



USAID
FROM THE AMERICAN PEOPLE

Title XII Report to Congress FY 2015

August 2016

This report is submitted to Congress pursuant to section 300 of Title XII of the Foreign Assistance Act of 1961, as amended.



LETTER FROM THE ADMINISTRATOR

At the U.S. Agency for International Development (USAID), we believe we can achieve more when we join forces with others. In recent years, we have made a concerted effort to expand and deepen our partnerships across the board, including with the university community here in the United States and institutions of higher learning across the globe. Universities bring research, technology and innovation to bear on development challenges. They serve as hubs for knowledge sharing and are uniquely positioned to leverage funds, broker public-private partnerships, and facilitate program implementation, monitoring, and evaluation. In every sector and every region of the world, our partnerships with universities are paying dividends that can be measured in goals met, dollars saved and lives changed.

To describe these critical partnerships, I am pleased to share with you the USAID Title XII Report for Fiscal Year (FY) 2015. This report details our coordinated effort to collaborate with Title XII universities, the Board for International Food and Agricultural Development (BIFAD) and other important partners to promote smart investments in international development.

In FY 2015, USAID significantly increased funding to Title XII universities operating in Feed the Future and USAID partner countries. In total, we provided more than \$558 million to Title XII institutions, which accounts for approximately 89 percent of all USAID awards made to higher education institutions globally. Our broad portfolio of investments includes support for long-term degree training, leadership and professional development for Africans, and agricultural research. For example, in FY 2015 U.S. universities trained more than 684 students with support from USAID and Feed the Future. We also awarded two new university-led Feed the Future Innovation Labs, joined with the Department of State to launch new Regional Leadership Centers for young people in Africa and engaged research scientists at Title XII universities through the Partnerships for Enhanced Engagement in Research (PEER) program. We have also taken steps to make our engagement with universities more strategic, appointing USAID's first Higher Education Coordinator, establishing a working group on higher education strategy development, and launching a new mechanism for tapping into the academic and technical expertise of the university community.

The members of BIFAD have been central to our collaboration with Title XII partners. The Board has advised us on ways to further university engagement, increase agricultural research capacity, promote youth engagement, and integrate human and institutional capacity development into USAID programming in food, agriculture and beyond. Throughout FY 2015, BIFAD convened the public and global community of development professionals through their public sessions, meetings with congressional offices and staff and a virtual consultation with stakeholders from over 22 countries. BIFAD's counsel on university engagement continues to strengthen USAID and enhance our impact on multiple fronts.

As we move into a transition year in 2016, we look forward to deepening our collaboration with Title XII universities and the global academic community to leverage the creative spirit, ingenuity, skill and expertise of these institutions. These partnerships with the higher education community will continue to be vital to our ongoing efforts to advance dignity and prosperity around the world.

Sincerely,

Gayle E. Smith

ACRONYMS AND ABBREVIATIONS

| | |
|----------|--|
| AANAPISI | Asian American, Native American, Pacific Islander Serving Institutions |
| AIANSI | American Indian, Alaska Native Serving Institutions |
| AUB | American University of Beirut |
| BIFAD | Board for International Food and Agricultural Development |
| CGIAR | Consultative Group for International Agricultural Research |
| CIAT | International Center for Tropical Agriculture |
| CIMMYT | International Maize and Wheat Improvement Center |
| CRS | Catholic Relief Services |
| DR | Dominican Republic |
| E3 | USAID's Bureau for Economic Growth, Education and Environment |
| F2F | Farmer-to-Farmer |
| FY | fiscal year |
| HBCU | Historically Black Colleges and Universities |
| HEPII | Higher Education Partnerships for Innovation and Impact |
| HESN | Higher Education Solutions Network |
| HEWG | Higher Education Working Group |
| HICD | Human and Institutional Capacity Development |
| HIS | Hispanic Serving Institutions |
| HMU | Hanoi Medical University |
| iAGRI | Innovative Agricultural Research Initiative |
| ICT | information communications technology |
| IHE | institutions of higher education |
| IPM | integrated pest management |
| MEAS | Modernizing Extension and Advisory Services |

| | |
|-------|--|
| MENA | Middle East and North Africa |
| MoA | Ministry of Agriculture |
| MOOC | Massive Open Online Courses |
| MSI | minority-serving institutions |
| PEER | Partnerships for Enhanced Engagement in Research |
| PUSH | Presidents United to Solve Hunger |
| RLC | Regional Leadership Centers |
| TCU | Tribal Colleges and Universities |
| UC | Université Caraïbe |
| UFWH | Universities Fighting World Hunger |
| USAID | U.S. Agency for International Development |
| VOHUN | Vietnam One Health University Network |
| YALI | Young African Leaders Initiative |

EXECUTIVE SUMMARY

This report summarizes FY 2015 U.S. Agency for International Development (USAID) partnerships and priorities with U.S. university institutions authorized under Title XII of the Foreign Assistance Act of 1961, as amended. The report focuses on the Agency's collaboration with its Title XII partners to address global food security challenges through investments in agricultural research, education and extension, and through related programs in nutrition, sustainable management of natural resources and trade. The report also considers broader contributions by Title XII universities to development. It documents how institutions that have not historically belonged to the Title XII community are now addressing the problems of food security, climate change and extreme poverty. All data contained in this report are based on financial obligations for direct awards to institutions of higher education (IHEs), as well as a limited number of sub-awards made through non-IHEs to IHEs.¹

U.S. universities played a key role in implementation of USAID programming in FY 2015. Feed the Future, a whole-of-government global hunger and food security initiative involving 11 federal departments and agencies, drew heavily upon U.S. university assets and leadership to support continued gains in child nutritional status and reductions in extreme poverty. U.S. universities played a vital role in creating extension programs, conducting collaborative agricultural research, and supporting educational reform in partner countries. In FY 2015 USAID contributions to U.S. universities totaled over \$561 million; of these investments, approximately \$558 million went to Title XII institutions.

In FY 2015, USAID awarded two new U.S. university-led Feed the Future Innovation Labs to Virginia Polytechnic Institute and State University in integrated pest management, and to University of Florida in livestock systems. The Agency also launched biotechnology programs to develop and deploy late blight-resistant potatoes, led by Michigan State University in partnership with University of Minnesota, and to facilitate the deployment and scale-up of genetically modified pod borer-resistant eggplant, led by Cornell University. More than 684 USAID-funded Associate's, Bachelor's, Master's, and PhD students and short-term trainees were trained at U.S. universities in FY 2015. The Partnerships for Enhanced Engagement in Research (PEER) program, which provides grants to scientists and engineers in developing countries who partner with U.S. Government-funded researchers to address global development challenges, engaged research scientists at Title XII universities. Young African Leaders Initiative (YALI), a partnership between USAID and the Department of State, launched its Regional Leadership Centers (RLC) in FY 2015. These Centers seek to develop new alliances with the private sector to improve the availability, relevance and quality of leadership training programs for female and male young leaders in sub-Saharan Africa. These alliances are strengthened by incorporating the expertise, experience and resources of academia, including Title XII institutions.

USAID appointed its first Higher Education Coordinator, Barbara Schneeman, in FY 2015. The Coordinator position was created to interface directly with the higher education community, to improve

¹ All data were sourced on May 2, 2016 using Phoenix, a commercial off-the-shelf, web-based financial management system configured for USAID that provides information about commitments, obligations, and expenditures.

awareness of USAID opportunities and to increase engagement avenues for USAID. Internally, the Coordinator champions the role of higher education in addressing development challenges.

Throughout FY 2015, the Higher Education Solutions Network (HESN) continued its partnerships between USAID and U.S. universities to channel the ingenuity of university students, researchers and faculty toward global development challenges. In FY 2015, the Agency launched Higher Education Partnerships for Innovation and Impact (HEPII) Annual Program Statement. The HEPII fills an identified gap by providing a mechanism for USAID to access the technical resources of higher education institutions across a range of sectors and to support strengthening higher education institutions in partner countries. Additionally, USAID's Bureau for Economic Growth, Education and Environment (E3) began conducting research in FY 2015 on the effectiveness of Massive Open Online Courses (MOOCs) as a platform for increasing youth employment and improving access to educational opportunities. Curricula and coursework for MOOCs are developed and taught by various U.S. institutions in partnership with non-profit organizations, related companies and venture capitalists.

USAID's Farmer-to-Farmer (F2F) program promotes sustainable economic growth, food security and agricultural development worldwide. Volunteer technical assistance from U.S. universities, farmers, agribusinesses and cooperatives helps developing countries improve productivity, access new markets, build local capacity, combat climate change and conserve environmental resources. In FY 2015, F2F engaged with U.S. universities through the volunteering of faculty members.

The Board for International Food and Agricultural Development (BIFAD) saw the departure of veteran members Catherine Bertini and Marty McVey, who completed their terms in FY 2015. New additions to the BIFAD included James Ash, Food and Agribusiness Group Leader and Partner, Husch Blackwell LLP, and Cary Fowler, former Executive Director of the Global Crop Diversity Trust. Brady J. Deaton, Chancellor Emeritus of the University of Missouri, continued as chair, joined by continuing members Waded Cruzado, President of Montana State University; Gebisa Ejeta, World Food Prize winner and Distinguished Professor of Agronomy at Purdue University; and Harold L. Martin, Sr., Chancellor of North Carolina A&T State University.

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INTRODUCTION

This report documents FY 2015 development activities implemented by Title XII institutions, including and in addition to the traditional fields of agriculture, natural resources, environment and higher education. Title XII institutions have evolved since the passage of the International Development and Food Assistance Act of 1975 (P.L. 94-161) and are bringing more resources to bear on a broad range of development challenges. The Famine Prevention and Freedom from Hunger Improvement Act of 2000 (P.L. 106-373) broadened the provisions of the original Act from “preventing famine and establishing freedom from hunger” to achieving “[t]he mutual goals among nations of ensuring food security, human health, agricultural growth, trade expansion, and the wise and sustainable use of natural resources.” As such, more higher education institutions have been designated as Title XII institutions, and schools traditionally working in agriculture have become increasingly multidisciplinary.

Many Title XII institutions are working in the fields of health, governance and trade, and these fields are increasingly interlinked with agricultural development. Urban universities that have not historically worked in agriculture are entering the field in response to the challenges of environmental degradation and climate change. This year’s Title XII report again documents U.S. university-led water and sanitation projects within the environment category, which were not considered in the domain of Title XII activities prior to FY 2014. According to the Food and Agriculture Organization of the United Nations, up to 95 percent of water in developing countries is destined for agriculture, and new understanding of the relationship between nutrient absorption and enteric health links water and sanitation closely to the goal of improved child nutrition.

Higher Education as a Driver of Development

USAID recognizes the importance of the higher education community in advancing food security and, more generally, development goals. This is underscored by the levels of USAID investment globally in higher education institutions, totaling more than \$2.39 billion over the last half-decade, 84 percent of which went to Title XII universities. Table 1 shows USAID obligations in FY 2015 to universities worldwide, including Title XII institutions.

Table 1: Summary of Investments in Higher Educational Institutions Worldwide

| Institutional Type | FY 2015 obligations in millions of dollars ^a |
|--|--|
| All Universities (Foreign & U.S.) | 645 |
| All U.S. Universities | 561 |
| Foreign Universities | 84 |
| Title XII U.S. Universities ^b | 558 |
| Non-Title XII U.S. Universities | 3 |

^a All data contained in this report are based on financial obligations for direct awards to institutions of higher education (IHEs), as well as a limited number of sub-awards made through non-IHEs to IHEs.

^b USAID uses an inclusive definition of a Title XII institution, as described below. Provisions of the Famine Prevention and Freedom from Hunger Improvement Act of 2000, P.L. 106-373, broadened Title XII from preventing famine and establishing freedom from hunger to achieving “[t]he mutual goals among nations of ensuring food security, human health, agricultural growth, trade expansion, and the wise and sustainable use of natural resources.” The new mandate more broadly defines agriculture and related sciences. Title XII institutions comprise: 1) those listed in the First Morrill Act (1862) or the Second Morrill Act (1890); 2) those listed in the Sea Grant College and Program Act (1966); and 3) other U.S. colleges and universities which: a) have demonstrable capacity in teaching, research and extension (including outreach) activities in the agricultural sciences; and b) can contribute effectively to the attainment of the objective of Title XII.

Source: Phoenix database, accessed May 2, 2016, HICD portfolio investments via the CGIAR fund, PEER Program, HESN Program, YALI Program. Figures are rounded to the nearest million.

Global Distribution of Investments

USAID invests in universities throughout the world. In FY 2015, 86 percent (\$558,154,467) of obligations were made to Title XII universities, 13 percent (\$84,452,895) to institutions outside the United States, and less than one percent to non-Title XII U.S. universities (\$2,885,095). Figure 1 shows the distribution of funding outside the United States. Even when funding went directly to foreign universities, many partnered with U.S. collaborators and obtained their awards as a result of assistance provided by the U.S. institution.

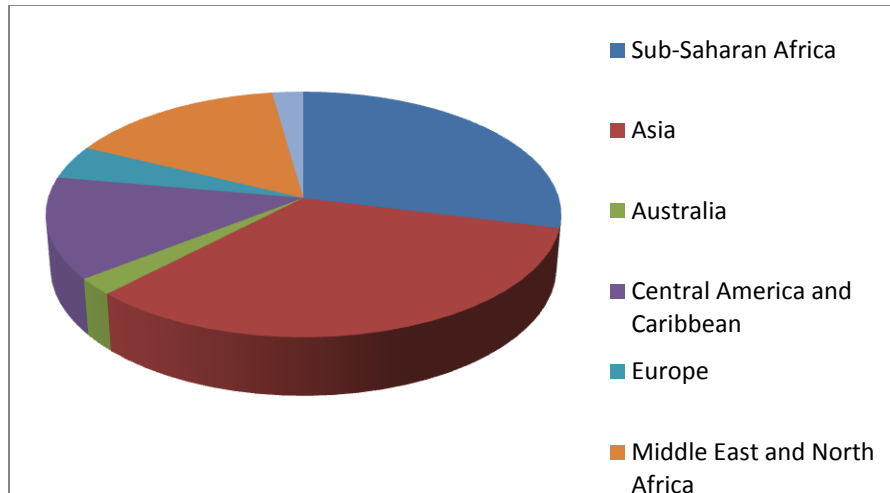


Figure 1: Geographic distribution of foreign institutions funded by USAID. In FY 2015, a total of 45 institutions in 28 countries received funds. This relative distribution has remained fairly constant since 2011, reflecting Agency priorities, particularly in Feed the Future countries.

Source: Phoenix database, accessed May 2, 2016, PEER Program, HESN Program, YALI Program.

U.S. Distribution of Investments

In FY 2015, USAID invested a total of \$561,039,562 in U.S. institutions of higher education, only three of which were not Title XII universities.² Of this total, \$558,154,467 was awarded to Title XII institutions for research and development activities across all fields. Moreover, universities received an additional \$55 million in sub-awards under grants and contracts from private sector entities and non-profits.³

I. KEY USAID ENGAGEMENT WITH TITLE XII INSTITUTIONS

In FY 2015, USAID continued to expand its engagement with Title XII universities, in line with the goals of reducing extreme poverty and improving nutrition through agriculture-led economic development.

Degree and Short-term Training

U.S. universities supported over 684 USAID-funded Associate’s, Bachelor’s, Master’s and PhD degree trainees and short-term trainees in FY 2015 across all fields,⁴ including many in agricultural fields supported through such programs as the Feed the Future Innovation Labs.

Feed the Future Innovation Labs

Feed the Future supports 25 U.S. university-led Innovation Labs, two of which are led by minority-serving institutions (MSI), in partnership with over 65 colleges and universities, 22 of which are MSIs. The USAID Bureau for Food Security awarded two new Feed the Future Innovation Labs in FY 2015:

² These were stand-alone medical schools.

³ USA Spending. Accessible at www.usaspending.gov

⁴ Data retrieved from the USAID Training and Information System database “TraiNet” for FY 2015

- The Feed the Future Innovation Lab for Integrated Pest Management, led by Virginia Polytechnic Institute and State University. The program is supporting improved, environmentally sustainable yields for smallholder farmers through the implementation of participatory, integrated pest management (IPM) programs in horticultural and grain crops using centers of excellence for dissemination of best IPM practices and scalable solutions.
- The Feed the Future Innovation Lab for Livestock Systems, led by the University of Florida. The program is working to improve livestock systems by addressing key issues related to livestock value chains, disease management, animal-source foods, and enabling policies that drive sustainable local and national agricultural productivity and combat food insecurity and undernutrition.

Biotechnology

In FY 2015, USAID launched the Feed the Future Biotechnology Partnership for Potato, led by Michigan State University in partnership with the University of Minnesota and J.R. Simplot Company. This five-year award will develop and deploy genetically modified late blight-resistant potatoes for use in Asia and Africa. Late blight is the fungal disease responsible for the famous Irish Potato Famine. The disease continues to pose a serious risk to food security in developing countries in Africa and Asia. The Agency also launched the Feed the Future South Asia Eggplant Improvement Partnership, led by Cornell University, in FY 2015, which will facilitate the deployment and scale-up of genetically modified pod borer-resistant eggplant for Bangladesh, India and the Philippines. Control of the pod-borer often requires up to 80 insecticide sprays per year, negatively impacting farmer and consumer health. The pod borer-resistant eggplant has reduced pesticide use on eggplant by over 95 percent.

Commitment to Minority-Serving Institutions (MSIs) and Diversity

The Agency continues its strong commitment to diversity. In FY 2015, \$31,561,933 of prime and sub-awards engaged MSIs.⁵ Several schools with which USAID partners lost their MSI status in FY 2015, resulting from shifts in their student populations. Historically Black Colleges and Universities (HBCU) received \$3,145,696 of this funding; Tribal Colleges and Universities (TCU) and American Indian, Alaska Native Serving Institutions (AIANSI) received a combined total of \$10,620,363; Hispanic Serving Institutions (HSI) received \$16,770,169; and Asian American, Native American, Pacific Islander Serving Institutions (AANAPISI) received a total of \$1,025,705. Appendix 1 provides a full listing of the MSIs receiving funds.

Higher Education Coordinator Position Created

USAID appointed its first Higher Education Coordinator, Dr. Barbara Schneeman, in FY 2015. The Coordinator position was created to interface directly with the higher education community, to enhance awareness of USAID opportunities and to increase engagement avenues for USAID. Internally, the Coordinator champions the role of higher education in addressing development challenges. Under Dr. Schneeman's leadership, USAID formed a Higher Education Working Group (HEWG) to encourage interaction and information sharing among different bureaus across the Agency. The HEWG and the Coordinator serve as points of contact for the university community seeking engagement with USAID.

Higher Education Partnerships for Innovation and Impact (HEPII)

USAID created the HEPII Annual Program Statement in FY 2015 to support the Agency in 1) strengthening human and institutional capacity within higher education institutions in USAID partner countries, and 2) achieving development impact by engaging universities' research capability, focus on science, technology and engineering, subject-matter knowledge and experience, and partnership

⁵ USAID FY 2015 Annual Performance Report on Minority Serving Institutions

connections. Partnerships developed through HEP2 are anticipated to expand USAID's reach into academic and technical sectors to solve development challenges, while engaging the private sector, foundations and other industry partners.

Massive Open Online Courses (MOOCs)

In FY 2015, USAID's Bureau for Economic Growth, Education and Environment (E3) began conducting research to address the unmet potential of Massive Open Online Courses in developing nations. The International Research and Exchanges Board (IREX), CourseTalk and the University of Washington lead this activity. The partnership is raising awareness of online courses in target countries, building new alliances with NGOs, government agencies, universities and the private sector to further online course usage, and investigating incentives to improve MOOC completion and certification rates. In addition, the partners are conducting research on the use of online courses in three target countries: Colombia, South Africa and the Philippines.

Higher Education Solutions Network

The Higher Education Solutions Network (HESN) is a network comprising eight programs spanning seven prime university institutions and over 650 university, NGO, governmental, foundation and other partners. Notable projects in FY 2015 included Michigan State University's Global Center for Food Systems Innovation, which is creating, testing and enabling the expansion of solutions to address critical pressures on the global food supply, and the ResilientAfrica Network, a collaboration among Makerere University in Uganda, Tulane University, and Stanford University. In the latter, university students, researchers, faculty, and their partners incubate, catalyze, and scale science- and technology-based solutions to the world's most challenging development problems, including the global food supply.

Partnerships for Enhanced Engagement in Research (PEER)

The PEER program facilitates an international platform that builds scientific research capacity and strengthens research ecosystems in developing countries with direct impact on policy. PEER catalyzes collaborative research and elevates the use of science and technology to further USAID's development objectives. In FY 2015, PEER had 195 active projects in over 40 countries in collaboration with researchers from U.S. institutions. PEER mentor universities do not receive direct funding but collaborate with their host country partners.

Young African Leaders Initiative (YALI)

The Young African Leaders Initiative invests in the next generation of African leaders by supporting them to spur growth and prosperity, strengthen democratic governance, and enhance peace and security across Africa. In FY 2015 YALI launched its Regional Leadership Centers (RLC). The RLCs target accomplished young leaders in the public sector, civil society and business, enabling YALI to reach a far greater number of emerging leaders than through the Mandela Washington Fellowship Program. YALI works with a number of U.S. universities to deliver its programming, both in the United States (through the Mandela Washington Fellowship Program), and in Africa (through the RLCs).

The Farmer-to-Farmer (F2F) Program

As part of its efforts to promote sustainable economic growth, food security and agricultural development worldwide, in FY 2015 F2F facilitated a program development project grant for Colombia with Purdue University, a small grant project in Haiti with Florida A&M University, and a small grant project in Bangladesh with Tennessee State University. The Purdue University Colombia F2F project engages U.S. volunteers to improve sustainable agricultural production and the marketing of agricultural products in the Orinoquia Region. Purdue University works closely with its host, the University of the Llanos (Unillanos), and a number of other partners to address challenges to agricultural productivity. Activities include training workshops on production problems, support for market assessments of local food value chains and development of an IT platform to connect producers with consumers. The Florida A&M Haiti

F2F project helps young agricultural entrepreneurs improve their business skills. Volunteers work with entrepreneurs in conjunction with Université Caraïbe (UC) and Food for the Poor. The Tennessee State University Bangladesh F2F project fields volunteers to train and facilitate dissemination of information on adoption of new and improved farming practices. Volunteers work closely with the two host organizations, Bangladesh Agriculture University and CARITAS, to present organic agricultural practices through training workshops, factsheets and a website.

II. TITLE XII PROGRESS IN FY 2015

Section 297 of Title XII authorizes activities within five program areas, which achieve distinct and specific outcomes as described below. USAID has active programs that directly address all five components.

Component 1 supports strengthening the institutional capacity and human resources in developing countries around food security. This goal is achieved directly through such programs as the Feed the Future Innovation Labs; the Borlaug Higher Education for Agricultural Research and Development program, implemented by Michigan State University; the Borlaug Leadership Enhancement for Agriculture Program, implemented by University of California Davis; the U.S. Borlaug Fellows in Global Food Security Program, implemented by Purdue University; the Modernizing Extension and Advisory Services project, implemented by a consortium led by University of Illinois, Champaign-Urbana; and the Innovation for Agricultural Training and Education program, implemented by a consortium led by Virginia Polytechnic Institute and State University.

Component 2 supports long-term programs for U.S. university global agricultural and related environmental collaborative research and learning. USAID responds to component 2 primarily through the Feed the Future Innovation Labs. Appendix 2 provides a full listing of Feed the Future Innovation Labs and collaborating partner colleges and universities in the United States.

Component 3 supports integrating U.S. universities into the international network of agricultural science. This component is addressed through the Feed the Future Innovation Labs, HESN, and the PEER program.

Component 4 supports programs for (a) international agricultural research centers, (b) research projects identified for specific problem-solving needs and (c) strengthening of national research systems. USAID is an active participant in the Consultative Group for International Agricultural Research (CGIAR) and has research partnerships with most of the CGIAR centers. USAID also supports research on vegetables carried out by the World Vegetable Center based in Taiwan. Research partnerships between U.S. universities and international agricultural research centers engage the complementary strengths of both to overcome specific scientific challenges. One example is the Heat Tolerant Maize in South Asia project, a public-private alliance involving the International Maize and Wheat Improvement Center of the CGIAR (CIMMYT); Purdue University; national agricultural research system institutions from India, Nepal, Bangladesh and Pakistan; and local and multinational seed companies.

Extensive problem-oriented research is carried out through the university-led Feed the Future Innovation Labs, as well as through other university or private sector-led programs. USAID's climate-smart agriculture, biosafety and scaling activities also respond to this mandate. Nearly all Feed the Future research programs feature capacity development, usually with national research partners. In addition, a portfolio of Feed the Future investments specifically targets human and institutional capacity

development of national agricultural research systems.

Component 5 authorizes special programs supported by non-agricultural funds. Consistent with Section 296, Title XII activities are now more broadly defined to include trade expansion, rural income generation, nutrition and agribusiness. Title XII universities are engaging in a much broader range of activities than in the past, including in health, good governance, energy and infrastructure, as well as the traditional Title XII agricultural production activities. Moreover, universities that historically were not in the Title XII community have begun addressing concerns in agriculture, environment, natural resources, nutrition, and how they combine to achieve food security.

Table 2 shows funding for traditional Title XII activities in FY 2015. USAID invested \$558,154,467 in direct partnerships with Title XII universities in all fields throughout the United States. Figure 2 shows the distribution of these partnerships across sectors in FY 2015.

Table 2: Title XII FY 2015 Obligations in the Fields of Agriculture, Environment and Higher Education.

| Field | FY 2015 obligations, millions of dollars |
|--------------|---|
| Agriculture | 157 |
| Environment | 18 |
| Higher Ed | 76 |
| Total | 251 |

Source: Phoenix database, accessed May 2, 2016, HICD portfolio investments via the CGIAR fund, PEER Program, HESN Program, YALI Program.

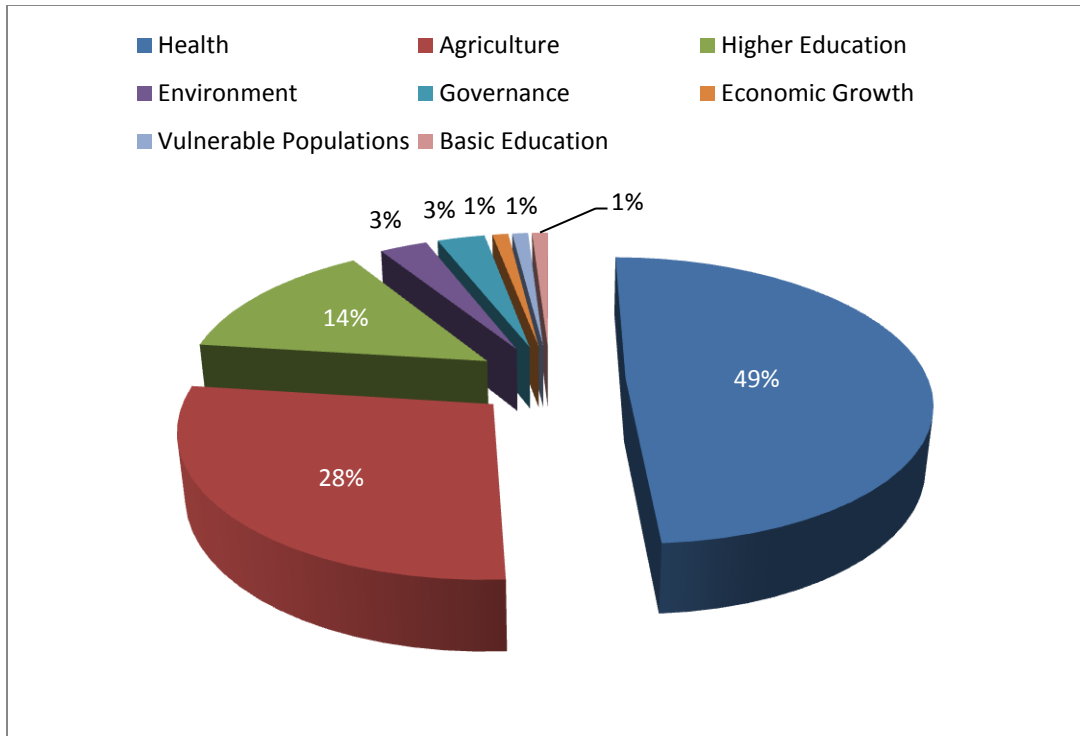


Figure 2: FY 2015 distribution of USAID funding at Title XII institutions by sector. Health programming (49%) received the largest proportion of funding, followed by agriculture (28%), higher education (14%), environment (3%), governance (3%), basic education (1%), economic growth (1%) and vulnerable populations (1%).

Source: Phoenix database, accessed May 2, 2016, HICD portfolio investments via the CGIAR fund, PEER Program, HESN Program, YALI Program.

U.S. Distribution of Investments

In FY 2015, USAID invested a total of \$561,039,562 in U.S. institutions of higher education, only three of which were not Title XII universities.⁶ Figure 3 shows the geographic distribution of U.S. universities contributing to international development in partnership with USAID. In FY 2015, a total of 173 institutions received funding in 49 states, including Puerto Rico and the District of Columbia.

⁶ These were stand-alone medical schools.

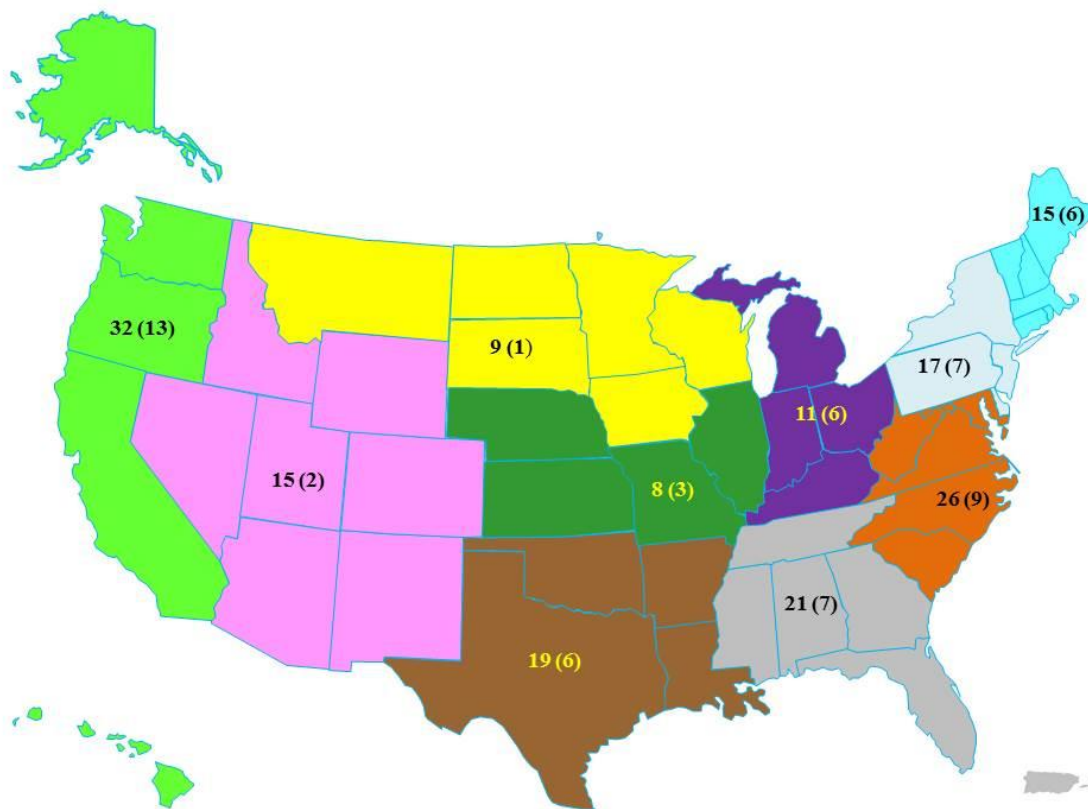


Figure 3: Geographic distribution of U.S. universities contributing to international development. The numbers in each geographic region include: 1) those universities receiving direct USAID awards (all categories) or sub-awards from non-profits, private sector entities, or other universities under Feed the Future research programs, Human and Institutional Capacity Development (HICD) programs, minority-serving institutional programs and the Higher Education Solutions Network. The number in parentheses reflects the number of institutions with prime awards, meaning that the institution is the legal entity that receives the award directly from USAID. Partners receive their funds from the prime award holder in the form of sub-awards; 2) universities participating in the Young African Leaders Initiative (either the Mandela Washington Fellowship, funded by the Department of State, or the Regional Leadership Centers, funded by USAID); and 3) U.S. mentor universities in the Partnerships for Enhanced Engagement in Research (PEER) program (PEER mentor universities do not receive direct funding but collaborate with their host country partners). The numbers reflect institutions, not awards, as many institutions hold multiple awards or sub-awards.

Source: Phoenix database, accessed May 2, 2016, HICD portfolio investments via the CGIAR fund, PEER Program, HESN Program, YALI Program.

III: LOOKING FORWARD: TITLE XII—THE NEXT FIVE YEARS

U.S. universities are a key asset that can be brought to bear on a new set of emerging challenges and opportunities affecting international development, including climate change, urbanization, the youth bulge, a global economy, new market opportunities and breakthrough technologies. USAID identified

certain directions to explore in FY 2015 and beyond in response to both these larger trends and to BIFAD guidance.

Feed the Future continues to refine its strategies and implementation. Broader engagement with universities across a range of topics, including human and institutional capacity development, research, public-private partnerships, resilience, youth, and agricultural workforce development, will be part of efforts going forward.

BIFAD and USAID will continue to engage with the broader global community about the changing nature of partnerships between U.S. universities and those in developing countries, particularly in light of the past success of capacity development programs and continued efforts on sustainability and the use of local systems.

The Higher Education Working Group (HEWG) and Higher Education Coordinator will continue to provide leadership on higher education issues across the Agency, including providing input on a revised Education Strategy.

The results of the Bureau for Economic Growth, Education and Environment's research on Massive Open Online Courses usage in Colombia, South Africa and the Philippines will be used to create frameworks and outreach around improving access to relevant content, increasing enrollment and access, and helping young people to improve their employment prospects. The results of the study will then be used to potentially replicate successful components in other developing countries.

USAID anticipates continued outreach by Africa-based implementers to U.S. universities in support of the Regional Leadership Centers. Although no U.S institutions are directly funded, the Agency's Africa-based prime implementers running the RLCs have some sub-agreements with U.S. universities, and U.S. university involvement will continue to strengthen the programming of the RLCs. The awards for the RLCs run through calendar year 2019, and regular curriculum reviews will be conducted.

Over the next five years, USAID will continue to increase outreach activities uniquely designed to encourage and assist MSIs to internationalize. Implementation of the Development Diplomat in Residence program to expose more MSI students and faculty to the challenges and rewards of a career in international development will be expanded. USAID also will continue to work with MSIs and industry partners to encourage collaborations that address development goals.

IV: SUMMARY OF BIFAD ACTIVITIES IN FY 2015

The BIFAD is a presidentially appointed, seven-member advisory body comprising at least four representatives from U.S. universities, with additional representation from the private sector and civil society. BIFAD is authorized under Section 298 of Title XII of the Foreign Assistance Act of 1961, as amended, in recognition of the critical role that U.S. land-grant institutions play in agricultural development and ensuring food security, both domestically and abroad. BIFAD plays an important advisory role to USAID on Title XII-related agriculture and higher education issues in developing countries. BIFAD's activities are supported by USAID in compliance with the Federal Advisory Committee Act of 1972.

In FY 2015, the BIFAD held three public business meetings.⁷ One, at the World Food Prize in Des Moines, Iowa in October 2014, focused on “Agricultural Research Capacity and Youth Engagement.” The Board also hosted a side event, “Creating Future Leaders: BIFAD and Feed the Future Dialogue on Human and Institutional Capacity Development.” A February 2015 BIFAD meeting in Washington, D.C. focused on “HICD in Agricultural Innovation Systems” and included an update on the USAID/Bureau for Food Security’s Ebola response. In April 2015, board member and President of Montana State University, Waded Cruzado, hosted a meeting in Bozeman, Montana that highlighted international research by Montana State University faculty and included a panel with Tribal College Presidents.

The BIFAD and USAID hosted an e-consultation in November 2015: *Feeding the World in 2050: How Human and Institutional Capacity Development Can Support Agricultural Innovation Systems*, bringing together key stakeholders to share experiences and input on this topic. The exchange was summarized in a final report.⁸ The consultation featured authors and contributors to three topical reports: the commissioned *BIFAD Review of Strategic Human and Institutional Capacity Development (HICD): Issues and the Role of USAID and Title XII Under the Feed the Future Programs*,⁹ the USAID Africa Bureau-commissioned report, *African Higher Education: Opportunities for Transformative Change for Sustainable Development*,¹⁰ and the USAID Bureau for Food Security-commissioned report, *Good Practices in Leveraging Long-term Training for Institutional Capacity Strengthening*.¹¹ The results of the e-consultation will be leveraged as key inputs to decision making and priority setting in HICD programming.

The consultation brought together stakeholders from over 22 countries in sub-Saharan Africa, Asia, Europe, Latin America, the Caribbean and North America. Seven themes emerged from the exchange: 1) designing strategic human capacity development and integrating leadership, management and technical skills to support institutional capacity development; 2) strengthening long-term institutional capacity development; 3) building diverse partnerships of mutual interest and motivation; 4) supporting programs to be flexible, adaptable, and responsive to market needs; 5) building both human and institutional networks; 6) increasing women’s participation in the agricultural sector by establishing and maintaining gender-equitable institutions; and 7) increasing information and communications technology (ICT) access and use in agricultural innovation systems based on monitoring and evaluation. The exchange and final report generated over 30 recommendations for stakeholders including USAID, universities in the United States and in developing countries, national agricultural research institutions, NGOs, and private firms.

⁷ The digital recording of the live-streamed meetings and minutes can be found at www.usaid.gov/bifad/documents.

⁸ *Report on the BIFAD and USAID Consultations: Feeding the World in 2050: How Human and Institutional Capacity Development Can Support Agricultural Innovation Systems* (2015). Access online at: <https://agrilinks.org/agexchange/agexchange-feeding-world-2050-how-human-and-institutional-capacity-development-can> and <https://www.usaid.gov/sites/default/files/documents/1867/AgExchange%20Summary%20Report%20Final.pdf>.

⁹ *BIFAD Review of Strategic Human and Institutional Capacity Development (HICD) Issues and the Role of USAID and Title XII Under the Feed the Future Programs* (2014). Access online at: http://www.aplu.org/projects-and-initiatives/international-programs/bifad/BIFAD_Library/bifad-human-and-institutional-development-report/file.

¹⁰ *African Higher Education: Opportunities for Transformative Change for Sustainable Development* (2014). Access online at: <http://www.aplu.org/projects-and-initiatives/international-programs/knowledge-center-for-advancing-development-through-higher-education/knowledge-center-library/executive-summary-african-higher-education-opportunities-for-transformative-change-for-sustainable-development/file>.

¹¹ *Good Practices in Leveraging Long-term Training for Institutional Capacity Strengthening* (2014). Access online at: <http://www.aplu.org/library/good-practices-in-leveraging-long-term-training-for-institutional-capacity-strengthening/file>.

To raise awareness of U.S. university engagement under the U.S. government's Feed the Future initiative, the Board met with staff from several Congressional member offices and staff of the Senate Foreign Relations Committee in FY 2015. They also met and conducted a conference call with former Administrator Rajiv Shah. Several members of the Board met with the deans of agricultural universities in Ethiopia and visited Sokoine University in Tanzania to learn about the Innovative Agricultural Research Initiative (iAGRI) university partnership project, managed by a consortium of U.S. universities led by the Ohio State University¹².

The BIFAD has engaged both with Universities Fighting World Hunger (UFWH) and the Presidents United to Solve Hunger (PUSH), a movement which grew out of UFWH when more than 100 U.S. university presidents signed a pledge to make a difference in the global effort to achieve food security and reduce hunger. BIFAD Chair Deaton is a member of the Steering Committee of PUSH, representing the four campuses of the University of Missouri. The Deaton Institute at the University of Missouri organized the 11th Annual Summit of UFWH and hosted a pre-conference of PUSH. Summit keynote speakers included Catherine Bertini, longtime member of the BIFAD. Roughly 50 universities and 10 countries were represented at the Summit.

In addition to these efforts, the BIFAD engaged in global outreach throughout FY 2015. The Board continued its commitment to Title XII engagement in agricultural research and youth development. Table 3 provides a summary of activities in which the BIFAD participated.

¹² *Report on BIFAD Visit to Sokoine University of Agriculture (SUA) and Innovative Agricultural Research Initiative (iAGRI)* (2015) Access online at: <https://www.usaid.gov/documents/1867/bifad-report-iagri-and-sua>

Table 3: BIFAD Outreach and Engagement Events in FY 2015

| Date & Location | Event | Highlights |
|--|--|---|
| October 14, 2014 Des Moines, IA | Public BIFAD Meeting: “Feeding the World in 2050: Agricultural Research Capacity and Youth Engagement” | <ul style="list-style-type: none"> • Focus on higher education efforts under Feed the Future • Panel on student engagement • Side event: “Approaches to National Agricultural Research System Strengthening” |
| October 15, 2014 Des Moines, IA | Creating Future Leaders: BIFAD and USAID dialogue on Human and Institutional Capacity Development | <ul style="list-style-type: none"> • Expert panelists reviewed BIFAD’s commissioned report on HICD and validated conclusions • A kickoff for an e-consultation with a broader group of stakeholders concerning HICD |
| November 17–20, 2014 Global | e-Consultation with stakeholders concerning HICD | <ul style="list-style-type: none"> • Started with a webinar to highlight BIFAD HICD report results and recommendations • Eight expert facilitators stimulated discussion with participants from 22 countries concerning how HICD can support agricultural innovation systems |
| Feb. 27, 2015 Washington, DC | Public meeting featuring report on e-consultation results | <ul style="list-style-type: none"> • Report of conclusions from e-consultation and responses from experts • Meeting was webcast |
| April 9–10, 2015 Bozeman, MT | Public BIFAD Meeting: “Decision Making To Enhance Food Security and Resilience” | <ul style="list-style-type: none"> • Waded Cruzado hosted the meeting at the Montana State University Campus. • A panel of Tribal College leaders discussed agricultural development by the U.S. Government in developing countries even while similar problems exist in Tribal lands. An outreach program was conducted on the campus with faculty, staff, and students. |
| May 11–17, 2015 Tanzania and Ethiopia | iAGRI Program Familiarization Visit and Meeting with deans of agricultural universities in Ethiopia | <ul style="list-style-type: none"> • A team representing BIFAD visited Sokoine University of Agriculture in Morogoro, Tanzania to learn about its partnership with five U.S. universities. • The team also met with deans from Ethiopian agricultural universities. |

V: BIFAD RESPONSE TO THE FY 2015 TITLE XII REPORT TO CONGRESS

The Board for International Food and Agricultural Development (BIFAD) is pleased to comment on this Title XII Report to Congress for FY 2015. The Board commends USAID for establishing new avenues for working with universities to accomplish development goals while maintaining and strengthening its level of interaction with U.S. universities through a number of important traditional approaches described in the report.

In addition, the Title XII Report to Congress for FY 2015 continues the improvements begun in 2011 to provide a greater level of detail on programmatic interactions with educational institutions. These improvements will more clearly communicate to Congress the approach being undertaken and will allow for a much greater level of transparency than in Title XII Reports prior to FY 2011. We see these improvements being of value as the full impacts of USAID programs are evaluated.

The report's Introduction emphasizes that those universities "...working in agriculture have become increasingly multidisciplinary" and that "...new understanding of the relationship between nutrient absorption and enteric health links water and sanitation closely to the goal of improved child nutrition." These concepts are key to the future of development and BIFAD applauds them wholeheartedly. Our expectation is that such examples will be expanded in the future in ways that better illustrate the effectiveness of USAID's mission.

BIFAD's observation of university responses to new USAID projects and programs suggests that these increases reflect growing interest of U.S. universities to contribute to the development process. BIFAD hopes that in future Title XII Reports to Congress, additional detail could be provided that clearly illustrates the programmatic shifts that drive trends in funding. Collaboration with university partners will ultimately improve program efficiency, reveal the power of the "whole of government" philosophy, and enhance the return on the respective investments of university programs and government agencies, especially the research arms of program collaborators.

USAID's effort to leverage the capabilities of minority-serving institutions is highlighted in this Title XII Report, and this effort has been, and continues to be, of interest to BIFAD. Title XII universities have a long history of developing successful private sector partnerships, and this is also found with minority-serving institutions. Efforts can be undertaken to strengthen partnerships with other educational and research partners, including private sector partners, as the Board observed in its public meetings. Perhaps USAID may wish to consider increasing Title XII minority-serving institution participation by leveraging their experience with fostering educational and research partnerships with private sector and private voluntary organizations.

BIFAD applauds USAID for the steps taken to not only hire the first Higher Education Coordinator, but also to establish the Higher Education Working Group. BIFAD looks forward to interacting with the Coordinator and the Working Group. The Higher Education Partnerships for Innovation and Impact (HEPII) Annual Program Statement was launched in FY 2014 as a mechanism for USAID to leverage the technical resources of higher education institutions, including Title XII institutions. BIFAD is greatly interested in assessing how this mechanism is working in future Title XII reports.

BIFAD was very pleased to note the high level of interest from U.S. universities to become more fully involved with USAID through the Higher Education Solutions Network Global Development Laboratory. BIFAD looks forward to further information that can be included in future reports on how USAID intends to capture the enthusiasm that the Title XII institutions demonstrated with their applications.

There was new funding toward the establishment of a new Feed the Future Innovation Lab on livestock in partnership with a Title XII institution. Funding for the Integrated Pest Management Innovation Lab was a continuation of efforts already established but now refocused. BIFAD is very pleased with these efforts to draw on recognized excellence, proven international experience, and emerging innovations in research, curriculum development, and new partnerships with private sector and governmental collaborators. Innovative communication technology is increasingly being drawn into the development strategies. The continued involvement of U.S. university partners in collaborative research and human capacity development in Innovation Labs is particularly noteworthy.

BIFAD anticipates monitoring progress of programs that have been funded for the last several years and should be reaching fruition. BIFAD is supportive of these initiatives and is particularly interested in assessing these efforts in the future. The Title XII Report for FY 2015 highlights efforts with MOOCs in developing nations. BIFAD seeks to determine whether these efforts can be expanded for some critical aspects of agricultural curricula in the future as new innovations in educational design are evaluated. African universities have acknowledged the need for curricula reform, and BIFAD suggests that MOOCs are one mechanism that can be a critical component of educational innovation and reform.

In FY 2011, the former USAID Administrator challenged BIFAD to play a more active role in engaging U.S. universities and encouraging them to be “ambassadors” for the Feed the Future approach. BIFAD welcomed these changes and accepted the Administrator’s challenge. During FY 2015, BIFAD members attended USAID-sponsored or hosted meetings related to agricultural research and innovation. BIFAD held a public meeting at one Title XII university that included outreach sessions to students, faculty, staff, and administrators on that campus concerning the Feed the Future approach. Following its visit to Tanzania in FY 2015, BIFAD found in the iAGRI project a promising model for capacity development. BIFAD applauds the learning-focused, adaptive approach and found appealing many of the specific innovations used in the project, including strategy development, financial risk mitigation, small-scale organizational experimentation, working with both formal and non-formal systems, building trust through internal and external stakeholder engagement, brokering relationships with the private sector for technology commercialization, identifying new means of income generation, and using transformative study tours. The BIFAD looks forward to hearing more about the project’s progress. BIFAD also supported a new effort, Universities Fighting World Hunger, through a variety of mechanisms. We look forward to continuing interaction with the current Administrator on these and other topics.

BIFAD commends USAID for increasing funding for food and agricultural development and for augmenting involvement of U.S. universities in these development activities. BIFAD thanks USAID for the excellent efforts and the opportunity to help strengthen U.S. university participation in the noble goal of helping foster food security worldwide.

APPENDICES

Appendix 1: Minority-Serving Institutions Funded by USAID in FY 2015

| | Institution | AANAPISI | AIANSI | HBCU | HSI |
|----|---|-----------------|---------------|-------------|------------|
| AK | Prince William Sound Community College | | X | | |
| AK | University of Arkansas | | X | | |
| AL | Tuskegee University | | | X | |
| AZ | Arizona State University – Downtown Campus | | | | X |
| AZ | Arizona State University – Tempe | | X | | |
| AZ | University of Arizona | | X | | |
| CA | California State University – Dominguez Hills | X | | | X |
| CA | California State University, East Bay | X | | | |
| CA | California State University - Long Beach | X | | | X |
| CA | California State University - Los Angeles | X | | | X |
| CA | San Diego State University | | | | X |
| CA | San Jose State University | X | | | |
| CA | University of California, Riverside | X | | | X |
| CA | University of San Francisco | X | | | |
| DC | Howard University | | | X | |
| FL | Florida A&M University | | | X | |
| FL | Florida International University | | | | X |
| GA | Fort Valley State University | | | X | |
| HI | University of Hawaii at Hilo | X | | | |
| HI | University of Hawaii at Manoa | X | | | |
| IL | University of Illinois at Chicago | X | | | |
| MD | University of Maryland, College Park | X | | | |
| MD | University of Maryland, Eastern Shore | | | X | |
| MA | Bunker Hill Community College | X | | | |
| MT | University of Montana – Billings | | X | | |
| NC | N.C. A&T University | | | X | |
| NM | New Mexico Institution of Mining and Technology | | | | X |
| NM | New Mexico State University-Main Campus | | | | X |
| OK | Northeastern State University | | X | | |
| OK | Oklahoma State University – Main Campus | | X | | |
| OR | Portland State University | | X | | |
| SC | S.C. State University | | | X | |
| TN | Tennessee State University | | | X | |
| TX | El Paso Community College | | | | X |
| TX | Texas Southern University | | | X | |
| TX | University of Houston (main campus) | X | | | |
| TX | University of Texas, El Paso | | | | X |
| TX | University of the Incarnate Word | | | | X |
| VA | Northern Virginia Community College | X | | | |
| VA | Virginia State University | | | X | |
| WA | Bellevue College | X | | | |
| WA | Edmonds Community College | X | | | |

AANAPISI = Asian American, Native American, Pacific Islander Serving Institutions
 AIANSI = American Indian, Alaska Native Serving Institution
 HBCU = Historically Black College and University
 HSI = Hispanic Serving Institution

Appendix 2: Feed the Future Innovation Lab U.S. College and University Collaborating Partners in FY 2015

| Innovation Lab | Lead University | Focus Countries | Collaborating U.S. Partners |
|---|---------------------------------|---|--|
| Adapting Livestock Systems to Climate Change | Colorado State University | Ethiopia, Kenya, Nepal, Senegal, Tanzania | Arizona State University City College of New York Emory University Michigan State University South Dakota State University Syracuse University Texas A&M University University of California, Davis University of Vermont Utah State University Virginia Polytechnic Institute and State University Cornell University |
| Applied Wheat Genomics | Kansas State University | India, Mexico, Pakistan | |
| Aquaculture and Fisheries | Oregon State University | Bangladesh, Cambodia, Ghana, Kenya, Nepal, Philippines, Tanzania, Uganda, Vietnam | Alabama A&M University Auburn University North Carolina State University Purdue University University of Arizona University of Arkansas, Pine Bluff University of Connecticut, Avery Point University of Georgia University of Hawaii, Hilo University of Michigan University of Rhode Island Virginia Polytechnic Institute and State University |
| Assets and Market Access | University of California, Davis | Bangladesh, Burkina Faso, Dominican Republic, Ghana, Haiti, Kenya, Malawi, Mexico, Nepal, Tanzania, Senegal, Uganda | Colorado State University Columbia University Cornell University George Washington University Harvard University John Hopkins University Michigan State University Montana State University New York University Ohio State University Stanford University Tufts University |

| Innovation Lab | Lead University | Focus Countries | Collaborating U.S. Partners |
|--|-------------------------------------|---|---|
| | | | University of Alaska, Anchorage University of California, Berkeley University of California, Los Angeles University of California, San Diego University of Georgia University of Illinois University of Maryland, College Park University of Michigan University of Minnesota, St. Paul University of San Francisco University of Washington University of Wisconsin, Madison Weber State University Yale University |
| Climate Resilient Beans | Pennsylvania State University | Haiti, Honduras, Malawi, Mozambique, Tanzania, Zambia | North Dakota State University University of Missouri University of Puerto Rico, Mayaguez |
| Climate Resilient Chickpea | University of California, Davis | Ethiopia, India, Turkey | Florida International University University of Southern California |
| Climate Resilient Cowpea | University of California, Riverside | Burkina Faso, Ghana, Niger, Senegal | <i>None in U.S.</i> |
| Climate Resilient Millet | University of California, Davis | Mali, Nigeria | <i>None in U.S.</i> |
| Climate Resilient Sorghum | University of Georgia | Ethiopia, India, Mali | Louisiana State University |
| Climate Resilient Wheat | Washington State University | Bangladesh, India | Kansas State University |
| Food Processing & Post-Harvest Handling | Purdue University | Kenya, Senegal | North Carolina A&T State University San Diego State University |
| Food Security Policy | Michigan State University | Burma, Mali, Malawi, Nigeria, Tanzania | <i>None in U.S.</i> |
| Genomics to Improve Poultry | University of California, Davis | Ghana, Tanzania | Cornell University Iowa State University University of Delaware |

| Innovation Lab | Lead University | Focus Countries | Collaborating U.S. Partners |
|--|---|--|---|
| Grain Legumes | Michigan State University | Benin, Burkina Faso, Ghana, Guatemala, Haiti, Honduras, Malawi, Mozambique, Niger, Senegal, Uganda, Zambia | Iowa State University Kansas State University North Dakota State University University of California, Riverside University of Hawaii, Manoa University of Illinois University of Nebraska, Lincoln Univ. of Nebraska, Panhandle Research and Extension Center University of Puerto Rico, Mayaguez Washington University School of Medicine |
| Horticulture | University of California, Davis | Bangladesh, Cambodia, Ghana, Guatemala, Honduras, Kenya, Nepal, Rwanda, Tanzania, Uganda, Zambia | North Carolina A&T State University Ohio State University Pennsylvania State University Purdue University Rutgers University University of Wisconsin, Madison |
| Integrated Pest Management | Virginia Polytechnic Institute and State University | Bangladesh, Cambodia, Ethiopia, Kenya, Nepal, Tanzania, Vietnam | Virginia Polytechnic Institute and State University <i>Other sub awards TBD</i> |
| Nutrition | Tufts University | Malawi, Nepal, Uganda | Columbia University Cornell University Harvard University John Hopkins University Oregon State University Purdue University Tuskegee University University of Georgia University of Illinois |
| Peanut Productivity and Mycotoxin Control | University of Georgia | Burkina Faso, Ghana, Haiti, Malawi, Mozambique, Niger, Senegal, Zambia | Auburn University California Polytechnic State University Cornell University Mississippi State University New Mexico State University North Carolina State University Texas A&M University Tufts University University of Connecticut University of Florida Virginia Polytechnic Institute and State University Washington University School of Medicine |
| Reduction of Post-Harvest Loss | Kansas State University | Bangladesh, Ethiopia, Ghana, Guatemala | Fort Valley State University Ohio State University Oklahoma State University |

| Innovation Lab | Lead University | Focus Countries | Collaborating U.S. Partners |
|---|---|---|---|
| | | | Purdue University South Carolina State University University of Kentucky University of Nebraska, Lincoln University of Texas Medical Branch, Galveston |
| Rift Valley Fever Control in Agriculture | University of Texas, El Paso | Tanzania | |
| Small-Scale Irrigation | Texas A&M University | Ethiopia, Ghana, Tanzania | North Carolina A&T State University |
| Sorghum and Millet | Kansas State University | Ethiopia, Niger, Senegal | Purdue University Texas A&M University Virginia Polytechnic Institute and State University West Texas A&M University |
| Soybean Value Chain Research | University of Illinois, Urbana- Champaign | Ethiopia, Ghana, Malawi, Mozambique, Zambia | Mississippi State University University of Delaware University of Georgia University of Maryland, Eastern Shore University of Missouri |
| Sustainable Intensification | Kansas State University | Bangladesh, Burkina Faso, Cambodia, Ethiopia, Ghana, Senegal, Tanzania | University of California, Davis University of Illinois <i>Other sub awards TBD</i> |
| Livestock Systems | University of Florida | Burkina Faso, Cambodia, Ethiopia, Mali, Nepal, Rwanda | TBD |

Appendix 3: Title XII Universities with Direct Awards in FY 2015. Types of projects include Agriculture and Nutrition; Environment, Natural Resources and Clean Water; Higher Education and International Networks; Health; Trade, Economic Opportunity, Infrastructure and Energy; Good Governance, Civil Society and Vulnerable Populations; Resilience, Conflict Mitigation and Disaster Preparedness; and Basic Education.

| State | University | Location | Type of Project | | | | | | | |
|-------|--|--|---------------------------|-------------------------------------|---|--------|---|--|--|-----------------|
| | | | Agriculture and Nutrition | Environment Natural Resources Water | Higher Education & International Networks | Health | Trade, Economic Opportunity, Infrastructure, Energy | Good Governance, Civil Society, Vulnerable Populations | Resilience, Conflict Mitigation, Disaster Preparedness | Basic Education |
| AZ | Arizona State University | Pakistan, Vietnam, Global | | x | x | | | x | | |
| CA | San Jose State University | Vietnam | | | x | | | | | |
| CA | Santa Clara University | India | | x | | | | | | |
| CA | Stanford University | Indonesia | | | x | | | | | |
| CA | University of California System (Berkeley, Davis, Riverside) | Afghanistan, Burkina Faso, Cameroon, Democratic Republic of Congo, Côte d'Ivoire, Ethiopia, Ghana, Guinea, India, Kenya, Liberia, Mali, Mozam- | x | x | x | x | | x | | |

| State | University | Location | Type of Project | | | | | | | |
|-------|-----------------------------------|---|---------------------------|-------------------------------------|---|--------|---|--|--|-----------------|
| | | | Agriculture and Nutrition | Environment Natural Resources Water | Higher Education & International Networks | Health | Trade, Economic Opportunity, Infrastructure, Energy | Good Governance, Civil Society, Vulnerable Populations | Resilience, Conflict Mitigation, Disaster Preparedness | Basic Education |
| | | bique, Nepal, Pakistan, Senegal, Sierra Leone, Tanzania, Uganda, Global | | | | | | | | |
| CA | University of Southern California | Indonesia | | | x | | | x | | |
| CO | Colorado State University | Global | x | | | | | | | |
| CO | University of Colorado | Indonesia, Asia, Global | | | x | x | | x | | |
| DC | Georgetown University | Nepal, Uganda, Africa, Global | | | | x | | x | | |
| FL | Florida International University | Tanzania, West Africa | x | x | | x | | | | |
| FL | University of Florida | Brazil, Haiti, Peru, Global | x | x | | | | | | |
| FL | University of Miami | Cuba | | | x | | | | | |
| GA | University | Global | x | | | | | | | |

| State | University | Location | Type of Project | | | | | | | |
|-------|-----------------------------|-----------------------------------|---------------------------|-------------------------------------|---|--------|---|--|--|-----------------|
| | | | Agriculture and Nutrition | Environment Natural Resources Water | Higher Education & International Networks | Health | Trade, Economic Opportunity, Infrastructure, Energy | Good Governance, Civil Society, Vulnerable Populations | Resilience, Conflict Mitigation, Disaster Preparedness | Basic Education |
| HI | University of Hawaii System | of Georgia Indonesia | | | | | | | | x |
| IL | University of Chicago | Egypt, India, Global | | | | | | x | x | x |
| IL | University of Illinois | Georgia, Tajikistan, Malawi | x | | x | | | x | | |
| IN | Indiana University | South Sudan | | | x | | | | | x |
| IN | University of Notre Dame | Kenya, Global | | | | | | x | | |
| IN | Purdue University | Afghanistan, Global | x | | | | | | | |
| KS | Kansas State University | Afghanistan, Rwanda, Global | x | | x | | | | | |
| LA | Tulane University | South Africa | | | | | x | | | |
| MA | Boston University | Ghana, Global | | | | | x | | | |
| MA | Brandeis University | Global | | | | | x | | | |
| MA | Harvard University | Bangladesh, Senegal, South Sudan, | | | x | | | | | |

| State | University | Location | Type of Project | | | | | | | |
|-------|--------------------------|--|---------------------------|-------------------------------------|---|--------|---|--|--|-----------------|
| | | | Agriculture and Nutrition | Environment Natural Resources Water | Higher Education & International Networks | Health | Trade, Economic Opportunity, Infrastructure, Energy | Good Governance, Civil Society, Vulnerable Populations | Resilience, Conflict Mitigation, Disaster Preparedness | Basic Education |
| | | Vietnam | | | | | | | | |
| MA | MIT | Global | | | x | | | x | | |
| MA | Tufts University | Egypt, Ethiopia, Bangladesh Malawi, Nepal, East and West Africa, Global | x | | x | x | | | x | |
| MD | Johns Hopkins University | Angola, Bangladesh Burma, Côte d'Ivoire, Egypt, Ethiopia, Ghana, Guatemala, Guinea, Guinea-Bissau, Indonesia, Liberia, Malawi, Mali, Mozambique, Nepal, Nigeria, Pakistan, Peru, | x | x | | x | | | x | |

| State | University | Location | Type of Project | | | | | | | |
|-------|---------------------------|--|---------------------------|-------------------------------------|---|--------|---|--|--|-----------------|
| | | | Agriculture and Nutrition | Environment Natural Resources Water | Higher Education & International Networks | Health | Trade, Economic Opportunity, Infrastructure, Energy | Good Governance, Civil Society, Vulnerable Populations | Resilience, Conflict Mitigation, Disaster Preparedness | Basic Education |
| | | Senegal, Sierra Leone, Swaziland, Tanzania, Zambia, Zimbabwe, East and West Africa, Global | | | | | | | | |
| MI | Michigan State University | Burma, Cambodia, Guatemala, Malawi, Nigeria, Senegal, West Africa, Zambia, Global | x | x | x | | | | | |
| MI | University of Michigan | Asia | | | x | | | | | |
| MN | University of Minnesota | Cameroon, Democratic Republic of Congo, Ethiopia, Kenya, Tanzania, Uganda, | | | | | x | | | |

| State | University | Location | Type of Project | | | | | | | |
|-------|--|--|---------------------------|-------------------------------------|---|--------|---|--|--|-----------------|
| | | | Agriculture and Nutrition | Environment Natural Resources Water | Higher Education & International Networks | Health | Trade, Economic Opportunity, Infrastructure, Energy | Good Governance, Civil Society, Vulnerable Populations | Resilience, Conflict Mitigation, Disaster Preparedness | Basic Education |
| | | East Africa, Global | | | | | | | | |
| NC | Duke University | East Africa, Global | | | | | x | x | | |
| NC | University of North Carolina Chapel Hill | Bangladesh, Botswana, Democratic Republic of Congo, Côte d'Ivoire, Dominican Republic, Ghana, Guatemala, Guinea, Equatorial Guinea, Guyana, Kenya, Lesotho, Liberia, Madagascar, Mali, Nepal, Nigeria, Rwanda, South Africa, | | | x | | x | x | | |

| State | University | Location | Type of Project | | | | | | | |
|-------|-------------------------------------|--|---------------------------|-------------------------------------|---|--------|---|--|--|-----------------|
| | | | Agriculture and Nutrition | Environment Natural Resources Water | Higher Education & International Networks | Health | Trade, Economic Opportunity, Infrastructure, Energy | Good Governance, Civil Society, Vulnerable Populations | Resilience, Conflict Mitigation, Disaster Preparedness | Basic Education |
| | | Swaziland, Tanzania, Uganda, Zambia, East Africa, West Africa, | | | | | | | | |
| NJ | Rutgers University | Indonesia, Global | | | x | | x | | | |
| NY | Columbia University | El Salvador, Ethiopia, Indonesia, Senegal, West Africa, Global | | x | x | | x | | | |
| NY | Cornell University | Bangladesh, India, Uganda, Global | x | | | | | | | |
| NY | New York University | Afghanistan | | | | | | | | x |
| NY | State University of New York System | Bosnia-Herzegovina, Côte d'Ivoire, Kenya, Global | | | | | | x | | |
| OH | The Ohio | Tanzania | x | | | | | | | |

| State | University | Location | Type of Project | | | | | | | |
|-------|-------------------------------|---|---------------------------|-------------------------------------|---|--------|---|--|--|-----------------|
| | | | Agriculture and Nutrition | Environment Natural Resources Water | Higher Education & International Networks | Health | Trade, Economic Opportunity, Infrastructure, Energy | Good Governance, Civil Society, Vulnerable Populations | Resilience, Conflict Mitigation, Disaster Preparedness | Basic Education |
| OR | State University of Oregon | Indonesia, Global | x | x | x | | | | | |
| PA | Eastern Mennonite University | East Africa, Kenya | | | | | | x | x | |
| PA | Pennsylvania State University | Global | x | | | | | | | |
| PA | Pittsburgh University | Global | | | | x | | | | |
| RI | University of Rhode Island | Ghana, Senegal | x | x | x | | | | | |
| TN | Vanderbilt University | Haiti, Nicaragua, Latin America and Caribbean | | | x | | | x | | |
| TX | Rice University | Malawi, Global | | | | x | | | | |
| TX | Texas A & M University | Democratic Republic of Congo, Global | x | | x | | | | | |
| TX | Texas Tech University | Global | | | x | | | | | |
| TX | University of Texas, El Paso | Global | x | | | | | | | |

| State | University | Location | Type of Project | | | | | | | |
|-------|---|------------------------------------|---------------------------|-------------------------------------|---|--------|---|--|--|-----------------|
| | | | Agriculture and Nutrition | Environment Natural Resources Water | Higher Education & International Networks | Health | Trade, Economic Opportunity, Infrastructure, Energy | Good Governance, Civil Society, Vulnerable Populations | Resilience, Conflict Mitigation, Disaster Preparedness | Basic Education |
| UT | University of Utah | Pakistan | | | x | | | | | |
| VA | College of William and Mary | Colombia, Ghana, Global | | | x | | x | | | |
| VA | George Mason University | Georgia | | | | | | x | | |
| VA | Virginia Commonwealth University | Global | | | | x | | | | |
| VA | Virginia Polytechnic Institute and State University | Africa, Armenia, Honduras, Senegal | | | x | | x | | | |
| WA | Washington State University | Global | x | | | | | | | |
| WA | University of Washington | Bangladesh Global | | | | x | x | | | |

Appendix 4: Illustrative Examples from FY 2015

Feed the Future Innovation Lab for Aquaculture and Fisheries, led by **Oregon State University**

Aquaculture and Fisheries Innovation Lab partners at North Carolina State University and the Bangladesh Agricultural University have demonstrated for the first time that a *Pangasius* catfish species (*P. hypophthalmus*) can be grown in hyposaline or brackish waters. This is an important discovery because culture of this species has been limited to freshwater systems along the Mekong delta region of Vietnam and Cambodia, Thailand, and the Central and Northern regions of Bangladesh, and this region is now experiencing salinization along inland coastal areas, a trend that is expected to continue with rising sea levels. Expanding catfish cultivation to coastal regions impacted by seawater incursion and in vulnerable communities affected by overfishing will increase food security and alternative livelihoods. As overfishing, increased frequency of natural disasters, and disease outbreaks in shrimp culture continue to affect the impoverished communities of coastal Bangladesh, sustainable intensification of aquaculture is critical.

Feed the Future Innovation Lab for Food Security Policy, led by **Michigan State University**

The rapid rise of medium-scale (10 to 100 hectares) investor farms represents a revolutionary change in sub-Saharan Africa's farm structure since 2000. These enterprises now control more land than foreign and domestic large-scale farms in each of the five African countries examined by Food Security Policy Innovation Lab researchers. Moreover, medium-scale farms are growing rapidly—much faster than small-scale or large-scale farms. This will have a major impact on smallholder farmers. Studies suggest that every 1 percent increase in agricultural income per capita reduces the number of people living in extreme poverty by between 0.6 and 1.8 percent, but it is well known that this relationship is sensitive to the distribution of land and other assets within rural communities. The Food Security Policy Innovation Lab is working with the World Bank and national statistical units in several African countries to improve the quality of data collection on medium- and large-scale farms. The data will help governments address many key policy questions such as whether promoting land access to medium-scale farms would lead to an increase in agricultural productivity, how such farms affect the incomes of people in surrounding rural communities and how they are affecting private sector investments in agricultural value chains.



Landscape heterogeneity in soil fertility and soil organic carbon in Rift Valley, Kenya. Photo Credit: Tony Simons, ICRAF

Farmer-to-Farmer Middle East and North Africa Program, led by Land O'Lakes with **South Dakota State University Faculty in Lebanon**

Diversifying product lines is key to increasing sales and preparing businesses for exports. Associate Professor of Dairy Science at South Dakota State University, Dr. Ashraf Hassan, recently completed a successful two-week volunteer abroad assignment in Lebanon. His visit was made possible by the

Farmer-to-Farmer (F2F) Middle East and North Africa (MENA) program, which is being led by Land O'Lakes International Development and funded by USAID. While on assignment in Lebanon, Dr. Hassan helped a small dairy company gain a competitive advantage by improving sanitation and expanding their products to include cheddar, feta, soft mozzarella, pizza, braid and Gouda cheeses. "I look at such volunteer assignments as opportunities to help small producers and support the mission of our Dairy Science Department and South Dakota State University," explained Dr. Hassan. "I also learned about the dairy industry in different parts of the world. Dairy products and the export of their ingredients play an important role in the U.S. economy." Prior to working with Dr. Hassan, the Lebanese company manufactured local white cheeses and an organic, strained, salted yogurt called *labneh*. It is one of very few companies in Lebanon that manufactures organic local dairy products, and Hassan knew adding organic international cheeses would give them a competitive advantage. "My objective was to adapt the cheese-making protocols to fit within the facilities available in the plant without putting a burden on the company to invest in new equipment," he said. Hassan shared plant sanitation and manufacturing best practices to help the company reduce costs, shorten its processing times and eliminate major sources of contamination. Plant owner Alex Asmar explained, "I was very happy when Dr. Hassan came and saw my cheese production site and equipment. I was afraid he [would] turn his back and leave [because] it had so many hygiene problems—plus we didn't have the technical knowledge about new types of cheese production—but he was extremely helpful in assisting me through the process." Asmar says Dr. Hassan's assistance will enable him to expand his product line and, hopefully, increase sales. While in Lebanon, Hassan conducted a cheese-making workshop at a medium-sized dairy company organized by the Lebanese Chamber of Commerce and Industry. In addition to the time Hassan spent with the dairy industry, he also visited the Department of Nutrition and Food Sciences at the American University of Beirut (AUB). "My goal was to explore collaborative possibilities and create opportunities for SDSU Dairy Science faculty and students," he said. "It's very important to share the needs of the dairy industry around the world with our dairy manufacturing students, who will lead the dairy industry in the near future."

Partners of the Americas/Dominican Republic: From the Schoolyard to the Riverfront: Students Learn Local Methods to Measure Water Quality in the Dominican Republic, with the **University of Wisconsin-Madison**

As more frequent and severe droughts, floods and storms affect the Dominican Republic (DR), the Escuela Nacional del Medio Ambiente y Recursos Naturales de Jarabacoa (Jarabacoa National Environmental and Natural Resources School) is dedicated to building the next generation of environmental leaders. In response to interest in including global climate change in Jarabacoa's curriculum, Partners of the Americas reached out to the University of Wisconsin-Madison (UW-Madison) Arboretum RESTORE Earth Partnership program, which teaches students and teachers how to restore native ecosystems through interdisciplinary learning. The program enhances community awareness, skills and knowledge of stewardship actions to improve biodiversity and ecological restoration. In 2014, UW-Madison helped to create Colaboración Ambiental, a Spanish version of the Earth Partnership training program. They adapted the program to address local environmental issues in Nicaragua. The class has since been formally integrated into the Nicaraguan Ministry of Education.

In February 2015, UW-Madison staff traveled to the DR as F2F volunteers to explore the possibility of adapting the Colaboración Ambiental program to the Dominican context. Faculty and staff of the Jarabacoa School were involved in a week-long planning process for the development of appropriate learning activities that encouraged watershed exploration along the Jimenoa River. These activities were then piloted with the students at the Jarabacoa School.

Because environmental education is important for all age groups, the students from the Jarabacoa School applied what they learned by leading parallel activities at nearby schools. Very quickly, the Jarabacoa

students realized that aside from simply imparting a curriculum, they were cultivating an interest in sustainability and its impact on everyday life to the general public.

The School District Superintendent now seeks to include five additional schools in the project, with the ultimate aim of district-wide implementation. The Jarabacoa School also created a partnership with the RESTORE program to finalize the curriculum of the Dominican Colaboración Ambiental.

Feed the Future Innovation Lab for Integrated Pest Management, led by **Virginia Polytechnic Institute & State University**

The parasitic wasp *Anagyrus lopezi* is being tested as an effective method to control the cassava pink mealybug, a major pest in Southeast Asia capable of reducing cassava yields by up to 84 percent. In Indonesia, cassava is the second biggest food source after rice. In September 2015, a team of scientists from the Integrated Pest Management Innovation Lab and the International Center for Tropical Agriculture (CIAT) released 3,000 of the wasps in a confined field trial on an Indonesian cassava field, the first step in a plan to combat this pest. The team is now awaiting the field release permit, which will allow researchers to introduce the wasp to mealybug-infested areas all over the country. They are also working with regional partners to provide technical information on wasp production and release as well as monitoring and evaluation training.



Parasitic wasp, *Anagyrus lopezi*, (the size of a gnat) laying eggs in a cassava pink mealybug. Photo credit: Aunu Rauf

Feed the Future Innovation Lab for Sorghum and Millet, led by **Kansas State University**

The Sahel region of Africa is home to the world's harshest cropping environment: poor sandy soils; low and erratic rainfall; and excessive soil surface temperatures. To address the challenge of seed germination in this environment, the Sorghum and Millet Innovation Lab, in collaboration with the University of Hohenheim, developed a tiny seedball technology as part of a long-term collaborative research effort with farmer organization Fuma-Gaskiya in the Maradi region of Niger. The seedball creates a microenvironment that can capture moisture and make nutrients more readily available to improve seeding success rates and combat the harsh growing conditions. The seedball contains two essential plant nutrients: potassium (from wood ash, available in every household) and nitrogen (from urine). Potassium promotes stomatal closure (small openings in the surface of the plant) that allows for higher water-use efficiency. The seedball can survive longer dry spells than broadcasted seeds. It can also increase labor efficiency by reducing the need to replant. The seedball is a low-cost technology with low application risk for farmers, particularly women, who are often even more limited in their access to inputs.



Pearl millet seed sprouting in a seedball. Photo credit: Jan Mühlena

Workshop on Module Development for a One Health-Oriented International Master of Public Health Program in Vietnam, in collaboration with the **University of Minnesota** and **Tufts University**

With the support of the Vietnam One Health University Network (VOHUN), national and international experts have developed a curriculum for an International Master of Public Health, a One Health-oriented program. This will be the first International Master of Public Health program in Vietnam that will be taught in English. In collaboration with 27 lecturers from Hanoi Medical University (HMU) and other Vietnamese medical schools, experts from the University of Minnesota and Tufts University participated in a series of workshops in 2015 to develop 14 modules for the new program at HMU. The workshop participants reached a final consensus on the objective of each lesson, main content, required readings, and recommended readings for the modules. The workshop participants also created a timeline to finalize the drafts and initiate the program at HMU. The program will launch at the beginning of the next academic school year in November 2016.

ICTs for Extension System Improvement in Kenya, led by **University of Illinois** in partnership with CRS, and the Government of Kenya, Ministry of Agriculture

The Modernizing Extension and Advisory Services (MEAS) project, under the direction of the University of Illinois and in collaboration with Catholic Relief Services (CRS) and the Ministry of Agriculture (MoA) in Kenya, carried out an innovative pilot action program in two districts in Kenya. The goal of the effort was to strengthen capacity of front-line extension agents in such fundamental and wide-reaching, market-oriented “SmartSkills” as farmer group organization, financial education, agro-enterprise development, natural resource management and innovation adaptation. MEAS and its in-country partner CRS provided five week-long trainings to 30 front-line extension agents working with approximately 1,500 farmers. One groundbreaking aspect of the activity was the utilization of Farmbook Suite, a set of integrated, field-based ICT tools co-developed by CRS and the University of Illinois, along with e-learning and face-to-face training for capacity development. Moreover, e-learning courses were loaded on tablets and shared with extension agents in these programs, which significantly facilitated accessibility and replicability. Results from the impact evaluation of the training showed a substantial increase in the frequency of group visits from agents who participated in the training compared to a control group of agents who did not participate in training but received operational support for their work. Extension agents testified that this was the most comprehensive, systematic and organized in-service training they have ever received since joining the government. Approximate 60 percent of agents have completed business plans and calculated profits of farmers they serve. Since the pilot project ended in 2015, not only has the Kenyan government worked to integrate the skills program in its national e-extension program, but the extension methodology has been replicated in other places around the world. Through the Farmbook and SmartSkills deployment as a result of the MEAS Project, CRS has reached over 574,477 farmers directly and 2,872,385 farmers indirectly through its work in Malawi, Madagascar, Zimbabwe, Zambia, Rwanda, Bangladesh and Serbia with improved quality extension services.