plan, no significant achievements were accomplished during this project.

d) **Summary of impact on host-country development and prospects for sustainability**

Because of the limited number of activities accomplished during the project, the impact on host-country development and sustainability is not anticipated. Sana'a Community College does have a better understanding of the requirements of USAID funded projects and amount of effort required.

e) **Partnership period of performance, funding amount, leveraged funds, and cost share**

The partnership period of performance was January 1, 2012 - November 30, 2013.

The total partnership funding amount was $448,907 with a cost share totaling $67,368. Because of the limited results for the partnership and the termination prior to the end date the full funding amount was not spent. The total amount spent was $41,108.27 and the total cost share amount was $6,271.83 which resulted in a 15.26% cost share rate.

2. Partnership Results

a) **Presentation of the partnership's key achievements and all major outputs produced including important research findings, if applicable.**

The most significant achievement by this partnership was establishing a relationship between the United States and Yemen. All partners strived to overcome the political, economic, leadership, and communication problems that plagued this project. The partners worked tirelessly to get this project off the ground but with no avail. Outside of developing a partnership between peers and institutions and working on the budget, reporting requirements, results framework, partnership monitoring plan, and partnership implementation plan, no significant achievements were accomplished during this project.

b) **Detailed discussion of the partnership's development outcomes, specifically what significant impact the partnership has had.**

Because the project never was implemented at Sana'a Community College, there were no significant impacts on students, faculty, the community, or the institution. The impacts the partnership had were on the project directors who met on a regular basis and developed a solid working relationship.

c) **As appropriate, include tables, graphs or other diagrams that contain monitoring and evaluation findings to support your stated outcomes. Visual aids should highlight relevant results to make them clear and readily accessible.**

Not applicable.

d) **Description of significant challenges to implementation and how those were addressed (e.g. language barriers, security issues, other).**

The significant challenges of implementation for this project were language, culture, college systems, travel restrictions, communication, infrastructure in Yemen, and three changes in leadership at the host institution. These challenges were addressed on several levels with several strategies but had limited results. For example, most of the communication was done via email when the project was initially started but the communication systems in Yemen were constantly being disrupted by terrorist activities in attempts to interrupt the government. There were many times when our Yemeni partners would be out of electricity for a week. This limited the amount of email access they had which in turn limited our communication. We also found it challenging to communicate via telephone because of the poor connection and the American partners often had a hard time understanding the Yemeni partners even though they spoke fluent English. The final method we attempted to use was the Adobe Connect webinar platform. We had much better results with this platform and could understand what the Yemeni partners were saying because of the clear connection. But this platform is Internet-based and can only be utilized if the electricity in Yemen is functioning.

3. Conclusion

a) **Summary of the key lessons learned and advice for future implementers.**

There are several lessons learned for future implementers who will be working in Yemen. At this point in time the political situation in Yemen made carrying out the objectives of this project very difficult. The American partners were unable to travel to Yemen to visit the host institution. This would have allowed them to gain a clear understanding of the issues in Yemen and the systems that were in place at Sana'a Community College. Many colleges in the United States will not allow their employees to travel if the State Department has issued a travel warning for that country. This was the case for the entire partnership and the country of Yemen.

There were also a number of communication barriers which made it very challenging to complete a partnership of this caliber. The electrical power in the country/region would often be out for up to a week at a time. This limited the number of email exchanges, webinars, and other digital communications needed to move this project forward. Often the phone connection was so poor that it was challenging to understand what our partners in Yemen were saying even though they spoke fluent English.

Another lesson learned was how the partners adapted to leadership changes at Sana'a Community College. It is essential that partnerships are developed with the head of the institution as well as with a number of additional employees to ensure solid relationships throughout the organization. Initially the American partners had a solid relationship with four members of Sana'a Community College until all of them, at the exact same time, left the organization or were reassigned to different positions by the government.

b) **Analysis of how the HED partnership has affected policies and practices at both U.S. and host country partner collaborating institutions.**

The partnership did not have a direct impact on policies at the U.S. and host country institutions, but it did impact future practices for partnerships of this nature. EICC's practices were impacted because of the limited success of this partnership. EICC has always valued working in regions of the world that are challenging. But this project will cause EICC to reevaluate the feasibility of capacity-building projects in highly volatile regions of the world.

c) **Discussion of whether or not your institutions will continue to collaborate and, if so, how.**

Despite not fulfilling the outcomes and objectives of this project, the partners did work well together. They established a partnership that will allow continued collaboration. SCC partners will be invited to professional development activities EICC plans to hold in Jordan. Faculty from SCC will be able to participate in professional development training for faculty which will have a direct impact on their students. TCC and EICC will continue to seek opportunities to collaborate through faculty exchanges, study abroad opportunities, and additional international projects. The goal between the partners has always been to figure out a way for continued collaboration once the partnership was complete.

d) **Discussion of the prospects for sustainability as well as future opportunities.**

The prospect for sustainability is limited because there little to sustain. Regular communication between the three partners will continue to seek additional ways to collaborate. Dr. Price and Dr. Pickard will meet on a regular basis at the CCID conferences as well as at other international workshops.

4. Appendices

There are no additional documents or supporting information that would provide relevant examples of the partnership.

I. Detailed Outline

- *Partnership title*: Use of ICT and Service Learning to Develop Health Curricula
- *Period of performance*: October 1, 2010 - September 30, 2013 (extended through December 15, 2013)
- *Names of U.S. and host-country partner institutions*: Fairfield University and Université Alioune Diop Bambey (UADB)
- *Name of partnership directors:* Dr. Winston Tellis (Fairfield University), Mr. Cheikh Sene (UADB)
- *Funding amount, leveraged funds, and cost share:*
  Funding amount: $299,606; Cost Share: $ 254,878
- *Date of final report:*

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Executive Summary

- *Partnership context*
  HED selected the Collège Universitaire Régional de Bambey (CUR-Bambey) as the partner in Senegal. In 2012, the institution, founded in 2007, was renamed Université Alioune Diop Bambey (UADB). Fairfield University was founded in 1942 as one of the 28 Jesuit institutions in the U.S. Jesuit universities have a reputation for rigorous academic standards and service to under-served populations in the U.S. and around the world. Fairfield University has long had a commitment to Service Learning (SL), which therefore made it particularly suited to the project in Senegal, where SL was identified as the method of choice to disseminate health information to the local rural population. The Fairfield team has wide experience in each aspect of the proposed project (i.e. SL, international development, educational technology). The UADB Health Sciences Department has extensive experience in community work in the local area, and the Information and Computer Technology (TIC) Department of UADB is well qualified to develop appropriate training materials for electronic presentation where needed. The combined skills of the two teams would provide the outcome desired by HED, to serve the rural population of the Bambey area.
- *Development issue addressed by the partnership*
  HED plans to improve the training of educators in rural Senegal, where the population has little access to modern technology and the recent advances in fields such as medicine. A widespread problem in rural areas is the insufficiency of information on health matters. Thus, this project was intended to train the university faculty in techniques that would bring them in close communication with their students and with the local villagers around the university's four campuses. SL was the pedagogical method used by Fairfield University's team to use projects in courses with application in local communities, where teams of students presented particular health topics. Using a Microsoft free software application, digital story telling (DST) was the technique selected to develop health modules for presentation in community meetings. Thus, both the Health and the Technology university students would be engaged in the service aspect of each SL course.

- *Development goal and objectives of the partnership(s) per the M&E plan(s)*
  We first conducted a needs assessment, in partnership with UADB. Together we developed a curriculum in consultation with a pilot school in Dakar. The baseline data collected at this stage informed our decisions for the following years in terms of training of faculty. In the second year, the trained UADB faculty trained the students at UADB, and the teachers in the local candidate schools, particularly in SL, which was a major focus of UADB's Rector. At a meeting of all senior faculty in December 2012, the President declared that he wanted "UADB to be known as the Service Learning University in Senegal!" Assessment continued throughout the plan. Full-scale implementation began in the third year, with completely trained UADB faculty guiding the process for the new participants and community projects. We assessed the ability of

the existing network to support the proposed activity on all campuses, and we determined that UADB needed significant enhancement to support planned SL and ICT activity.

- *External Evaluator*
  A report from the approved External Evaluator, Dr. Alassane Thiam was submitted as required. The evaluator confirmed the consistency of the objectives accomplished by his observed results on the campuses, which he visited. He interviewed students, faculty, administrators, and community members during his investigation. His report is attached (Appendix III).

- *Summary of partnership's most significant achievements (organized by partnership objective) and their impact on host-country development, shared learning, and sustainability outlook*
  - At the pilot site Sacoura Badiane Middle School in Dakar, we tested materials for cultural acceptance prior to use in Bambey. We trained 14 middle school teachers, some who had never used a computer before. Fairfield alumnus M. Diakhate (2009) had attended this school and his Fairfield senior project at Fairfield was a proposal for PC training at his former middle school.
  - We offered training sessions to the faculty of UADB's Health Sciences (SDD) and Information and Computer Technology (TIC) departments. Dr. Tellis spent a two-month sabbatical in residence at the main campus, travelling extensively to other campuses as needed.
  - SDD offered training sessions for students and schoolchildren in the area and community members, in five planned health topics. Included in these sessions, was community presentation of student-developed health modules.
  - TIC has identified and worked with a community school near the Bambey campus, where they instructed the faculty and students in the use of computer applications.
  - UADB has acquired several buses to transport faculty and students to various community service locations.
  - SDD and TIC have firm plans to continue the SL course offerings. UADB will expand this pedagogy as the Economics department (ECOMIJ) implements its plan to work with a farming community near Bambey. The professors were trained in SL in 2013, but the partnership ended before they were able to organize the farming community to receive the students in the courses. SDD and TIC are also part of this project.
  - UADB's Director of Technology designed and negotiated installation of an inter-campus Internet connection, which previously was unavailable to satellite campuses. In addition, WiFi is operational on all campuses.
  - Resulting from the network availability, UADB acquired one videoconference system for testing from their funds. Its success prompted similar devices to be installed at other campuses, and classes could be offered online instead of transporting faculty and students between campuses over rugged terrain.

- 6 UADB Faculty spent one week each at Fairfield University's Annual Pedagogy Conference, where they were able to explore new ideas and work on plans to modify their existing courses, where appropriate.
- 3 Research papers were published in academic journals on aspects of the partnership activity, including SL, networking, and SL in the Health Sciences. Two of the papers had coauthors from UADB. In June 2011, Tellis and Vinekar presented a talk at The Annual Conference Colleagues in Jesuit Business Education in Milwaukee, WI entitled: *"Corporate Social Responsibility and the Academic World"*. In September 2012, Tellis presented a talk at the Annual African Studies Association Conference in Philadelphia, PA, at the HED-sponsored Roundtable, "*US Higher Education Initiatives in Africa: Strengthening Public Health Capacity in West Africa"* describing the challenges of education projects in Senegal.
- UADB has negotiated replacing their unreliable and expensive telephone system with an Internet Protocol phone system, using UADB funds.

Section 1. Partnership Achievements

This section emphasizes your partnership's accomplishments and performance over the entire project lifecycle. Please include comprehensive information organized into the following subsections:

1.1 Results and Performance

Describe and discuss the **results** that your partnership achieved in its lifetime:

- Organize results by partnership objective.
    - Training sessions: Digital Story Telling (DST), Service Learning.
      Having tested the process and materials with the pilot site in Dakar, the Fairfield team offered sessions in DST training, first to the UADB faculty of SDD and TIC. In February 2012, a group of 6 graduate students from Marymount University (VA) and Fairfield University (CT) arrived with Dr. Langran to conduct intensive DST training with the students at the Bambey, Ngoundiane, and Diourbel campuses. The outcome was that at least 40 students were trained and they produced their modules for use in community gatherings. The students used SDD's 5 themes as their development guide. The material they developed was used almost immediately, as one of the student groups scheduled a community meeting with Bambey villagers, to which they invited all the U.S. participants. It was an excellent learning experience for everyone, and from questions and reactions, it appeared that the villagers accepted and understood the material well. UADB has created "SL Kits" that includes a small generator, a slide projector (HED funded) and a portable screen. This was implemented in December 2013.
    - SDD sessions in 5 health topics to students, area teachers.
      SDD conducted 5 training sessions, one on each of the 5 themes: Sexuality (including, STD, HIV/AIDS, early Marriages, and sexual aggression), Malaria, Hygiene and Sanitation, Oral Hygiene, Smoking and addiction to various substances, to a large group of SDD students, and a few area school teachers. The SDD Director and other senior faculty conducted the sessions, giving the students ample time to develop their own modules, under the guidance of the lecturer. The material that SDD developed (funded by HED) is reusable and thus available to all future such sessions. The students' direct contact with the rural community is a critical element in the dissemination of the health information that HED has made a priority, particularly for the Fairfield-UADB partnership. The size of the community participants varied from 300 to about 1500 depending on the community and the number of sessions the UADB students conducted. There were mostly women present, with men entering and leaving as their other activities intervened.
    - TIC's work with grade school in nearby Ndem.
      TIC has an eager and competent cadre of faculty and students at Ngoundiane and Bambey campuses, where 7 faculty and 30 students received appropriate DST and

SL training. TIC has developed a close partnership with Ndem School located in, a village near Bambey. The Ndem school received a donation of a few laptops, and the UADB faculty and students first helped examine and set up the units. The Principal of the school requested training for the teachers so that they could use the laptops in the classroom, when appropriate. TIC has begun the process of training all the relevant groups, engaging the young students in learning Internet research techniques. The school has approximately 600 students, 25 percent of whom are female.

- ECOMIJ plans to work with farming community.
  The Economics Department developed an innovative SL plan in consultation with a farming community near Bambey. The Director and students had visited the area an observed that the fields had considerable produce unsold and rotting. The farmers informed them that they could not sell any more produce in Bambey so they were allowing the excess to turn into fertilizer. However, they had never investigated expanding their market into neighboring towns, or evaluating whether modifications to their line of produce could generate a wider market and revenue. Thus, the Department developed a plan to design a SL course that included students visiting the farming community to learn the realities and available resources. Their task would then be, under supervision, to propose modifications to the farmers' methods to expand the market beyond Bambey, and to understand the needs of other nearby communities. TIC would join the effort by assisting in developing modules for market research, and inventory management tools. SDD's students would help the farmers to use sanitary habits in the fields, so that the spread of disease is minimized. However, before ECOMIJ could implement the plan, the Fairfield-UADB partnership ended (December 2014). The UADB President and ECOMIJ have started discussions about future development of this project and its financial support.
- Design and Implementation of University-wide Internet inter-campus connection.
  In December 2012, Mr. Massamba Seck, UADB's Director of Technology, met with Dr. Tellis for a discussion of the current state of the network at UADB. Clearly, the existing Internet connection was inadequate to support academic use. It was not much faster than a dialup line and the line was frequently overwhelmed by the volume of users. Together, they used their expertise and local experts to design a viable network for Bambey, but to include connections to Ngoundiane and Diourbel campuses as well. After extensive research and exhaustive consultation, the design was completed.
  However, The Internet Service Provider (ISP) would deliver the Internet signal via cable only to the Bambey campus, since it is located on a main road. Seck and Tellis researched alternate ways to transmit the signal to the remote campuses. Using a pair of antenna dishes from Airmax, the signal would easily reach the two

campuses from Bambey, but the antennae had to be mounted on a pylon, above the tree line. Once the design was complete, the next task was to price the individual components. After approval from the UADB senior leadership, Seck sent the items to bid from three vendors, so that all transactions were transparent. This was a new experience for UADB, but the Fairfield team considered it a critical element to ensure continuing procedural integrity. The ordering process in Senegal was unlike anything in the Fairfield team's prior experience. While the vendors responded with a quotation, the delivery date would only be available after payment in full, prior to delivery. Fairfield University arranged to transmit sufficient HED funds to purchase the various elements necessary to implement the network. All the elements were delivered and the UADB staff installed the components with which they were familiar, and the vendors completed the rest. The system was tested successfully on Bambey campus in December 2012. The Wifi connection was also effective and immediately used by the students and faculty, in the classrooms and dorms.

HED regulations did not permit pylon construction, but since UADB has a contractual relationship with Google in Africa, Seck and Tellis approached Google's network manager for assistance with the construction at a Dakar meeting. He agreed to investigate the possibility, but returned a few weeks later with the same restriction as HED. UADB as a public institution was part of a group of universities that the World Bank will interconnect across the Internet. That project will be implemented within the next two years, but the World Bank agreed to include the pylon as part of their project and it was implemented accordingly in January 2014. After a successful test in February 2014, all campuses now have Internet access and WiFi for the first time.

- Each campus acquires WiFi capability.

  As indicated above, all UADB campuses now have viable and reliable Internet access and a robust WiFi system as well. Fairfield University donated several Access Points to UADB, which were deployed on all campuses as needed. Instructors are now able to assign readings, knowing that the students have ready access to resources where the source material is available. Textbooks are in short supply and expensive in Senegal, so the ability to share non-copyrighted material with the students over the WiFi system is a major enhancement to the pedagogical environment.

- Acquisition of Videoconferencing capability on 3 campuses

  As the network implementation was proceeding, Seck determined that the network could support videoconferencing. Accordingly, with UADB President's permission, he acquired and installed a complete system using UADB funds. In December 2012, Senegal's President Macky Sall notified UADB that he would be available for a conversation. Using the new system, the country's President,

UADB's President and their respective senior aides conducted a lengthy discussion. It was a robust and highly visible inauguration of an important concept.

Following that test, UADB with partial HED financial support, acquired additional components for the other campuses so that videoconferencing could be used for classes. In fact, the faculty and some students currently travel between campuses along unpaved roads to the other campuses, where they teach after a strenuous 45-minute trip. UADB must maintain a fleet of 4-wheel drive vehicles along with drivers to transport the instructors to remote campuses for class. By using videoconferencing, the potential savings from reducing or eliminating this journey could be thousands of dollars each semester. In addition, expert speakers are often available in Dakar, but are unwilling to travel to the rural Bambey area. Their presentations over videoconference could be an important new feature for UADB.

- **Analysis of Pre and Post Test data**

Students
Pretesting was completed in May 2011 at Sacoura Badiane School in Dakar (Pilot school), and on the campuses of UADB. The survey instrument was derived from available literature and modified for local conditions and translated into French, which is the language used in schools.

Note: The sample size in the post-test population was very low, such that statistical comparison was inappropriate. The small sample size was due to external issues that affected the participation of most of the students. The post-test was designed to measure the effect of SL and DST; the use of technology, community service, and the training *after* the students used it. However, events in the country and on campus caused several academic interruptions, making it impossible to engage in SL activity or in any new techniques. Their priority was completing the current syllabus.

There were 72 usable responses in the pretested population and 8 in the post-test.

- In the **Health Topic Table**, the responses indicated confusion between knowledge and lack thereof of in several fields. Since the post-test was with the Health Sciences group, it is clearly invalid to respond with less information after they were trained and used the training. Perhaps, the students misunderstood the questions.
    - In **Student Benefits From Community Work Table**, the post-test responses were uniformly higher, as would be expected, in some cases considerably higher.
    - The **Computer Affect Table** showed marked decline in post-test responses, as the purpose of the computer was clearly defined, making it an important tool.
    - Similarly, the **Computer Anxiety Table** showed expected marked reduction in scores.
    - **Perceived Ease of Learning Table** was unchanged, but **Perceived Ease of Use Table** showed positive improvement.

- The **Computer Knowledge Table** showed marked increased scores in the post-test, as expected. The **Computer Experience Table** items were not clearly understood, as the responses indicated current use. The **Intention to Use Table** was uniformly higher in the post-test, as expected. The **Place of Use Table** showed uniform increased scores, as expected.

Faculty
Pretesting was completed in May 2011 at on the campuses of UADB. The survey instrument was derived from available literature and modified for local conditions and translated into French, which is the language used in schools.

In the Pre-test, we processed 20 usable responses and in the post-test, we received 23 responses.

- The Reasons for SL Table revealed a mixed increased and decreased tendencies. Peer encouragement, Institutional resources, and incentive money were lower in the post-test, which might be surprising. However, the other questions showed expected increase in the post-test.
  - **Concerns About Teaching SL Course Table** sowed mostly lower concerns except about the cost of the community work. All other concerns diminished after training and use of training.
  - The **Mission Table** showed great awareness of institutional priority for SL in the post-test compared to pretest data. Both items service as part of the academic program and it being a fundamental defining characteristic showed significant increase.
  - In the **Computer Knowledge Table**, most scores were slightly higher, as well as the "I do not know how to use computers" item.
  - The **Computer Experience Table** similarly was uniformly increased in reported responses in the post-test.
  - The **Intention to Use Table** was generally increased in the post-test survey responses.
  - In the **Place of Use Table**, use in school and CyberCafe both declines considerably, which could be an interpretation problem with the questions, since the respondents expect to use the computers equally in SL sites as elsewhere.

- Briefly mention the main facts (what, when, where, who, why) for the outputs produced to achieve outcomes. Activities should be mentioned to support and complement the outputs, not the reverse.
  - In 2010, a Fairfield University alumnus arranged to donate 13 laptops to Sacoura Badiane, a middle school in Dakar, where we piloted the training material. The Fairfield team trained 14 middle school teachers to use laptops with DST. They developed modules and tested them with their own classes successfully. This experience prepared the Fairfield University team for the type of language and examples that would resonate with the local population.
  - SDD has extensive experience in community health issues, since UADB runs a clinic in Diourbel and Bambey. The SDD faculty developed 5 themes: Sexuality

(including, STD, HIV/AIDS, early Marriages, and sexual aggression), Malaria, Hygiene and Sanitation, Oral Hygiene, Smoking and addiction to various substances. They developed training material, including handouts and PowerPoint presentations that students, using DST, then created their own modules for presentation to the community in their SL sessions. Local schoolteachers were included in these sessions and they received USB drives with the material loaded ready for them to use.

- TIC offered to develop video modules for SDD's community sessions, since some of their students are more adept at using the technology and could develop more professional material than some of the SDD students. TIC used the training to spread the use of computers among the local grade schools. They have an agreement with a grade school in Ndem, about 15 minutes from campus, where the school received a donation of a few laptops, and the training of teachers and students would have continuing benefit to themselves, but also to the community, as more technologically adept students emerge from this rural environment more prepared to compete in the modern world.
- ECOMIJ developed an interesting model in consultation with the local farmers. The economics department noticed that the farmers rely only on the local population to buy their produce. However, ECOMIJ sees a greater market beyond the village, perhaps with some product modification. They proposed using TIC's technological skills to search neighboring areas where they might sell their excess produce, or even expand their production. ECOMIJ also worked with the farmers to assess alternate products that would bring them income out of the growing season. Additionally, ECOMIJ engaged SDD to join their effort by working with the farmers to use safe habits in their farms, such as sanitation and general cleanliness. However, due to local delays, the project could not be implemented prior to the end of the Fairfield-UADB partnership in December 2013.
- In 2010, UADB had one very slow Internet connection in the main campus. It was essentially dialup speed, which was unsuitable for academic use. There was no Wifi, and no other campus had access to either Internet or WiFi, including the departments such as TIC, that were teaching advanced computer courses. The Fairfield University team with Massamba Seck, the Director of Technology at UADB assessed the needs and developed the network plan for the main campus and a connection via wireless transmission to the other campuses. The design and negotiation was detailed and very technical, taking most of two years. The initial test was to install a viable Internet signal on the main campus, where most students were located. Fairfield University shared some of its excess Access Points so that UADB was able to install WiFi on the main campus rapidly. The test was successful. The network response time was fast enough to support the academic and administrative needs of the campus. UADB then researched with

Fairfield University support, how the signal would travel to the remote campuses. The Internet vendor was unwilling to install a cable to the remote sites, since the rural population would never become customers. Research surfaced a WiMax solution, which transmits the signal great distances, and most likely would work for the UADB satellite campuses. Mr. Seck ordered the necessary devices covered by HED funds and the installation was complete by August 2012.

- Once the Internet signal was working reliably, UADB acquired a videoconferencing system so that they might access some national programs. It was tested in December 2012, when the country's President, Macky Sall and his staff had a video conference with UADB Rector Seck and his senior staff using the equipment. UADB will incrementally acquire modules for other campuses until all are videoconference capable. That will transform the nature of some courses, because instructors and sometimes students have to travel between campuses for classes. The roads are unpaved and extremely rough. In addition, the university must maintain a fleet of four-wheel drive vehicles and drivers to transport faculty. They envision a major reduction in this travel activity when videoconference facilities allow remote classes across all campuses.
- The antenna dishes to broadcast the Internet signal from Bambey to the other campuses required a pylon to be installed above the tree line. Since HED does not permit 'construction' to be covered, UADB and Fairfield team approached Google's Africa representative at a meeting in Dakar in 2012. However, Google later informed UADB that they also are not permitted to cover construction activities. Finally, as UADB is part of a nationwide effort with the World Bank to interconnect all the public universities, UADB requested assistance with the pylon, and the World Bank agreed to include it in their project. The pylons were installed on all campuses in December 2013 and they are now operational and tested. Ngoundiane campus has Internet and WiFi for the first time in its history.
- UADB recently ordered equipment to upgrade their unreliable telephone system, by using the HED-funded network, to Internet Protocol telephones. They will then reduce their telephone expense considerably while enhancing their capability.

1.2 Effects on Institutional Systems

This subsection allows you to show how the partnership has strengthened the host-country institution's ability to support the country's development priorities.

The following was contributed by UADB SG Cheikh Sene:

Université Alioune Diop de Bambey was honored to get into partnership with Fairfield University through partnership initiated by USAID and implemented by HED. UADB has highly appreciated the inclusive approach that made it able to participate in the jury allocation of the offer to Fairfield University out of more than 30 candidates.

As a whole UADB made the most of the partnership by reinforcing its vision and practice of service learning which began at the very opening of the institution. The project enabled UADB to foster sustainable links with the city of Bambey as well as the surrounding villages. The administration of UADB was impressed by the diplomacy, tact, and straightforwardness of the U.S. partner coordinator. His humility and his respect for contradictory ideas emanating from our faculty made this project come to a beautiful conclusion despite the difficulties inherent to the common execution of the project

It goes without saying that a new institution like UADB which was only three years old with no previous experience in the piloting of such partnership looked upon the project as a test of patience and a test of mastery of the incidence of the inter cultural dimension in the inter university relationships. Fortunately, all misunderstandings relating to the differences of approaches were overcome through dialogue and explanation based on mutual respect and a stern resolution to succeed this very first cooperation.

UADB would like to express all its gratefulness to the U.S. government for fully supporting this project, which helped us enrich our vision of community service with the light of our partners. We would have liked this project to continue to be supported by USAID, but if that is not possible we would not mind discussing with Fairfield the continuation of our relationship in another form and with our own resources.

All through the program, the exchanges only involved faculty on both sides and the students of Fairfield. We, at UADB, would like to initiate reciprocal visits of the two Presidents to discuss the possibilities of studying the project impact on the respective communities.

UADB made President Matar Seck and SG Cheikh Mbacke Sene, (an English speaker), work benevolently. However, one must say that it was difficult to combine the role of secretary general with the coordination of the project. The duties of President Seck and his secretary general constitute the cost-sharing aspects of the project.

God bless Senegal and America

Describe, analyze, and discuss how the partnership has contributed to **developing institutional systems** at the host-country institution. Institutional systems include elements such as strategy, governance, leadership, policies and processes, resources (human, technical, financial…), etc.

1.3 Overall Change

This subsection examines the larger context within which to understand your partnership's accomplishments. Please briefly articulate:

- To what extent did the partnership's achievements contribute to **mitigation of the development issue** that the partnership was set to address?
  Fairfield University and UADB always followed the intent of the partnership as developed by HED. We therefore, designed the entire project around the needs of UADB, expressed to us in meetings with SG Sene and other senior staff at UADB, to further the goals of HED as well. The Fairfield team was flexible and was willing to

adapt and adjust to conditions on the ground. The three-year plan that emerged was the result of several discussions with UADB faculty, administrators, students and some community stakeholders. As UADB's President announced, SL was the focus of the partnership, within which we included the DST tool to disseminate health information to the community in and around Bambey. Appendix I shows the details of each year's activity and outcomes. In year 1 and 2 the Fairfield team completed the training where needed. SDD developed their 5 themes and proceeded to schedule training for their students, using SL and community projects to spread the information to the community as required by HED. Year 3 was intended for implementation of the SL course and plans for SDD and TIC. While some of this was accomplished, not all projects were completed and one (ECOMIJ) was not initiated. The reason was the disruption of academic continuity due to student and faculty strikes and earlier, violence resulting from the Presidential political campaign. The university was frequently unable to hold classes and when they resumed, faculty were required to complete the syllabus. Thus, SL and projects were lower priorities. However, the plans and the designed projects are available to UADB and they expect to continue to serve the surrounding community through the projects designed to address some of the community's needs and concerns.

In December 2013, UADB SG Sene attended a meeting in Dakar of all the public universities in Senegal. During the meeting, the Minister of Education raised to topic of SL and started to explain some of the features. SG Sene raised his hand and asked if he might address the gathering since he was trained by Fairfield University specialists as part of the HED partnership. He then described the pedagogy to the gathering at the end of which, he received a loud and prolonged ovation. Perhaps, UADB President Seck's vision of a "Service Learning University" will emerge from the partnership.

Section 2. Sharing Learning

This section provides evidence-based insights that can be shared with higher education audiences seeking to formulate or improve their own policies and practices related to development-focused partnerships. Please include comprehensive information organized into the following subsections:

2.1 Challenges and Solutions

Describe, analyze, and discuss significant challenges that have affected implementation and/or sustainability outlook. Indicate whether each challenge is related to a specific partnership objective or if it is cross-cutting in nature.

- In developing the modules for use in rural Senegal, the Fairfield University team first had to become familiar with the local area and with the nature of the population that the projects would serve. We therefore visited the campuses in January 2011 to learn what resources were available and what the prevailing norms and expectations. We used a small middle school in Dakar as our pilot site, where we tested the material before implementation in Bambey. This process was informative for the U.S. team and helped them develop culturally appropriate material. In addition, the U.S. team met with the faculty and senior administrators at UADB to learn the extent of their expertise and available skill set of others at the institution. In both cases, the U.S. team was impressed with the competence of all UADB personnel.
- At extended meetings we explored the needs of the surrounding community, and determined who would develop specific materials, and when. The U.S. team was assigned the task of developing training material for SL and DST. We also agreed that prior to any training the Fairfield University team would conduct a pre-training survey to measure the current state of readiness of the faculty and students. Accordingly, the Fairfield University team developed the survey and first administered it to the Sacoura Badiane middle school teachers and students. That exercise indicated that minor modifications to the instrument were needed. The survey was then administered to the UADB faculty, students and community partners in Bambey and other campuses. The same instrument would be administered at the end of the project to determine the effect of the training and use of training (Appendix II). The sample size of the posttest was small because only SDD had planned and executed the SL projects and had used the training. The other departments were delayed by previously mentioned strikes and other disruption, thereby affecting the planned activity.
- UADB was usually unable to meet deadlines for various tasks that were assigned to them during meetings when the Fairfield team was in Bambey. Often, that was the result of circumstances beyond their control.
- During the sabbatical in 2012, Dr. Tellis encountered numerous delays in transportation because the country was embroiled in a confrontational political campaign for the Presidency. Tasks that should have taken hours, instead took weeks.

Further, there were several strikes and sympathy strikes joined by other groups, including the students and faculty at UADB. This further delayed any scheduled tasks. Dr. Tellis used public transportation to attend meetings in Dakar and elsewhere to meet with faculty who were unwilling to meet on campus.

- Between 2010 and 2013, UADB experienced several student strikes for various reasons, including a demand for open admission to graduate school for all seniors. The government pays the students a stipend while they are attending classes and with the unemployment rate at over 50 per cent, their job prospects are not bright. They therefore frequently choose to stay in school, where all their expenses are covered through government grants.
- We learned that most of the faculty does not live in Bambey, but in Dakar or Thies, a city about 30 miles from campus. Thus, they are frequently unavailable for meetings, because they are off campus, except the two or three days when they teach. Scheduling training and meetings therefore, became very challenging.
- The funds transmitted from the U.S. for items purchased by UADB in Senegal, was always challenging. The village bank was not forthcoming in notifying UADB when funds arrived. Further, they charged a transaction fee (as did the U.S. Bank in Fairfield), and used an exchange rate that was beneficial to the bank. The result was that UADB received less than the amount expected, that was meant to cover expenses for particular devices or services in Senegal. When UADB returned unspent funds at the end of the program in March 2014, the same transaction fee and exchange rate issue arose at both ends again, thus reducing the actual amount transmitted.

2.2 Lessons Learned and Best Practices

Describe, analyze, and discuss key lessons learned and recommendations. Indicate whether the lesson learned/recommendation is related to a specific partnership objective or if it is cross-cutting in nature.

- Cultural sensitivity imperative.
  The culture of any country, and within the country each local community must be respected, if the external group expects positive results. The Fairfield team therefore spent time on the first trip in extended conversations with local residents with whom they had contact; with USAID Dakar Office personnel; with the teachers at Sacoura Badiane School; and with Cheikh Sene, the Secretary General (SG) of UADB. From these conversations and from our meetings with the various significant individuals in the government, we were able to design appropriate materials and present them in a manner that indicated a mutual learning experience. The people at UADB greatly appreciated this.
- Western sense of timing and efficiency is not in the Senegalese culture.
  The Fairfield team quickly learned that punctuality is not a high priority for most Senegalese. Rather, they spend time at meetings and in communications on unrelated

matters so that they show respect for the persons involved. In addition, if the meeting required any travel, traffic delays from poor roads or traffic congestion was common. They often tend to wait until the deadline for a task is upon them before they begin the work related to it. This also causes delay, frequently.

- UADB's faculty is unionized and they expect a stipend for any activity not on the contract, including meetings and training sessions for the project.
  The Fairfield team included a budget item; a stipend for faculty attendance at training and community service sessions, if those activities were not part of the classroom session. The students were aggressive about participating in the project, but they could only do so with the faculty participation. Fortunately, the UADB President explained this element to the Fairfield team, and the team acted accordingly.
- Students are extremely interested in participating in projects. They are militant and aggressive in their demands.
  During the first trip to UADB, the Fairfield team visited each campus and with SG Sene and Seck, who was then the TIC Director to explain the plan for the partnership over three years. After the presentation at each campus, the students would ask numerous questions, and aggressively follow the group into the parking lot demanding participation. They are bright and eager students, all of whom reside in the dorms on campus. They were anxious to learn whatever new material the partnership had designed for them. They were also clearly eager for the SL aspect of the partnership.
- Transmitting funds is slow and expensive.
  As previously mentioned, transmitting funds to rural Senegal was slow and expensive. It might have been expedient to transfer a large amount at the beginning of the partnership, if the accounting could be aligned between the two institutions. As it transpired, each time funds were wired to Bambey, the banks each deducted a fee, and the Bambey bank in addition used an exchange rate that was usually lower than the local ATM machines used. The effect was that UADB had to cover the purchase temporarily, and in addition, often they had to provide additional funds since the transmitted amount was insufficient to cover the purchase.
- Faculty and administrators are excellent learners and willingly accept new ideas.
  SG Cheikh Sene often remarked to Tellis, that he was impressed by the humility and solidarity of the Fairfield team. It is important to respect the host community and to maintain an open mind so that the visitors learn from the hosts what could sometimes transform the project. The same was true of the hosts at UADB where the Fairfield team found willing participants, ready to accept new ideas and to blend them into their own practices. The administrators were often asked to modify their existing procedures or to reschedule an activity and they were always accommodating.
- Transportation in and around rural Senegal is primitive, if one relies on public transportation. The alternative is private service, which is expensive.

There is one paved road passing in front of Bambey campus. The roads to the other campuses are dirt trails, usually animal-cart paths. Those carts are the usual mode of transportation for the villagers. However, between main junctions such as Diourbel or Thies, a public bus carries passengers at unpredictable intervals. A shared taxi: "Sept Place" is another efficient mode of traveling between major towns, with stops on the way. This mode allows passengers to pay a small amount to go even to Dakar. It is certainly cheaper than using a private vehicle, for which the fuel is expensive.

- Senegal follows the French system of education and is rigorously tied to rank and status. The status of rank and position are important symbols in Senegal, as SG Sene explained to Tellis, it is a remnant of the French academic structure. They expect to be addressed as "professor" or "director" by subordinates; never by first name.
- Female participation in education, while increasing, is still sparse. UADB has a considerable female population in some disciplines.
  The statistics of female attendance in grade school still shows a precipitous decline after grade 5, although Senegal has made major strides in this area. This is a cultural and religious reality in many Muslim countries. The Fairfield team with HED encouragement, always sought to include as many females as possible in every task. There were more females in some disciplines than in others, much as one would find in the U.S., but there was clearly a female presence in every discipline on campus. SDD and ECOMIJ had a greater number of females than TIC.

Section 3. Conclusion

This section allows you to discuss the factors that may influence the prospects for sustainability of your partnership. It should also include other reflections you would like to share.

In 2010, when Fairfield University was considering the RFP from HED, we had no experience in Senegal, although two persons of the Fairfield team had prior experience in Morocco and South Africa, and all of us had experience in Central America. The nature of the request was almost tailored to the expertise of the Fairfield team; a specialist in Graduate Education with a specialty in technology, a specialist in Information Systems and computational techniques and a specialist in SL. Together they were able to address all the areas in the request for proposal. However, from prior experience, we were aware that without a conversation with the partner institution in Senegal, the Fairfield proposal would not be appropriately designed. We therefore had an extended telephone conversation with SG Cheikh Sene prior to any design work. We explained to him what we had in mind and he advised us on certain changes that would be needed in the Bambey context. That was precisely what we hoped would emerge from that conversation. UABD received the final version of the proposal with much hope and expectation. The Fairfield team also had many conversations with Mamadou Diakhate, who graduated from Fairfield University in 2009. Mr. Diakhate was born in Senegal and he attended Sacoura Badiane Middle School in Dakar as a child. He designed a project to introduce computers into that school under guidance from his advisor, Dr. Tellis, and we were able to incorporate some of his ideas in the training and in the introduction of the laptops in the school. We used Sacoura Badiane School as a pilot site to field test the materials that we developed for use in Bambey. A Fairfield University alumnus of 1987 arranged for a donation of 13 laptops to that school and as we delivered the units, we were able to introduce the teachers to SL and DST. What was unclear or culturally inappropriate, we were able to modify before expanded use at UADB's campuses.

The Fairfield team spent many weeks developing the Annual Work Plans (Appendix I) so that the responsibilities were clearly outlined. The Fairfield team visited Bambey in January 2011 to assess whether the infrastructure would support the planned activity, and to become familiar with the individuals who would lead the project at UADB. While the network was clearly insufficient to support the extent of the technical activity planned in the project, the faculty was well qualified in their respective areas and dedicated to the intellectual growth and development of the students at UADB. The faculty learned the SL and DST material quickly, was expected and the students were equally fast learners. In addition, the students were eager and aggressive in their demand to participate in the program, in whatever role was available to them. In his assessment of the partnership, the External Evaluator, Dr. Thiam confirmed the positive attitude of the students and the positive results from the SL and DST training and projects. His observations were consistent with those of the Fairfield team as it arrived for visits at regular intervals.

Prior to any training at the Sacoura Badiane School, using a validated survey instrument modified for local conditions, we assessed the teachers and students at the school. The instrument included questions on prior use of technology and attitudes related to its use. We also included questions related to community service. This data was gathered and merged with similar survey data from the Bambey, Ngoundiane, Diourbel, and Lambaye faculty, students, and community members, who were assessed prior to scheduled training. We followed the same

process at the end of the project, after training was complete and the groups had used the training in practical applications. The posttest assessment was conducted at the end of the partnership, when additional time for assessment was unavailable. Thus, the sample size was small and consequently, the statistical procedures we had planned to run were not statistically valid. Instead we were able to obtain information from alternative techniques as listed in Appendix II.

In December 2013 as the Fairfield-UADB partnership ended, there were some obvious changes to the UADB campuses. The most significant enhancement was the implementation of the inter-campus Internet access and WiFi availability on all campuses. HED will be remembered for supporting and encouraging this development, which will have a long lasting the surrounding community. The effect of the network has brought previously unavailable resources and information to several villages in the Bambey area. The SL projects with the communities and schools will continue to serve the area long after the partnership has ended. For that, HED's foresight and financial support in fostering these relationships will reap goodwill for the US in ways few other initiatives might accomplish. Educating the youth and their parents in areas often neglected is of major significance in the reduction of worldwide illiteracy and disease.

Although the partnership ended before ECOMIJ's major and innovative project could begin, UADB has indicated that in its continuing support for SL, the project will be completed later. UADB acquired four buses to transport faculty and students to various service sites, demonstrating their commitment to SL and their commitment to the surrounding community, giving life to the UADB President's vision of UADB becoming the SL University of Senegal!

Appendix I

Summary Data Table

Annual Workplan Year 1 of 3

Timeframe *(by month or quarter)*	**Planned Activity***	**Anticipated Development Outputs****	**Results**
Year 1 Quarter 1	Develop online collaborative environment (using a website and/or course management system)	An online collaborative environment will be put in place for document sharing and communication among partners	Fairfield Univ. MENTOR system access provided to UADB
Year 1 Quarter 2	Conduct needs assessment: Fairfield University project faculty travel to Senegal; Meet with UADB faculty & Ministry of Education officials	Assessment of the social, physical, and institutional environments, analysis of identified needs, and statement of proposed action in the form of a goal statement will be used to develop instructional objectives	Fairfield Team visited Bambey January 2011 to assess infrastructure, faculty qualifications, student preparation. Visited pilot site Sacoura Badiane school, Dakar.
Year 1 Quarter 2	Collect baseline data	Data will be collected on UADB pedagogy, service learning, and ICT use, and local middle school pedagogy, health curricula, and ICT use	May 2011 Conducted survey of all potential participants. Sacoura Badiane teachers and student included in assessment.
Year 1 Quarter 3	Develop health education materials in consultation with UADB staff and pilot school in Dakar	French-language health education materials	SDD developed 5 themes and all relevant materials in reusable form.
Year 1 Quarter 4	Pilot health education materials and teacher training at Dakar school; assess learning outcomes from pilot	Materials use and learning outcomes from pilot will inform next implementation in middle schools	December 2011 training materials tested at pilot site adjusted as needed.
Year 1 Quarter 4	Develop service-learning training materials in collaboration with UADB faculty	French-language service-learning training prototype materials	SL material from Fairfield Univ SL Department shared with UADB, translated and modified as needed.
Year 1 June	UADB faculty travel to Fairfield University's annual June conference on Technology, Pedagogy, and Course Redesign and visit Roger Ludlowe Middle School (town of Fairfield) and local service-learning sites.	Human capacity building at UADB and Fairfield University; in-person meetings to inform project development	Dr. Awa Gaye, Director of SDD and Mssamba Seck, Dir Technology spent one week in October 2011 attending SL classes, meeting Nursing and other faculty, visited clinics.

Annual Workplan Year 2 of 3

Timeframe *(by month or quarter)*	**Planned Activity***	**Anticipated Development Outputs****	**Results**
Year 2 Quarters 1 & 2	First semester-long faculty exchange (Dr. Winston Tellis from Fairfield University spends sabbatical at UADB)	Human capacity building at UADB and Fairfield University; project development and implementation of "training of trainers" session	Tellis spent January and February 2012 in residence at Bambey. conducted SL training of faculty, capacity training, designing network.
Year 2 Quarter 2	Deliver first "training of trainers" session for UADB faculty: rapid prototyping of materials in service-learning	French-language service-learning training materials fully developed; Improvements for UADB faculty in knowledge of ICT pedagogy, increased ICT acceptance, service-learning models	Trained all faculty present in SL, using same materials they would use later. Political demonstrations limit attendance. Travel to Dakar to meet faculty.
Year 2 Quarter 2	New Graduate School of Education & Allied Professions Fairfield University course developed to incorporate international service-learning	Institutional capacity strengthening at Fairfield University; new course development	Change in personnel. Not completed.
Year 2 Quarter 3	Conduct first round of service-learning experiences for Fairfield University students to travel to Senegal to assist in training UADB students and visit middle schools; UADB students receive service-learning training and participate in teacher partnerships in small number of local schools.	Students from the Graduate School of Education & Allied Professions participate in international service learning; Contributions to Senegal's national health and ICT development goals; Middle school teachers in target Senegalese schools have professional development in using technology to deliver health education.	Students from Fairfield Graduate School of Education & Allied Professions and Marymount U (VA) participate in international service learning. Trained students in DST and developed numerous modules for community meetings
Year 2 Quarter 3	Mid-project assessment – review of data collected on UADB pedagogy, service learning, and ICT use, and local middle school pedagogy, health curricula, and ICT use; review of quarterly and bi-annual reports	Assessment will inform project implementation for year 3	Joint decision to forgo midterm assessment; training was not used because of repeated faculty and student strikes and political demonstrations. University shut.
Year 2 June	UADB faculty travel to Fairfield University's annual June conference on Technology, Pedagogy, and Course Redesign and visit local School () and local service-learning sites.	Human capacity building at UADB and Fairfield University; in-person meetings to inform project development	Dr.Youssou Kasse and Dr. Gallo Sow attend Fairfield Annual Pedagogy Workshop, Conference. Worked with peers and modified their courses based on new information.

Annual Workplan Year 3 of 3

Timeframe *(by month or quarter)*	**Planne Activity***	**Anticipated Development Outputs****	**Results**
Year 3 Quarter 1	Full-scale implementation of service-learning project at UADB	Institutional capacity strengthening at UADB	Delayed due to student, faculty strikes, and political election violence
Year 3 Quarter 2	Service-learning trips by Fairfield University students & faculty to UADB	Human capacity building at UADB and Fairfield University	Budgetary constraints at Fairfield prevented student travel, but Capacity building continued as planned.
Year 3 June	UADB faculty travel to Fairfield University's annual June conference on Technology, Pedagogy, and Course Redesign and visit Roger Ludlowe Middle School (town of Fairfield) and local service-learning sites.	Human capacity building at UADB and Fairfield University; in-person meetings to assess project and sustainability of partnership	Dr. Ousseynou Ka of SDD, and Diery Ngom arrived in June to attend the Fairfield Pedagogy workshop & conference. They returned with modified courses, and visits to Nursing Homes, and Network installations, their respective interests.
Year 3 Quarter 4	Signing of Memo of Understanding to continue relationship between the two universities if sought by both parties	Memorandum of Understanding	Attached.
Year 3 Quarter 4	Final assessment of project; data collection on data collected on UADB pedagogy, service learning, and ICT use, and local middle school pedagogy, health curricula, and ICT use; review of quarterly and bi-annual reports	Final Project Assessment; determination of model's ability to be replicated	• Faculty trained • SL Courses established • Resources for above identified at UADB • All trainees using DST for project presentations • TIC in partnership with Ndem School for computer instruction.

Appendix II
Faculty Pretest Survey

Demographics:

The number of University of Bambey faculty that responded to the initial survey was 20. The respondents had an average age of 29.5, with a standard deviation of 5.18. The youngest respondent was 22, and the oldest was 40 years old. The respondents were 80% male and 20% female. The SDD school was the largest group among the respondents, at 45%, followed by the Santé (health) school, at 35%, and the Ecomij (Economics & Law) school at 20%. They reported an average of 10 years of teaching at the post-secondary level.

Community-Based Service Learning:

The respondents reported an average of 3 departments doing Service-Learning. 45% of the respondents had taught a service-learning class themselves. These respondents teach an average of 3 service-learning courses.

On student learning from community-based service learning, faculty reported an average of 3.9 (sd 0.78) on "Community participation helped students to see the relevance of their college courses"; and an average of 3.67 (sd 1) on "Community work helped students understand college courses". However, they reported that "Students could learn more by spending time in the classroom instead of in the community" (reverse coded, average 3.45, sd 1.15).

In terms of faculty benefits from Service Learning, faculty reported an average of 3.65 (sd 0.75) on "Community work helped me define my own personal strengths and weaknesses"; and an average of 4.9, on "My community-based teaching helped improve me professionally". However, they had a low average rating of 2.7 (sd 1.13) on "Community worked helped me become more aware of my biases and prejudices".

For their reasons for trying out Service Learning, the reason most reported was "desire for increased relevance of courses", with 43% of the respondents choosing this reason and ranking it at 2.20 (at average 1 being the most important, 9 being least important reason). This was followed by "resources to support the issue", with 39% of the respondents choosing this reason and giving it an average rank of 2.22. The full list of reasons is given below:

Reasons for SL (check and rank)	Rank (1-8) Average	Standard Deviation
Need to try something new	1.75	0.97
Desire for increased relevance in courses	2.85	1.27
Have taught these courses before	3.6	1.73
For professional recognition	3.6	1.90
Curiosity	4.7	2.05
Encouragement from colleagues	5.3	1.42
Faculty incentive money	5.35	1.35
Resources to support the issue	5.75	1.33

Most serious concern about teaching a community-based learning course	Average Rank (1-8)	SD
Coordination of placements	4.1	2.36
Supervision of students	4.2	1.74
Unpredictable nature of community work	5.15	1.46
Assessment of student's learning and work	5.25	1.86
Time constraints	5.4	1.54
Reduced time for classroom instruction	5.5	2.09
Costs	5.6	1.96
Communication with community partners	5.7	1.49

Institutionalization of Service Learning

We measured UB's level of commitment to service in the areas of Mission, Promotion/tenure/hiring, Participation of students and curriculum, Faculty participation, Community participation, and Campus publications. In each of these areas, we asked the respondents to chose one of 4 levels of organizational commitment to service.

On the mission, the most selected response was "The service is what we do as citizens" (50%). On Promotion tenure and hiring, the most selected response was "Community research and education are key criteria for hiring and evaluation" (75%). On Student participation, the most selected response was "Learning and community education featured service across the curriculum" (40%). On Faculty Participation, the most selected response was "Community research and active learning a high priority ; interdisciplinary work and collaboration is encouraged". On Community Participation, the most selected response was "Community involved in the definition, implementation and evaluation of community-based research and learning" (70%). On Campus Publications, the most selected response was "The focus on the economic impact , the role of campus centers / institutes" (85%)

Mission	% answering
1 . No mention of this service or undefined reference rhetoric	20%
2 . The service is part of what we do as citizens	50%
3 . The service is part of our academic program	0%
4 . The service is a fundamental and defining characteristic	25%

Promotion, tenure, hiring	**% answering**
1 . Service to campus committees or discipline	5%
2 . Community services mentioned ; volunteer or consultation may be included in the portfolio	15%
3 . formal guidelines to define , document and reward service	5%
4 . Community research and education are key criteria for hiring and evaluation	75%

Participation of students and curriculum	**% answering**
1 . Part of student life in extracurricular activities	0%
2 . Organized support of volunteer activity	20%
3 . Possibility of extra credit , internships, internship experience , events or special activities	30%
4 . Learning and community education featured service across the curriculum	40%

Faculty participation	**% answering**
1 . Service defined only as free campus; committees; some interdisciplinary work	0%
2 . Pro bono consultation; volunteering in the community recognized	0%
3 . Holders / experienced teachers to continue the research community , some teach classes of service learning	10%
4 . Community research and active learning a high priority ; interdisciplinary work and collaboration is encouraged	90%

Community participation	**% answering**
1 . Random or limited individual or group participation	0%
2 . Community representation on advisory committees for departments or schools	15%
3 . Influences campus community through active partnerships or part-time education or participation in service learning programs	15%
4 . Community involved in the definition, implementation and evaluation of community-based research and learning	70%

Campus Publications	**% answering**
1 . community engagement not focus	0%
2 . Stories student or former volunteer as good citizens	10%
3 . The focus on the economic impact , the role of campus centers / institutes	85%
4 . link with the Community as the key to the mission; Fundraising commitment that the focus	5%

IT Adoption:

In addition, we measured the faculty's Information Technology (IT) Adoption, by measuring their Computer knowledge, Computer experience, Intention to use IT, all of which were high. In addition, we also asked about the place of use – it appears that.

Computer Knowledge:

	Average	Standard Deviation
I know how to use a computer	4.75	0.44
I can use computers	4.85	0.37
I have the knowledge to use a computer	3.8	1.36
I do not know how to use a computer (reverse coded)	1	0.00

Computer Experience:

In the past I have used computers	Average	Standard Deviation
frequently ...	4.6	0.60
regularly ...	3.55	1.00
often ...	2.95	1.15
I hardly used computers	1	0.00

Intention to Use:

In the future,	Average	Standard Deviation
I intend to use computers	5	0
I predict that I will use computers	2.05	0.39
I do not intend to use a computer	1	0

Place of Use:

How often do you use computers in the following places ? (1-7 Scale)	Average	Standard Deviation
Home	1.45	1.39
school	5.85	0.49
cyber cafe	4.7	2.00

Pretest Student Survey

The number of usable student responses was 72. The students' ages varied between 20 and 27, with an average age of 23.39 (Standard deviation 1.89). The students were 24% female and 76% male. 61% of the students were in the SATIC (Science and Technology) school, 35% were in the Santé (Health) school, and 4% were in the SDD school. 10% were in their first year, 61% were in their second year, 24% in their third year and 6% in the masters' program. There were no fourth year students in the sample. 39% were in Ngoudiane campus, 22% were in the Lambaye campus, and 39% were in the Diourbel campus.

The students reported health knowledge was high, with most items being above a 4 on a five point scale.

Health Topic	Average	Standard Deviation
Reproductive Health	4.14	0.93
STI / HIV / AIDS	4.47	0.58
Prevention of unwanted pregnancies	4.25	0.93
Prevention and treatment for rape	3.78	1.17
Malaria prevention	4.61	0.55
The use of mosquito nets	4.65	0.54
Sanitation of home and school environments for malaria prevention	4.43	0.77
Hygiene in schools and community groups	4.28	0.85
Personal hygiene	4.56	0.60
Hand washing for personal hygiene	4.66	0.59
Deworming	3.93	1.02
Oral hygiene	4.18	0.88
Toothbrush use	4.46	0.72
"Sothiou" traditional method of cleaning teeth	4.21	0.75
Dangers of smoking tobacco	4.38	0.88
Smoking prevention	4.17	0.93

The community organizations where the students reported working were Aucune, Child fun, association khékh sibirou des parcelles assenies, le ramassage des sachets en plastique pour les besoins de recyclage, association de quartier, poste de santé, neant, pas encore, USAID/child fun sante communautaire, UPROSCOM: union des professionnels de la santé communautaire, district sanitaire, CONGAD, santé communautaire, association sportive et culturelle, club evf, association rurale, amicale des ressortissants de mbour a l'université de Bambey.

The work they reported doing included y'en pas assez là ouù j'habite, c'est d'aider les population,les familles,les groupes d' indivudue à mieux connaitre leurs problemes de santé et a participer à leur eradication; native des villes et ne connaissant rien dans les villages, l'apprentissage communautaire me permettrer de partager mon savoir et acquerir d'autre connaissances puisque les modes de vie sont des fois different, l'apprentissage a base communautaire est toujours un moyen agreable pour acquerir de la connaissance pesé mensuel , causeries sur le paludisme, cholera et sida, neant, non, l'apprentissage a base communautaire est une etude issus de la communauté choisi par la communauté et traité par la communautéc'est une association qui prone la revolution des problemes de santé des populations, il m'a permis

l'adoption d'un comportement pour prevenir et sensibiliser sur les maladies et a la contribution a l'élaboration, a la mise en œuvre et au suivi des programmes, L'apprentissage a base communautaire m'a permi de mieux comprendre la communauté et d'ameliorer ma competence et de savoir mes forces et faiblesses, l'apprentissage a base communautaire m'est utile car il m'a permi de connaitre beaucoup de notion durant ma formation, pour le developpement durable, on tire beaucoup de leçons,on commence a voir ce que l'on est capable de faire si l'on est au communauté,on voit le vrai visage de gens avec qui on travail, c'est interessant et j'en ai besoin.
The students reported benefits from the community participation. The following are responses for items were on a 5 point scale. **Note** that the "I could learn more in the classroom than working for the community" is a reverse coded item; students disagreeing with this item indicates that they found the community work more useful than the classroom.

Student benefits from community work	**Average (1-5)**	**Standard Deviation**
The community participation helped me see the relevance of my college studies	3.66	1.12
The community work I did helps me better understand my college studies	3.15	1.23
I could learn more in the classroom than working for the community	2.31	1.21
Doing work in the community helped me see my own strengths and weaknesses	4.15	0.92
Community work helped me decide on my profession	3.56	1.16
The community work made me more aware of my biases and prejudices	3.87	1.06
Participating in the community helped me enhance my leadership skills	4.16	0.92
Community work makes me more able to communicate my ideas	4.10	1.08
I liked working for the community	4.29	0.86

There were several items measuring the students' IT Adoption. Computer affect was high, with items averaging between 3.55-4.76 on a 5-point scale. Computer anxiety was low, with items averaging between 2.3 and 2.96. Perceived usefulness and perceived ease of use are the strongest factors predicting technology adoption. While perceived ease of use and ease of learning were high, perceived usefulness was even higher, indicating that the students were likely to use it in the future. Following this, the student's intention to use was higher than their computer experience.

Perceived ease of learning	**Average (1-5)**	**Standard Deviation**
Computers are easy to learn	3.79	1.11
I can learn to use computers quickly	4.10	0.86
I can learn to use computers well	4.35	0.72
It's difficult for me to learn to use a computer	2.00	1.16

Perceived ease of use		
Once I learn how to use it,	**Average (1-5)**	**Standard Deviation**
A computer will be easy to use	3.99	0.97
I can be very skilled in using a computer	4.23	0.78
I can become an expert at using a computer	4.10	0.93
Using a computer will still be difficult (reverse coded)	2.36	1.20

Students reported that the place they used computers most frequently was school. They also seemed to be more self-taught and learning with friends and peer-learners.

Computer Affect		
Computers are:	Average (1-5)	Standard Deviation
Fun	3.55	1.40
Exciting	4.12	0.95
Interesting	4.76	0.54
pleasant	3.99	1.05

Computer Anxiety		
Computers are:	Average (1-5)	Standard Deviation
Scary	2.30	1.20
intimidating	2.73	1.36
threatening	2.96	1.50
formidable	2.79	1.49

Perceived Usefulness	Average (1-5)	Standard Deviation
Computers are useful	4.82	0.56
Computers can improve my performance at work	4.72	0.65
Computers can help me do things better	4.74	0.60
Computers can help me do things faster	4.81	0.57

Self-learning vs. being taught	Average	Standard Deviation
I try to learn to use computers….		
…mostly on my own	4.04	1.05
…by teaching myself	3.22	1.41
…mostly in school	3.54	1.28
…mostly through schoolteachers	3.33	1.25
…mostly outside of class	3.85	1.07
…mostly without schoolteachers	4.01	0.99
…mostly without trainers	3.86	1.10
…mostly with other learners	3.89	1.10
…with me and my friends teaching each other	3.71	1.19

Peer-learners	Average (1-5)	Standard Deviation
I have friends who learn computers with me	4.03	1.04
I have people around me who learn computers	4.13	0.97

Computer Knowledge	Average (1-5)	Standard Deviation
I know how to use a computer	4.32	0.60
I can already use a computer	4.21	0.65
I have knowledge of computers	4.01	0.92
I do not know how to use a computer	1.58	0.95

Computer Experience:	**Average (1-5)**	**Standard Deviation**
In the past, …		
I use computers very frequently	3.30	1.52
I use computers regularly	3.23	1.48
I often use computers	3.54	1.27
I have hardly used computers (reverse coded)	1.40	0.79

Intention to Use	**Average (1-5)**	**Standard Deviation**
I plan to use computers	4.72	0.61
I intend to use computers	4.71	0.55
I predict that I will use computers	4.34	0.91
I do not intend to use computers (reverse coded)	1.30	0.64

Place of use	**Average (1=Most frequent ; 7 = Least frequent)**	**Standard Deviation**
School	1.54	1.20
Cyber cafe	3.05	1.70
Home	2.64	2.31

Faculty Posttest Report

Demographics:

The number of University of Bambey faculty that responded to the final survey was 23. The respondents had an average age of 30.8, with a standard deviation of 10.4. The youngest respondent was 20, and the oldest was 60 years old. The respondents were 78% male and 22% female. The SDD Departmen was the largest group among the respondents, at 76.2%, followed by the TIC Department, at 23.8%. There were no respondents from the ECOMIJ Department.

Training:

76% of the respondents felt that they had been trained in Digital Story Telling pedagogy. These trained respondents rated the extent of their training at a 4.23 on a 1-5 scale, with a standard deviation of 0.83. 92% of the trained respondents reported they felt they have utilized the training that they received. The respondents who felt they had utilized their training rated the extent of their utilization at an average of 3.55 on a 1-5 scale, with a standard deviation of 0.93.

Community-Based Service Learning:

The respondents reported an average of 6.22 requests from the community for assistance, with a wide standard deviation of 9.77, and maximum of 30 requests. They reported an average of 1.375 service-learning courses (standard deviation 1.19), and an average of 4 community-UB partnerships (standard deviation 4.69), with the most being 10 requests. They reported an average of 108.33 students working with the community in these courses. The standard deviation was large (166.16), with a maximum of 300 students doing community service. The respondents reported an average of 8.4 teachers adopting Service Learning, with a minimum of 2 and a maximum of 30. They also reported an average of 1.33 departments doing Service-Learning, (standard deviation 1.03), with a maximum of 3. 45% of the respondents had taught a service-learning class themselves. These respondents teach an average of 2.75 service-learning courses (standard deviation 0.96, minimum 2, maximum 4).

Faculty reported mixed outcomes on students learning from community-based service learning. They felt that "Community work helped students understand college courses", (average 3.4, standard deviation 1.1), and disagreed that and "Students could learn more by spending time in the classroom instead of in the community" (reverse coded, average 2.41, standard deviation 1.18). However, they reported lower scores on the "The community participation helped students see the relevance of their college courses" (Average 2.95, standard deviation 1.43). If responses from faculty who do not teach Service-Learning are dropped, we see higher reported student benefits from service learning. The "Community work helped students understand college courses" and "The community participation helped students see the relevance of their college courses" both rose to an average of 4.4, standard deviation 0.55), and disagreed that and "Students could learn more by spending time in the classroom instead of in the community" (reverse coded, average 2, standard deviation 0.71).

Respondents reported more in terms of faculty benefits from Service Learning. The "Community work helped me define my own personal strengths and weaknesses" item had an average of 3.68, standard deviation 1.05; the "My community-based teaching helped improve me professionally" item had an average of 3.28, standard deviation 1.32; and the "Community worked helped me become more aware of my biases and prejudices" had an average of 3.56, standard deviation 0.92. Here as well, the reported benefits were higher if respondents who do not teach service-learning courses were dropped from the list. On the "Community work helped me define my own personal strengths and weaknesses", the average was 4.2, standard deviation 0.84, on the "My community-based teaching helped improve me professionally" the average was 4.0, standard

deviation 1.73) and "Community worked helped me become more aware of my biases and prejudices" the average was 4.4, standard deviation 0.89.
For their reasons for trying out Service Learning, the reason most reported was "desire for increased relevance of courses", with 43% of the respondents choosing this reason and ranking it at 2.20 (at average 1 being the most important, 9 being least important reason). This was followed by "resources to support the issue", with 39% of the respondents choosing this reason and giving it an average rank of 2.22. The full list of reasons is given below:

Reasons for SL (check and rank)	**Rank (1-9) Average**	**Standard Deviation**	**% of respondents checking**
Desire for increased relevance in courses	2.20	0.92	43%
Resources to support the issue	2.22	1.39	39%
Need to try something new	2.50	1.31	35%
I have taught these courses before	2.57	2.15	30%
Encouragement from colleagues	3.33	2.18	39%
Faculty incentive money	3.78	2.17	39%
For professional recognition	3.78	2.54	39%
Curiosity	5.17	3.31	26%
Other	6.00	4.36	13%

In most cases, the faculty made the arrangements for service learning themselves. In a few cases, a student assistant helped them.

Logistics of community-based learning course	**% of Respondents**
I made the arrangements and placements	55%
A student assistant made the arrangements and placements	0%
A student assistant and I worked together on the arrangements and placements	27%
Students handled their own placements	0%
The community representative handled the arrangements and placements	9%
Other:	9%

Student Posttest Survey

The number of usable student responses was 8. The students' ages varied between 22 and 28, with an average age of 25.75 (Standard deviation 1.91). The students were 38% female and 63% male. All students were in the SDD Department. 25% were in their second year, 38% in their third year and 38% in their fourth year. There were no first year students in the sample. All students in the sample responded that they have been trained in Digital Storytelling pedagogy. The average extent they reported that they felt they had been trained was 4.5 on a 1-5 scale (Standard deviation 0.53). All students in the sample also felt they had utilized the training. The average extent to which they felt they had used the training was 4.29 (Standard deviation 0.49)
The students reported health knowledge was high, with most items being above a 4 on a five point scale.

Health Topic	Average	Standard Deviation
Reproductive Health	4.38	0.52
STI / HIV / AIDS	4.38	0.52
Prevention of unwanted pregnancies	4.00	0.76
Prevention and treatment for rape	3.75	0.71
Malaria prevention	4.25	0.71
The use of mosquito nets	4.29	0.76
Sanitation of home and school environments for malaria prevention	4.29	0.49
Hygiene in schools and community groups	4.00	0.76
Personal hygiene	4.25	0.71
Hand washing for personal hygiene	4.38	1.06
Deworming	3.75	0.46
Oral hygiene	4.13	0.64
Toothbrush use	4.13	0.64
"Sothiou" traditional method of cleaning teeth	4.00	0.93
Dangers of smoking tobacco	4.25	0.71
Smoking prevention	4.00	0.53

The community organizations the students reported working for were CONGAD, UFK, ONG Africare, Child Fund, and CETA.
The students reported high benefits from the community participation. All items were 4 or above on a 5 point scale, except for "The community work made me more aware of my biases and prejudices", which was slightly lower at 3.75. Note that the "I could learn more in the classroom than working for the community" is a reverse coded item; students disagreeing with this item indicates that they found the community work more useful than the classroom.

Student benefits from community work	Average (1-5)	Standard Deviation
The community participation helped me see the relevance of my college studies	4.71	0.49
The community work I did helps me better understand my college studies	4.88	0.35
I could learn more in the classroom than working for the community	2.75	1.39
Doing work in the community helped me see my own strengths and weaknesses	4.63	0.52
Community work helped me decide on my profession	4.00	0.53
The community work made me more aware of my biases and prejudices	3.75	0.89
Participating in the community helped me enhance my leadership skills	4.88	0.35
Community work makes me more able to communicate my ideas	4.25	1.04
I liked working for the community	4.88	0.35

There were several items measuring the students' IT Adoption. Computer affect was high, with items averaging between 3 - 4.63 on a 5-point scale. Computer anxiety was low, with items averaging between 1.88 and 2.25. Perceived usefulness and perceived ease of use are the strongest factors predicting technology adoption. What is interesting to note is that the students' perceived usefulness of computers was very high, with items ranging between 4.75-4.88. While perceived ease of learning was not as high as perceived usefulness, the students believed that once they learn how to use computers, ease of use will be high. So we can expect these students to be strong technology adopters in the future. In line with this, students' knowledge of IT was very high, and the items on intention to use computers in the future seemed to be rated higher than their past experience with computers. In addition, we see that the students depended more on self-learning than on learning from school or teachers when it came to learning about IT. In addition, they also reported learning more from peer-learners and friends. They also reported having peer-learners and friends who learn IT with them.

Computer Affect		
Computers are:	**Average (1-5)**	**Standard Deviation**
Fun	3.00	1.07
Exciting	3.88	0.64
Interesting	4.63	0.52
pleasant	3.75	0.71

Computer Anxiety		
Computers are:	**Average (1-5)**	**Standard Deviation**
Scary	2.00	1.20
intimidating	2.13	1.13
threatening	1.88	0.83
formidable	2.25	1.58

Perceived Usefulness	**Average (1-5)**	**Standard Deviation**
Computers are useful	4.75	0.46
Computers can improve my performance at work	4.88	0.35
Computers can help me do things better	4.88	0.35
Computers can help me save time	4.88	0.35
Computers can help me do things faster	4.75	0.46

Perceived ease of learning	**Average (1-5)**	**Standard Deviation**
Computers are easy to learn	3.75	0.89
I can learn to use computers quickly	4.00	0.93
I can learn to use computers well	4.38	0.52
It's difficult for me to learn to use a computer	2.75	1.39

Perceived ease of use		
Once I learn how to use it,	**Average (1-5)**	**Standard Deviation**
A computer will be easy to use	4.25	0.89
I can be very skilled in using a computer	4.50	0.53
I can become an expert at using a computer	4.25	0.89
Using a computer will still be difficult (reverse coded)	2.00	0.76

Self-learning vs. being taught	**Average (1-5)**	**Standard Deviation**
I try to learn to use computers….		
…mostly on my own	4.50	0.53
…by teaching myself	4.50	0.53
…mostly in school	3.38	1.19
…mostly through schoolteachers	3.00	1.41
…mostly outside of class	3.71	0.95
…mostly without schoolteachers	4.00	0.93
…mostly without trainers	3.75	1.28
…mostly with other learners	4.25	0.71
…with me and my friends teaching each other	4.13	0.64

Peer-learners	**Average (1-5)**	**Standard Deviation**
I have friends who learn computers with me	3.43	1.13
I have people around me who learn computers	4.14	0.69

Computer Knowledge	**Average (1-5)**	**Standard Deviation**
I know how to use a computer	4.88	0.35
I can already use a computer	5.00	0.00
I have the knowledge of computers	4.38	1.41
I do not know how to use a computer	2.25	1.75

Computer Experience:	**Average (1-5)**	**Standard Deviation**
In the past, …		
I use computers very frequently	3.88	1.55
I use computers regularly	4.25	1.04
I occasionally used computers (reverse coded)	2.75	1.67
I have hardly used computers (reverse coded)	1.38	0.74
I often use computers	4.38	0.74

Intention to Use	**Average (1-5)**	**Standard Deviation**
I sincerely hope to use computers	5.00	0.00
I intend to use computers	4.88	0.35
I do not intend to use computers (reverse coded)	1.13	0.35
it is possible that I use computers	3.63	1.69
I plan to use computers	4.50	0.76

Place of use	**Average (1-5)**	**Standard Deviation**
Home	3.13	1.96
School	2.38	1.51
Cyber cafe	3.25	1.91

Appendix III
External Evaluator Report
FAIRFIELD UNIVERSITY-UNIVERSITY OF BAMBEY

Report to HED On Fairfield University – UADB Project

Dr Alassane THIAM
14/10/2013

Report to HED
On Fairfield University – UADB Project
Submitted to HED October, 2013
Dr. Alassane Thiam

Executive Summary

To better contribute to the attainment of the Millenum Development Challenge Objectives, USAID through an HED project involving Alioune Diop University and Fairfield intends to implement Service Learning project so as to reduce poverty in villages of the Diourbel area. The program is absolutely relevant to the needs of the country and the region where the university is created. The service learning has positively impacted the curriculum by the strengthening of the computer equipment, the stabilization of the internet, facilitating easy access to course materials and lessons and facilitating communication with stakeholders (students, teachers, administration, and foreign partners). The Health and Durable Development (SDD) department has not yet introduced Service learning into the curriculum but some faculty are thinking about it. The training was conducted by expert teachers with wide experience in health and technology. Completion of the project originally planned for October 31 was extended until December 2013 with the integration of ECOMIG Faculty and new activities at SDD and ICT.

In the future, it would be good to conceive the project together and implement it together administratively and financially so that UADB have the same accountability as the US partners whom they respect very much.

Introduction

I.1. Conditions in region and campuses

University Alioune Diop of Bambey (UADB) (formely Collège Universitaire Régional de Bambey) opened in 2007 as part of the government of Senegal's initiative to decentralize the education and heath sectors and to increase access to higher education. This semi-rural area of Diourbel has approximately 1,275,000 inhabitants with a school attendance rate of 57.76% (one of the lowest in Senegal). In 2008, UADB increased to 4 campuses, quadrupling the number of students. There are 111 full-time employees and 52 part-time employees. UADB is located in the second poorest area of Senegal, the region of Diourbel. The region suffers from most of the poverty- related ailments and needs a good education in health and health related issues.

I.2. Background of Evaluation

Evaluation is taking place in a context where school is re opening with some difficulties relating to the raise of the tuition fees of all universities and threats that there may be disturbances from students' unions.

I.2. Methods of Evaluation

The evaluation method is based on interviews and analysis of documents provided by the UADB coordinator and the US coordinator and interviews with administrators, students and community participates.

I. Main Findings

The Higher Education for Development (HED) with USAID, Bambey University and Fairfield University, as part of their project "Improving the health of communities through service-learning," led in the region of Diourbel activities that fit into the logic of the Strategy Poverty Reduction.

Relevance of program

The program is absolutely relevant to the needs of the country and the region where the university is created. In poor rural areas community service in health using TIC is just a wonderful gift. Health care is still very costly in Senegal with regards the purchasing power of the population. The program helped the targets that have participated in the health program, to be

better equipped, and better contribute to the improvement of their health. The project has permitted to provide farmers, women's associations and local authorities with up to date tools in CIT, company management, planification and health prevention in order to promote durable development.

Appropriateness of Service Learning, Digital Story Telling as introduced into UADB curriculum

The service learning has positively impacted the curriculum by the strengthening of the computer equipment, the stabilization of the internet, facilitating easy access to course materials and lessons and facilitating communication with stakeholders (students, teachers, administration, and foreign partners). Students of Bambey, Lambaye (ICT) and Diourbel (Health) have been trained in Digital Story Telling. Teachers also have been trained in Service Learning and Digital Story Telling. High-speed internet is now available for the administration (Registration and re-registration) and for students on Bambey campus. The project also allowed making functional Videoconferencing. The Health and Durable Development (SDD) department has not yet introduced Service learning into the curriculum but some faculty are thinking about it.

Quality of training

Activities were planned in different phases. In the first phase, students were trained as future trainers by the teachers; a second phase consists of the training of community and relies on the conclusion of their training; students in their turn, train farmers, peasants organizations, leaders of women's organization as well as sport and culture associations throughout the area of Diourbel; a third phase deals with the monitoring and evaluation. The training was conducted by expert teachers with wide experience in health and technology.

Impact of innovations in meeting needs of UADB

It may seem too early to talk of impact but the effects on the community and the university is obvious, so much so that the other students in departments that were not involved were fighting to be part of the project.

Program sustainability

The program came to give shape to the communitarian stand of the trainings of UADB. It will continue through the commitment of the students and the determination of the faculty to help the nation.

UADB Financial commitment to continuity

UADB has not yet discussed the issue; we shall see what the two departments will suggest.

II. Planned activities

With project extension until December 2013, new activities are planned with integration ECOMIJ component:

1. For ECOMIJ, the main objective of their activity is to support farmers in the creation of income-generating activities. This requires training of the target groups on techniques of management (12 organizations will be trained, 3 students formed an organization). These activities will end the third week of February 2014.

2. For SDS, activities are planned on Sexuality Awareness, Oral Dental Hygiene Education and an evaluation will take place at the end. These activities are scheduled during the month of November.

3. For ICT, Service Learning practice is scheduled on site, at NDEM College and Bambey Serer College. Four (4) formations are planed with 10 students +1 ICT teacher per formation (2 formations per target college).

III. Observations and recommendations

If we were to resume a similar project, it would be good to conceive the project together and implement it together administratively and financially so that UADB have the same accountability as the US partners whom they respect very much.

Appendix

Persons interviewed

Names	Functions
Cheikh Mbacke SENE	Secretary General of UADB Project coordinator
Massamba SECK	Teacher UADB TIC coordinator
Dr Awa GAYE	Teacher UADB HEALTH coordinator
Dr Tidjane NDIAYE	Teacher UADB ECOMIG Director
Students	5 Students on TIC: 2 women and 3 men 5 Students on health: 3 women and 2 men

Dr. Thiam's CV

Dr. Alassane THIAM
Mousdalifa 1, Lot 85. Pikine Tally Boubess, BP 18226
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E-mail : thiamal@voila.fr

TEACHER RESEARCHER

PROFESSIONAL EXPERIENCE

- Since April 2013: Lecturer at the University of Thies-UFR Engineering Sciences.
- December 2010 to March 2013: CHARGE OF RESEARCH AND HEAD OF CENTRAL LABORATORY ANALYSIS "SOIL AND WATER PLANTS" Senegalese Institute of Agricultural Research / CNRA Bambey.
- 01/2003-05/2010 - PHD Laboratory of Water Geochemistry, Institute of Earth Physics of Paris (IPGP), University Paris Diderot
  METANOX Program: "Biodiversity and metabolisms in anoxic aquatic systems: microbiological, physical and geochemical dynamics in the water column of a meromictic lake (Lake Pavin, Massif Central)" - (ANR-ECCO GCWR.
- 1/2003-07/2003- TRAINEE Laboratory of Water Geochemistry, Institute of Earth Physics of Paris (IPGP), University Paris Diderot
  MICROBENT program Thau Lagoon (Hérault, France): The benthic biogeochemistry in proof of high spatial resolution: Intercalibration of new technologies
  coastal marine environment.

SKILLS DEVELOPED

- Water Resources and Environment:
- Hydrology, Hydrogeology, Geology, Management and Water Planning
- Mapping qualitative and quantitative monitoring, modeling, cleansing
- Geochemistry-Hydrochemistry:
    - Sampling by Niskin bottle and Syringe
    - measures basic parameters (T, Oxygen, C25, ...) by multiparameter probe debit cloud by saline
    - Dosages: nitrates, nitrites, chlorides and sulfates by ion chromatography, minor elements, trace and major ICP-MS, phosphates, ammonium sulphide by colorimetry
- General Pedology (physico-chemical characterization of soils in the laboratory), Study of environmental impact, sustainable development

Teaching at the University Paris Diderot:

- Member of the expert panel of education: Water Pollution
- Intervention session case study, co-supervision of trainees Master 2.

Teaching at the University of Thies (UFR SI-Isfar)

- Courses Chemistry and Soil Pollution (Master 1)
- environmental impact study (Master 2)
- Course in Geology Isfar Bambey (Preparatory Year)
- Course bio-physicochemical processes in porous media (Research Master)
- Courses Ethics Courses and Engineering Company (Licence 3 Master 1).

Supervision of trainees:

- 2011 Miss Seynabou DER, Master Water Treatment, University of Kenitra in Morocco
- 2012: Elisabeth. A. Mr. C. DIOP, Analysis and Quality Engineer, University of Tlemcen, Algeria
- 2012: Mr Muhammad KONTE, License 3. Applied Chemistry, University of Bambey
- 2012: Mr Babacar Sadikh Yatte, License 3. Applied Chemistry, University of Bambey
- 2012: Miss Maty NDOUR, License 1. Agroforestry, University of Ziguinchor

Project Management:

- From 23 to 26 March 2001: Training in Monitoring and Evaluation Project in Bamako, Mali.

Congress:

- 21 to 25 March 2005: Congress-IPGP PhD – Post
- 24 to 27 April 2006: Congress of Oral PhD-IPGP-France-Communication
- 26 to 29 March 2007: Congress Post-Doctoral-IPGP

- 11-14th July 2007, ILIC, 4th International Limnogeology, Congress, Barcelona-Post
- 13-15 November 2007, the 50th Congress of the AFL: Toulouse-Oral Communication

Seminars:

- November 2008: Global assessment of METANOX Project (Fontainebleau, France)
- June 2007: Mid-Term Project METANOX (Besse, France)
- June 2006: First results from METANOX Project (Besse, France)
- March 2005: Presentation of the project METANOX (Besse, France)
- February 2005: Presentation of my research project to the members of the Geochemistry of Water Laboratory: Interaction Molybdenum-nitrogen cycle in continental aquatic systems

Computer:

- Office software: Word, Excel, Word, Outlook
- Modeling software: MINEQL + Aquasim
- Scientific software: ChemDraw, Sigmaplot 10 surfing EndNote6, Photoshop
- Software database: Access, dBase

Languages:
English (read, written, and spoken), Spanish (read and write), Wolof (spoken, read, and written)

Degrees:

- 2009: PHD Fundamental and Applied Geochemistry "in Water Resources" (Right Honourable Mention), Institute of Earth Physics of Paris, France
- 2003 MASTER (DEA) in Fundamental and Applied Geochemistry, CERTIFICATE ⎫ Health and Safety at Work-Institute of Earth Physics of Paris
- 2001: CONTROL Natural Science (Hons pretty-good), University Cheikh Anta Diop
- 2000 DIPLOMA Computer College-Maurice Delafosse in Dakar
- 1999: LICENSE Natural Science - University Cheikh Anta Diop
- 1998 DUE of Natural Sciences - University of Cheikh Anta Diop
- 1996 BACHELOR, Series D-School Valdiodio Ndiaye Kaolack

Additional Activities:

- Member of the French Association of Limnology (AFL)
- Team Sports: Football, Basketball.

Appendix IV
News Releases

News Releases: http://www.fairfield.edu/dsb/dsb_news.html?id=2880
http://us1.campaign-archive2.com/?u=2281e6517be9b28cbc99a2160&id=0cde7f116b&e=d036a01fb1

Appendix V
Memo of Understanding

Fairfield
UNIVERSITY

Senior Vice President for Academic Affairs

Memo of Understanding
Fairfield University and Université Alioune Diop Bambey (UADB)

March 17, 2014

Fairfield University and Université Alioune Diop Bambey received a grant from USAID/HED for the period October 2010 through September 2013, extended through December 2013. This grant created a partnership between the two institutions located in the United States of America and Senegal, respectively. The grant was intended to develop sustainable skills at UADB such that the USA partner would no longer be needed to maintain the project in Senegal.

The Fairfield University team has accomplished that task, with the able assistance of the senior administrators at UADB, relying upon the dedication and competence of the UADB faculty and staff. This mutual learning exercise shall continue into the future with Fairfield and UADB teams exchanging visits.

We agree to accept periodic visits from UADB faculty and/or staff for brief exchanges even as Fairfield University members may make similar visits to UADB. The cost of such visits shall be borne by the sending institution, and any governmental regulations regarding visas will be handled locally in each case.

Rev. Paul J. Fitzgerald, S.J.
Senior Vice President for Academic Affairs

Prof. Matar Seck
Recteur

1073 North Benson Road Fairfield, CT 06824-5195 Tel: (203) 254-4000, ext. 2776 Fax: (203) 254-4291 www.fairfield.edu

Appendix VI
Pictures of Partnership Activities in Bambey

DST Training Ngoundiane

Training for SDD Doctors

DST Training Bambey

SDD Training, Diourbel

DST Training Diourbel

Designing DST module

Community Service Presentation

Ngoundiane Campus

Dr. Langran with Ngoundiane students

UADB Main Campus

Cheikh Sene in Faculty Meeting

DST Module Design Forms

Bambey Village Center

Sacoura Badiane School, Dakar

Sacoura Badiane Principal, classroom

Sacoura Badiane Teachers designing DST modules

DRs Tellis, Langran, Vinekar with Sacoura Faculty

Dr. Tellis with SG Sene, Recteur Seck

Dr. Vinekar planting tree Bambey

Typical homes in Bambey

Bambey Serere HS faculty

Typical village

Mayor of Bambey with Tellis, Sene, Langran

USAID Dakar Program Office Director Tocco at Inauguration

Pylon at Diourbel

Family meal

Pylon at Ngoundiane

USAID
FROM THE AMERICAN PEOPLE

HED
Higher Education for Development

Broader Middle East and North Africa – U.S. Community College Entrepreneurship Grants Program: 2011-2014

Partnership Title: "Collegiate Entrepreneurship and Collaborative Strategies"

Period of Performance: March 1, 2012 – September 30, 2014

U.S. Institution: Gateway Technical College, Kenosha, Wisconsin

U.S. Partnership Director:

Robin Hoke
Title: Project Director
Dept.: Workforce and Economic Development
Institution: Gateway Technical College
Street address: 3520 30th Avenue
City: Kenosha State: Wisconsin Postal Code: 53144
Telephone: 262.564.3608 Fax: 262.898.7501
E-mail address: hoker@gtc.edu

Host Country Institution: Université Mohammed Premier – Ecole Supérieure De Technologie - Oujda

Host Country Partnership Director:

Dr. Naima Benazzi
Title: Director Dept.: Ecole Supérieure De Technologie - Oujda
Institution: Université Mohammed Premier - Oujda
Street address: Hay El Qods, BP 473
City: Oujda Province: Postal code: 60000 ____
Country: Morocco
Telephone: 05 36 50 02 25 Fax: 05 36 50 02 23
E-mail address: benazzin@est.univ-oujda.ac.ma

Funding amount, leveraged funds, and cost share:
$461,575., Funded $276,842., Shared

Date of Final Report: October 30, 2014

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List of Acronyms

AIREPME	Association for Research of Entrepreneurship & Small Business
ALC	American Language Center
ANAPEC	National Agency for the Promotion of Employment and Skills

BMENA	Broader Middle and East North Africa
CGEM	Confederation Generale des Enterprise
CRI	Regional Investment Center
CUDRO	Development of the Eastern Region
ESTO	Ecole Superieure de Technologie Oujda
MENA	Middle East and North Africa
NBIA	National Business Incubation Association
PD	Product Development
RP	Rapid Prototyping
SMEs	Small - Medium Enterprises
UMP	University Mohammed Premier
WBIA	Wisconsin Business Incubation Association

Executive Summary

In 2011 Gateway Technical College (Kenosha, Wisconsin), already in a partnership with Ecole Superieure de Technologie-Oujda (ESTO, Oujda, Morocco) received an early planning grant for *Collegiate Entrepreneurship and Collaborative Strategies.* In the six months of planning the team was able to link personnel to the program objectives in a logical and sustainable manner to build entrepreneurial capacity at an individual and institutional level. With the US team site-visit to Oujda in May 2011 and the Moroccan team visit to Wisconsin in July 2011, these links were further solidified and project objectives and deliverables were established. The results of the early planning grant follow the executive summary.

Based upon the BMENA partner institutional assessment of its capacity at the time; ESTO desired to develop entrepreneurialism for its students through institutional and individual entrepreneurial capacity building. Following the US team site-visit in May the original partnership objectives of business incubation were revised to focus on capacity building prior to the exploration of incubation. The project goals are identified by learning Objectives (1,2,3) throughout this report:

1. *L'Ecole Supérieure de Technologie faculty have improved ability to teach students and advise local citizens in critical components of entrepreneurial and enterprise development.*
2. *Strengthen the capacity of students to launch and operate their own business and/or measurably enhance existing small and medium sized enterprises (SMEs) by creating internships and other experiential learning opportunities.*
3. *Develop and deploy technological innovations that improve instruction and integrate technology and classroom practice to meet the needs of the productive sectors in society.*

Projected results and outcomes of the partnership include increased knowledge and skills in entrepreneurial development, increased capacity to provide quality technical assistance to entrepreneurs and small business owners, increased experiential learning opportunities for students and value-added linkages to regional businesses and manufacturers – all in alignment to national education and workforce development goals in the US and Morocco.

In 2012 Gateway received the full grant for *Collegiate Entrepreneurship and Collaborative Strategies* and finalized all the necessary programmatic learning objectives, activities, budgets, and monitoring documentation in partnership with ESTO.

Twenty-eight faculty members received certificates of completion in:

- Entrepreneurship and Serving New Companies
- Coaching Start-up Companies
- Fundamentals of Business Incubation

Thirty-three ESTO partners enthusiastically participated in six months of English language classes at the American Language Center. Many continue to attend weekly classes at their own expense to improve their language skills.

Ten ESTO partners (instructors and one administrator) attended the National Business Incubation Association international conference on business incubation in Boston, Massachusetts where they learned about:

1. Coaching Clients to Success
2. Developing an Effective Entrepreneurship Program
3. Developing a University-Affiliated Student Incubator
4. Creating an Entrepreneurial Culture
5. Fostering Economic Growth Through Innovation and Entrepreneurship
6. Public Relations and Advocacy
7. Strategies for Effective Client Mentoring

They participated in tours of incubator and accelerator facilities in the Boston area:

- MassChallenge
- Cambridge Innovation Center
- North Shore InnoVentures
- Venture Development Center

Ten to 20 faculty members were trained on a unique course called Biz Squad. This multi-disciplinary course, which works collectively and collaboratively on problem-centric learning with local business enterprises, includes cross-functional teams of students. Forty-four students at ESTO worked on a total of 13 consultancies. Due to the success of this specific objective Gateway was able to secure additional funds to send US faculty and students to Oujda Spring 2015 in an international exchange program.

Ten faculty members from the Applied and Computer Engineering departments received *Rapid Prototyping and Product Development Technical Training* including hands-on experiential learning on the Projet SD Printer operation system and Magics software (acquired through the grant).

Rapid Prototyping technology has been integrated institutionally and regionally. Programming in Product Development and Rapid Prototyping in the Applied Engineering programs inclusive of computer sciences has been introduced. Students have begun to use this technology in partnership with local businesses.

All three project objectives were in alignment with the goals and priorities of the Moroccan government, particularly the emphasis on youth job promotion, education and training as central tenets of the government's economic and social development strategy.

Positive institutional impacts included the:

- Integration of entrepreneurial concepts in ESTOs teaching
- Introduction of videoconference technology
- Increase in English language knowledge

ESTO is positioned as a lead institution in the Eastern Region of Morocco for entrepreneurial and economic development. This foundational work is the base for future business incubation, advanced technology and a mind-set of entrepreneurial business creation.

Section I: Partnerships Achievements

1.1 Results and Performance

Objective 1: *L'Ecole Supérieure de Technologie faculty have improved ability to teach students and advise local citizens in critical components of entrepreneurial and enterprise development.*

Prior to developing and delivering any entrepreneurial training, everyone agreed that English was the recognized global language of business. In addition, ten L'Ecole Supérieure de Technologie, Oujda (ESTO) faculty, were scheduled to attend the National Business Incubation Association (NBIA) conference in Boston, Massachusetts, April 2013. Therefore, ESTO faculty and administration were trained in English at the American Language Center (ALC) in Oujda. This training was conducted over two sessions, October – December 2012 and January – March 2013. Tuition for 21 individuals was provided by the grant. This group was self-selected however the following criteria were considered; level of project participation, attending the NBIA conference, as well as the impact and ability to move the whole project forward. Funding limited the number to 21, however **33 individuals completed this training**, and showed an increase in knowledge, as well as several continued on their own and to date are still enrolled at the ALC. Therefore exceeding the baseline target. An unexpected outcome of this training was that teachers who were not directly involved in the project were motivated to improve their English language skills. And for the first time at ESTO, one specialty module (management course) was taught in English.

In January 2013, Catherine Pommier, NBIA board member conducted a two-day training, *Entrepreneurship and Serving New Companies* at ESTO in French. The training was designed to develop a foundation in entrepreneurial concepts and ideas at ESTO. The training was developed to increase entrepreneurial capacity and to prepare participants for the NBIA conference in Boston, MA, April 2013. The training consisted of 80 slides including two modules; Background on Entrepreneurship, and Serving Start-up Companies. Each module included several exercises, which led to tremendous discussion. Thirty-four individuals participated during the two days, however **28 faculty and administration received certification** for attending all 16 hours. Ms. Pommier's delivery was both hands-on and experiential, as she manages the International Business Incubator de Montpellier Agglomeration, NBIA Incubator of the Year in 2007. The training was very well received and evaluations conducted after the session indicated an overall approval of 8.5 (scale of 1-10 poor - excellent). (Appendix A)

In April 2013, ten individuals from ESTO representing all three objectives joined the US partners and attended the NBIAs 27th annual international conference on business incubation, *Forging Connections, Collaborations and Community*, in Boston, MA. Over 635 professionals in the incubation industry attended from all over the world including the Broader Middle East and North Africa (BMENA) region.

The conference provided a forum for Gateway and ESTO partners to hone their skills to foster the culture of entrepreneurship and build individual capacity.

Simultaneous translation services were provided at seven pre-selected 75-minute sessions:

1. Coaching Clients to Success
2. Developing an Effective Entrepreneurship Program
3. Developing a University-Affiliated Student Incubator
4. Creating an Entrepreneurial Culture
5. Fostering Economic Growth Through Innovation and Entrepreneurship
6. Public Relations and Advocacy
7. Strategies for Effective Client Mentoring

Each participant had the opportunity to explore how other entrepreneur support professionals manage their programs through incubator and accelerator tours of the following facilities in the Boston area:

- MassChallenge
- Cambridge Innovation Center
- North Shore InnoVentures
- Venture Development Center

(See Appendix B)

After the January 2013 training on Entrepreneurship and attending the NBIA conference in April, ESTO partners requested additional training in entrepreneurial support systems. The budget was collaboratively realigned between ESTO and Gateway to allocate resources for additional training opportunities. A two-day train-the-trainer program was developed and delivered to 37 individuals in November 2013. **Twenty-one faculty members participated and received certificates of completion.** Therefore, 15 exceeded the baseline target. *Coaching Start-up Companies* was broken into four modules; Coaching Skills, Coaching Environment, Coaching a Start-up Business and Coaching a Growing Business. The training included six group exercises utilizing real-life work sheets, which resulted in many dynamic dialogs. Participants were surveyed at the end of the training and reported an overall satisfaction of 8.5 and 8.9 for knowledge and credibility of the trainer, Tracy Kitts, consultant and former president and CEO of NBIA. Comments included:

"I like the new information about the topic – the rich explanatory documents."
"Exercises were useful and very focused."
"Wished it had been longer."

Simultaneous translation services were provided throughout the entire training. (See Appendix C)

April 2014 an overview of NBIAs *Fundamentals of Business Incubation* was delivered and discussed over two days in Montpellier, France including one day spent at the

International Business Innovation Center managed by Catherine Pommier, NBIA board member. Five ESTO partners including Objective 1 and 2 leads joined US team members in this training and sharing of best practices.. While at the Innovation Center ESTO faculty and the project director saw first-hand how a university can work with a business incubator and provide entrepreneurial support. Participants surveyed reported an overall satisfaction of 9.2 (See Appendix D).

The four training opportunities (excluding English training) represented a minimum of 68 hours of high-quality training delivered by internationally renowned experts in the entrepreneurial support industry including business incubation. In addition, it aligned with NBIA's Incubator Management Certificate Program; a comprehensive and practical overview of the tasks and responsibilities of incubator management. The Program was developed with input from experienced industry professionals, and provides a real-world view into the best practices of incubator management, including but not limited to:

- Entrepreneurial concepts
- Infrastructure
- Market-based needs assessments

Total attendance for all four trainings was 100 individuals, 80 of which received multiple certificats of completion. Participants included ESTO faculty, administrators, students and representatives from the local business community including an entrepreneur. **Thirty-two members of the faculty report increased skills in technical areas of entrepreneurial development**. Exceeding the baseline target by ten. **100% of individuals trained report adapting their teaching and course materials to include entrepreneurial principles,** exceeding the baseline target by 35%. The baseline target for increasing internal resources to support entrepreneurs and small business owners was 20%. In hind-site this indicator is difficult to measure in percentages. To continue to develop entrepreneurial capacity the following resources (human, physical, technical and/or financial) were provided:

1. NBIA Developer Memberships for six individuals through September 2015 (Appendix E)
2. Entrepreneurial resource library available to students, faculty and community members (Appendix F)
3. Conducting an Effective Feasibility Study, Presentation by Mark Long & Chuck Wolfe (Appendix G)
4. Feasibility/Needs Assessment Report; Athens, Tennessee
East Central Tennessee Enterprise Development Center (Appendix H)
5. Summary of Business Incubation Programs in the BMENA Region (Appendix I)
6. *Pre-feasibility Study Plan* developed by Chuck Wolfe with Claggett & Wolfe Consultants specifically for ESTO (Appendix J)

"All these trainings were designed to prepare the team for the effective and efficient management of an eventual university incubator." Dr. Naima Benazzi, ESTO Project Director

"Tours of incubators in US and France changed our vision in terms of organization and work." Professor Rahhal Lahrach, Objective 2 ESTO Lead

Objective 2: *Strengthen the capacity of students to launch and operate their own business and/or measurably enhance existing small and medium sized enterprises (SMEs) by creating internships and other experiential learning opportunities.*

Faculty at ESTO was trained by Gateway faculty, Cheryl Ucakar (Objective 2 Lead) on a unique course called the Biz Squad during the Fall 2012 semester. It is a multi-disciplinary course, which works collectively and collaboratively on problem-centric learning with local businesses and entrepreneurs. The Biz Squad course isa semester long class made up of cross-functional teams of students from the following tracts: Accounting, Marketing, Information Technology, Administrative, Graphic Design, Supervisory and Business Management programs at Gateway. Collectively this team works with local businesses on a consultant basis to address specific requests. These requests can range from creating a website, a database, and a marketing or business plan.

During the baseline data collection visit it was determined by the ESTO and GTC team that this program would be replicatable as a project-based learning environment with students selected by instructor nomination. The team of multi-disciplinary instructors started with nearly 20, but a total of ten key instructors consistently participated in this programming.

Starting in September 2012 the ESTO instructors shadowed the GTC Biz Squad. They would connect via video conference to watch the interactions between the students and instructors. This experiential learning opportunity helped the instructors understand the processes of problem-centric learning. It also allowed them to see how the cross-functional teams worked in a consultative manner. While the initial intention of this training was to prepare ESTO for their exclusive Biz Squad programming, the team determined it would help in application, if both ESTO and GTC students/faculty worked together on projects and as a whole team.

In January 2013 EST implemented its first Biz Squad class with 14 students from cross-functional programs. Both teams, Gateway and ESTO, worked collectively on two businesses (each) from Wisconsin and Oujda through problem-centric learning. They met weekly via videoconference technology throughout the semester. Two more classes followed in September 2013 and January 2014 including 30 more students, three additional US businesses and four more Moroccan businesses. Projects included, website development, graphic design, database development and marketing.

The successful launch of this effort increased opportunities for ESTO and Gateway students to work on diverse international projects which increased the depth and breadth of programming overall. The involvement of faculty, students and

entrepreneurs dramatically increased everyone's international exposure to culture, business practices and educational models. Students at both institutions have the opportunity to work as a team with students from very different cultures to work in a consultancy manner for businesses which have different paradigms, policies, and practices.

It was through extensive outreach to the local business community that ESTO was able to attract these projects for consulting work. A working relationship was established between the ESTO Biz Squad team and the Confederation Generale des Enterprises de Maroc (CGEM), similar to a local chamber of commerce chapter in the US. Thus assuring area small businesses will continue to be an active participant in student-based projects. The CGEM continued its support of this project and included a visit to USAID in Morocco speaking on behalf of the value of this initiative.

Forty-four students at ESTO worked on a total of 13 consultancies, exceeding the baseline target of 30 students by 14 and 9 consultancies by 4. The students applied real-time academic skills to address real-life needs of the local business community.

Due to the success of this specific project. Gateway started an International Biz Squad which is now two semesters long rather than one. Gateway secured additional funds to send US faculty and students to Oujda Spring 2015 who are serving on the International Biz Squad. Eight students and one instructor are scheduled to attend. It is the hope of the team that funding can be identified to bring ESTO students and instructors to Gateway as an exchange in the near future.

"The Biz Squad experience, including contact with businesses in the presence of students, has allowed us to better observe what our students can do to meet the needs of these companies." Afaf Bensghir, Professor, Finance, Statistics and Marketing, ESTO

"For the first time, we were able to involve and integrate together students, business professionals and teachers in the analysis and study of projects as part of a fresh perspective with American students and teachers." Khadjia Douiri, Professor, Accounting and Marketing, ESTO

Objective3: *Develop and deploy technological innovations that improve instruction and integrate technology and classroom practice to meet the needs of the productive sectors in society.*

Once the lengthy purchasing process of the 3D Printer was complete and installed, *Technical Training* was delivered to ten individuals over five days in December 2013. The training agenda included:

1. Introduction to Rapid Prototyping
2. Rapid Prototyping Terminology
3. Rapid Prototyping Process

4. Difference between Rapid Prototyping and CNC machining
5. Examination of Research Books
6. Different Processes of Rapid Prototyping
7. Classroom Training on Magics Software
8. Review of Projet SD 3D Printer Operation System
9. Set-up Files for Printing Using Majics
10. Run a Test-part
11. Review and Discussion

"The one-week training provided by Mike Cobert and books delivered under the project have trainers to master this process. In this course I learned a lot about using the 3D printer, the desgn on Majics software, and drawing on the 3D printer."
Mostafa EL Ouariachi, Professor, Electronics, ESTO

ESTO integrated the Rapid Prototyping course within the programs of Mechatronics and Industrial Maintenance and has reached more than 30 students in Spring 2013. Product Development courses were integrated within the programs of both the Applied and Computer Engineering departments and has reached more than 300 students to date.

"As head of the mechatronics department, I introduced the teaching of Rapid Prototyping the 2nd and 3rd semesters and the importance of developing and deploying technological innovations and it's impact on education." Mostafa Ziani, Professor, Applied Engineering, ESTO

1.2 Effects on Institutional Systems

All three project objectives were in alignment with the goals and priorities of the Moroccan government, particularly the emphasis on youth job promotion, education and training as central tenets of the government's economic and social development strategy.

The very first activity to have a significant impact on institutional systems was the introduction of videoconference technology. Prior to the partnership this medium was one that they had not used before. The first LifeSize videoconference equipment was used primarily for the monthly face-to-face partner planning meetings and the individual objective lead meetings. This certainly made the project implementation process an efficient one as well as added to a better understanding of communications through non-verbal cues, and improved engagement beyond the scope of a conference call. With a strong language and cultural differences it was critical to enhance communication as much as possible. The second LifeSize videoconference equipment was primarily for the student Biz Squad classroom. This technology involved the students as actors, active and reactive and provided the venue in which ESTO students could see first hand the working methods of the American students. In addition, it strengthened the student's English language skills at ESTO.

The short-term training in English for all objective leads and key faculty had a significant effect on the institution. It also motivated those not involved in the project to become more interested in learning the language. This will continue to have a positive impact especially because the project established the Entrepreneurial Resource Library at EST of nearly 30 tools and resources (in English) including books, DVDs, and Software on Entrepreneurship, Business Incubation, Business Development & Management, Angel Investing and Rapid Prototyping. All of which are available for students, faculty and the business community.

The penultimate effect on institutional systems is the one on teaching. An assessment (Appendix K) was conducted for those who participated in both two-day trainings; *Entrepreneurship & Serving New Companies* January 2013 and *Coaching Start-up Companies* November 2013. It determined that the tools and materials learned throughout the trainings are being used in the classroom. Sixteen faculty members completed the survey and nearly 100% indicated that they had integrated entrepreneurial concepts in their teaching 50% of the time.

"This experience has allowed me to raise new ideas for the development of the entrepreneurial climate and strengthened my skills in several disciplines such as, coaching, and new marketing techniques. It is now an innovative activity in our institution."
Khadjia Douiri, Professor, Accounting and Marketing, ESTO

"My way of teaching the material has changed my course, it is more participatory, interactive and practice-oriented." Majda Alaoui, Professor, Entrepreneurship and Marketing, ESTO

"The involvement of students, professionals, teachers and researchers in assembling project studies allowed me to organize my course and project management."
Saida Filali, Professor, Management and Marketing, ESTO

Please follow the link on YouTube to see and hear firsthand from our Gateway and EST students about the impact of this unique partnership:
https://www.youtube.com/watch?v=0uPXIT1-3G0&feature=youtu.be

Teaching methods in entrepreneurship have changed and now are more oriented toward a "project approach" and being applied in the classroom by trained faculty.

In addition, curricula in both entrepreneurship and prototyping modules have been revised. Rapid Prototyping technology has been integrated institutionally and regionally as well.

"Before the acquisition of the 3D printer some students work was limited to design, but now my students have the opportunity to design and touch the parts that they drew with the software." Jamal Yousfi, Professor, Mechanics, ESTO

"The project helped me develop a new vision of technical education at ESTO. The project allowed us to use and apply this technical know-how in the Rapid Prototyping production and subsequently with my students to develop an entrepreneurial spirit." Jamal Bouchnaif, Professor, Electronics, ESTO

"I see the Rapid Prototyping technology filling a hole as a simple and effective method to create system parts. Rapid Prototyping allows us to quickly validate designs and the students were very surprised by the simplicity and effectiveness of this method to realize and implement their projects." Mohamed Amine Bourhaleb, Professor, Mechatronics, ESTO

1.3 Overall Change

Partnership Goal: To position ESTO as a lead institution in the Eastern Region of Morocco for entrepreneurial and economic development.

Original partnership objectives identified in the Early Planning Grant (February – July 2011) such as Objective 2: Support the establishment of local business start-ups by establishing or strengthening existing business incubation programs with BMENA partner institutions, was removed based upon an analysis of the identified networks that demonstrated no known linkages to ESTO programs or faculty.

At that time it was noted that this objective, rather, offers long-term opportunities in promoting entrepreneurship and linking the BMENA partner institution and its students to business and industry and supporting the establishment of start-up businesses and community-based entrepreneurial initiatives. The partnership regarded this objective and business incubation as a major entrepreneurial principle as a 3-5 year goal.

USAID staff commended the US team for revising the initial plan to develop a business incubator (when visiting Rabat in June 2014) and changing the goal to build capacity of the institution. (See Appendix L)

Outcomes:

- EST mobilized stakeholders to innovate and create awareness for all students of the importance of entrepreneurship in the development of the region.
- EST faculty member, Professor Majda Alaoui, recently received a special award from the International Association for Research of Entrepreneurship and Small Business (AIREPME). (See Appendix M)

- EST expanded the Mechatronics Lab to incorporate Rapid Prototyping and Product Development. It is currently in 3 programs, and six classes. For this year PD will be integrated into all coursework at EST0 in the Applied Science and Engineering Department.

"The students appreciated the concept that encourages innovation and entrepreneurship. This will have a positive impact on changing the Oriental region. "
Jamal Bouchnaif, Professor, Electronics, ESTO

"The Rapid Prototyping technology enabled our school to expand its socio-economic environment. In fact, a number of manufacturers contacted us for possible partnerships on the design and construction of prototypes for their products."
Jamal Yousfi, Professor, Mechanics, ESTO

In June 2014, ESTO and Gateway hosted a communitywide event, *Outcomes and Prospects Community Showcase,* highlighting the entire entrepreneurial project at the Ecole Superieur de Technologie in Oujda. Attendees included; USAID, Regional and Academic Dignitaries, Local Businesses, Students and Community Leaders.

The full morning agenda included opening remarks from President Sadak, University Mohamed Premier (UMP); Gary Bittner, USAID; President Albrecht, GTC; Abdelkarim Mehdi, President CGEM; and Yassine Zarhloule, Director ESTO.

The project directors, Dr. Naima Benazzi, ESTO and Robin Hoke, GTC, provided project presentations. Ms. Hoke asked all students to stand so they could be recognized for their contribution to the project. Then she asked all faculty that had been impacted by the project to stand. Both of these requests showed the human impact of the project over the past three years. Their presentations were followed by many student testimonials as to how their new experiential studies have and will impact their professional lives.

Event highlights can be seen on YouTube:
http://www.youtube.com/watch?v=Xs9kaLWnemo
http://www.youtube.com/watch?v=su2m43jDppk
http://www.youtube.com/watch?v=su2m43jDppk
http://www.youtube.com/watch?v=su2m43jDppk
http://www.youtube.com/watch?v=iXY5RibQKok
http://www.youtube.com/watch?v=-jsOeU8Kfn8
http://www.youtube.com/watch?v=VPwXUsXGMUA
(See Appendix N)

EST now has the resources, tools and technology to **replicate and expand regionally** with:

- Trained faculty who can serve as coaches, mentors and trainers
- Trained faculty and students who can work with local business development

- Trained faculty and students who can integrate rapid prototyping and product development

Thus linking the university to the business world!

From the dawn of human society, entrepreneurship - the creation of value by scaling an enterprise – has always had a positive and unique social and economic impact.

The president of CGEM accompanied the partnership teams on a visit to USAID Morocco (Rabat) to discuss the value of the partnership for the local economy and the vice president of CGEM represented businesses at the *Entrepreneurial Showcase.*

This initiative is a true translation of the cooperation between universities, business and USAID to promote entrepreneurship and innovation in the Oriental region...A success story to further promote and duplicate." Abdelkarim Mehdi, President and Director, CGEM and FIRO

Section II: Sharing Learning

2.1 Challenges and Solutions

Implementation challenges did not present themselves until fiscal year two.

- Delay of materials ordered for Objective 3

A significant obstacle was the delay in receiving the 3D printing machine. In addition, there was a tremendous delay in receiving the books required for the instructors to adequately prepare course work. These factors delayed the training of using the equipment until December 2013. Needless to say this negatively impacted Objective 3's ability to meet baseline targets. There are two challenges with the baseline data and goals set for not achieving the target number of existing programs in Applied Engineering and Computer Science that provide instruction and equipment in product development and rapid prototyping. First, the team did set the targets according to what both ESTO and Gateway thought was achievable in the timeline. This was simply inaccurate. While Gateway was under the impression it was achievable, with the current educational structures and programming at ESTO it was an unrealistic goal to change all the coursework and programming in the time allocated. While the instructors have demonstrated through past reported documentation the implementation of programming and concepts in the noted courses, others are not able to quantify the implementation outside of saying it is part of it. Therefore it is not verifiable or quantifiable. The timing was too short to adequately implement programming in all the planned courses in the planned manner due to educational paradigms at ESTO and in the region.

- Budget Reallocation

Considerable time needed to be spent in discussion on how to meet the training and experiential needs and desires of ESTO while maintaining the integrity of the

original scope of the project. A positive solution included the additional two-day training on *Coaching Start-up Companies.*

- Close of Business for Host Partner

When the original implementation plan was developed US partners were not fully aware of the impact that institutional closures and Ramadan and vacations would have on the project. The orginal project included activities during this time which were agreed upon by ESTO partners. The reality is there was a loss of nearly 6 months of time dedicated to activities due to vacation and Ramadan. It is recommended that any future higher education audiences are aware of this challenge and plan accordingly.

Besides the delay in equipment and books required for curriculum these challenges were crosscutting in nature and not of great significance. Each objective worked through challenges to ensure the scope of the project remained intact. Regardless of delays, there was great impact for the staff at ESTO and the students. The programming is continuing to grow as a result of this project.

2.2 Lessons Learned and Best Practices

- Clarify assumptions as much as possible in the beginning of the project. It is critical to understanding structures and paradigms in education, business, cultural and government and the assumptions around these institutions.
- Communication is key to creating opportunities, which are not always planned or expected. For example, Objective 2 had the benefit of expanding the original scope of the project to include international business consultation for both the US and Moroccan students. This communication should include video conferencing to include body language.
- Value of verification of communications and political structures within the institution when there is a change in leadership, and re-verify incrementally.
- Deliver training in language of host partner or provide simultaneous (at best) or consecutive translation services, in addition to short-term English language training.
- Inclusion of meetings with the US Embassy and USAID local staff at the very beginning during the early planning grant period and at the end of the final project.
- It would be a best practice from program managers to clearly identify real time expectations of administration so implementers can plan accordingly. There were far more administrative needs than originally planned due to HED monitoring and evaluation evolving needs. They continued to perfect their processes which required far more time in administrative management of the project. While critical for reporting, it was incredibly burdensome for the GTC team who did the majority of the administration for the project. In the original budget only a percentage of staff time was projected and therefore much of the time allocated was in-kind. Due to other duties at the college creating more time to allocate beyond what was projected was

difficult for the Director and Project Coordinator. While there was input from ESTO partners, it was at an entirely different level of responsibility, time commitment, and diligence.

- Adequately budget time for discussions and meetings regarding expectations of each stakeholder, compensation and per diem processes and identification of those responsible/accountable for the project deliverables.
- Introduction of new technologies require business partners at the front end. It is essential to gain buy in and support.

Section III: Sustainability

3.1 Steps Taken toward Sustainability

Objective 1: *L 'Ecole Supérieure de Technologie faculty have improved ability to teach students and advise local citizens in critical components of entrepreneurial and enterprise development.*

Strategy

Ecole Supérieure de Technologie Oujda (ESTO) has a desire to develop a business incubator locally. In order to determine if a business incubator is an appropriate model for ESTO, a plan -based on newly acquired skills- needs to be developed to facilitate the implementation of a comprehensive feasibility study including a current and local market needs assessment for the feasibility of business incubation at ESTO at the local and regional area.

Action Plan

A. Project partners should continue engaging with the global community that are focused on entrepreneurship as a viable means of economic development. This can be done through social networks, membership in international organizations and attendance at international conferences on the topic. Membership for six members of the team has been secured to the NBIA to support these efforts.

B. All administrators and faculty trained in Pre-entrepreneurship, Coaching Start-up Companies and Fundamentals of Business Incubation, should continue to use and develop their tools/resources when working with and teaching students entrepreneurship. A dedicated space needs to be identified as a Community Entrepreneurship Center including resources, staff and programing for students and the community.

C. Faculty/Administrators should continue cultivating relationships with entrepreneurs, small businesses, business lenders/investors, along with other entrepreneur support organizations in the region. The university must lead the effort to create a vibrant ecosystem in the region to support not only student entrepreneurs, but others in the community interested in starting a new venture.

This can be achieved through opening communications with entrepreneurial activities with students, businesses and the greater community.

D. Establish an advisory committee at ESTO along with two to three US entrepreneurial and business incubation experts to include EigerLabs who will commit to a one-year relationship with M. Azizi, S. Filali, R. Hajbi, R. Lahrach, and Z. Taybi, as identified by Director Zarhloule to lead entrepreneurial initiatives at ESTO.

E. Follow recommendations of the pre-feasibility plan that was developed by Chuck Wolfe an expert consultant in business incubation who specifically outlined next steps for ESTO.

Additional Resources Provided through the Partnership and Maintained by ESTO (human, physical, technical, financial)

1. NBIA Developer Memberships for six individuals through September 2015
2. Entrepreneurial resource library available to students, faculty and community members
3. Conducting an Effective Feasibility Study, Presentation by Mark Long & Chuck Wolfe
4. Feasibility/Needs Assessment Report; Athens, Tennessee
East Central Tennessee Enterprise Development Center
5. Preliminary Research Study of Business Incubation Programs in the BMENA Region
6. *Pre-feasibility Study Plan* developed by Chuck Wolfe with Claggett & Wolfe Consultants specifically for ESTO

Objective 2: *Strengthen the capacity of students to launch and operate their own business and/or measurably enhance existing small and medium sized enterprises by creating internships and other experiential learning opportunities.*

Strategy

Develop a plan to facilitate the continuation of an ESTO Biz Squad to work collaboratively with the Gateway Biz Squad to provide consultative cross-functional services to startup businesses, existing growth companies and non-profit organizations.

Action Plan

A. Project partnership between ESTO and GTC will continue through a shared Biz Squad classroom via Lifesize video-conference equipment (provided by the grant) in the Fall 2014 and Spring 2015 (and beyond 2015) semesters to share business projects.

B. A working committee of ESTO and GTC (administration and instructors) will be created so monthly meetings will continue to further develop items listed below and develop relationships and the capabilities of the Biz Squad.

C. The expansion of the Biz Squad to an International Global Scholar program for GTC and ESTO will be incorporated as funding allows. This proposed scholar program would allow for one instructor and up to 8 students to further learn about business and education of the partner country by traveling to and being immersed into the culture and education of the partner school for two weeks in the Spring 2015 semester.

- GTC has identified one instructor and 6 students to travel to Morocco in March 2015 which is funded by GTC.
- ESTO must determine if a funding is available to visit GTC with at least one ESTO professor and up to 6 students in 2015.

D. All Biz Squad faculty trained in Pre-entrepreneurship and Coaching Start-up Companies should continue to use and develop their entrepreneurial capacity to reach out to potential entrepreneurs to assist in the creation of business plans, marketing analysis and other tools to aide them in developing business ideas.

E. Create a student entrepreneurial club, such as Enactus which is a global club. The club's focus would be to engage students' interaction with local community business leaders and provide monthly activities centered on entrepreneurial topics. The purpose is to foster the entrepreneurial spirit and share entrepreneurial resources of ESTO with the community.

F. Create a common database for sharing ideas for students (ESTO and GTC) for the establishment of companies. This will help both groups of students to study global business needs. This will expand experience beyond local and regional needs. The goal is to have an overview of the international economic environment for both groups of students.

G. Create an entrepreneurial resource guide of additional programs and supporting organizations regionally, nationally and internationally. This guide will consist of information inclusive of incubator space, financial, technical or legal resources. This guide can be on digital media and integrated on the sites of Biz Squad.

H. Create a resource library related to business creation and entrepreneurship. This is intended for students and the general public. Media can be digital (website for example) or as paper (photocopies and books).

I. Organize a competition for entrepreneurship among students from ESTO and GTC and possibly, other stakeholders locally or internationally such as GTC's partnership with Germany.

J. Conduct research of tools that could be incorporated into the Biz Squad class to assist in the creation of business client deliverables and resources that could be recommended to businesses and entrepreneurs for the management of a startup/growth business or a non-profit organization.

K. In the long term (2-5 years), research the possibility of utilizing the existing GTC certificate "Small Business Entrepreneurship" or identify potential courses that could be developed into a certificate in Morocco. The GTC certificate currently contains three courses: Entrepreneurship, Business Planning & Development, and Operations Management.

Additional Resources to be Developed and Maintained by ESTO (Human, Physical, Technical, Financial)

1. ESTO Faculty to continue working with Biz Squad class and guide students on the entrepreneurial projects
2. Marketing Plan for promoting the Biz Squad class as an entrepreneurial resource for the local business community to recruit additional projects for the student Biz Squads
3. ESTO assistance in the scheduling and coordination of GTC International Global Scholar Biz Squad visit March 2015 including hosting of instructor and students and itinerary for educational and cultural activities
4. Research into potential funding for an ESTO International Global Scholar Biz Squad visit to GTC in Spring/Fall 2015
5. ESTO Faculty and Biz Squad students for development of a student entrepreneurial club
6. GTC assistance in the creation of the digital library
7. Develop a local business incubator in partnership with the University Center for Development of the Eastern Region (CUDRO), Moroccan General Confederation of Enterprises (CGEM), Regional Investment Center (CRI) and National Agency for the Promotion of Employment and Skills (ANAPEC)

Objective 3: *Develop and deploy technological innovations that improve instruction and integrate technology and classroom practice to meet the needs of the productive sectors in society.*

Strategy

Teach and integrate Rapid Prototyping (RP)/Product Development (PD) in ESTO curricula in order to increase advanced technical expertise at ESTO and the local business community.

Action Plan

A. Establish a combined US-Moroccan team with EIGERlab, to exchange ideas about technologies of RP/PD and manufacturing.

B. Trained instructors will continue to deliver courses and labs on RP/PD for both ESTO students and the local business community. It is recommended additional equipment be acquired to support the diverse needs of the business community.

C. In the scope of the incubation initiative of Objective 1, ESTO trained faculty through the new center could give a real service to small and medium sized

businesses interested in RP/PD. This would be achieved through outreach in the community. A portable printer was purchased as part of the project to have instructors conduct outreach specifically for RP/PD to educate local business on this specific technology. Local businesses could submit their RP needs inclusive of models/ideas of pieces to ESTO/Center for Manufacturing instead of acquiring costly 3D printers. They might also benefit from the skills of ESTO students for short or long-term job training.

D. Mr. Yousfi will report on behalf of Objective 3 to the advisory committee proposed by objective 1 focused on entrepreneurial development.

E. Partner with the University Mohamed I University (UMP) (Oujda, Morocco four-year university) to help students with projects through utilization of equipment and developed skills. For a fee, ESTO can create Rapid Prototyped parts for the University's students. The parts can be made by ESTO's students and professors. ESTO can teach the University students about RP/PD and how to make the parts. ESTO can charge the University or local businesses for machine time, materials, students and professor's time.

F. GTC and ESTO will develop course outlines in the applied studies (Prototyping) which can be offered through a joint certificate

Additional Resources Provided through the Partnership and Maintained by ESTO (human, physical, technical, financial)

1. All technical books purchased for objective 3
2. 3D Printer ProJet SD
3. Makerbot and accessories
4. Training of faculty and students
5. New center show room and labs currently under construction
6. Support of the ESTO/UMP
7. Student interns
8. Continue to cultivate relationships with businesses to demonstrate the value of this new technology in the region

3.2 Factors that May Influence Sustainability

ESTO has strong leadership, with a commitment to entrepreneurship training and support, which is critical for sustainability of Objective 1. Over 30 individuals including faculty, administrators, students and entrepreneurs participated in both the two-day *Pre-entrepreneurship* training and two-day *Coaching Start-up Companies* training. Ten of these individuals travelled to Boston and attended entrepreneurial sessions at the NBIA international conference on business incubation. They toured several incubators and a FabLab space. Five of those individuals participated in a two-and-one-half day training on *Fundamentals of Business Incubation* including meetings and presentations at the Montpelier

International Business Incubator, an award winning and world-renowned program in Southern France.

While the partners at ESTO have a strong foundation in entrepreneur support and business incubation best practices, the idea of implementing a successful business incubator is still to be determined. The goal of the project was to increase individual and institutional entrepreneurial capacity which has been achieved at an introductory level.

The US team recommends continued capacity building at the individual and institutional level through steps outlined in the strategies. It is further recommended prior to next steps of implementation that a comprehensive feasibility study be conducted by an outside expert, and one that specializes in business incubation. ESTO partners will play a significant role in this process and have been provided tools to start collecting data in preparation of a feasibility study.

The future sustainability of Objective 2 will require commitment by both ESTO Administration and Professors. Time will need to be allocated for faculty to setup a positive learning environment for the ESTO Biz Squad students to collaborate with the GTC students in the Lifesize videoconference classroom. Time will need to be allocated so research and creation of Business Client deliverables (i.e. logos, marketing plans, websites, etc.) can be completed in a timely manner and at a level acceptable to the business clients.

ESTO faculty now has a good foundation in the Biz Squad Class philosophy and operation. It will be important over the next academic year that the faculty be given the time to take on larger projects that incorporate broader scope than a single focus. This will provide students with a more interesting and realistic view of the challenges and opportunities facing startup businesses. It will also allow ESTO to show the community the value of their programs and their student capabilities as a resource for the community.

It is imperative that additional funding be secured to expand the ESTO Biz Squad to an International Global Scholar Biz Squad and provide ESTO instructors and students the opportunity to visit and experience the educational and business culture of the partner school. This experiential learning component would be invaluable to ESTO students based on the life-changing experiences GTC students have with international exchange opportunities.

ESTO had the opportunity to forge new relationships thru GTC, Wisconsin Business Incubation Association (WBIA), and NBIA that will help develop other partnerships, and enhance the work in Biz Squad and benefit from other regional, national and international experiences.

Rapid prototyping (RP) is a technology that has been recently transferred to the ESTO during the project on entrepreneurship. The first 3D machine, ProJet SD, was

acquired and some courses on RP were included in the curricula of the applied engineering department.

A teaching space dedicated to RP will be reserved in the center under construction. The commitment of teachers trained in this field and the attitude of the administration to succeed the RP, will guarantee the sustainability of this project. In addition, there is a real interest of socio-economic partners in RP that is expected to grow by more student placements and long-life training.

Similarly, support from American partners such as EigerLabs with RP through strong relationships forged with the ESTO team, will surely contribute to the sustainability of this project. PD is planned to be integrated into all programs at ESTO over the next year. EigerLabs will continue to support the partnership as a service and consultative relationship.

This technology development needs to be guided and nurtured from experts to ensure it is developed and applied appropriately. A concern of ESTO partners is by stopping the funding for this project, it may negatively influence the performance of practical works or labs on PD, especially for the purchase of 3D printer input materials as they are costly and have an expiration date.

3.3 Overall Prospects of Sustainability

"The credibility of all involved earned the trust of economic actors and policy makers (both regional and national) in Morocco. With their support of the project from the beginning they are committed to continue supporting this cooperation; a collaborative relationship that has gone beyond the university level." Dr. Naima Benazzi, Project Director, ESTO.

All three objective sustainability plans include the formation of working committees dedicated to not only maintaining what was accomplished under the grant, but moving projects forward. Objectives 1 and 2 should consider including a student on these committees. In addition, it is recommended that an executive committee be established under the leadership of ESTO's acting director, Dr. Yassine Zarhloule and include objective leads, faculty and those individuals that will develop programing to continue to drive entrepreneurship and impact change.

Programming that can be replicated at ESTO:

- Shark Tank Presentations
- Fast Pitch Competitions
- Business Plan Competition

(See Appendix O)

It is recommended that in the immediate future EST looks at developing a dedicated '*entrepreneurial space*' such as a Co-working Maker Space on campus and open to

students, faculty and the start-up community. (See Appendix P) Winners and participants of the suggested programing above could be the pipeline for this space and graduates could be the pipeline for a future business incubator. This would be a low-risk and low-cost starting point prior to developing a business incubator. It also could be developed in the short-term and fulfill immediate needs of entrepreneurs while local market needs are being assessed and a feasibility study is conducted.

In association with the NBIA, the 6th annual Saudi Technology Incubation Conference will take place January 19 – 21, 2015, in Riyadh. The conference will cover international best practices in the incubation industry and related innovation and entrepreneurial support. **Middle East and North Africa (MENA) region countries are driving the development of their economies by fostering innovation and supporting entrepreneurship, especially in the small and medium enterprises (SME) sector.** Driving innovation and entrepreneurship in the MENA region is vital for the advancement of national and regional economies. Small and medium enterprises are seen as a driving force of innovation. In addition, it will strengthen the cooperation across the MENA region incubation industry.

There is no registration fee to attend this conference therefore it is highly recommended that members of the ESTO Entrepreneurial Initiatives Committee (Section 3.1 Objective 1 Action Plan D) attend this conference. International, regional and local experts will present and discuss recent improvement in policy-making, new innovations and future opportunities in incubation and its support of entrepreneurship. (See Appendix Q)

In addition, at a local level, ESTO should continue to develop curriculum that incorporates entrepreneurship across all disciplines as well as prototyping modules for all programs of applied engineering.

This project has achieved the objectives through diligent work, expertise, and collaboration. The goal of building institutional and individual entrepreneurial capacity was the intention and result of this project. Stakeholders on both sides have expanded their knowledge base through this project. It has expanded individual and institutional capacity for both schools through working in uncharted waters on unprecedented projects. Together a firm foundation of entrepreneurial concepts, advanced technology in Rapid-Prototyping and Product Development, and consultative business practices translated into experiential learning has been achieved. Students from both schools have had the experience to work with very different cultures on diverse business projects which have entirely different scopes due to regional business norms. There are many more opportunities to develop the foundational learning obtained in this project. It will require due diligence, and the continuation of building and nurturing relationships, which happens one person at a time. The project stakeholders believe it is critical to continue to invest time, funding, and talent in Morocco's entrepreneurial future as an investment in our global future. The increase of an entrepreneurial mind-set along with advance

technology will help to increase opportunities in workforce options with a reduction in poverty. These efforts make for a better and safer society, as we become an increasingly global ecosystem.

SUMMARY DATA TABLE

	Custom Indicators	Target	Actual End of Project
1	% EST faculty trained who report adapting their teaching and course materials to include entrepreneurial principles	65%	100%
2	# of faculty trained who report increased skills in technical areas of entrepreneurial development	22	32
3	% increase in internal resources developed to support entrepreneurs and small business owners	20%	NA see note 1
4	# of faculty receiving train-the-trainer training	6	21
5	# of faculty receiving one-on-one coaching and mentoring	42	10 see note 2
6	# of EST faculty and/or staff demonstrating improved English language skills	21	33
7	# of consultanciesto local businesses in which EST students are participating	9	13
8	# of EST students who work in cross-functional teams using the Biz Squad model	30	44
9	# of existing programs in Applied Engineering and Computer Science that provide instruction and equipment in product development and rapid prototyping	22	4
10	# of new market-driven student projects that are developed by EST faculty	6	0
11	# of EST female students participating in product development and rapid prototyping projects	44	120
12	# of courses developed and/or revised with product development or prototyping based on private and/or public sector employers' input or on the basis of market research	9	0
13	# of mechatronics laboratories established and functioning	6	2
14	# of product prototypes developed through the mechatronics labs in support of student business development and/or local business development	3	0
Standard Indicators			
	# of faculty who completed short-term training	24	28
	# of host-country individuals (faculty) affiliated with the host-country institution who completed short-term training in English	21	33
	# of higher education institution outreach/extension activities in the host country community	9	13
	# of host-country individuals (facultyand/or teaching staff, students, and administrative/other staff) affiliated with the host-country institution who completed short-term training programs	24	80 - 100
	# of degree programs that include experiential and/or applied learning opportunities	25	25
	% of curricula newly developed and/or revised with private and/or public sector employers' input or on the basis of market research	100%	36%

Notes

1 Difficult to quantify as a percentage - reported on resources provided in Entrepreneurial Library Appendix F

2 This indicator is reflective of work performed under Objective 2

Final Report

"Africa-US Network of Centers of Excellence in Water and Environmental Science & Technology"

Tuskegee University (TU) and International Institute for Water & Environment Engineering (2iE) Partnership

Cooperative Agreement No. AEG-A-00-05-00007-00

Submitted to Higher Education for Development (HED) for the United States Agency for International Development (USAID)

November 2014

Partnership Overview

This final report is submitted for the partnership between the Tuskegee University and 2iE (Burkina Faso) that was awarded under the LWA Cooperative Agreement # AEG-A-00-05-00007-00 which ended as of August 31, 2014**.** The American Council on Education (ACE), Office of Higher Education for Development (HED) and Tuskegee University (TU) signed an Award Agreement effective May 5, 2011. The award provided funding for a partnership between TU and International Institute for Water & Environmental Engineering (2iE) in Burkina Faso entitled "*Africa-US Network of Centers of Excellence in Water and Environmental Science & Technology*" to enhance capacity of the 2iE in its educational programs, research, and community engagement.

HED has supported partnership implementation through continuous monitoring of progress and troubleshooting and assistance in developing/revising results based frameworks and monitoring and evaluation (M&E) plans. HED/ACE worked closely with 2iE and Tuskegee University partners toward quality and timely submission of quarterly financial expenditure reports and semi-annual progress reports. Continuous engagement and communication between HED and 2iE/TU partners has provided guidance on issues such as developing monitoring and evaluation plans, budget realignment, faculty/staff travel, meeting organizations, and effective implementation of planned activities.

a. Goals and Vision

Tuskegee University and Burkina Faso's International Institute for Water and Environment Engineering (2iE) are collaborating to establish a network of centers of excellence in water and environmental science and technology in three higher education institutions in Africa. 2iE is serving as the principal African partner, with other centers located at the University of Mines and Technology in Ghana and the University of Benin in Nigeria. The partnership provides faculty and curriculum development, training of graduate-level scientists and engineers to build regional human capacity, mobilizing African Diaspora scientists, developing technology and problem solving capacity, creating linkages with private, public and non-government organizations, and raising the quality of facilities and equipment at the participating African institutions.

b. Partnership Objectives

To position 2iE as a hub of academic, research and outreach excellence in the areas of water, environmental engineering, and climate change in West Africa, the partnership has the following objectives:

1) To increase the competitiveness of academic offerings at 2iE in the areas of water, environmental engineering, energy, minerals and climate change
2) To increase the research capacity of 2iE and partnering institutions in the areas of water, environment, climate change, minerals and renewable energy disciplines
3) To enhance the capacity of 2iE to conduct outreach activities locally and regionally and identify entrepreneurial opportunities.

c. Summary of Activities and Work

To achieve strengthened human capacity at 2iE, two 2iE faculty enrolled in long term training programs at Tuskegee University. One has been enrolled in the PhD (Mr. Ahmed Bagre) program and the second one (Dr. Abdoulaye Diarra) is in research training in the area of modeling of climate change factors on agricultural productivity in Burkina Faso and West Africa.

Students have benefitted from the institutional capacity developed in this partnership through their training and education in new Masters' degree (MSc) programs developed as part of the partnership activities. A total of 44 candidates (9 females) have been trained and completed their MS degree program in Sustainable Management of Mining at 2iE, including a required industrial internship program for experiential learning. Five students from African partner institutions were admitted to and enrolled in MS and PhD programs at 2iE. 2iE has included a clear goal for female students' enrollment in its 2011 - 2015 Strategic Plan. The goal is the admission rate of 25% female students admitted by 2015. In FY-2014, female admission into MSc & PhD degrees was 20%.

Short term training and faculty exchange offered by the partners have contributed to strengthening skills and knowledge of faculty, students and staff at 2iE. Ten students and faculty participated in exchange research programs, traveling internationally to participate in research activities, including conducting laboratory research, attending conferences and symposia, and developing research projects.

Thirty five (35) 2iE students and faculty participated in hands-on research training and scientific forums including:

- training at the European Institute for Membranes on nano-filtration and reverse osmosis techniques and their application to water treatment,
- training for dewatering technology development,
- training at the Institute for Water Education at Delft University in Netherlands and
- a Mechanics training workshop in Bordeaux, France.
- Training during the Africa Water Forum conference held in June 2014

These trainings improved research skills toward solving local problems in water resources management, industrial management, eco-materials, nanotechnology, power systems modeling, and drying of sludge.

Strengthened institutional research and community outreach capacities of 2iE was demonstrated by problem-solving research and extension activities. A total of 14 research projects were jointly developed and investigated between 2iE and TU for faculty and students. These include the last ten listed below that were concluded in FY-14:

a) Climate Change Impact & Agricultural Decision Making by Farmers in Sahel,
b) Bioremediation of Cyanide Contaminated Gold Mining Wastewater,
c) Low-Carbon Renewable Energy Resource & Development Research,
d) Biochar Production & Evaluation for Agricultural Soil Amendment & Carbon Sequestration,
e) CO2 Recycling for Chemical Feedstock Production by Electrochemical Splitting,
f) Climate Change Modeling in West African sub-Region for Impact Assessments,
g) Impact of Municipal Wastewater & Sludge on Agricultural Crop Production,
h) Use of Constructed Wetlands for Municipal Wastewater Treatment,
i) Modeling of Solar radiation Intensity in West Africa,
j) Modeling of Precipitation Partners in West Africa for Flood & Drought Early Warning System Development,

Partners implemented seven major outreach activities in FY13 including:

1. A visit by three project participants from Tuskegee University to the National Space Research
2. & Development Agency (NASRDA) of Nigeria to discuss collaboration and explore exchange of personnel and data on the modeling, prediction, and forecasting of adverse climate change induced weather phenomena in West Africa.
3. Signing of a MOU with SADIOLA Mining Company in Mali toward a program development for training and capacity building of their technical personnel at 2iE. This MOU will enable the direct contribution of our partnership to the industrial technical capacity building in West Africa.
4. Outreach to Morila Mines, involving a 2 hour teleconference to discuss updates to previous visits to the mining company by 2iE faculty and staff in Q1 & Q2. The discussions centered solely on planning of training programs and activities for the staff of Morila Mines at 2iE for technical capacity building in local industry.
5. Meeting with Wassolor Mining Company at their headquarters in Bamako, Mali to discuss and exchange ideas on 2iE MS students' internship and experiential training opportunities at Wassolor, and also for possibilities of joint research and development projects between 2iE and Wassolor Mining Company
6. Hosting a major international conference on solar energy development in Africa in December 2013.
7. Hosting the Africa Water Forum in June 2014

PARTNERSHIP RESULTS AND PERFORMANCE

Planning Accomplishments: initial planning activities accomplished the following at the early stages of the partnership:

i. A **memorandum of understanding** (MOU) signed between Tuskegee University and 2iE

ii. Partnership **formally launched** on 2iE campus in Ouagadougou in September 2011(with the presence of HED, USAID and other US and African officials and partners)

iii. A **Baseline Survey**, **Monitoring & Evaluation** (M&E) Plan, and implementation strategy are completed jointly by 2iE-Tuskegee University and HED

A. Achievements and Implementation Progress

Objective 1: To increase the competitiveness of academic offerings at 2iE in the areas of water, environmental engineering, energy, minerals and climate change

Outcome: Existing MS degree program was made relevant to industry needs, while being and accessible to underserved female students

Partners have not developed any new policies to support increased access of underserved groups to their degree programs. However, they are implementing a previously-established policy embedded in the institutional strategic plan that has set a goal of achieving 25% female students' admission by 2015. This effort has resulted in achieving a 20% female student population in FY13 and FY-14.

Indicator: Percent of curricula newly developed and/or revised with private and/or public sector employers' input or on the

A new MS degree curricula was developed and implemented during the partnership. The degree program was for an MS degree in sustainable Management of Mining. This was developed within the first year of the partnership. After this first curriculum, no new curriculum was developed, except for addition of PhD students to be trained through the existing curriculum at 2iE. However, the existing curriculum for MS degree in Mining Management is revised on an annual basis.

Indicator: Percent of academic certificate and/or degree programs supported through the partnership that include new and/or enhanced experiential and/or applied learning opportunities

Experiential/applied learning was included in the new MS degree program in mining

management. This experiential learning industrial internship is a requirement for all students toward the end of the training program. This involves industrial internship for direct field experience as an integral part the partnership MS degree program.

Four PhD students' are also engaged in joint research projects:

1) TADJOUWA Kouawa - Planted filters and treatment of sludge in Sahelian climate : Processes understanding, experimentation and modeling
2) KUELA Kpoda Noellie (Female) - Biological and sanitation risks assessment linked to reuse of treated waste water and human excreta in gardening agriculture in the Northen Sub-Sahara : Case of the City of Ouagadougou
3) AHOULE Domp? Maxime Ghislain - Performance and feasibility in Sahelian conditions of drinking water treatment polluted by arsenic using membranes techniques.
4) Amadou KEITA - Flow process study and optimium drainage in irrigation schemes of the soudanian climate - Case study of Moutori in Burkina Faso

Objective 2: To increase the research capacity of 2iE and partnering institutions in the areas of water, environment, climate change, minerals and renewable energy disciplines

Outcome: 2.1: Increased capacity among students and faculty to conduct research that addressed local/regional needs

Indicator: Number of host-country institution faculty and/or teaching staff who enrolled in long-term training programs for qualifications strengthening

To achieve strengthened human capacity, two 2iE faculty were enrolled in long term training programs at Tuskegee University . Mr. Ahmed Bagre has been enrolled in the PhD program and Dr. Abdoulye Diarra is in research training in the area of modeling of climate change factors on agricultural productivity in Burkina Faso and West Africa.

Indicator: Number of host-country individuals (faculty and/or teaching staff, students, and administrative / other staff) affiliated with the host-country institution who completed long-term training programs for qualifications strengthening

44 students, including 9 females, completed their MS degree program academic and course requirements in Mining Management at 2iE (Table 1) including a required internship program for experiential learning before their formal graduation. This is the MS program created by the partnership as a graduate training program at 2iE with new curriculum for advanced studies and research. Partners expect 15 students to complete their long term training programs in FY14.

As part of the Regional goal of the partnership, five students from the Western Africa region were enrolled in graduate programs at 2iE.

Indicator: Number of individuals from underserved and / or disadvantaged groups accessing tertiary education programs

The partners have created an opportunity for women students (9 in MSc and 1 in PhD) to be enrolled in masters and doctorate programs (Table 2), improving access to underserved groups. This resulted from 2iE's clear strategic document that included a clear percentage goal for female students' enrollment in 2011 - 2015. This plan has been translated into an institutional

policy with a drive towards achieving a 25% female students' admission by 2015

Indicator: Number of host-country individuals (faculty and / or teaching staff, students, and administrative / other staff) affiliated with the host-country institution who completed short-term training programs

Short term training and faculty exchange have contributed to strengthening skills and knowledge of faculty, students and staff at 2iE. Short term trainings were provided to four 2iE faculty. The short term trainings involve study tours and training in the areas of water treatment, dewatering technology development and mechanics training (Table 1).

Table 1.

Short Term Training Areas

Training Area	Participant and Country of Training
Nanofiltration and reverse osmosis techniques and their application to water treatment	Mr. Ahoule from 2iE attended training at the European Institute for Membranes conducted in Montpellier, France from September 3 - October 31, 2013
Dewatering technology development	Mr.Tadjouwa Kouawa at 2iE attended training at the University of Strousbourg,
Water and Drainage	Mr. Keita Amadou at 2iE attended a training at the Institute for Water
Mechanics training workshop	Mr. Adamah Messan attended a workshop in Bordeaux, France from October 7 - 20, 2013 at the

Six students and faculty participated in exchange research programs, traveling internationally to participate in research activities, including conducting laboratory research, attending conferences and symposia, and developing research projects. Thirty 2iE students and faculty participated in hands-on research training and scientific forums (workshops, science meetings, etc.). All training were hands-on research training for 2iE teaching and research personnel to acquire research skills that will enable them solve local problems in Africa in water resources management, eco-materials, nanotechnology, power

systems modeling, and drying of sludge.

Outcome 2.2: Increased research-based capacity to address local/regional development needs

Indicator: Number of U.S. - host country institution joint development research projects

Partners have implemented five joint research projects in FY13 (Table 6). Several other joint research projects have also been initiated.

Strengthened institutional research capacity of 2iE was enhanced through the development and commencement of problem-solving research activities. Ongoing research projects at 2iE and TU for faculty and students based on the problem being addressed increased skill demonstrated by faculty and students involved in research projects that address local/regional needs. These research projects focus on important challenges (Table 7).

Other joint research projects, involving both 2iE and Tuskegee faculty and graduate students, that have been initiated in FY13 include studies in the areas of Climate Change Impact & Agricultural Decision Making by Farmers in Sahel, Bioremediation of Cyanide Contaminated Gold Mining Wastewater, Low-Carbon Renewable Energy Resource & Development Research, CO2 Recycling for Chemical Feedstock Production by Electrochemical Splitting, Climate Change Modeling in West African sub-Region for Impact Assessments, Impact of Municipal Wastewater & Sludge on Agricultural Crop Production, Use of Constructed Wetlands for Municipal Wastewater Treatment, Modeling of Solar radiation Intensity in West Africa, and Modeling of Precipitation Partners in West Africa for Flood & Drought Early Warning System Development.

The partnership developed and implemented 12 Joint faculty research projects as follows:

Proj#1: Climate Change Impact & Agric Decision Making by Farmers in Sahel

Proj#2: Bioremediation of Cyanide Contaminated Gold Mining Wastewater.

Proj#3: Low-Carbon Renewable Energy Resource & Development Research Group (Team under dev).

Proj#4: Biochar Production & Evaluation for Agricultural Soil Amendment & Carbon Sequestration – Drs. N. Egiebor (TU) & A.H. Maiga (2iE) with 2iE Graduate Students

Proj#5: CO2 Recycling for Chemical Feedstock Production by Electrochemical Splitting – Dr J. Mbah (TU) with 2iE Graduate Students.

Proj#6: Climate Change Modeling in West African sub-Region for Impact Assessments - Drs. G. El-Afandi & N. Egiebor (TU) with 2iE Graduate Students.

Proj#7: Impact of Municipal Wastewater & Sludge on Agricultural Crop Production.

Proj#8: Use of Constructed Wetlands for Municipal Wastewater Treatment.

Proj #9: Drainage of Tropical Savannah valley bottoms in order to alleviate iron toxicity, of irrigated soils

Proj #10: Arsenic Removal from Groundwater by Membrane Filtration

Project#11: Modeling of Solar radiation Intensity in West Africa, and

Project#12: Modeling of Precipitation Partners in West Africa for Flood & Drought Early Warning System Development.

Four of the research projects were conducted by PhD students' as follows:

1. TADJOUWA Kouawa - Planted filters and treatment of sludge in Sahelian climate : Processes understanding, experimentation and modeling
2. KUELA Kpoda Noellie (Female) - Biological and sanitation risks assessment linked to reuse of treated waste water and human excreta in gardening agriculture in the Northen Sub-Sahara : Case of the City of Ouagadougou
3. AHOULE Domp? Maxime Ghislain - Performance and feasibility in Sahelian conditions of drinking water treatment polluted by arsenic using membranes techniques.
4. Amadou KEITA - Flow process study and optimium drainage in irrigation schemes of the soudanian climate - Case study of Moutori in Burkina Faso

Indicator: Percent of academic research initiatives whose findings have been applied, replicated, or taken to market

Objective 3: To enhance the capacity of 2iE to conduct outreach activities locally and regionally and identify entrepreneurial opportunities

Outcome 3.1: 2iE's community outreach capacity is augmented

Indicator: Number of higher education institution outreach / extension activities in the host country community

During the reporting period, partners implemented seven major outreach activities that will have benefits toward addressing effects of climate change, expanding engagement with mining companies, enhancing student internships and strengthening faculty research and training programs.

These outreach activities included:

1) With SADIOLA Mining Company in Mali, an MOU was signed (Appendix C) and a training program developed for training and capacity building of their technical personnel at 2iE. This MOU will enable the direct contribution of our partnership to the industrial technical capacity building in West Africa. Three individuals from Tuskegee University participated in this activity.
2) A visit by three project participants from Tuskegee University to the National Space Research & Development Agency (NASRDA) of Nigeria to discuss collaboration and explore exchange of personnel and data on the modeling, prediction, and forecasting of adverse climate change induced weather phenomena in West Africa.
3) With Morila Mines, the outreach involved a 2 hour teleconference to discuss updates to previous visits to the mining company by 2iE faculty and staff in Q1 & Q2. The discussions centered solely on planning of training programs and activities for the staff of Morila Mines at 2iE for technical capacity building in local industry.

4) Meeting with Wassolor Mining Company at their headquarters in Bamako, Mali to discuss and exchange ideas on 2iE MS students' internship and experiential training opportunities at Wassolor, and also for possibilities of joint research and development projects between 2iE and Wassolor Mining Company.
5) A stakeholder workshop held to discuss the outcome of Phase I activities and more importantly to improve the engagement of stakeholders in Phase II activities. Attendees came from throughout the West African sub-region including Burkina Faso, Benin, Ghana, Mali, Niger, Guinea, Senegal, and Togo. The twenty five attendees represented national government agencies, regional organizations (ECOWAS), local governments, NGOs, and private businesses.
6) Hosting a major international conference on solar energy development in Africa in December 2013.
7) Hosting the Africa Water Forum in June 2014

Indicator: Number of direct beneficiaries

More than 100 individuals have directly benefitted from partnership activities during the partnership period These include students, faculty and community, who participated in short and long term training and workshops, outreach and joint research projects.

Partnership Challenges

Funding Uncertainty: Partners were unable to plan effectively for FY2014 due to uncertainty in funding and funding levels. This is particularly important because of the need to mobilize partnership resources (human and institutional commitments) both at 2iE and Tuskegeee University, as well as partnering institutions in the region. The uncertainty of funding for FY14-15 also limited partners' ability to plan properly and prepare for effective implementation of longer term activities.

Higher Travel Costs: The rapidly increasing international travel airfares led to a reduction in the number of supervisory trips.

Lessons Learned

a. International higher education partnerships are critically important to Sub-Sahara Africa's (SSA) economic and millennium development goals.
b. Only long-term partnerships (> 10 years) can have the desired impacts on human & institutional capacity developments in SSA's higher education.
c. International higher education partnerships in STEM fields should include significant support for laboratory equipment and research infrastructure procurement & development.
d. Most SSA higher education institutions do not have the capacities to administer external R&D funding to meet stringent funding agency requirements.
e. The need to maintain continuous contact and interaction with stakeholders throughout the project region of West Africa toward having a meaningful collaboration in the coming years has been important.
f. The significant reduction in funding levels for the coming two years has created feelings of mistrust (of USAID and of the partners) particularly by regional partners in Nigeria and Ghana who had worked so hard in the first two years to be a part of this project.
g. Unfortunately, they have to be excluded due to the lack of funding.
h. The partnership has accomplished a lot in the last two years. However, two-year duration partnerships are too short for meaningful impact on the ground in Africa. Development partnerships must involve a longer-term commitment, preferably a period of up to 10 years.

SUCCESS STORIES

SUCCESS STORY #1: Biagwoul Beatrice Christelle graduated at MSc level.

Biagwoul Beatrice Christelle was a Master student from 2iE. "I did my Master research program in Tuskegee University as a USAID sponsored scholar from March 2012 to

September 2012 on *Design and development of high storage capacity complex hydrides for reversible hydrogen storage*", said Christelle. He further noted that, "my stay and research in Tuskegee University had so many positive impacts. Being a research student in the domain of renewable energy (Hydrogen), I had the opportunity to have all the necessary laboratory equipment as well as the necessary follow-up by my advisors to do my research appropriately. I learned how to use many laboratory equipment which I had never had access to before; I also had the necessary books for my research and constant advise, support and encouragement from so many teachers both from Tuskegee University and 2IE." The scholarship provided to Christelle was sufficient enough to cover costs of health, nutrition, housing, bills, and hobbies. "My research and stay in Tuskegee as a USAID scholar was very satisfying both as a graduate student and as a human being", said Christelle. Christelle has now completed the MS degree program and graduated, fully prepared to make a difference in Burkina Faso.

SUCCESS STORY #2: Dr. Abdoulaye Diarra, Lecturer at 2iE and 2012/2013 USAID Partnership Research Intern at Tuskegee University

Dr. Abdoulaye Diarra is a young lecturer and researcher in the field of Agricultural Economics and Management of Natural Resources at 2iE. His research interests include the study of climate change risks and impact on farmers' decision making, and their coping and adaptation skills to face these risks. "The research visit to Tuskegee University as a faculty intern, under the USAID funded Tuskegee-2iE partnership, allowed me to strengthen my research capacity on the most recent methodologies used to study the impact of climate change with a focus on agriculture", said Diarra. The team was able to identify and complete work on two subjects for publication in a scholarly journal, (a) Impact of climate change on cotton production, a major export earner in Burkina Faso, and

(b) Impact of climate change on staple food crops in Burkina Faso. "We also identified a project to explore for additional external funding on climate change impact and assessment of farmers, adaptive capacity in the Sahel region: case of Burkina Faso", noted Diarra. "During my research visit, I also strengthen my capacity in the use of geographic information system (GIS) for research, and for technology transfer, received a GIS software named ArcGIS10, and a powerful laptop computer for data analysis to enhance my continuing research work

back at 2iE", said Diarra. Based on this partnership research work, the team has submitted an article titled "Impact of climate change on the principal product exported by Burkina Faso: The cotton product" for publication in the Journal of Agricultural and Resource Economics Review. The team is also working on a second article titled "impact of climate change on staple food crops in Burkina Faso". Diarra noted, "as a French speaking researcher in West Africa, my visit to Tuskegee University enabled me to improve my English language proficiency, and familiarize me with the American educational system and way of life. My visit to Tuskegee University was a smashing success and a lifetime opportunity.

SUCCESS STORY #3: Essakane solar data station of 2iE – climate data collection facility - combination of research and outreach on a mining industry in Burkina Faso

2iE Institut International d'Ingénierie de l'Eau et de l'Environnement
International Institute for Water and Environmental Engineering
Fondation 2iE

Compte-rendu de mission

Entreprise : IAM GOLD ESSAKANE SA **Lieu :** Site minier situé à Essakhane **Date :** 27/04/12 au 02/05 /12	**Personnes impliquées :** 2iE : Gildas Tapsoba, Justin Bassolé

Objectif : Installation et mise en route d'une station météo à Essakane (site minier).

1-Montage de la station

Le montage de la station a commencé à proprement dit le 28/04/12 et conformément au guide d'installation de chacun de ces appareils.

Etape 1 : montage du mat inclinable avec la centrale d'acquisition (QML), le capteur WXT520 qui mesure neuf (09) paramètres, le capteur de durée d'ensoleillement, et l'antenne GPS.

Etape 2 : montage du module alimentation d'une puissance de 160Wc (panneaux photovoltaïques, batteries, régulateur)

Etape 3 : montage du suntracker, du capteur solaire pour le tracking actif et des capteurs d'ensoleillement (global, direct, diffus)

Etape4 : La connexion de l'ensemble alimentation, centrale d'acquisition et capteurs

Photos station météo 2iE_BF2_Essakane

2- Fonctionnement de la station

Nous avons d'abord procédé au réglage (niveaux à bulles) et à la bonne orientation des capteurs avant de procéder à la mise en route et à la vérification du bon fonctionnement de la centrale d'acquisition (de manière visuelle par l'allumage des LEDs et par le logiciel AWS Client fournit avec le matériel Vaisala). La photo ci-dessus montre le résultat:

SUCCESS STORY #4: FasoPro Developer - developed by Kahitouo HIEN. Born into a farming family, at the western part of Burkina Faso, Mr Hienhad his primary education in his native village of Pana, in the province of Tuy. He graduated with a Master's degree in Environment from the 2IE Foundation and a Masters in Biochemistry from the University of Ouagadougou.

According to him, he had always been interested in becoming an entrepreneur since childhood. From the third grade until his Masters degree completion, he was always involved in starting new income-generating activities (especially agribusiness and livestock) in order to support his education and upkeep. Mr Hien grew up with the dream of becoming an entrepreneur who will contribute to developing his country both economically and socially. He shares how the FasoPro idea emerged below:

"I eat the chenille since my childhood because my whole family, especially my father is very fond of it. At the time, there was no reason to pay special attention to this insect which was used for food by many people.

It was during my university studies in biochemistry at the University of Ouagadougou that I became aware of the nutritional potential of the chenille shea, which was presented as one of the most protein-rich food in Burkina Faso. After reading Dr. Moussa Ouedraogo, the only specialist of chenille shea in Burkina Faso, I became totally convinced and fascinated by the nutritional qualities of chenille shea. Henceforth, developed the idea and the possibility of establishing an agribusiness around this insect, which will employ many women and provide sources of income.

In 2010, with a Master's degree in Biochemistry & Microbiology, I decided to continue my studies at the 2iE Foundation and specialize in the area of Environmental science and engineering. After following a few managerial and entrepreneurial set of courses at 2iE, my willingness to undertake the FasoPro busibess became a major obsession for me.

In 2012, I participated in the Global Social Venture Competition (only international competition to create social enterprises dedicated to students and graduates) organized by the University of California, Berkeley. It was on this occasion that I structured my project in the form of a business plan. This is how FasoPro was born. Going until World Finals at the Haas School of Berkeley, and winning the award for best social impact ($10,000), FasoPro has attracted interest

from a number of professionals and partners, and the idea is transformed into a concrete plan of life and business.

In July 2012, FasoPro had the opportunity to join the 2iE Foundation incubator, where we have since received technical, financial and managerial support to develop the first prototypes of FasoPro.

Finally, what is FasoPro? FasoPro is a private social enterprise whose main activity is the transformation of the chenille shea. Burkina Faso could ultimately offer an additional solution in the fight against malnutrition. Through Agribusiness valuing's resources and local know-how of traditional women, FasoPro wants to develop a diverse range of chenille products. Note that the first set of products of FasoPro, 'Toumou'D'lice', are consumer products that meet the needs for under-nourished people of Burkina Faso. Although the products are specifically dedicated to malnourished people, there are plans for the development of generalized consumer products in the future. FasoPro is aimed at marketing healthy and nutritious products for public consumption in Burkina Faso".

Picture of the FasoPro first product Toumou'Delice

Conclusions

- **Contribution to Regional & National Priorities:**
  - The partnership led to significant capacity development at 2iE, in addition to the training of highly qualified scientists and engineers in West Africa.
  - A significant increase was recorded by the partnership for the enrollment and training of underserved female population in Burkina Faso and West African sub-region.
  - The partnership contributed directly to regional & national **industrial development priorities** as illustrated with Anglo-Ashanti Gold (Mali), Essakane Mining and COGEB Intl. SA (Burkina)
  - Helping train critically needed advanced **S&T human capacity priorities** for Burkina Faso & the West African region to support technical and economic development and wealth creation.
  - Contributing to high quality advanced education and research that are critical to development.
  - Partnership directly contributing to the new USAID (2012-2016) ***Climate Change and Development Strategy*** by:
    - Providing research & human capacity support for national & regional transition to ***climate resilient and low carbon development*** pathway, water and sanitation.
  - Enhance 2iE faculty research & teaching capacity.
  - Institutional capacity for education & research management & administration
  - Exposure of students to international education.

Appendix A: Selected Project Pictures

Participants from across West African sub-region at the TU-2iE Partnership Community Outreach and Training Workshop held in Ouagadougou, Burkina Faso - Feb. 2013

Community training workshop session – Feb 2013.

Presentation by Omri Malul of Higher Education for Development (HED) during 2013 training workshop at 2iE – From left: Dr. Ben Oni (Tuskegee Univ.), Dr. Nosa O. Egiebor (Tuskegee Univ.), Dr. Amadou Hama-Maiga (2iE), Jeanne-Marie Duval (HED), Omri Malul (HED) and workshop attendees.

From right: Philip Girard (2iE), Dave Hansen (ACE), Kine Lidell (HED) and a 2iE student during a TU-2iE Partnership Training Workshop in 2011.

Partnership Industrial training visit for 2iE students to gold mining operations in Burkina Faso – Morrila Mining Company properties in June 2012

Partnership trainees at the industrial training visit to Morrila Mining operations in Burkina Faso – June 2012.

Abandoned surface mining property at Morrila Mines – June 2012.

Attendees at Partnership Project Training Workshop for 2iE Administrators and Faculty held at Tuskegee University in March 2012. Front Row from left: Philip Girard (PhD Director-2iE); Nosa O. Egiebor (Tuskegee); Paul Ginies (Director General-2iE); Amadou Hama-Maiga (Deputy Director General-2iE), Danette Hall (Tuskegee); Ben Oni (Tuskegee). Back Row from left: Yinussa Maiga (2iE); Tarig Hassan (Tuskegee); Gamal El Afandi (Tuskegee); Abdoulaye Diarra (2iE); Mudiayi Ngandu (Tuskegee); Jonathan Mbah (Tuskegee); Raymon Shange (Tuskegee); Shamim Begum (Tuskegee); Joseph Quansah (Tuskegee) and Deborah Spencer (Tuskegee).

Attendees at the launching ceremony of the Tuskegee-2iE Partnership of the Africa-U.S. Higher Education Initiative in Ouagadougou, Burkina Faso in 2011 – Front Row: Invitees from USAID/Burkina Faso & U.S. Embassy in Burkina Faso Personnel attending the Ceremony (Launching Photo #2).