Higher Education Solutions Network (HESN) 2.0 Programs
Annual Performance Report Narrative

LASER PULSE
Year 1 Annual Report (2019)

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1. BACKGROUND

LASER PULSE is a five-year USAID-funded consortium, led by Purdue University and also comprising Catholic Relief Services, Indiana University, Makerere University, and the University of Notre Dame. LASER PULSE supports the 'research-to-translation' value chain through a global network of 1,000+ researchers, government agencies, non-governmental organizations, and the private sector for research-driven, practical solutions to critical development challenges in low- and middle-income countries (LMICs). LASER supports the discovery and uptake of research-sourced, evidence-based solutions to development challenges spanning all USAID technical sectors and global geographic regions.

The LASER PULSE strategy ensures that applied research is co-designed with development practitioners, and results in solutions that are useful and usable. LASER does this by involving development practitioners upfront in its Research for Development Workshops leading to grant rounds - from topic selection, research question definition, conducting and testing research, and developing translation products for immediate use. We support this process with capacity building and technical assistance to enable the researcher/user partnerships to function effectively. LASER PULSE is focused around three pillars: 1) Research Capacity Building, to support research enterprise overall; 2) Research Translation, to support research applied to development solutions; and 3) Sustainable Networks, to support South-South, North-South, and researcher-practitioner collaborations in research for development.

2. MAJOR MILESTONES / ACHIEVEMENTS

1. **First Research for Development (R4D) conference held in Kampala, Uganda May 6-8, 2019:** Makerere Purdue Universities led development of session content, participant invitations, and venue logistics. Around 130 participants attended, mostly from the US and from Kenya, Tanzania and Uganda. Summary data of conference participation can be found in Annex A, and a full report of the conference itself is provided here.

2. **First LASER RFA completed** (include online certificate trainings): As part of the grant application process, research teams must complete two online trainings with certifications in order to be eligible to submit. The two trainings, feedback about which can be found in Annex B to this document, comprise deliverables for Year One. Details regarding the Comprehensive Issue Analysis process as it was used to generate input towards the refinement of the sector focus for the RFA is available here.

3. **Online Matchmaking site launched for LASER network researchers and practitioners:** LASER PULSE's website is intended to serve as a convening site for network research collaboration.   As such, our searchable database was activated in April 2019, and there are currently 1,329 registered LASER HEI Network members. Of these, a total of 1,257 (552 Female; 552 Male; 153 n/a) are researchers and 55 (24 Female; 29 Male;

2 n/a) are registered as "Development Professionals." See Annex C for more detail on member statistics.

LASER continually upgrades the site to increase the ease of conducting a search of the database, and to help network members improve their profiles to make them more visible to potential collaborators. Recruiting implementers has been a particular challenge, as demonstrated by the very low percentage of members registered as Development Professionals (it is hypothesized that they see the network as being primarily for researchers). As such, in Year Two LASER will implement a strategy to recruit implementers to the network (CRS leads this).

3. SUMMARY OF KEY ACTIVITIES

IR1: Increased HEI delivery of collaborative and effective development-focused research

Sub-IR 1.1: Increased capacity of LMIC HEIs to obtain, administer, and conduct effective applied research programs

1.1.1 The HEI Network is activated: HEI Network has been activated and informational documents on processes finalized. Additional organizations have been included in HEIN, including those institutional partners of consortium partners not included in the LASER PULSE proposal. We have identified researchers to invite to the network through outreach on buy-ins, and we have had many new researchers join the network through invitation to the R4D Conference in Uganda, as joining the network was a requirement. A Qualtrics survey serves as the registration platform for both HEI researchers and development practitioners to join the LASER PULSE Network. See point 3 above.

1.1.2 The HEI researcher capacity assessment has been carried out: LASER PULSE conducted a capacity assessment (see above) of the research environment among the Makerere University-ResilientAfrica Network (RAN) university partners and affiliated networks / institutions in sub-Saharan Africa (SSA). The findings have already been used to identify, prioritize, and describe key capacity gaps that need to be addressed in order to increase development research outputs and impacts from low-income country universities. The assessment showed that Higher Education Institutions in Africa have capacity gaps in all of the capabilities related to the development research ecosystem. The capability in which they showed the highest capacity score was in the area of 'National Research Engagement'. Two of the most relevant (to the embedded research capacity) findings were presented as sessions at the R4D Conference in Uganda:

1) Development research leadership in low-income countries: Building healthy and responsive ecosystems, and
2) Research Empowerment: Igniting untapped potential in LMIC universities

The RAN team has created a report from this assessment, the link for which is embedded above and loaded to the DEC. On the basis of this report, RAN will create and carry out an advocacy

campaign to address these two barriers to embedded research within the RAN Network, and especially within Uganda. Further assessments of this nature will be carried out in Year Two, in different R4D regions, to be able to identify barriers to research - and especially embedded research, that appear to be common to HEIs in developing countries globally.

Sub IR 1.3 Increased inclusion of private sector, government, NGOs, and others in research for development

1.3.1 'Activate' the Corporate Advisory Board: This activity was postponed until Year Two, owing to force majeure delays in holding the R4D Conferences, where we expected to invite corporate representatives to demonstrate LASER objectives, strategies, and value. Moreover, many of the corporate social responsibility reps for the enterprises that had signed letters of interest and commitment, had changed positions by the time LASER was funded. One of the representatives that did not, Janice Zdankus of HP Enterprises, was a keynote speaker for the Uganda Conference and continues to engage with LASER on development issues. Both Purdue and Notre Dame will hold private sector convenings in Year Two to re-introduce LASER to private sector partners, and to understand how the private sector may or may not see value in an activity (LASER) that was not initiated by them. Based on feedback from this session, LASER will re-examine the possibility of a CAB for Year Three, with strategies to meet the needs of corporate partners.

1.3.2 As part of R4D preparation, develop issue and stakeholder analysis specific to R4D region: 1) East Africa: The Uganda R4D Conference priority sectors (Food Security, Water Security, Maternal/Child Health, and Basic Education) were identified from a review of 25 key documents (e.g., Country Development Cooperation Strategies, National Development Plans) and input from 19 sectoral experts that included both academic researchers and development implementers. Following this process, 'Success Factor Trees' were generated via automated iterative searches using natural language processing and pattern recognition to organize and synthesize qualitative information obtained from 160,000 – 480,000 documents (depending upon the sector) accessed from the Internet. These 'trees' are visual representations of streamlining and refining of 1,000 Google searches per tree, and manual mining of approximately 1,500 on-line articles and 200 academic articles. The trees represent in 'branches and leaves' all the factors that need to be in place for success in a given sectoral system. Extensive work was subsequently undertaken to develop a protocol and materials to enable the Uganda R4D conference participants to understand how to navigate the trees during the success factor gap identification sessions at the conference. LASER provides a complete report on the use of this methodology from identifying sectoral focus, to provision of inputs for the RFA.

2) **Colombia**: This process was also undertaken for the Colombia Workshop, which was postponed, and so was held just after the Year Two Reporting period began. Unlike Uganda, the process for Colombia began with the Mission identifying the three sectoral focus areas: Integrated Rural Development, Youth, and the Venezuelan Migrant Crisis. Once these were identified, the Comprehensive Success Factor (CSF) Analysis text mining process was initiated

from 1,000s of documents, including USAID plans and implementer reports, IDB reports, Government of Colombia (GoC) documents, and NGO implementing reports. This text mining yielded the' issue trees' for each sector, and comprises 16 system levels with 'branches' corresponding to those factors that must be in place for impact in the sector. These results were made into a Qualtrics survey and sent to LASER-identified leaders known as 'the Scoping Group.' The survey was also sent to conference session leaders, and to participants. The results of this process will be detailed for the bi-annual report.

1.3.3 Hold first R4D Conference to identify development research priorities and contribute to research capacity enhancement: The conference, held May 6-8, is summarized in point 1 above, in the major milestones. A conference report is linked to that summary.

1.3.4. Hold first 'Fast-Track' R4D Conference, in Colombia, to generate research priorities for small grants: This conference was postponed from the planned dates in August, at the request of USAID/Colombia, until Oct 1, one day after the Year One reporting period ended. However, in year one, extensive planning was done for this conference, including several convenings of researcher and implementer boundary partners in pre-conference preparatory meetings. Purdue led the conference organization, owing to decades of partnership with Colombia, including a national-level MOU between Purdue and the Colombian Government Academy of Sciences, signed by former President Santos. Notre Dame, because of their engagement in Colombia through the Kroc Center 'Barometer' for the Peace Accord, also played a significant organizing role - especially engaging implementers through planning sessions that prepared NGO and UN sector leaders to lead sessions at the conference on perceived research gaps in the three sectors. A report is being developed for this workshop, and will include a description of the revised CSF process and how it was applied and refined before and during and after the conference.

Sub IR 1.4 Increased partnership opportunities for US and LMIC HEIs within the research to translation value chain

1.4.1 Develop and launch a matchmaking site for researchers on the LASER PULSE network: Related to 1.1.1 (above), this site was launched and its functionality for HEIN members improved throughout Year One. The more significant improvements included reduction of the steps to register; increasing the ease of searching the network, based on geographic location as well as USAID sectoral focus of researchers. The site managers have made a practice of posting USAID and other donor funding opportunities and professional events (related to development research), and the site now features information about buy-ins, requests for applications, and about LASER events such as the R4D conferences. The main objective of this site, as a matchmaker for potential opportunities and especially for researchers to identify potential collaborators, is partially achieved in Year One. The ease of identifying collaborators will also depend on members' updates to their profiles to ensure refinement of their focus areas. This is facilitated by ensuring relevance of the site to members (such as more information about opportunities), which goal will be a major focus in Year Two.

1.4.2 First round of R4D standard grants made: This activity was not accomplished in Year One, owing to a more prolonged process of finalizing the first RFA document, including both the basic document around LASER's processes and requirements, as well as the sector-specific content. This process represented the challenges of the 'first' round. The first round of grants will be made in early Year 2. We envision that subsequent year two grant rounds will be more timely now that we have the basic document ready, and can focus on the process we have in place for obtaining inputs from conference participants (pre-conference CSF surveys, in conference templates from the CSA session, and notes from the conference discussions on where research can advance development goals).

1.4.3 First round of fast track grants made: The Colombia conference was scheduled for August, but was pushed back for reasons described elsewhere in this document. The delay of this conference necessitated delaying the subsequent release of the RFA for Colombia. But more importantly, LASER determined that Colombia was a significant opportunity to promote sustainability of approach, and therefore will make this a standard grants opportunity with up to $250K per award and two years of implementation, instead of the 'Fast Track' $100K for one year of implementation.

IR2: Increased HEI synthesis, exchange, and translation of research results into useable development products and practices

Sub IR 2.2 Increased capacity of field-level development actors to participate in the research to translation value chain.

2.2.1 Identify training and support that can be provided to LASER PULSE partnered development actors in order to better communicate and collaborate with HEIs.

CRS and IU teamed up to develop promotional tools and trainings to help LASER network members better understand the LASER definition of research to translation, as we have been calling our approach, and how research to translation takes place. More recently we have been thinking of it as embedded translation, as the translation is meant to be built in from the inception of the collaboration between researchers and practitioners. This is an evolving definition that will likely continue to be refined. In year one CRS and IU have designed a one-pager, including an illustrative graphic, on research to translation. They have also produced both conference-based training and online-based certificate training on The How-to of Translation[1].

Sub IR 2.3 Enhanced capacity of HEI researchers to translate research results into usable products and practices.

2.3.1 Identify training and support that can be provided to LASER PULSE partners HEIs in order to better communicate with and disseminate timely evidence and results to field-level development actors LASER PULSE:

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[1] Note: The complete training, with audio and test, can be found on the LASERPULSE.org website on the Learning page.

CRS led a desk review of over 25 academic and 'gray' literature resources, most of which were tabulated in a spreadsheet and subsequently condensed by Purdue into an annotated bibliography. Nevertheless, this activity needs to be readdressed and taken to a higher level as part of building a resource library for translation literature and tools.

2.3.2 Develop key resources to aid HEI communication of research results and ability to disseminate relevant evidence and outcomes with key stakeholders:
Compiled existing translation templates, toolkits, and examples on policy briefs, working papers, and syntheses. Developed research translation facilitators' guide and PowerPint for R4D conferences. Developed online training on research translation for grant applicants. Onboarded a faculty member to contribute to this activity for Y2 with the understanding that boundary partner focus groups and analysis need to be completed before materials can be finalized.

Sub IR 3.1 Increased access among development actors and information brokers to good practices and systems for delivery of translated research

3.1.1 Leverage existing platforms and networks (ICS, TOPS, CORE Group, SEEP Network, American Evaluation Association, consortium newsletters etc), and identify new dissemination channels and methodologies, for information sharing between researchers and development actors: At the Academic-Practitioner Forum, CRS participated in multiple sessions on innovation and research collaborations, and organized side meetings with World Vision, Save the Children and Oxfam. In the meetings, CRS shared LASER's approach to research-practitioner collaboration, promoting the R4D conferences and learned more about NGOs' perspectives on translation and academic partnerships. At the Interaction event, CRS connected with Harvard's Public Health School and Georgetown's Humanitarian program, encouraging interest in LASER and learning more about their experiences with practitioner engagement. Purdue and Notre Dame contributed to this activity as well, through collaborations with the IDEAL Network (which replaced TOPS) and with HWISE-RCN, which comprises researchers and practitioners both. We have cross-posted links and information on these networks as 'Sister Networks' on LASER's website, and they have posted LASER information, including the LASER East Africa RFA. For more detail on how LASER is engaging with IDEAL, please see item 4.2.4 in the following subsection.

4. ENGAGEMENT WITH PARTNERS

4.1 List of partnerships (subawards/subcontracts, formal, or informal) with institutions of higher education
- Link to list of LASER PULSE Researchers and NGO implementers (84 institutions, with more than 1,300 researchers from 34 countries).

LASER has garnered many memberships (see the institutions and researchers above), and has provided funding through buy-in activities, but have not yet been able to hold the first grant rounds, owing to delays resulting from the partial government shutdown. Therefore though

activities and outreach (see 4.2. below) have been robust, and funding disbursements will begin as planned in the second year of the program.

4.2 New and ongoing partnerships of particular interest

1. Uganda regional universities: Makerere University successfully convened local Ugandan universities at a stakeholders meeting held on April 3, 2019. The theme of the meeting was "Towards enhancing Ugandan University involvement in supporting in-country regions to improve development programming capacity." In this event, and the larger, ongoing USAID engagement towards regional development, Makerere was able to engage the following local Universities to dialogue about ways to enhance Ugandan local University involvement in supporting in-country regions to improve development programming capacity: Uganda Christian University; Uganda Martyrs University; Muni University; Kumi University; Soroti University; Lira University; Kabale University; Mountains of the Moon University; Busitema University; Islamic University in Uganda; and the Constituent College of Gulu University in Moroto.

2. Colombian universities and implementers for planning the Colombia Workshop: The workshop planning has necessitated close collaboration with the following LASER Network partner institutions. To that end, LASER representatives, and staff from the Colombia Purdue Initiative (CPI) visited the following universities during April, 2019: Universidad de Los Llanos, Universidad de Antioquia, Universidad de Cartagena, Universidad del Norte Universidad EAFIT, Universidad de los Andes, Universidad Tecnológica de Pereira, and Universidad Nacional de Colombia. The researchers were requested to partner with an implementer to respond to challenges in the following sector areas identified by the USAID/Colombia Mission. Additionally, a LASER PULSE representative and CPI representatives reached out to implementers during a two-week period prior to the conference dates.

3. University of Indonesia for planning future jointly-held Fast Track conference. Two representatives of this LASER network institution visited the LASER team at Purdue on February 19th to propose collaboration on research to translation initiatives, including a joint R4D conference, oriented at Smart Cities initiatives. There have been several follow-up calls on this conference, which is planned for the first week of August, 2020.

4. The IDEAL Network: The Food Security and Nutrition Network engages community members through a knowledge hub at FSNnetwork.org, where development and emergency food security practitioners can share knowledge, resources, and promising practices. As we learn from each other, we identify gaps and develop solutions, thus propelling the field of food security and nutrition programming forward to maximize impact. The FSNnetwork.org is run by the Implementer-Led Design, Evidence, Analysis and Learning (IDEAL) activity, funded by the USAID Office of Food for Peace (FFP). IDEAL consists of a consortium of four partner organizations: Save the Children, the Kaizen Company, Mercy Corps, and TANGO International. IDEAL addresses knowledge and capacity gaps expressed by the food and nutrition security implementing community to support them in the design and implementation of effective development and emergency food security activities. FSNnetwork.org is the hub for IDEAL's

work. LASER has been communicating with IDEAL on collaboration through generating interest among IDEAL's implementor partners in research to translation, through joining the LASER network, attending R4D conferences, and serving as partners to university researchers for the LASER research grants. LASER has posted the IDEAL logo and a summary of their mission on a "sister networks" webpage on the LASER PULSE website and, in turn, IDEAL announced LASER's East Africa RFA in the FSNetwork newsletter, as well as to their WASH community. IDEAL will display LASER branding and mission statement on their website once it has been redesigned.

5. QED: LASER has communicated with QED around data visualization for buy-in opportunities. Currently we are also planning to work with QED to cohost an international development datajam / hackathon, at the end of March 2020, with students from IU, Notre Dame, and Purdue, as well as from several universities in Colombia (we are working with the Colombia Mission to plan this). QED implements hack-a-thons to promote: (1) data use for improving effectiveness and increasing evidence-based decision making in development, (2) increasing a culture of data use in Lower Middle Income Countries, and (3) reduced gender inequity and an increase in the number of women in the data sciences. Data visualizations created by individuals or teams, based on furnished data (usually obtained from USAID) for a pre-selected topic, is the core activity of these hack-a-thons. LASER would use this vehicle as a way to engage students and link it to an international development theme(s) of interest to a Mission and/or Bureau. The topic of the hackathon will likely be migration issues.

5. MONITORING, EVALUATION, AND LEARNING (MEL)

Table 1. Annual Performance Indicator Table for LASER PULSE Fiscal Year 1 (FY1).

Key result Area (Intermediate Result)	Indicator # & Code	Indicator Name	Life of Project Target	Year 1 Target	Year 1 Achieved	Data Collection Method	Comments
Objective: Enhanced discovery and application in policy and practice of university-sourced, evidence-based solutions to development challenges	(1) L3.S.2_in1	# of program or policy changes made by public sector, private sector, or other dev. actors influenced by Lab-funded research results or related scientific activities	20	2	0	n/a	No results; the buy-ins that were anticipated to be completed by the end of FY1 were extended into FY2
IR1: Increased HEI delivery of collaborative and effective development-focused research	(2) L3.S.1_in2	# of research products produced with LASER-supported funding [gender d/a]	84	2	3	BIDRF*	See list in Section 12 below
Sub-IR 1.1: Increased capacity of LMIC HEIs to obtain, administer, and conduct effective applied research programs	(3) Custom LP.1	# of tertiary-level educators & faculty who complete pro. develop. activities w/ USG assist. [gender d/a]	560	80	54	R4D-RTL^	25 F, 29 M; data is from the Uganda R4D conference (see note below)

Sub-IR 1.2: Adoption by HEI networks of best practices for conducting and translating research	(4) Custom LP.2	Percentage-point improvement on research readiness assessment score [gender d/a]	--	30	0	Online register	Only 1 response during the reporting period; see note below
	(5) Custom LP.3	% of research proposals with adequate gender & translation components [gender d/a]	--	50%	0	n/a	No results yet; data will be collected in FY2
Sub-IR 1.3: Increased inclusion of private sector, government, NGOs, and others in research for development	(6) Custom LP.4	# of development actors (d/a by institution) engaged in research for develop. [gender d/a]	494	90	86	BIDRF; R4D-RTL	51 F, 35 M; data from 9 Buy-Ins & 1 R4D conference
	(7) L3.S.2.2_in1-num	# of collaborative research initiatives resulting from engagement btw. researchers & develop./ policy actors	28	6	0	n/a	No results yet; initial LASER research grants scheduled to be awarded in FY2
Sub-IR 1.4: Increased partnership opportunities for US and LMIC HEIs within the research to translation value chain	(8) L3.S.1.2_in3	# of institutions or affl. individuals associated w/ CDR research networks	--	70	103	Program records	Purdue & ND HEI partners, plus buy-in partners
	(9) L3.S.1.1_in3	% of research projects led by LMIC or MSI HEIs / research institutions (includes LASER buy-ins)	--	50%	20%	Program records; BIDRF	See notes below in the text sections following the table
IR2: Increased HEI synthesis, exchange, and translation of research results into useable development products and practices	(10) L3.S.2.2_in4	# of research products translated for use	80	2	1	BIDRF	Buy-ins that were anticipated to be completed by the end of FY1 were extended into FY2
Sub-IR 2.1: Increased HEI collaboration with field-level development actors throughout the research to translation value chain	(11) Custom LP.5	Partnership scorecard to measure deep collaboration (co-creation) btw researchers and develop. practitioners [gender d/a]	--	0	0	n/a	This metric will be developed in FY2; research grants yet to be awarded
Sub-IR 2.2: Increased capacity of field-level development actors to participate in the research to translation value chain	(12) Custom LP.6	# of development actors trained on translation (@ R4D conf. and on-line modules) [gender d/a]	270	30	30	R4D-RTL	15 F, 15 M; data from the Uganda R4D conference
	(4b) Custom LP.2	Percentage-point improvement on research readiness assessment score [gender d/a]	--	30	0	Online register	See notes below in the text sections following the table

			Target	FY1 Q...	...	Source	Notes
Sub IR 2.3: Enhanced capacity of HEI researchers to translate research results into useable products and practices	(13) Custom LP.7	# of LASER-produced research translation materials (e.g. toolkit) utilized by researchers [gender d/a]	70	0	0	n/a	No results to report; this is n/a until FY2
IR3: Increased dissemination of translated research solutions and policy	(14) L3.S.2.2_in2	# of convenings with decision-makers to disseminate research for use and/or develop policy recommend.	142	4	1	BIDRF	Buy-ins that were anticipated to be completed by the end of FY1 were extended into FY2
IR3: Increased dissemination of translated research solutions and policy	(15) L3.S.2.2_in3	# of participants in convenings with decision-makers to disseminate research for use and/or develop policy recommend. [gender d/a]	4,375	90	89	Estimated	52 F, 37 M; Tusome buy-in presented at an education conference in Uganda
IR3: Increased dissemination of translated research solutions and policy	(16) L3.S.2_in2	# of instances of USAID OUs using CDR-supported research tools, approaches or mechanisms	34	6	10	BIDRF; Program records	10 buy-ins: 2 bureaus, 4 missions, and 4 LAB-sponsored projects
Sub-IR 3.1: Increased access among develop. actors and information brokers to good practices and systems for delivery of translated research	(17) Custom LP.8	# of translated research products shared with networks, policy-makers, private sector, and/or donors	78	2	1	BIDRF	Tusome buy-in conference presentation
Crosscutting Sub-IR 4: Enhanced systems and structures for gender and minority considerations in the HEI network that enable women and minorities to conduct research	(18) Custom LP.9	# of female researchers, and/or US minority researchers, conducting LASER-funded research	28	6	0	n/a	No results yet; initial LASER research grants scheduled to be awarded in FY2

* BIDRF = Buy-In Data Reporting Form

^ R4D-RTL = R4D Conference Registration and Training Logs

Deviance From M&E Targets

Reporting data is derived from the 10 buy-ins currently managed by LASER, the Uganda R4D conference held in May 2019, and from program administrative records. Table 1 above consists of the 19 official LASER PULSE indicators ("official" signifying that there are targets associated with them); they are listed in red text from 1-18, with Indicator 4 being repeated (as 4b) under a different Sub-IR. Of the 11 indicators with reported data, 3 exceeded their corresponding targets, 1 hit the target exactly as specified, 2 narrowly missed the target (i.e. less than 5% deviation), and 5 under-achieved their targets by more than 5%. The following points summarize those indicators that were over/under by 10% or more:

- **Indicator 2** L3.S.1_in2 # of research products produced with LASER-supported funding

LASER developed targets for this indicator based primarily on the awarding of research grants, with outputs to be lagged by 2 years, and secondarily on the buy-ins. As we did not factor in any core research outputs (i.e. materials derived from work conducted by the consortium itself), this led to the over-achievement observed in FY1 (note that we actually did achieve the 2 buy-in outputs targeted). It is anticipated that reporting will align better with targets in the latter years of the program (FY4, FY5), but there is much uncertainty regarding this because we do not know how many more buy-ins will be obtained, what their duration will be, and how many outputs each buy-in will generate. LASER may exceed the FY2 target somewhat, given the un-targeted demand for core outputs, and it might underachieve the FY3 targets due to the fact that no research grants were awarded/initiated in FY1 (as had been assumed when targets were estimated), but it will depend upon the timing involved.

- **Indicator 3** Custom LP.1 # of tertiary-level educators & faculty who complete professional development activities w/ USG assistance

  The data for this indicator is exclusively from the Uganda R4D conference. Note that, if the Colombia R4D conference had not been postponed (it was held just after the end of FY1), then LASER would have narrowly missed the target by less than 3% (and thus precluding this note). Going forward, the targets may be difficult to achieve given changes in conference scheduling and a shift toward inclusion of more development practitioners; however, this indicator also tracks completion of the online training modules, and this may be enough to offset the limiting factors noted.

- **Indicator 8** L3.S.1.2_in3 # of institutions or affl. individuals associated w/ CDR research networks

  Over-achievement resulted from targets set with reference only to Purdue's HEI partners and a few buy-in partners; the excess is a function of adding Notre Dame's HEI partners plus a dozen additional buy-in partners. Due to a misunderstanding of how this indicator is calculated, targets will be revised in consultation with USAID.

- **Indicator 9** L3.S.1.1_in3 % of research projects led by LMIC or MSI HEIs / research institutions (includes LASER buy-ins)

  The deviation here is due to the fact that LASER initially included this indicator to track the research awards only. However, during FY1 Bi-annual reporting, it was discovered that this indicator is automatically calculated in DevResults from two other CDR indicators (L3.S.1.2_in1, # of research projects; and L3.S.1.1_in3, # of research projects led by LMIC or MSI HEIs / research institutions) that LASER informally tracks without targets, and which do report on the buy-ins. In consultation with USAID, LASER therefore revised this indicator to include buy-ins, and update FY2 and FY3 targets, to rectify the situation. With regard to targets: while it is desired to have buy-ins be led by LMICs, it is not always possible for LASER to ensure that that is the case due to issues such as research topic area and/or the preference of the USAID OU that is sponsoring the buy-in. This will likely be balanced by

the issuance of research awards (beginning in FY2), of which LASER anticipates that at least 70% will be led by LMIC researchers.

- **Indicator 10**   L3.S.2.2_in4   # of research products translated for use

  LASER initially assumed that 2 of the 10 buy-ins would be completed by the end of FY1, but this was not the case and they were extended into FY2. Thus, only one of the extended buy-ins had a translated output to report on for FY1; however, LASER anticipates that reporting will better align with targets in subsequent years.

- **Indicator 16**   L3.S.2_in2   # of instances of USAID OUs using CDR-supported research tools, approaches or mechanisms

  LASER did not anticipate having a total of 10 buy-ins in the first year of the award (accounting for more than 40% of the non-core funding); thus there was a significant over-achievement for this indicator. Targets for FY2 and beyond may need to be updated to reflect this circumstance.

- **Indicator 17**   Custom LP.8   # of translated research products shared with networks, policy-makers, private sector and/or donors

  Same issue as for Indicator 10. Thus, only one of the extended buy-ins (Tusome) had a FY1 convening in which to share translated research -- otherwise LASER would have achieved, and perhaps even exceeded, the target for this indicator.

Reporting Notes

In addition to a generally favorable set of monitoring numbers reported in Table 1, LASER PULSE also records the following positive highlights taken from some of the additional CDR Standard Indicators that LASER reports on:

- 10 projects   L3.S.1.2_in1   (# of research projects)
- $13.2 million   L3.S.2_in3   ($ value of USAID OUs using CDR tools, mechanisms, etc.)
- 24 engmnt.   L3.S.2.2_in2-d   (# of ongoing engagements btw. researchers and dev./policy actors to develop research initiatives)
- 2 products   L3.S.1.2_in4-d   (# of innovation products by CDR research networks)

The first item reflects the 10 buy-ins managed by LASER, three of which are expected to be completed in FY2 (Tusome, South Sudan, Self-Reliance). The total value of these buy-ins equals $21.2 million, or 42% of LASER's non-core funding amount; as noted in the second item above, $13.2 million is derived from USAID Missions or Bureaus other than the Global Development Lab. The buy-ins collectively include 24 development / policy actors as collaborators on the research and/or evaluations being conducted. The last item refers to the Comprehensive Issue Analysis materials developed for the Uganda R4D conference (see Section 12 below), and which also helped to inform the subsequent RFA.

On the downside, the government shutdown in January of 2019 affected overall MEL reporting for LASER PULSE because it led to the postponement of the Uganda R4D conference. This

subsequently impacted the scheduling of the Colombia R4D Workshop, which was held at the very beginning of FY2 (October 1-2), meaning that three key indicators were not able to tally Colombia-derived data for FY1 reporting. This led to Indicators 3 and 6 being listed as "under-achieved" (the former substantially, and the latter barely), when the addition of the Colombia data would have resulted in the near-achievement of Indicator 3 (within 3%), and a considerable overachievement for Indicator 6.

Data for some other indicators are lacking because the Tusome and South Sudan buy-ins had their lifespan extended for several months, instead of being completed by the end of FY1 as originally planned. Such programmatic delays are not unexpected, but it is nearly impossible to predict them in advance and so the impacts they cause on reporting are unmanageable and simply taken as part of the overall process. Additionally, Indicator 7 (L3.S.2.2_in1-num) and Indicator 18 (Custom LP.9) cannot be reported on until FY2 because these, among other indicators, specifically track LASER-funded research grants and/or related activity; such grants will not be awarded and officially contracted until approximately the mid-point of FY2 (Spring 2020).

6. USAID ENGAGEMENT

Current/Active USAID buy-ins to program (if applicable)

A link to the Buy-In Update sheet is included here.

Potential USAID buy-ins to program (if applicable)

Title: Nature and Scope of Trafficking in Persons (TIP) in South Africa
USAID operating unit/mission: USAID/South Africa
Buy-in amount: $700,000 (USAID $500K, Department of Science and Technology (DST) $200K)
Duration: Oct 1, 2019 – May 1, 2021
Lead Implementer:
Other Implementer(s):
Overall objective: USAID/South Africa seeks to partner with USAID/LAB/CDR and LASER PULSE to understand the scope and trend of trafficking in persons (TIP) in South Africa. The purpose of this research programme is to strengthen the capacity of South African institutions (HEI, government, and NGOs) to partner in the generation of robust data and socially-relevant studies which are aimed at revealing the nature and magnitude of TIP in South Africa. It is envisioned that evidence-based studies will create a baseline and shed light on the complex characteristics of trafficking, and will target the underlying drivers of exploitation. This will enable South African government to respond with policy changes that address the underlying drivers of TIP. Outcomes are expected to be: (i) expansion and integration of TIP research capacity; (ii) building and strengthening collaboration, partnerships and networks; (iii) building and strengthening individual and institutional capacity building to be more responsive to TIP needs in South Africa; and (iv) promoting effective participation in the global research agenda – thus enabling TIP 'best practices' to be shared via North-South and South-South linkages.

Other engagements with USAID

- Uganda Mission (for planning of the Uganda R4D conference; for engagement of Makerere University in the Regional Development Initiative). Much of this engagement was voluntary, owing to the match with Makerere's focus on capacity for HEIs to contribute to development solutions. This involvement no doubt led to a buy-in for Makerere/RAN to work with two regional universities to address the needs of indigenous Ugandan communities.

7. LESSONS LEARNED / BEST PRACTICES

LASER lessons learned were chiefly centered around:

- Buy-Ins: **Problem**: The buy-in mechanism presented a steep learning curve for LASER PULSE - especially with three buy-in opportunities coming immediately upon signing the LASER contract with USAID. We found that our management systems were overtaxed early as LASER had not yet had experience with buy-ins. We did not know how to effectively balance staff time for buy-in management nor did.we have all the necessary processes in place to design competitive mechanisms to respond to the many different scenarios for buy-ins. **Learning:** To expect different contexts for SOPs, from discussing them with Missions, to managing them. Awareness of the various aspects that required transparent guidance for LASER and its awardee teams has taken the entire year, and we continue to learn in response to new needs, demands, and contexts. **Response:** Develop SOPs that are updated monthly to incorporate the different contexts and needs from the experiences of managing these.

- Gap identification leading to the RFA Sector content: **Problem:** The application of LASER PULSE's methodology for determining sector focus for R4D conferences (and the RFAs that follow), formerly known as Comprehensive Issue Analysis (CIA), and now known as Comprehensive Success Factors (CSF), resulted in outputs were not as focused as we needed them to be by the end of the Uganda conference. The key exception was in the Water Sector, because of the greater expertise of that conference working group. **Learning:** We needed to obtain CSF survey inputs in advance of the conference so that we could begin conference identification of priority sectors with a set of sectoral system factors that were already reduced. **Response:** Begin the process of obtaining survey results from the Advisory Group (and conference participants as well, to the extent possible) in advance in order to work with the narrowed set of factors during the conference.

- R4D conference engagement, and participation especially of practitioners: **Problem:** Engaging NGO implementers for the Uganda conference in advance was challenging. In part this was due to the more limited preconference outreach resulting from the US partial government shutdown, but also because LASER had yet to learn about the depth of this challenge, given that this was our first conference. **Learning:** Through attempts to engage implementers, and their feedback on the conference, we understood that we needed to more clearly relate embedded translation to their development challenges, and underscore what 'research' means in this context - that it is the applied expertise of a researcher, and not simply a study that results in a research paper. **Response:** For the second conference,

in Bogota, we have already received substantial input through pre-conference engagement opportunities with targeted NGOs (ones focusing on the sectoral issues USAID Colombia identified), to the extent that we were able to invite practitioners (as well as researchers) to co-design and lead conference sessions. Year Two semi-annual report will provide detailed information about this conference, and on the success of that engagement. *LASER assumes that the more engagement we are able to secure via the R4D forums, the more likely researchers and implementers are to become LASER network members and to apply together as collaborative teams for research grants.*

8. PIVOT POINTS / CHALLENGES

- The partial government shutdown resulted in certain delays. It meant pushing back the R4D conference in Uganda by two months, and therefore pushing back the first full grant round. The Fast Track conference and grant round were thus also delayed by at least two months. There were also impacts to carrying out some activities related to the South Sudan buy-in.

- Certain bandwidth issues with the Colombia Mission (related to the Venezuelan crisis and its demand on the mission) resulted in the delay of the R4D workshop by 1.5 months. This did not have the same level of impact as the Uganda conference delay, where we were unable to communicate with USAID for some time. In fact, the Colombia delay likely bought us the extra time we needed to ensure much more substantial engagement from participants. This delay alerted us to the need to ensure constant open and clear channels of communication with the host country Missions. Mission reps are generally quite saturated with their usual workload, thus our communications with them need to be useful and not burdensome.

- The first RFA release was delayed by several months to ensure closer alignment with the missions and bureaus and to finalize details of the RFA process with CDR staffs. We have since refined the CSF process such that more appropriate R4D participants are identified much earlier, resulting in more useful RFA inputs. We are also engaging with the missions in a way we were not able to in East Africa (because of the government shutdown and methodological improvements).

- In response to lessons learned from this RFA delay, LASER asked the Colombia and Vietnam missions (the next two R4D host country locations) to define the priorities that they have identified with the host country governments. This process replaces the front end of CSF, relieving the need to use machine learning to identify priorities. Having the missions provide the priority sectors allowed us to spend time refining those priorities instead of spending months identifying the priorities and then refining them in a couple of conference days.

9. KEY ACTIVITIES FOR NEXT REPORTING PERIOD

The following activities for year one were delayed owing to factors discussed above. They will be completed by or near January 2020:

- 1.3.4 Hold R4D Workshop, in Colombia, to generate research priorities for the grant round, which is now a full grant round (as opposed to Fast Track). This conference was held in Colombia on Oct 1-2, 2019. It was delayed because of reasons detailed above, and will be reported in the Year 2 Biannual Report.

- 1.4.2 First round of R4D standard grants made: The grant round was delayed owing to reasons explained previously. The call for proposals as been released, and the first concept notes are due November 15, 2019.

- 1.4.3 First round of fast track grants made: The Colombia workshop was proposed for a round of fast-track grants. Because we have substantial opportunity there for very impactful collaboration, we were allowed to make this a full grant round. The RFA will likely be released in early January 2020.

- 4.1 Develop LASER PULSE Gender Plan: The Gender Plan was completed, but it is not in a format we are able to use to guide LASER mainstreaming of gender considerations. This output will be completed by Purdue, as was the online gender certificate training, before the end of calendar year 2019.

The following activities are planned for Year Two, and are planned to be completed by the next reporting period:

- 1.1.2 Conduct focused research gathering activities among SE Asian researchers to provide information on institutional barriers in SE Asia for embedded translation.

- 1.1.4 Engage students in international development solutions through QED/LASER Hackathons (Purdue, Notre Dame, IU).

- 1.3.2 Hold conferences in Colombia, Vietnam and Indonesia.

- The Colombia conference, carried over to Year Two, has already been held and will be reported in the Biannual Report for 2019-2020. LASER will hold the Vietnam conference in time to report on it for the same period.

- 1.3.3 Hold pre-R4D conference engagement meetings with researchers and practitioners to identify barriers and opportunities to partner with researchers.

- 1.3.8 Revise, apply and document Comprehensive Success factors methodology as it evolves and is applied adaptively in different country and regional contexts

- 2.1.1 Buy-in opportunities: identify teams, and providing overall management of subaward(s)

- 2.1.2 Make awards for three standard R4D grant rounds (**East Africa, Colombia**, Vietnam); and, relatedly, Develop RFAs based on USAID sector priorities (2.1.3)

10. ENVIRONMENTAL MONITORING

LASER's FY 2019 work plan was reviewed by the U.S. Global Development Lab's Bureau Environmental Officer (BEO) for potential environmental impacts and received a categorical exclusion for each included activity pursuant to 22 CFR 216.2(c)(2).

11. GENDER/SOCIAL INCLUSIONS CONSIDERATIONS (if applicable)

1) Gender Integration is required with all buy-ins and all research grants. The PI is responsible to ensure this for buy-ins, and must complete LASER gender training. For research grant teams, all team members must complete the gender training. See Buy-In SOPS.

2) A gender plan has been underway throughout Year One. One has been completed, but it is felt that this plan was too theoretical and so another is being developed so as to be practically applicable by the LASER program implementers and their stakeholders. The main objective of this report is to operationalize gender for the Year Two Work plan especially, but to serve as a guide for LASER overall in 'engendering' work. So, this will take the form of guidance around work plan activities. We operationalize this by identifying those elements of our work where gender stereotypes/norms for males or females negatively impact development and human rights. For example, in conflict areas males are often seen as legitimate targets for homicide - by virtue of being male (sex-selective massacre)[2]. The most obvious places to apply this lens are in review of research grant proposals, and in the design of buy-in PDs. LASER PULSE core work can also reveal opportunities for a gendered lens. RAN's Gap Analysis for research has identified also barriers to research opportunities - especially for women, and has addressed this issue during the Uganda R4D Conference. Another example of an opportunity is ensuring that policy templates provide guidance on the need to describe differential impacts on males and females. Or, in addressing researchers and implementers as Boundary Partners, noting whether there are difficulties engaging males or females as partners in collaborative teams on embedded research.

12. DELIVERABLES COMPLETED

- **Tusome and PRIMR: A Desk Review of Early Grade Reading Programs in Kenya from 2011-2019.** Completed by the Tusome Buy-In, with final version approved by USAID in September 2019; uploaded to the DEC on October 16, 2019.

- **Application of Comprehensive Issue Analysis to Inform Development Research in East Africa, Part 1: Basic Education (BE), Maternal/Child Healthcare (MCH).** Link to document via the LASER website; upload to the DEC will follow, pending approval by USAID.

- **Application of Comprehensive Issue Analysis to Inform Development Research in East Africa, Part 2: Food Security (FS); Water, Sanitation and Hygiene**

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[2] https://journals.sagepub.com/doi/10.1177/0967010606064139

(WaSH). Pending embargoed upload to the DEC, following approval by USAID.

Deliverables reported on in the FY2019 Bi-Annual Report, but uploaded to the DEC later:

- **Assessment of the Research Context and Research Capacity in Higher Education Institutions in Africa**, uploaded to the DEC on October 16, 2019.
- **Tusome Case Study Poster**, uploaded to the DEC on October 17, 2019.

13. OTHER (Annexes)

Annex A: Summary Uganda R4D Conference Attendance Data

Table A1. LASER PULSE Uganda R4D Conference Participant Summary, 6-8 May 2019

Participant Type	Female	Male	Africa	Latin America	USA	Total	Percent
Researchers	26	31	45	1	11	57	43.8%
Implementers	16	16	19	0	13	32	24.6%
Donors	6	8	7	0	7	14	10.8%
LASER Staff	15	12	8	0	19	27	20.8%
Total	63	67	79	1	50	130	100%

Table A2. Uganda R4D Comp. Issue Analysis Session Participants – 8 May 2019 (Day 3)

Participant Type	Basic Education	Food Security	M/C Health	Water Resources	Total	Female	Male
Researchers	10	17	6	13	46	20	26
Implementers	4	8	13	4	29	14	15
Donors	2	3	0	2	7	3	4
LASER Staff	6	2	7	3	18	10	8
Total	22	30	26	22	100	47	53

Note: differences between Tables 1 and 2 reflect (a) some participants recorded in Table 1 include guest speakers (e.g. Mission Director, government officials) that attended only part of a day, and (b) some LASER staff served in support roles and are therefore not part of the sector tallies displayed in Table 2.

Table A3. RFA Design Input Synthesis Workshop Participants – 9 May 2019

Participant Type	Basic Education	Food Security	M/C Health	Water Resources	Total
Female	9	3	4	1	17
Male	2	1	5	6	14
Total	11	4	9	7	31
Core LP Staff	4	2	5	2	13
Other LP	5	1	4	3	13
USAID	1	1	0	2	4
Other (SDRI)	1	0	0	0	1

Note: the post-conference workshop covered 2 days (9-10 May 2019), but some participants on 9 May did not attend the following day.

Annex B: Feedback on LASER Online Training (comments as of Oct 27, 2019)

B1. Gender Training

#1   Respondent #1 4:03 am 14 Oct 2019

1. Gender consideration in all aspects of life is important since men and women are affected differently by developmental decisions.

2. Research has to mainstream gender in its activities since this normally gives a two dimensional lens that may bring on board needs of men and women for inclusivity.

3. Gender considerations are key to national development. inclusion of both men and women in governance leads to all inclusive decision making that addresses the need of humanity.

4. Mainstreaming gender will ensure removal of gender blindness barriers and bring about a reflection on what affects men and women in developmental activities.

5. Gender issues if properly addressed will fast track development since identification of the needs of either gender and incorporating them in the decision making process may lead to formulation of grounded policies frameworks.

#2   Respondent #2 5:29 am 25 Oct 2019

This was a very nice presentation. This ideas has actually changed my thinking and perception about gender. Initially I used to think about gender as either male or female which should not be the case. I used to have that mentality that some specific tasks are only meant for men. For this reason I will change my approach of gender as from today.

#3 Respondent #3 12:37 pm 24 Oct 2019

I have just watched the presentation and I have learnt interesting new perspectives of looking at gender in research. Particularly, the issue of hard science being masculine, while soft science being feminine caught my interest. it is actually true that hard science, tend to associated with men, while soft science tend to be associated with women. this division actually translates into the acceptance of research findings. For instance, recently a masters student whom am supervising is using quality approaches to data collection analysis had a hard time convincing the proposal defence panel that his methods and results(devoid of hard statistics, formulas and figures) is adequate.

#4 Respondent #4 7:28 am 22 Oct 2019

Equal opportunity is important for development, some cultural norms need education before eradication as they are almost in the realm to taboos

Reply Respondent #3 12:05 pm 24 Oct 2019

some cultural norms and taboos are responsible for gender disparities that are observed especially in traditional, rural communities. Such norms need to be debunked and addressed adequately ignorer to achieve gender equity

#5 Anonymous 10:12 am 15 Oct 2019

Such an interesting exposition of gender considerations.

#6 Respondent #1 3:24 am 14 Oct 2019

1. gender is a term that acts as a lens for looking at men and women differently based on their culture, religion, and settings,

2. There are many forms of gender biases in employment, research, technological discoveries and innovations,

3. Human biases have been elevated by technological innovations

4. Need to bring on board both men and women will help address the expectation of everyone in a developmental agenda since such expectations are not the same.

5. A research undertaking should involve both men and women since this may lead to findings which holistically looks at life with orientation of the both gender

Reply Respondent #3 12:06 pm 24 Oct 2019

I agree absolutely with these arguments

#7 Respondent #1 3:04 am 14 Oct 2019

From the presentation a number of things come out on gender:

1. gender is a geographical, cultural, religious and social lens a person is oriented to look at male and female in a societal setting.

2. Biases exist since gender blindness make policy makers, opinion leaders not put into consideration what affects man and woman differently as they make decisions.

3. If both men and women are involved as stakeholders in a research or project then both gender orientation in the findings may give a holistic approach to handling issues since needs of both gender are addressed.

4. Technology has been used to amplify gender disparity by totally leaving out components of either a woman or man's needs in designs and use of such technologies i.e anything to do with food preparation may be oriented towards women whereas earth movers in road construction reflect on men.

5. All aspects of life require inclusion in order to address the needs of all to enable holistic development with everyone on board.

#8   Respondent #6 9:20 am 12 Oct 2019

Many new interesting insights on gender analysis issues.

#9   Respondent #7 6:35 am 05 Oct 2019

Give an example for beta and alpha Bias

#10 Respondent #8 3:35 am 04 Oct 2019

A very rich presentation on Gender Analysis.

 Thanks

B2. Translation Training

#1   Respondent #6 4:06 pm 29 Sep 2019

Interesting stuff to be gained in this training course

#2   Respondent #9 7:39 am 24 Oct 2019

thank you for training on the four areas namely:- partnership, process, translation product and dissemination. it was an eye opener

#3   Respondent #10 7:09 am 26 Oct 2019

This training is very useful. Is it possible to avail to those who are not submitting and applications?

#4   Respondent #11 5:21 pm 01 Oct 2019

This was helpful information.

#5   Respondent #12 6:37 am 17 Oct 2019

This training was very educative and real as is on the ground. The part of developing partnerships has provided a good ground for the upcoming RFA.

Its good to understand that research translation can take place at different levels and so one can have multiple translators based on the project

Reply: Anonymous 3:20 pm 18 Oct 2019

True

#6   Respondent #4 6:29 am 22 Oct 2019

The translation of research to product is very important, however we should have a adoption strategy on how to introduce a product in the content of time tested indigenous knowledge for sustainability.

#7   Respondent #10 7:02 am 26 Oct 2019

This training is really useful. Is it possible for to be availed even to those who are not submitting and application?

Annex C: LASER PULSE Network Membership Data Details (as of 11-12-2019)

Table C1. Gender and Sector Disaggregation

Total HEI Network Members	1,316

Researchers	1,257
Females	552
Males	552
NA	153
Development Professionals	55
Females	24
Males	29
Industry Collaborators	6
Females	5
Males	1

Sectors	
Agriculture and Food Security	414
Environment and Global Climate Change	388
Education	386
Global Health	287
Gender Equality and Women Empowerment	265
Economic Growth and Trade	197
Water and Sanitation	195
Cross-Cutting	192
Democracy, Human Rights and Governance	171
Working in Crisis and Conflict	151
Total (non-exclusive)	2,646

Table C2. Disaggregation Detail by Region, Country, Member Type

Afghanistan and MENA	Country	Institutions	Researchers	Development Professionals	Industry Collaborators	Females	Males
	Afghanistan	2	2	0	0		
	Egypt	1	1	0	0		
	Jordan	3	195	1	0		
	Lebanon	1	2	0	0		
	Pakistan	2	1	1	0		
	Palestine	2	5	0	0		
	6	11	206	2	0	93	96

Asia

Country	Institutions	Researchers	Development Professionals	Industry Collaborators	Females	Males
Bangladesh	1	1	0	0		
India	6	11	1	0		
Japan	1	1	0	0		
Laos	1	0	1	0		
Malaysia	1	1	0	0		
Myanmar	2	44	0	0		
Nepal	1	5	0	0		
Philippines	1	47	0	0		
South Korea	1	1	0	0		
Vietnam	5	126	0	0		
10	31	240	2	0	127	65

Europe and Eurasia

Country	Institutions	Researchers	Development Professionals	Industry Collaborators	Females	Males
United Kingdom	4	4	1	0		
1	4	4	1	0	3	2

Latin America and Carribean

Country	Institutions	Researchers	Development Professionals	Industry Collaborators	Females	Males
Brazil	3	182	1	0		
Colombia	21	109	9	1		
Ecuador	1	1	0	0		
Guatemala	1	0	1	0		
Haiti	1	21	0	0		
Honduras	3	11	0	0		
Peru	5	54	0	0		
Puerto Rico	1	1	0	0		
9	37	380	11	1	176	171

North America

Country	Institutions	Researchers	Development Professionals	Industry Collaborators	Females	Males
Canada	1	1	0	0		
Mexico	1	1	0	0		
USA	53	213	24	2		
3	55	215	24	2	104	102

Sub-Saharan Africa

Country	Institutions	Researchers	Development Professionals	Industry Collaborators	Females	Males
Benin	1	9	0	0		
Congo (DRC)	1	1	0	0		
Ethiopia	5	24	0	0		
Ghana	5	10	0	0		
Kenya	29	102	6	1		
Liberia	1	1	0	0		
Madagascar	1	0	1	0		
Malawi	3	4	0	0		
Rwanda	2	3	0	0		
Somalia	3	3	1	0		
South Africa	1	1	0	0		
South Sudan	2	1	1	0		
Tanzania	7	20	1	1		
Uganda	13	32	5	1		
Zimbabwe	1	1	0	0		
15	75	212	15	3	82	144