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HIGHER EDUCATION SOLUTIONS NETWORK - ANNUAL REPORT (FY 2014)

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I. Executive Summary

The Department of Urban Studies and Planning (DUSP), D-Lab, the Sociotechnical Systems Research Center (SSRC), the MIT Center for Transportation and Logistics (CTL) and the Public Service Center (PSC) are the main partners in Comprehensive Initiative on Technology Evaluation CITE, a network of MIT faculty, staff, and students with expertise in technology design and testing, systems engineering, supply chains, community ethnography, institutional and public policy analysis, market systems analysis, and regional economics. CITE's goal is to develop a rigorous product evaluation method that will help development organizations make educated product deployment in developing countries. Our evaluations will also allow the development community to analyze specific product applications leading to better, data-driven programmatic decisions and overall product designs. By applying our evaluation method, CITE will help to identify the bottlenecks that prevent products from achieving measurable impact. CITE will house the results of its work in a dependable, web-accessible knowledge database that will inform the decisions of development practitioners and technology innovators. CITE is also developing undergraduate, postgraduate and professional courses around evaluation of technology for developing countries to educate stakeholders and the next generation of researchers and practitioners.

2. Major Milestones and Events Completed

During year 2, the solar lighting evaluation reports and the methodology white papers from each of the three teams - suitability, scalability and sustainability (the 3Ss) were submitted to USAID. Evaluation of water filters in India was also carried out and subsequent evaluation reports from each of the 3S teams, as well as a draft integrated report, have been produced and reviewed internally. The final version of the integrated water filter evaluation report will be made available to USAID for review during the first quarter of year 3. As part of the water filter evaluation in year 2 important working partnerships were formed with the Indian Institute of Management – Ahmedabad, the Indian Institute of Technology – Gandhinagar, Ahmedabad University and TERI University, which involved 40 students, faculty and researchers. Through completion of the Solar Lantern and Water Filter evaluations, proposed changes to future product evaluation methodologies have been made which will be incorporated into a revision of the methodology white papers during the **next phase of the program**.

With regard to course development, CITE seeks to make an impact at the undergraduate, graduate and professional level. The framework for a new undergraduate course on technologies for development has been created during this reporting period and CITE has also proposed a revision of a graduate course focused around technology evaluation to reach scale to be co-taught with the Mechanical Engineering Department at MIT during year 3. In addition, an edX Postdoctoral Associate Fellow has joined CITE and work has begun on a new edX course on the evaluation of products designed for the developing world to be targeted at professionals. Prof. Sanyal, Director of CITE, has taught the D-Lab Development course at MIT with Amy Smith, Director of the International Development Innovation Network (IDIN) and also gave the opening presentation on Topics in International Development at International Development House at MIT.

During year 2, foundations have been laid to collaborate with D-Lab regarding a new private sector engagement initiative specifically targeted around the postharvest storage loss evaluation, to take place during year 3. A joint effort on instrumentation for technology evaluation has also been established by Prof. Dan Frey, CITE Faculty Lead, with the Singapore University of Technology and Design (SUTD)/MIT International Design Centre. Relationships have been formalized with institutional partners, including UC Berkeley's Development Impact Lab, Harvard University's South Asia Institute, IIT-Gandhinagar, IIM-Ahmedabad and Center for Environmental Planning and Technology (CEPT) University in India, with the ultimate goal to create an innovation corridor in India which would include a Center (Hub) for Innovation, Evaluation and Entrepreneurship. A partnership has also been established with the Water and Sanitation Management Organization (WASMO) of Gujarat which will be of particular importance for the evaluation of Water Test Kits taking place during year 3.

3. Key Activities

CITE's overarching goal is to increase the impact and cost-effectiveness of products designed for people living in poverty by developing and implementing a product evaluation methodology. The annual work plan for the second year of the initiative was developed to guide project activities over the twelve-

month period from October 1, 2013 to September 30, 2014. CITE's year 2 objectives, which are supportive of CITE's results framework, are described in detail below:

Objective 1: Formalize the CITE product evaluation method

1. Complete at least 2 product evaluations. These may be fully comprehensive or focus on one or more of suitability, scalability or sustainability.
2. Publish at least 3 white papers or journal articles on product evaluation methods developed at CITE.
3. Plan for and teach an improved version of Evaluation of Technologies for International Development in the fall of 2014.

Objective 2: Establish the product CITE evaluation cycle

1. Define a product family prioritization and evaluation process
2. Formalize relationships and engagements with existing NGO partners
3. Explore new partnerships with private industry via the MIT Industrial Liaison Program (ILP)
4. Develop student recruitment strategy and hire students for targeted product family evaluations

Objective 3: Cultivate hubs, USAID and HESN lab connections

1. Determine at least one hub partner and locations
2. Generate at least 2 substantive collaborations with HESN partners
3. Hold a series of conferences or events to involve old and new partners in CITE's work

The key activities undertaken in this reporting period are described below in relation to the objectives above.

Objective 1: Formalize the CITE product evaluation method. Complete at least 2 product evaluations - During year 2 CITE has completed evaluations of two products: Solar Lanterns in Uganda and Household Water Filters in India, and begun evaluation of a third product: Water Test Kits in India. The Solar Lantern evaluation report was submitted to USAID during the first half of year 2 for review. Following feedback the comprehensive evaluation reports from each of the 3-S teams have been completed along with the final summary report and a video.

Between March and Sept of 2014 CITE undertook its evaluation of household water filters beginning with an exploratory visit by CITE team members Prof. Sanyal, Derek Brine and Chris Pilcavage, to India between March 22 and April 4. Susan Murcott, a water quality expert, was hired to lead the team. The subsequent water filter evaluation that took place was a comprehensive 3S evaluation which included six weeks of fieldwork in Ahmedabad, India between June and August of 2014. A team of over 40 MIT students, staff and faculty members alongside their counterparts in India participated.

The suitability team were comprised of two sub-teams, referred to as SI-Consumer Reports (SI-CR) and SI-India. SI-CR used the water testing lab at the Consumer Reports headquarters in Yonkers, New York, under the guidance of Jeff Asher, between June and Aug 2014, where modifications were made to the test rig in order to facilitate testing of parameters of major concern in India. In parallel, the SI-India team conducted an evaluation in the field, in Ahmedabad.

The scalability team developed data collection and analysis plans in the spring of 2014 prior to the field visit. Semi-structured interviews based on a snowball sampling approach were conducted in the field and analysis of the survey data and interviews were completed in August.

The sustainability team planned and prepared for the water filter evaluation by developing a weighted criteria matrix approach to sustainability work to interface better with the suitability team's Consumer Reports-style scoring chart. Six weeks of field work were completed in Ahmedabad where more than 250 households were surveyed.

All the data was analyzed and draft evaluation reports from each of the 3S teams have been produced along with an integrated report which has been reviewed internally. The final water filter evaluation report will be submitted to USAID for review during the first quarter of year 3.

The water test kit (WTK) evaluation was and remains the focus of the suitability and sustainability teams. The S1 team commenced this work in India in summer 2014 and the S3 team will continue this work in Year 3. The completed work is of hydrogen sulfide (H₂S) bacteria test kits. Three kits were evaluated – Aquacheck, an H₂S test in the ORLab multiparameter test kit, and a lab-made (MIT team-made) H₂S test. These three kits were used to test drinking water samples from piped water supplies sampled within households in Ahmedabad, as well as from filters used in these same households. The report of this work will be included in the Year 3 reporting.

Publish at least 3 white papers or journal articles - The suitability, scalability and sustainability teams submitted white papers on methodology during year 2. The white papers outline the process of attribute based comparative product testing and suggest a path forward for further improving the methodology.

Susan Murcott has submitted an abstract for consideration for a conference “Engineering Education for Sustainable Development” at the University of British Columbia June 9 – 12, 2015. The title of the Abstract and Paper is: “Real World Research in Product Evaluation and Sustainable Development to Reach Scale”.

Brittany Montgomery, a DUSP Research Assistant, is working on a paper for publication that examines the experience of the first CITE class—ESD.S20 11.S941: Evaluation of Technologies for International Development. Brittany has also drawn on this experience to plan an improved version of the class. This was originally scheduled for the Fall of 2014. However, the scope of this work has grown and the class (renamed Technologies for Development) is proposed for the Fall of 2015 as part of a larger Undergraduate Minor also named Technologies for Development. An integral component of the new class are case-based studies and CITE and the Public Service Center and iHouse are partnering in an initiative to create these new teaching materials for undergraduates, while providing current students a unique field-based learning opportunity. Through a coordinated semester-long seminar which will take place during the Spring of 2015 and a 2015 summer partnership with a MIT alumnus, students will cultivate the skills and gather the information necessary to write a development-focused teaching case. The completed teaching cases will form an integral part of the new undergraduate curriculum on Technologies for Development.

An additional paper on Rainwater Harvesting is also being prepared by CITE student Jaswanth Madhavan as his undergraduate thesis. This work focused on rainwater harvesting in one of the only locations in

India where it is taking place at a significant level. This provided the opportunity for CITE to understand the challenges of scaling up as they relate to the CITE scalability methodology. A draft paper “The nature of technological challenges for slum upgrading in India” has been submitted for review by CITE student Tania El Alam, who has just graduated with a Master’s degree in Urban Studies and Planning at MIT. This work was aimed at the identification of future products for evaluation by CITE in relation to building materials including materials used for foundations in slums.

Another DUSP Research Assistant, Cauam Ferreira Cardoso is working on a book-length manuscript with Prof. Sanyal for the MIT Press on the rise, fall and rise of Appropriate Technology (AT). This book looks at how AT as a development strategy has changed over time, and offers as a conclusion an alternative narrative of AT’s lifespan which has direct relevance to the work of CITE and HESN.

Plan for and teach an improved version of Evaluation of Technologies for International Development- As part of the plan for teaching an improved version of the Evaluation of Technologies for International Development class, a curriculum for a new course in Technology and Development to be taught in 2015 is currently being prepared. The syllabus and teaching materials are approaching completion and efforts are being made with MIT’s Public Service Centre to prepare some real development technology case studies to be used in the course.

Susan Murcott has also proposed a revision of an existing graduate course she has taught for the past 9 years. The revised course would be renamed “Technology Evaluation to Reach Scale: Water/Sanitation, Education, Food Security and Health” It was planned for Spring 2015, but is now being considered as a course offering in Fall 2015 and will potentially also be cross-listed in the Mechanical Engineering Department. Prof. Sanyal will also continue to teach the D-Lab Development course with Amy Smith. In addition, Dr. Gaurav Kewlani, a mechanical engineer, joined the CITE team during September 2014 as an edX Postdoctoral Associate Fellow. Dr. Kewlani’s role is to support CITE staff in developing a new edX course on the evaluation of products designed for the developing world which is planned as a professional four week course to be offered for the first time during the Summer of 2015.

Objective 2: Establish the CITE evaluation cycle. Define a product family prioritization and evaluation process - CITE spent two seminar sessions in the Fall of 2013 exploring the product family prioritization and evaluation process using the Pugh methodology. Professor Dan Frey led this aspect of the work. As a result, CITE generated a preliminary chart outlining product selection criteria and product families. The team also consulted our partner organizations to determine which product category would be of most use to them. As part of this process, key stakeholders at USAID and NGOs were interviewed to solicit their perspectives. A report with the initial interviews was compiled and shared with the CITE team during March 2014. As a consequence of this work a follow up survey was administered by Kendra Leith and these results were shared internally in June 2014.

During the first quarter of year 2, based on the outcome of the Pugh product selection process, the strategic decision was taken to define the sector focus for year 2 as Water, Sanitation and Hygiene (WASH) with a specific emphasis on drinking water quality through the evaluation of water filtration devices. Further product selection for year 3 was carried out between Jan and March 2014 based on the information gathered from extensive USAID and NGO interviews and background research conducted

during the first half of year 2. Specifically, plans have been developed, submitted and reviewed by USAID for year 3 to evaluate (1) Post Harvest Storage Technologies to be led by Dr. Jarrod Goentzel; (2) Water testing kits to be led by Jennifer Green; (3) Educational Technologies to be led by Prof. Eric Klopfer, a new research lead; (4) Malaria Rapid Diagnostic Tests to be led by Dr. Jarrod Goentzel and (5) Off-grid cell phone charging products and technologies to be led by Prof. Dan Frey. The last evaluation – off-grid cell phone charging products, was reviewed by USAID which revealed similar studies had recently been successfully completed. Consequently, an alternative proposal by Prof. Frey has now been submitted to USAID and is under review. This second proposal is to evaluate cold chain products and technologies used for the delivery of temperature sensitive vaccines and samples (such as blood) to and from remote areas. We are currently awaiting feedback. During September 2014, conversations have been taking place with USAID staff and partners in order to determine geographical locations for each of the evaluations taking place over the course of year 3.

Formalize relationships and engagements with existing NGO partners – At the beginning of this reporting period, Prof. Frey communicated with Ewa Wojkowska from Kopernik on the topic of how we might engage together on technology evaluation of low cost water test kits. Kopernik has expressed interest in such products as a key enabler for monitoring success of their installed water filtering systems in Indonesia. As evaluation of water testing kits is now slated for year 3, it will soon be a good time to re-open that conversation. CITE has also engaged with Mercy Corp during year 2 to discuss the possibility of future internships and collaboration. CITE explored having the Peace Corp work with MIT students in field testing, and exploring the potential for a Masters International development program at MIT. Solar Sisters continued to be involved with CITE in relation to the Uganda Solar Lantern report. In addition, CITE also completed seven telephone interviews with staff members at the following NGOs: Kopernik, Mercy Corps, American Red Cross, and Oxfam, as part of research to understand how these organizations select, purchase and track development technologies. The results were compiled into a summary report as described previously.

Explore new partnerships with private industry – CITE participated in the D-Lab Scaling Development Ventures annual conference with the private sector and in the Supply Chain Crossroads annual conference with the private sector hosted by the Center for Transportation & Logistics (one of the CITE core centers). These activities were to support collaboration with D-Lab regarding a new private sector engagement initiative which will come to fruition during year 3.

Develop student recruitment strategy and hire students for targeted product family evaluations - CITE's student engagement strategy has been developed in coordination with USAID. During year 2, CITE has been engaging students on the campus of MIT in the following ways: Student Orientations, CITE-Public Service Center (PSC) Internship Dinner, Department of Urban Studies and Planning (DUSP)-PSC Internship Luncheon, Scaling Development Ventures (SDV) Dinner and Poster Session, International Development Night Dinner and a talk during the MIT Poverty Action Week. In addition the CITE Research Assistants (RAs) meet with the larger CITE group of faculty and staff on a bi-monthly basis, and with their respective research groups on the alternate weeks.

CITE RAs are an integral part of the program. Each of the department/centers that make up CITE recruit researchers to assist in the work that CITE undertakes. For the Fall 2013 semester (beginning

September 1, 2013), 14 RAs worked on CITE programmatic matters, of which four RAs were paid in full or partially by another program (leveraged cost to CITE) and an additional two RAs were funded fully by DUSP (cost sharing). The RAs worked for varying periods of time with CITE, from three-months during the summer, to a single semester (sixteen weeks) to the whole academic school year. They were hired at 50% or 100% RA-ship (a normal 100% RA-ship equal to 20 hours/week work). In addition five MIT students were selected as e-interns to work with USAID/OST: Securing Water for Food Grand Challenge for Development beginning December 2013.

For the Spring 2014 academic semester (beginning February 2012), 12 RAs have been working on CITE programmatic matters, of which four RAs were paid in full or partially by another program (leveraged cost to CITE) and an additional two RAs were funded fully by DUSP (cost sharing). For the Summer 2014 academic session there were 12 RAs working on CITE. In addition, two undergraduates and an international PhD student from the Hanken School of Economics, Helsinki, joined the water filter evaluation team to work on the Sustainability portion of CITE's research. In addition, four MIT graduate students and two former MIT students joined the CITE Suitability water evaluation team in March. Each of these individuals brought extensive background knowledge on water and engineering. CITE RAs for the third year were recruited and joined the program in September 2014. 11 RAs will be working on CITE programmatic matters, of which one will be fully funded by DUSP (cost shared).

Objective 3 – Cultivate Hubs, USAID and Lab Connections. During year 2, conversations with UC Berkeley's Development Impact Lab (DIL) and Harvard University's South Asia Institute took place regarding the creation of a hub/center for innovation, evaluation and entrepreneurship in India in collaboration with USAID/India. An exploratory trip to India took place from March 24 to April 4 with members from CITE. There was a follow-up meeting with Dr. Sheila Desai from USAID/India at the end of May and further face-to-face meetings took place between June 30 and July 3, 2014 in which CITE staff engaged with faculty and students from several universities in Gujarat to cultivate hub development. Three institutions have emerged as partners in India for this undertaking: IIM-Ahmedabad, Center for Environmental Planning and Technology (CEPT), and IIT – Gandhinagar. An initial proposal has now been prepared for internal review which will be circulated to Dr. Sheila Desai during the first quarter of year 3.

Supplemental Activities During this reporting period CITE has been engaged in conversations concerning the development of Lean Research, led by IDIN. This is an approach to research to address poverty which recognizes that research must conform both to standards established in various disciplines of study or fields of practice as well as to three additional groupings of principles: relevant, respectful and right-sized. On August 1, 2014, fifty practitioners, institutional researchers and donors gathered to discuss research in the development context. The outcome of the meeting was a declaration by practitioners to a commitment to Lean Research.

4. Engagement of Partners and Other Actors

4.1.1 Interdisciplinary collaboration

The Department of Urban Studies and Planning (DUSP), D-Lab, the Sociotechnical Systems Research Center (SSRC), the MIT Center for Transportation and Logistics (CTL) and the Public Service Center (PSC) are the main partners in CITE, a network of MIT faculty, staff, and students with expertise in technology design and testing, systems engineering, supply chains, community ethnography, institutional and public policy analysis, market systems analysis, and regional economics. CITE engages the faculty, staff and students from DUSP, Mechanical Engineering, Engineering Systems Division (SSRC and CTL), and the Sloan School of Management.

4.1.2 Partner Engagement

CITE has engaged with a number of partners during this reporting period. In addition to interaction with NGO's (Kopernik, Mercy Corp, Peace Corp, American Red Cross and Oxfam) and private sector partners as described as part of the key activities above, relationships have been formalized with institutional and multi-lateral partners. Meetings were held with faculty from IIT-Gandhinagar, IIM-Ahmedabad, TERI-Delhi, CEPT University, the All India Disaster Mitigation Institute and Ahmedabad University, which provided the basis for student engagement in the water filter evaluation effort as well as laid the foundations for future collaboration towards the creation of an innovation corridor in India. In addition, CITE formalized its relationship with the UN World Food Program as a basis for a Year 3 evaluation on postharvest storage.

During the time spent in India over the summer of 2014, the CITE Sustainability team established contact (through Vandana Pandya, Regional Coordinator) with the Water and Sanitation Management Organization (WASMO), established in 2002 by the Government of Gujarat as a Special Purpose Vehicle to facilitate community development of water supply facilities in rural areas of Gujarat. The Sustainability team met with WASMO's CEO, Mahesh Singh, at WASMO headquarters in Gandhinagar on July 29, where they introduced the CITE project and discussed possible future partnerships to support evaluation of Water Test Kits during year 3.

Finally, during year 2, a joint effort on instrumentation for technology evaluation was established with the SUTD/MIT International Design Centre by Prof. Dan Frey.

4.2 Summary of Collaboration across HESN

During the spring of 2014 MIT, UC Berkeley and Harvard University's South Asia Institute came together to explore how the three institutions could collectively contribute to India's effort to strengthen the entrepreneurial capabilities of its leading research universities. This meeting was inspired by three recent developments. First, India's National Science and Technology Entrepreneurship Development Board (NSTED) and the Department of Science and Technology (DST) proposed to strengthen the entrepreneurial ecosystem in India. This goal is to be pursued on several fronts including the formalization of collaborative relationships with U.S. academic institutions that have a successful

track record of encouraging startups and entrepreneurship and can share that experience with Indian counterparts.

Second, the United States Agency for International Development (USAID) launched a new initiative, named the Higher Education Solutions Network (HESN). HESN is a partnership between USAID and seven top universities, designed to harness the ingenuity and passion of university students, researchers, and faculty to deliver the greatest impact and develop innovative solutions to global development challenges. HESN signifies a major commitment by USAID and its Global Development Lab to encourage the blending of rigorous academic research with private entrepreneurial initiatives. This initiative is expected to involve a new cadre of technically skilled, socially conscious and business savvy students who would use evidence based research to alleviate poverty.

Third, there has been a growing and worldwide acknowledgement of how well-functioning cities require productive business environments to deliver technological innovations to their cities' residents. This, in turn, requires both spatial and business linkages to respond to consumer demand. A new appreciation of the role of cities in cultivating markets has emerged almost simultaneously with the rapid spread of mobile information and communication technologies (ICT). ICT has created possibilities for more efficient transactions among individuals; it has also created new possibilities for the better management of cities through the effective use of data. However, to benefit fully from such innovations will require new types of assessments of why some technologies function better than others; why some spread quickly and over large geographic areas, while others do not, and why some technologies are more environmentally sustainable.

These three developments are of interest to CITE, UC Berkeley's Development Impact Lab (DIL), and Harvard's South Asia Institute (SAI) who are proposing to join hands to learn from, and contribute to, India's economic development. The ultimate goal is three-fold: first, to both understand the needs of urban consumers and assess the suitability of technologies currently offered in the market; second, to develop a two-way knowledge flow between U.S. and Indian Universities regarding why some technological innovations are not only better designed but are easier to market than others; and, finally, to create a dynamic knowledge network of individuals and institutions which will strengthen the entrepreneurial ecosystem of Indian cities.

An exploratory trip to India took place from March 24 to April 4 with members from CITE. Further face-to-face meetings took place between June 30 and July 3 2014 in which CITE staff engaged with faculty and students from several universities in Gujarat to cultivate hub development. An initial proposal has now been prepared for internal review which will be circulated to Dr. Sheila Desai USAID/India during the first quarter of year 3 and a trip is planned for January 2015.

4.2.1 Data

We are currently exploring the options for sharing the Solar Lantern suitability, scalability and sustainability evaluation data with USAID. The Water Filter suitability, scalability and sustainability evaluation data sets have been collected and analyzed and are expected to be released during the summer of 2015.

4.2.2 Solutions (creation, testing, scaling)

A family of Solar Lanterns were evaluated in Uganda, and a family of Water Filters were evaluated in India.

CITE is also creating a methodology for evaluating products. Three white papers have been created and shared with USAID. This methodology will be refined through the next evaluations. In addition, CITE is engaged in developing “Lean research” which is an approach for international development that ensures that research is rigorous, right-sized, respectful and relevant. This work together links directly to the evaluation component of the overarching goal within HESN, to create reliable development related databases, new ways to evaluate “what works,” and accelerate the creation, testing, and scaling of high-impact technologies and approaches.

4.2.3. Student Engagement

CITE’s student engagement strategy has been developed in coordination with USAID. During year 2, CITE has been engaging students on the campus of MIT in the following ways: Student Orientations, CITE-Public Service Center (PSC) Internship Dinner, Department of Urban Studies and Planning (DUSP)-PSC Internship Luncheon, Scaling Development Ventures (SDV) Dinner and Poster Session, International Development Night Dinner and a talk during the MIT Poverty Action Week. In addition the CITE RAs meet with the larger CITE group of faculty and staff on a bi-monthly basis, and with their respective research groups on the alternate weeks.

4. USAID Engagement

5.1. USAID/Washington Interactions

USAID/OST: Securing Water for Food Grand Challenge for Development - CITE worked with Ku Lanakila McMahan and Abigail Casey to recruit student evaluators for SWFF Grand Challenge: Eleven MIT student finalist candidates were submitted to USAID and six MIT students were selected as e-interns to work with SWFF beginning December 2013.

USAID/Power Africa Initiative @ MIT: October 18, 2013 Power Africa and Trade Africa Coordinator Andrew Herscowitz and USAID Energy Division Chief Allen Eisendrath met with CITE’s Bish Sanyal, Derek Brine and Christine Pilcavage to explore possible areas for evaluation in the field of energy.

USAID/Development Innovation Ventures (DIV): CITE’s Sustainability team continued to have discussions with DIV’s Armand Lanier regarding Solar Sister and the Uganda Solar Lantern report.

USAID/OST: CITE helped to promote USAID visit at MIT: Nov. 19, 2013 USAID Research and Innovation Fellowships Team and liaised with Christa Hasenkopf and Courtney Matson @ USAID/OST.

USAID/President’s Malaria Initiative: In April 2014, conversations took place with Larry Barat, Senior Malaria Advisor at the USAID/President's Malaria Initiative, to discuss potential information gathering

regarding malaria rapid diagnostics during our 2015 India fieldwork. These conversations helped us develop an evaluation strategy that became part of our Year 3 work plan.

USAID/E3/Education: In September 2014, CITE had a conversation with Tony Bloome to discuss synergy between the Education Technologies evaluation and the All Children Reading Grand Challenge. As a consequence, Scott Osterweil was invited to attend the Mobiles for Education Alliance Symposium on October 20-22 in Washington, D.C.

USAID: Starting in the fall of 2013, we began to interview employees at USAID to understand how they select, purchase and track development technologies. These interviews were motivated by the following questions: • Who is and ought to be CITE's audience? • Which product families should CITE evaluate and in what sequence? • What criteria should guide an evaluation?

The ultimate aim of the interviews was to better understand: • Which organizations purchase technologies? • If they do purchase technologies, how do they vet and select the technologies? • Whether the successes/failures of technologies are documented? • Which technologies would be most relevant for CITE to test? • How CITE could be useful to different organizations?

We used the following methods to collect and analyze the data: • Phone and Skype semi-structured interviews with key stakeholders at USAID and other development organizations. • Aggregated and organized data using qualitative content analysis.

During the fall 2013, we worked with Amit Mistry to identify 18 employees at USAID to interview for this CITE research in ten areas. • Office of Education • Grand Challenges • Development Innovation Ventures • Bureau for Global Health • Bureau for Food Security • President's Malaria Initiative • Water/Sanitation • Acquisitions and Assistance • Powering Africa • Office of Foreign Disaster Assistance.

In addition, a two-day conference on MIT's Middle East projects was planned for January 22 and 23, but due to bad weather a videoconference was used to facilitate this MIT-USAID convening. The USAID/Middle East Bureau (Kyriacos Koupparis and Sarah Tully) and USAID Grand Challenges water group (Jarrah Meador and Ku McMahan) took part in this one-and-a half-day MIT Middle East Conference. As part of the introduction, Prof. Olivier de Weck and Jennifer Green briefed the group on CITE's objectives and the recent study on solar lanterns in Uganda. The purpose of this conference was mainly exposure and introduction to the different Middle East projects at MIT.

5.2. USAID Mission Interactions

USAID/India: During this reporting period, CITE has been in a dialogue with USAID/India's Science and Technology Advisor, Dr. Sheila Desai, for possible collaboration in India. CITE participated in a side meeting with Dr. Desai at the 2013 TechCon in November and Dr. Desai came to MIT and met with CITE members on December 11, 2013. A special dinner was held with members from MIT, Harvard University and UC Berkeley to discuss development issues in India and the idea of creating a hub with Indian partners. Joint meetings in Ahmedabad and Delhi, India followed from March 24 to 28 and on April 4. On Friday, March 26, CITE team members met the USAID/India Mission Director, John Beed to

discuss the team's objectives in India and also to thank the Mission Director for USAID/India's Dr. Sheila Desai's efforts in arranging the various meetings for the CITE team in India and for her participation in the multiple meetings in both Ahmedabad and Delhi. A draft proposal has now been completed for internal review and this will be circulated to Dr. Desai during the first quarter of year 3.

USAID/RDMA: During March 2014, Teresa Leonardo, Regional Science & Technology Advisor for USAID/RDMA, had a conversation with CITE regarding possible collaboration. Teresa discussed the regional Urban Futures Conference scheduled to take place in June 2014 and CITE nominated Dr. Apiwat Ratanawaraha, former MIT/DUSP PhD student and current faculty of Department of Urban and Regional Planning, Chulalongkorn to be part of this upcoming conference.

USAID/Armenia: Prof. Frey from CITE met with Jeff Paretchan from USAID, the US Ambassador to Armenia, and the Director of the USAID/Armenia Mission on May 21. The subject was potential areas of common interest for joint research. One idea was an evaluation of fish farming and associated monitoring products and technologies. Another option was a technology assessment of micro-hydro solutions suitable to Armenia's geology.

USAID/Uganda: Jarrod Goentzel has been engaged with the USAID Mission in Uganda in order to obtain feedback and facilitate concurrence for the postharvest storage work to be carried out in year 3. During this reporting period CITE has also participated in multiple conversations and exchanged emails with USAID/Washington Dr. Nguyen Nguyen, Futures Advisor, Data and Analytics of USAID/OST in coordination with USAID/RMDA regarding possible collaboration.

6. Monitoring & Evaluation

6.1. M&E Updates

We are on track to meet or exceed most of our targets. We have exceeded our targets for the following areas:

Number of requests for evaluations (578). This number is much higher than we expected as we solicited feedback from many stakeholders from USAID, NGOs and universities through a survey and interviews.

Number of stakeholders engaged in problem solving with CITE. This number is much higher than the target, as we engaged many stakeholders in the selection of products to evaluate. We also engaged more partners in the evaluations than we expected. It is unlikely that this number will be as high for next year, but we may need to adjust the target as we have multiple projects each year with 1-2 partners per project.

Number of visitors to the CITE knowledge-sharing platform. This number is higher than expected by 50%. We may need to adjust our targets. We did not know what to expect for the first year.

Number of students serving as fellows, interns, etc. (31). This number is much higher than expected as

we engaged students through many different mechanisms and research projects as RAs and interns. We had a lot of support from interns in the field. It is much less expensive to support an intern for a short period of time in the field, rather than pay for a full RA. It is likely that we will need to increase our targets for next year.

Number of US students serving as fellows in developing countries (10). We were able to support more students and recent alums from MIT to travel to India this past summer. We may need to adjust our targets for next year.

Number of students participating in short-term practica (18). We had the opportunity to offer field experiences to more students than we expected as we were able to leverage the e-intern program at USAID and pay for additional interns with CITE money.

6.2. Deviance from M&E Targets

However, in some cases, we did not meet our targets for the year. This gap was primarily due to the late release of the first evaluation report to the public. Thus, as a result, we fell short in the following areas: number citations and user feedback on evaluations. Given that the first evaluation report and many other evaluation reports will be released in year three, we will more than make up for this gap. In addition, we are still a bit behind for the cumulative value of outside (non-USAID) resources utilized committed as we are at \$794,609 and should be at \$841,307. This is due to lower than expected cost-share amounts for the first year. We are still working on a plan to make sure that we meet this target over the life of the grant. We have made great progress this year to close the gap.

We are also short on the number of students taking the class each year. Given that all of the students in the class are funded, it is unrealistic to have 25 students per year. It is more likely that we will have 10-15 students per year. Thus, we should change the target to 10-15. However, we are also in the process of creating an EdX course, which could have up to 100 students per year. As we get closer to launching the course, we will set targets for the course.

In addition, we are also short on the number of white papers and evaluations, as we did not publish any official publications during this period. However, for FY15, we will have many white papers and evaluation publications, so we should make up for this deficit. Through an online survey, we also gathered a lot of feedback on the summer field experience related to preparation, safety, logistics, accessibility of the faculty members, resources needed, and work expectations. This information has been aggregated and will be incorporated into next year's field experience. Through interviews, we also collected feedback on what the students valued about the experience, what they would change, what they learned through the experience and whether they will be able to apply the experience to their academic and professional careers.

Here are some of the highlights from the evaluations:

The respondents learned a variety of skills during this experience. They acquired project management

skills, social science research skills, and communications skills. They felt like they could apply the project management and research skills to their future academic and professional careers. On average, respondents indicated that they are somewhat more likely to pursue a career in international applied field research compared to before the summer research experience. However, they also reported that they are just as likely to pursue a career in international development and a little less likely to pursue a career in product evaluation as compared to before the experience. They valued the student engagement piece, among other components. Many of the MIT team members worked closely with the IIM and IIT students. The Indian students provided translation services and served as cultural ambassadors, which was valuable for many of the MIT researchers. They also enjoyed the cultural exchange. In addition, they appreciated working on multidisciplinary teams and gaining the field and the research experience. Others also valued being exposed to a new context. However, there were some things that the team would change such as defining the project objectives and the outputs more clearly, providing more flexibility in spending/food and planning the logistics earlier. The logistics issue came up many times in the evaluations, especially organizing the interpreters and the taxi drivers.

7. Lessons Learned / Best Practices

One of the most important general lessons learned from year two came from TechCon 2013 and this was that having face-to-face opportunities to discuss with and learn from other HESN partners yielded concrete results. For example, it was at TechCon that discussion continued in earnest with UC Berkeley regarding the development of a hub in India. CITE also engaged in a new conversation about collaboration with William & Mary's AidData after a side workshop hosted by CITE was attended by the William & Mary group. In addition, coordination and relationship building takes a lot of time and effort from various parties.

More specifically, during the water filter evaluation work in India, the supply chain Scalability team again learned that engagement with manufacturers to evaluate their operations is challenging. Their parallel effort to gather data via retailer surveys provided more fruitful results and this approach will be incorporated in future evaluations. Furthermore, the Scalability team learned that the broader perception of the term "scalability" does not usually include the supply chain. The Scalability team intends to write a short paper during year 3 to define the role of supply chains in scalability. This will complement the current Scalability White Paper draft, which focuses on defining the CITE approach to evaluating the supply chain.

The Sustainability team is looking to bring in more visiting researchers for the Year 3 evaluations, including Linda Annala, a PhD student from the Hanken School of Economics in Helsinki Finland and Dr. Innocent Kamara from the University of Zurich and EAWAG (the Swiss Federal Institute of Aquatic Science and Technology). Visiting researchers are not funded through CITE but bring in additional funding that is used as cost-share. The Sustainability team is also planning on training and using local researchers and enumerators to assist with the research in the field, both in India and the site of the Post-Harvest Food Storage evaluation (currently Uganda). This provides greater support in the field for a lower cost than bringing in MIT students and also has a direct positive impact on local capacity.

Finally, CITE experienced some challenges with Graduate Research Assistant turn-over during year 2. Victor Lesniewski and Amit Gandhi ended their stints as RAs with CITE when they both found a better fit between their professional interests and other MIT research efforts. In both cases, they found projects still closely aligned with international development and engineering (Amit is still working closely with CITE but under IDIN funding and Victor is working on development of micro-grid technologies for India under Tata funding). A lesson learned is to offer more detailed examples of CITE activities to incoming students which is now possible since we have completed projects. A best practice is to enable student movement between projects when it is in the best interest of those students.

8. Future Activities

During year 3 CITE will complete the water filter evaluation started in the summer of 2014 and carry out an additional 5 product evaluations in the areas of: postharvest storage loss, educational technologies, cold chain technologies (to be confirmed), malaria rapid diagnostic kits and water test kits. This work plan represents a shift in direction from large integrated evaluations to several more focused evaluations in light of lessons learned during years 1 and 2.

Our evaluation methodology is evolving and during year 3 the approach will continue to be refined. Specifically, the Sustainability team has found that Water Filter evaluations are easier to link to the other “S” teams due to the new weighted criteria format that was developed as part of the work carried out during this reporting period. However, they would like to try an approach that is not entirely based on survey results but also incorporates some evidence-based research using direct observation and testing. They plan to implement this in the water test kit evaluation during year 3. In addition, Prof. Frey seeks to explore the intersection of Experimental Design and technology evaluation for developing world engineering. One potential topic here is the co-evolution of instrumentation alongside a sequential / adaptive experimental plan.

CITE will continue to work with UC Berkeley and Harvard’s South Asia Institute to collaborate in India with USAID and the Government of India to complete a proposal for an innovation corridor and evaluation hub. In addition, CITE will determine if there is demand for a CITE spinoff that is a self-sustaining technology evaluation resource for international organizations.

We also expect the new CITE class “Technologies for Development” and edX course to be completed during year 3 and we will be following up on the various manuscript and papers that are currently in draft form.

In terms of the central activities essential for the successful running of the CITE program we will take the opportunity during the first half of year 3 to refine our student and partner engagement strategies in light of lessons learned and we will also be re-designing the CITE web-site to facilitate greater interaction and outreach to all our partners and stakeholders.

APPENDIX

APPENDIX I. HESN Monitoring & Evaluation (M&E) Indicators - FY 14

Code	M&E Code Description	Target Value	Reached Value	%
HESN_0in01	\$ Total dollar value of outside (non-USAID) resources utilized	544,863	547,695	100.5%
HESN_0in06	# transformative innovations, technologies, or approaches evaluated with human, financial, or institutional resources contributed by HESN Development Labs	2	2	100.0%
HESN_0in07_ Masters_F	# US Female MASTERS students serving as fellows		6	---
HESN_0in07_ Masters_M	# US Male MASTERS students serving as fellows		2	---
HESN_0in07_ Other_F	# US Female students (other or unknown degree program) serving as fellows		0	---
HESN_0in07_ Other_M	# US Male students (other or unknown degree program) serving as fellows		0	---
HESN_0in07_ PhD_F	# US Female PhD students serving as fellows		1	---
HESN_0in07_ PhD_M	# US Male PhD students serving as fellows		1	---
HESN_0in07_ Undergrad_F	# US Female UNDERGRADUATE students serving as fellows		2	---
HESN_0in07_ Undergrad_M	# US Male UNDERGRADUATE students serving as fellows		0	---
HESN_0in08	# innovations, technologies or approaches in the innovation pipeline		2	---
HESN_0in09	# innovations, technologies or approaches that completed at least one of the five stages in the innovation pipeline		1	---

Code	M&E Code Description	Target Value	Reached Value	%
HESN_0in10	# beneficiaries reached		0	---
HESN_1.1in1_NPR	# citations in targeted non-peer reviewed fora/publications/projects of data collected or made available through human, financial, or institutional resources contributed by HESN Development Labs		0	---
HESN_1.1in1_PD	# citations in targeted project documents of data collected or made available through human, financial, or institutional resources contributed by HESN Development Labs		0	---
HESN_1.1in1_PR	# citations in targeted peer-reviewed fora/publications/projects of data collected or made available through human, financial, or institutional resources contributed by HESN Development Labs		0	---
HESN_1.3zCITE-in1	# partner organizations using CITE data in decision-making processes for product selection		0	---
HESN_2.2in1	# white papers, articles, assessments, analyses, and evaluations on development challenges, innovations, technologies, approaches, and contexts (drafted with human, financial, or institutional resources contributed by HESN Developments Labs) published in targeted fora and publications OR provided to USAID operating units, HESN partners, and the broader development community	3	0	0.0%
HESN_2.2in2_NPR	# citations in targeted non-peer reviewed fora/publications of white papers, articles, assessments, analyses, and evaluations (drafted with human, financial, or institutional resources contributed by HESN Developments Labs) on development challenges, innovations, technologies, approaches, and contexts		0	---
HESN_2.2in2_PD	# citations in targeted peer-reviewed project documents of white papers, articles, assessments, analyses, and evaluations (drafted with human, financial, or institutional resources contributed by HESN Developments Labs) on development challenges, innovations, technologies, approaches, and contexts		0	---
HESN_2.2in2_PR	# citations in peer-reviewed fora/publications of white papers, articles, assessments, analyses, and evaluations (drafted with human, financial, or institutional resources contributed by HESN Developments Labs) on development challenges, innovations, technologies, approaches, and contexts		0	---
HESN_2.2zCITE-in1	# requests for evaluations made by international development organizations		578	---
HESN_2.2zCITE-in2	# users who provided feedback on CITE evaluations		0	---

Code	M&E Code Description	Target Value	Reached Value	%
HESN_2.3in1	# MOUs or other agreements signed with public sector, private sector, local community partners, and one HESN Development Lab	2	1	50.0%
HESN_2.3in2	# stakeholders engaged in problem solving with one HESN Development Lab	6	31	516.7%
HESN_3.0in3	# new development related classes or disciplines created by university departments with human, financial, or institutional resources contributed by HESN Development Labs	1	1	100.0%
HESN_3.1in1	# development programs/projects/efforts undertaken collaboratively by Network members	2	1	50.0%
HESN_3.2in1	# visitors to Network knowledge-sharing platforms	1,000	1,505	150.5%
HESN_3.2zCIT E-in1	# product evaluation downloads		0	---
HESN_3.3in1	# classes supported by HESN Development Labs with human, financial, or institutional resources contributed by HESN Development Labs	1	1	100.0%
HESN_3.3in2	# collaborative platforms created by the HESN or with human, financial, or institutional resources contributed by HESN Development Labs	1	1	100.0%
HESN_3.3zCIT E-in1	# students taking each class per year		16	---
HESN_3.3zCIT E-in2	# students serving as CITE fellows, interns, research assistants, teaching assistants and undergraduate researchers		31	---
HESN_3.4in1_ Masters_F	# Female MASTERS students participating in short term practica		0	---
HESN_3.4in1_ Masters_M	# Male MASTERS students participating in short term practica		3	---
HESN_3.4in1_ Other_F	# Female students (other or unknown degree program) participating in short term practica		0	---

Code	M&E Code Description	Target Value	Reached Value	%
HESN_3.4in1_Other_M	# Male students (other or unknown degree program) participating in short term practica		0	---
HESN_3.4in1_PhD_F	# Female PhD students participating in short term practica		0	---
HESN_3.4in1_PhD_M	# Male PhD students participating in short term practica		2	---
HESN_3.4in1_Undergrad_F	# Female UNDERGRAD students participating in short term practica		1	---
HESN_3.4in1_Undergrad_M	# Male UNDERGRAD students participating in short term practica		0	---
HESN_3.4in2	# Hubs created with human, financial, or institutional resources contributed by HESN Development Labs	0	0	---

APPENDIX II.A. Innovations: Technologies and Approaches - FY 2014

Output Type	Name of Output	Description/Abstract	Country	Phase	# Bene.	Phase Compl.?	Evaluation Cond.?
Approach	CITE Methodology	CITE is in the process of developing the methodology for the evaluations. It has been adapted and used by the MIT D-Lab Scale-Ups Program.	United States		0	No	No
Approach	Lean Research	A new framework (including guidelines and standards) for conducting field research involving humans in development contexts.	United States		0	No	No
Technology	Solar lanterns	In the summer of 2013, CITE completed its first (suitability, scalability and sustainability) evaluation on solar lights in Uganda with Solar Sister. Testing of the products occurred in the lab at MIT and in the field with end users. As part of this evaluation, over 300 interviews conducted. The team evaluated 11 solar light products.	Uganda	Stage 5: Global Adoption	0	Yes	Yes
Technology	Water filters	The team conducted a water filter evaluation.	India	Stage 5: Global Adoption	0	Yes	Yes
Approach	CITE Malaria Rapid Diagnostic Scalability Methodology	CITE has been developing the scalability methodology for the malaria rapid diagnostic test evaluation.	Uganda	Stage 2: Initial Piloting	0	No	No

APPENDIX II.B. Evaluations - FY 2014

Output Type	Name of Output	Description/Abstract	Country	Status
Evaluation	Solar Lighting Evaluation Report	First pilot comparative evaluation of a product family		Ongoing
Evaluation	Water Filter Evaluation	Evaluation of water filter family in India	India	Ongoing

APPENDIX II.C. Data-Related Approaches, Tools, Best Practices - FY 2014

Output Type	Name of Output	Description/Abstract	Country	Status
----- No Entries -----				

APPENDIX II.D. Publications or Reports - FY 2014

Name	Description/Abstract	Country	Status
Appropriate technology book	The Appropriate Technology (AT) model became prominent in the 1970s through the work of the economist Fritz Schumacher's <i>Small is Beautiful</i> (1973). He promoted small-scale, low-cost, labor-intensive, context specific and environmentally friendly technologies that benefited the poor. The movement's legacy and influence from its inception until now though is widely contested. Many argue that it reached its peak in the 1980s and fell out of favor shortly thereafter. Through the use of a systematic review, this paper looks at how AT as a development strategy has changed over time, and offers as a conclusion an alternative narrative of AT's lifespan based on analysis of thematic findings drawn from the literature. This examination of AT's evolution showed that the model didn't in fact diminish but was transformed as a result of changing socio-political contexts and adoption of the model by different development players with different development agendas.		Ongoing
The nature of technological challenges for slum upgrading in India	"The nature of technological challenges for slum upgrading in India" work was aimed at the identification of future products for evaluation by CITE in relation to building materials including materials used for foundations in slums.		Ongoing
Real World Research in Product Evaluation and Sustainable Development to Reach Scale	Abstract submitted to "Engineering Education for Sustainable Development" at the University of British Columbia		Ongoing
Partner feedback on which products CITE should evaluate	Collected data through interviews and a survey. Compiled and shared within CITE		Complete
Rainwater Harvesting	The "rainwater harvesting" work focused on rainwater harvesting in one of the only locations in India where it is taking place at a significant level. This provided the opportunity for CITE to understand the challenges of scaling up as they relate to the CITE scalability methodology.	India	Complete
Examines and evaluates the experience of the first CITE class	Examines the experience of the first CITE class		Ongoing

APPENDIX II.E. Hubs - FY 2014

Name	Description	Country	Status
----- No Entries -----			

APPENDIX II.F. Knowledge Sharing/Collaborative Platforms - FY 2014

Name	Description	Country	Status
Website	CITE created its website		Ongoing

APPENDIX II.G. Major Events - FY 2014

Name	Description	Country	Status
CITE visit to UC Berkeley	CITE's Bish Sanyal and Derek Brine visited UC Berkeley.		Complete
TechCon	CITE students and faculty attended and participated in the USAID TechCon conference.		Complete
USAID/Washington visit	CITE visited USAID offices in Washington, DC for strategic planning meetings.		Complete
USAID/India visit	CITE hosted Dr. Sheila Desai from USAID/India at MIT.		Complete
Scaling Development Ventures Conference	CITE was involved in putting together the student poster session for the Scaling Development Ventures Conference.		Complete
CITE Tata Center Meeting	Explanatory meeting between CITE and Tata Center to learn about each other's programs in preparation of CITE's India Summer research		Complete
Poverty Action Week	MIT Poverty Action Week organized by MIT's Global Poverty Initiative to instill awareness about global poverty issues to the MIT community through education, outreach and action. On Feb. 11th, Prof. Bish Sanyal gave a talk on "Flood of Technologies for the Developing World: What Works" preceded by a showcase of D-Lab technologies. In addition, CITE student, Sydney Beasley was on the organizing committee and was the liaison for CITE.		Complete
State of Science 2014 Conference	CITE students Brittany Montgomery and Cauam Cardoso participated along with CITE's Derek Brine, in the State of Science 2014 Conference: Revealing the Demand for Pro-poor Innovation. After completing the solar lantern evaluation, we realized that the evaluation was missing an essential component, demand, and we wanted to understand what others were doing to tackle the issue.		Complete
Supply Chain Crossroads Conference	CITE student Lina Nilsson participated in the Supply Chain Crossroads annual conference with private sector attendees. The conference is hosted by a key CITE partner, the MIT Center for Transportation & Logistics.		Complete
Meet-and-Greet Event at IIT	Meet and greet with students at IIT-Gandhinagar	India	Complete

Name	Description	Country	Status
Meet-and-Greet Event at IIM-AMD	The entire water evaluation team participated in a meet-and-greet event at IIM-AMD on June 27, 2014 that drew a large crowd of local university participants. It was an opportunity for us to introduce MIT-CITE, and for us to meet local counterparts.	India	Complete
Meet-and-Greet Event at Ahmedabad University	An outcome of these meeting was a fruitful partnership between MIT students and local students who worked together on a daily basis for the months of June, July and August 2014. A number of other collaborative events were held in Ahmedabad India involving new partners during summer 2014.	India	Complete
Lean Research Convening	An event to convene researchers and practitioners to discuss lean research principles, implementation and next steps		Complete
Presentation on Lean Research at Frontiers in Development	Gave a lightning talk on lean research		Complete
GlobeMed at MIT Conference	CITE's Jarrod Goentzel presented	United States	Complete

APPENDIX II.H. Workshops/Trainings/Capacity Building - FY 2014

Name	Description	Country	Status
----- No Entries -----			

APPENDIX II.I. Other Outputs - FY 2014

Name	Description	Country	Status
Water filter dataset	Data from the water filter evaluation were collected and analyzed.	India	Ongoing
Feedback on the Global Development Lab Evaluation and Impact Assessment framework	Providing feedback on the EIA framework on whether the organization should scale a solution and can it scale		Ongoing

APPENDIX III. Partners - FY 2014

Partner Name	Level of Engagement	Partner Type	Partner Location Country	Partner Description	Support Type
IIM-Ahmedabad	High	Higher Education Institution/ Research Organization	India	Logistics and research support	
IIT-Gandhinagar	High	Higher Education Institution/ Research Organization	India	Logistics and research support	
Solar Sister	High	NGO	Uganda	Logistics and research support	
Mercy Corps	To be determined	NGO	United States	Engaged in initial conversations with CITE	
Kopernik	To be determined	NGO	Indonesia	Engaged in initial conversations with CITE	
Oxfam America	Low	NGO	United States	Engaged in initial conversations with CITE	
Michigan State University (MSU)	Low	Higher Education Institution/ Research Organization	United States	Engaged in initial conversations with CITE	

Partner Name	Level of Engagement	Partner Type	Partner Location Country	Partner Description	Support Type
UC Berkeley (UCB)	High	Higher Education Institution/ Research Organization	United States	Engaged in initial conversations with CITE and explored hub collaboration	
USAID-India	High	USAID operating unit or program	India		
USAID-Uganda	Medium	USAID operating unit or program	Uganda		
William and Mary	Low	Higher Education Institution/ Research Organization	United States	Engaged in initial conversations with CITE	
The Global Knowledge Initiative	Low	Other development actor	United States	Engaged in initial conversations with CITE	
KNUST	Low	Higher Education Institution/ Research Organization	Ghana	Engaged in initial conversations with CITE	

Partner Name	Level of Engagement	Partner Type	Partner Location Country	Partner Description	Support Type
East Meets West	Low	Other development actor	United States	Engaged in initial conversations with CITE	
DAI	Low	Commercial Enterprise	United States	Engaged in initial conversations with CITE	
Course Gateway	Low	Commercial Enterprise	United States	Engaged in initial conversations with CITE	
PATH	To be determined	NGO	United States	Engaged in initial conversations with CITE	
TERI	High	Other development actor	India	Research support	
CEPT	High	Other development actor	India	Research support	
Ahmedabad University	High	Higher Education Institution/ Research Organization	India	Research support	
All India Disaster Mitigation Institute	Medium	Other development actor	India	Research support	
Ahmedabad Municipal Corporation	Low	Non-US government	India	Research support	

Partner Name	Level of Engagement	Partner Type	Partner Location Country	Partner Description	Support Type
Water and Sanitation Management Organization	To be determined	Non-US government	India	Discussed CITE's work and potential collaborations	
Harvard University	To be determined	Higher Education Institution/ Research Organization	United States	Explored hub collaboration	
USAID RDMA	To be determined	USAID operating unit or program	United States	Explored potential collaboration	
USAID Armenia	To be determined	USAID operating unit or program	Armenia	Explored potential collaboration	
Government of India	High	Non-US government	India	Discussed hub collaboration	
USAID Office of Education	Low	USAID operating unit or program	United States	Engaged in initial conversations with CITE	
USAID Grand Challenges	Low	USAID operating unit or program	United States	Engaged in initial conversations with CITE	

Partner Name	Level of Engagement	Partner Type	Partner Location Country	Partner Description	Support Type
USAID Development Innovation Ventures	Low	USAID operating unit or program	United States	Engaged in initial conversations with CITE	
Bureau for Global Health	Low	USAID operating unit or program	United States	Engaged in initial conversations with CITE	
Bureau for Food Security	Low	USAID operating unit or program	United States	Engaged in initial conversations with CITE	
President's Malaria Initiative	Low	USAID operating unit or program	United States	Engaged in initial conversations with CITE	
Water/Sanitation	Low	USAID operating unit or program	United States	Engaged in initial conversations with CITE	
Acquisitions and Assistance	Low	USAID operating unit or program	United States	Engaged in initial conversations with CITE	
Powering Africa	Low	USAID operating unit or program	United States	Engaged in initial conversations with CITE	

Partner Name	Level of Engagement	Partner Type	Partner Location Country	Partner Description	Support Type
Office of Foreign Disaster Assistance	Low	USAID operating unit or program	United States	Engaged in initial conversations with CITE	
Peace Corps	Low	US government (other than USAID)	United States	Explored potential collaboration	
UN World Food Program	High	Multi-lateral institution	United States	Working together on the food storage evaluation	
MIT Department of Urban Studies and Planning	High	Higher Education Institution/ Research Organization	United States	Member of CITE team	Cost-share.
MIT Center for Transportation and Logistics	High	Higher Education Institution/ Research Organization	United States	Member of CITE team	Cost-share.
MIT Sociotechnical Systems Research Center	High	Higher Education Institution/ Research Organization	United States	Member of CITE team	Cost-share.

Partner Name	Level of Engagement	Partner Type	Partner Location Country	Partner Description	Support Type
MIT D-Lab	High	Higher Education Institution/ Research Organization	United States	Member of CITE team	Cost-share.
MIT CITE Central	High	Higher Education Institution/ Research Organization	United States	Member of CITE team	Cost-share.
Texas A&M	Low	Higher Education Institution/ Research Organization	United States	Engaged in initial conversations with CITE	
Singapore University of Technology and Design	High	Higher Education Institution/ Research Organization	United States	Engaged in sensor design for evaluations	Cost-share.
MIT International Design Center	High	Higher Education Institution/ Research Organization	United States	Engaged in sensor design for evaluations	

Partner Name	Level of Engagement	Partner Type	Partner Location Country	Partner Description	Support Type
USAID Global Development Lab	High	USAID operating unit or program	United States	Engaged in initial conversations with CITE	

APPENDIX IV. Classes & Disciplines - FY 2014

Name	Description	Location	Status
Evaluation of Technologies for International Development class	As part of the plan for teaching an improved version of the ESD.S20 11.S941: Evaluation of Technologies for International Development class that was taught in Spring 2013, a curriculum for a new course in Technology and Development to be taught next year is currently being developed by two CITE research assistants (one PhD and another Masters-level student) with the aim of having the course taught in 2015	MIT	Planned
CITE bi-monthly seminar	Bi-monthly research seminar focused on technology, evaluation, and international development. Students and faculty present their research results and get feedback on their work. In addition, we have guest speakers on topics relevant to CITE. We also discuss relevant articles. This class is required for the RAs.	MIT	Ongoing
EdX course on technology evaluation	EdX course on technology evaluation	MIT	Planned
Technology Evaluation to Reach Scale: Water/Sanitation, Education, Food Security and Health	This is a graduate course to be taught by Dan Frey and Susan Murcott. It an improvement on the first CITE course. The plan is to teach this course in the 2015-2016 academic year.	MIT	Planned

APPENDIX V. Fellowships & Practica - FY 2014

Name	Short Description	Host Organization	Total # Students	Status
India water filter evaluation	To complete the research for the water filter evaluation	IIM-Ahmedabad	10	
Water filter evaluation	To complete the lab testing for the water filter evaluation	Consumer Reports	2	
E-interns at USAID	This was with the Securing Water for Food Grand Challenge.	USAID	6	

APPENDIX VI. Communications - FY 2014

Communication Title	Description	Location
CITE Facebook launch	CITE launched its new Facebook page.	United States
CITE Twitter launch	CITE launched its new Twitter account.	United States
Fall 2013 InCITE Newsletter	Fall newsletter from CITE. Note: There was a lapse in newsletter sends due to some staff shuffling. CITE has now re-launched its newsletter with the intent to publish regularly.	United States
CITE Website launch	CITE launched its new website.	United States
CITE on Idealist.org	CITE enrolled as a 'nonprofit or community organization' with Idealist.Org	United States
Business Standard article	Article on Harvard, MIT and Berkeley's exploratory meetings to collaborate with India Institute of Management-Ahmedabad and visit to campus.	United States
Hindu Business Line article	Article on Harvard, MIT and Berkeley's exploratory meetings to collaborate with India Institute of Management-Ahmedabad and visit to campus.	United States
India Times article	Article on Harvard, MIT and Berkeley's exploratory meetings to collaborate with India Institute of Management-Ahmedabad and visit to campus.	United States
World News article	Article on Harvard, MIT and Berkeley's exploratory meetings to collaborate with India Institute of Management-Ahmedabad and visit to campus.	United States
DNA Syndication article	Article on Harvard, MIT and Berkeley's exploratory meetings to collaborate with India Institute of Management-Ahmedabad and visit to campus.	United States
India Today in Education article	Article on Harvard, MIT and Berkeley's exploratory meetings to collaborate with India Institute of Management-Ahmedabad and visit to campus.	United States
Counseling News article	Article on Harvard, MIT and Berkeley's exploratory meetings to collaborate with India Institute of Management-Ahmedabad and visit to campus.	United States
Minglebox article	Article on Harvard, MIT and Berkeley's exploratory meetings to collaborate with India Institute of Management-Ahmedabad and visit to campus.	United States

Communication Title	Description	Location
TestFunda article	Article on Harvard, MIT and Berkeley's exploratory meetings to collaborate with India Institute of Management-Ahmedabad and visit to campus.	United States
A Look Inside CITE's Solar Lantern Evaluation	CITE released a video overview of its solar lantern evaluation research and initial findings	United States
IDIN, CITE, D-Lab Scale-Ups, and Tufts University Host Convening to Explore Human-Centered Approach to Respectful, Right-Sized Research	News piece about the Lean Research convening co-hosted by CITE.	United States
CITE Begins Water Filter Evaluations at Consumer Reports Laboratories	Blog about Jeff Asher's experience evaluating water filters with CITE students at Consumer Reports Labs	United States
CITE Two-Pager	This is an overview document written about CITE's work.	United States
Evaluation Team Overcomes Challenges to Begin Water Filter Testing at Consumer Reports	Blog about Jeff Asher's experience evaluating water filters with CITE students at Consumer Reports Labs	United States

APPENDIX VII. Travel - FY 2014

Country	# Travelers	Partner(s) Engaged	Purpose	Outcome(s)	Next Steps
India	3	1. Berkeley, 2. Harvard	<p>1. To Identify one to two institutions which can collaborate with MIT students, faculty and staff for the purposes of technology evaluation in April and May 2014 and subsequently host MIT students, staff and faculty in the period June-August 2014; and</p> <p>2. To conduct meetings with pertinent institutional stakeholders regarding establishing a center for innovation focusing on technology design, evaluation and scaling (MIT is engaged with Berkeley DIL and Harvard's South Asia Institute to explore collaboration in India with USAID and the Government of India to 1. Strengthen entrepreneurship in Indian universities; 2. To engage research on technological innovations, evaluation, and commercialization; 3. To build a network in India to promote technological innovations in product design; and 4. Possible the creation of a hub in Ahmedabad)</p>	<p>1. agreement that IIM-A will take the lead on the India side and that MIT/Berkeley/Harvard would work on small concrete projects first to explore collaboration. First project will be water filtration/water testing kits with CITE/MIT. UC Berkeley/DIL will take the next lead in research on pollution sometime in late 2014 or 2015.</p> <p>2. MIT students will travel to India from June to August to collaborate on evaluation, possibly with Indian Students.</p>	

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India	3		<p>1. Explored joint funding from Government of India (Dept. of Science & Technology) with USAID/India</p> <p>2. Meet potential partners for research (TERI, IIT-Delhi)</p>		Submit proposal to GOI, DST in July after the election takes place in June.
India	13	<p>1. IIT-Gandhingar, 2. IIM-Ahmedabad, 3. TERI-Delhi, 4. Ahmedabad University, 5. CEPT University, 6. All India Disaster Mitigation Institute, 7. Water and Sanitation Management Organization WASMO</p>	<p>MIT sent a group of 8 students to Ahmedabad over the summer of 2014 to work with six other students at IIM-Ahmedabad on evaluating domestic water filter devices and water testing kits. Three staff members from MIT also visited Ahmedabad to work on the evaluation and two honorary MIT team members. During this time meetings took place with potential institutional partners regarding future collaboration and hub development</p>	<p>1. Data collection and surveys for the water filter evaluation were completed.</p> <p>2. Staff and students engaged with faculty and students from several universities in Gujarat to cultivate hub development.</p> <p>3. Connections were made for future collaboration on agriculture and water test kit evaluations</p>	<p>1. The final water filter evaluation report will be submitted to USAID for review during the first quarter of year 3.</p> <p>2. An initial hub proposal has now been prepared for internal review which will be circulated to Dr. Sheila Desai USAID/India during the first quarter of year 3.</p> <p>3. Follow up conversations are taking place regarding year 3 evaluations.</p>