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EVALUATION REPORT

Performance Evaluation of Enhancing Capacity for Low Emission Development Strategies (EC-LEDs)

July 2017 (Revised September 2017)

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PERFORMANCE EVALUATION OF ENHANCING CAPACITY FOR LOW EMISSION DEVELOPMENT STRATEGIES (EC-LEDs)

July 31, 2017 (Revised September 25, 2017)

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CONTENTS

Acronyms	v
Executive Summary	vii
Project Background	vii
Evaluation Purpose and Questions	vii
Evaluation Methodology and Limitations.....	viii
Findings, Conclusions, and Recommendations on Evaluation Questions.....	viii
Introduction	1
The Enhancing Capacity for Low Emission Development Strategies Program	1
Evaluation Purpose and Methodology	6
Evaluation Purpose.....	6
Evaluation Questions.....	6
Evaluation Methodology	7
Analysis Framework	9
Limitations.....	10
Evaluation Team Composition.....	11
EC-LEDS Planning Actions, Outcomes, and Resulting LEDS Implementation (EQ1, EQ 1a & EQ 1b)	12
EC-LEDS Planning Actions and Contribution to Partner Country LEDS Progress (Findings)	13
LEDS Planning Resulting to Mitigation Implementation (EQ1a and EQ1b - Findings)	21
Conclusions: EQ 1, EQ1a, & EQ1b.....	23
Recommendations: EQ1, EQ1a & EQ1b	25
Analysis of EC-LEDS Program Outcomes (EQ2)	26
Clean Energy	27
Sustainable Landscapes	34
Conclusions: EQ2.....	44
Recommendation: EQ2.....	50
EC-LEDS Support for Partner Countries' Participation in International Climate Change Negotiations (EQ3)	52
What Is an Intended Nationally Determined Contribution?	52
EC-LEDS Support for INDC Development.....	53
Support to Increase Capacity to Participate in International Climate Negotiations	54
Conclusions: EQ3.....	55
Recommendations: EQ3.....	56
The Effectiveness of the Whole-of-Government Approach (EQ4)	57

Findings: EQ4.....	60
Conclusions: EQ4.....	62
Recommendations: EQ4.....	62
Annexes.....	64
Annex A: Evaluation Statement of Work.....	64
Annex B: Evaluation Design Proposal	73
Annex C: Outcome Data for Clean Energy Pillar Funding	106
Annex D: Sustainable Landscape Outcomes	108
Annex E: Country Field Visit Reports.....	109
Annex F: Selected IMs for the Evaluation.....	157
Annex G: KII Instrument.....	174
Annex H: List of Key Informants.....	175

ACRONYMS

AFOLU	Agriculture, Forestry, and Other Land Use
AOR	Agreement Officer's Representative
APG	Annual Program Goal
AWP	Agreed Work Program
BAPPENAS	Planning Department (Indonesia)
BAU	Business as Usual
B-LEADERS	Building Low Emission Alternatives to Develop Economic Resilience and Sustainability Project
CBA	Cost-Benefit Analysis
CE	Clean Energy
CLEER	Clean Energy Emission Reduction
CO ₂ e	Carbon Dioxide Equivalent
COR	Contracting Officer's Representative
DOS	U.S. Department of State
DOE	U.S. Department of Energy
dTS	Development and Training Services
E3	Bureau for Economic Growth, Education, and Environment (USAID)
EC-LEDS	Enhancing Capacity for Low Emission Development Strategies
EE	Energy Efficiency
EPA	U.S. Environmental Protection Agency
EQ	Evaluation Question
ERPA	Emissions Reduction Purchase Agreement
ER-PD	Emissions Reduction Program Document
ER-PIN	Emissions Reduction Program Idea Note
EVOSS	Energy Virtual One Shared System
FCPF	Forest Carbon Partnership Facility
FIPI	Forest Inventory and Planning Institute (Vietnam)
GCC	Global Climate Change Office (USAID/E3)
GCF	Global Climate Fund
GCCI	Global Climate Change Initiative
GEF	Global Environment Fund
GEM	General Elimination Method
GHG	Greenhouse Gas
GOC	Government of Colombia
ICED	Indonesia Clean Energy Development
IM	Implementing Mechanism
INDC	Intended Nationally Determined Contribution
IPPI	GHG Inventory Project Progress Indicator
IR	Intermediate Result
KW	Kilowatts
KII	Key Informant Interview

LEAD	Low Emissions Asian Development
LEAP	Long-Range Energy Alternatives Planning
LECRD	Low Emission and Climate Resilient Development
LEDS	Low Emission Development Strategies
MACC	Marginal Abatement Cost Curve
MW	Megawatts
MLED	Mexico Low Emissions Development
MOU	Memorandum of Understanding
MRV	Monitoring, Reporting, and Verification
MSI	Management Systems International
MMtCO _{2e}	Million Metric Tons of Carbon Dioxide Equivalent
NAMA	Nationally Appropriate Mitigation Actions
NASA	National Aeronautics and Space Administration
ND-GAIN	Notre Dame's Global Adaptation Index
NREL	National Renewable Energy Laboratory (U.S. Department of Energy)
OPIC	Overseas Private Investment Corporation
PES	Payment for Ecosystem Services
PFES	Payment for Forest Ecosystem Services
PMP	Performance Monitoring Plan
PPA	Power Purchase Agreement
PPR	Performance Plan Report
PV	Photovoltaics (Solar)
RE	Renewable Energy
REDD+	Reducing Emissions from Forest Degradation and Deforestation
RDMA	Regional Development Mission for Asia (USAID)
SL	Sustainable Landscape
SOW	Statement of Work
tCO _{2e}	Metric Tons of Carbon Dioxide Equivalent
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	United Nations Program on Reducing Emissions from Deforestation and Forest Degradation
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
USFS	United States Forest Service
USG	United States Government
VCU	Verified Carbon Units
VER	Voluntary Emission Reduction
WoG	Whole-of-Government

EXECUTIVE SUMMARY

Project Background

Launched in 2010, the Enhancing Capacity for Low Emission Development Strategies (EC-LEDS) program is the U.S. Government's flagship international program to reduce and mitigate global greenhouse gas (GHG) emissions. The program encompasses both clean energy and sustainable landscape funding. EC-LEDS works with 26 countries.

Low emission development strategies (LEDS) are commonly defined as “forward-looking national development plans or strategies that encompass low-emission and/or climate-resilient economic growth.” Typically, LEDS comprise the following elements: a profile of a country's emissions data and projections; long-term economy-wide mitigation goals; and analysis and prioritization of cost-efficient mitigation options. LEDS may be national in scope, or may be sector or sub-nationally focused, such as the development of mitigation strategies for the energy sector, or for a province.

EC-LEDS has three main components:

1. **Development of LEDS to decrease GHG emissions** includes developing institutional management arrangements; GHG inventory development; economic modeling of mitigation options; prioritization of mitigation actions; and support for monitoring, reporting, and verification (MRV) systems.
2. **Clean energy (CE) implementation** includes support for renewable energy (RE) and energy efficiency (EE) policies, plans, and programs; facilitating renewable energy financing; and applying tools and platforms to increase the adoption of renewable energy.
3. **Sustainable landscapes (SL) implementation** includes support for forest management and protection; support to implement the United Nations' program on Reducing Emissions from Deforestation and Forest (REDD+); mangrove restoration; forest carbon inventory and monitoring; and climate-smart agriculture.

Implementation of EC-LEDS takes place through a whole-of-government (WoG) management structure. Participating agencies include U.S. Agency for International Development (USAID); the U.S. Department of Agriculture (USDA); the U.S. Department of State (DOS); the U.S. Department of Energy, mainly through its National Renewable Energy Laboratory (NREL); the U.S. Environmental Protection Agency (EPA); and the U.S. Forest Service (USFS). USAID and DOS co-manage EC-LEDS. Under EC-LEDS' WoG approach, USAID leads implementation and other agencies participate using mainly funding from USAID (agencies use some of their own resources to support the EC-LEDS work, although most funding has come from USAID and State).

Evaluation Purpose and Questions

This EC-LEDS performance evaluation is intended to document results, improve program delivery, and inform USAID's development strategy. USAID's evaluation questions are:

EQI: Which EC-LEDS interventions have been effective in contributing to partner countries' low-emission development, and why?

EQIa: Has LEDS planning resulted in implementation?

EQIb: Have LEDS implementation actions resulted in actual/projected emission reductions and development impacts?

EQ2: How has the EC-LEDS program contributed to partner countries' progress toward LED outcomes?

EQ3: How has the EC-LEDS program contributed to partner countries' engagement in international climate change mitigation efforts?

EQ4: How has the “whole-of-government” approach affected implementation of the EC-LEDS program?

Evaluation Methodology and Limitations

This evaluation used a mixed-methods approach that incorporated a range of primarily qualitative data methods, with quantitative analysis used to analyze program outcomes. This analysis identified key interventions and mapped these to program outcomes. Qualitative research components were built on a desk review framework, key informant interviews, and a multi-site field visit approach in six countries (Colombia, Indonesia, Malawi, Mexico, the Philippines, and Vietnam). The desk review portion of this evaluation, which reviewed available project implementation reports from the selected EC-LEDS implementing mechanisms, was most useful for comprehensively identifying the program's development outcomes. Fieldwork examined the contribution of EC-LEDS actions to development outcomes, with additional data gathered through phone calls to several USAID missions.

The evaluation faced several challenges that are inherent to multi-site evaluations of large-scale programs composed of disparate activities. Limitations included a lack of available data for some programs, data inconsistency, and the complications of varying country contexts and how they affect the program. While the evaluation was able to capture the main outcome accomplishments across the entire EC-LEDS program – including measures such as emission reductions, clean energy investment, and income generated from improved forest management – the program was able to provide its most detailed review of LEDS capacity building progress for the six countries that were visited as part of the fieldwork component of this study. The EC-LEDS program has not systematically tracked the development of LEDS capacity across its portfolio, and there was a paucity of information on partner governments' application of acquired capacity in terms of progress in transitioning from analysis and planning to the implementation of specific emission reduction actions.

To summarize progress across countries, the team adopted a DOS-USAID framework defining the stages of LEDS capacity development around planning and implementation: institutional and management arrangements established; greenhouse gas inventories developed; analysis of mitigation options completed; mitigation priorities identified and implemented; and implementation begun (funds secured) and systematic implementation with internal and external finance underway. The team was able to assess the six fieldwork countries against this framework, cross-referencing against multiple sources.

Findings, Conclusions, and Recommendations on Evaluation Questions

Principal findings and conclusions for the study's evaluation questions follow. As this is a program-level evaluation, all recommendations in this report were developed for USAID's Global Climate Change Office, which oversees the EC-LEDS program.

EQ I: Which EC-LEDS interventions have been effective in contributing to partner countries' low-emission development, and why?

Findings

EC-LEDS has provided extensive support to help partner countries develop national LEDS. This support has included developing institutional management arrangements, creating greenhouse gas emissions analysis capacity, supporting the development of Intended Nationally Determined Contributions (INDCs)¹, and helping countries develop national, sub-national and sectoral LEDSs.

A significant amount of EC-LEDS planning support was designed to create analytic capacity, which sets the foundation for LED implementation but does not directly result in implementation. This is particularly the case for GHG inventory work. In cases where the LEDS process has not yet proceeded to implementation this has mainly been due to the short duration of the effort, or due to partner countries not yet having the institutional arrangements or policies required to move actions forward.

EQ Ia: Has LEDS planning resulted in implementation?

Findings

In the countries where LEDS planning is most advanced, LEDS have resulted in the implementation of emission reduction programs across a variety of sectors, including in the transport, waste, and housing sectors. Among the fieldwork countries visited, Colombia, Mexico and Vietnam are implementing activities that have been developed under their national LEDS initiatives.

The programs showing the highest level of LED implementation are initiatives that have been ongoing for five or more years by partner governments, and that have stepped-down national policies into sector and sub-national action plans and received government or international support for implementation. Colombia's Efficient National Freight Logistics Initiative, which has received funding from the Global Environment Facility (GEF), is an example of a sector LEDS plan that has resulted in mitigation implementation.

EQ Ib: Have LEDS implementation actions resulted in actual/projected emission reductions and development impacts?

Findings

In the countries that have used the LEDS process to develop specific mitigation programs, meaningful mitigation outcomes are likely to be achieved. A focus of EC-LEDS' capacity building efforts was to help countries develop systems to identify and quantify emissions and conduct analysis to develop cost effective emissions reduction programs. This is complex and time-consuming work that enables countries to design emission reduction programs, develop supportive policies and allocate implementation resources. One take-away from this review is that building a national LEDS, and integrating LED into national planning and implementation, can be expected to take at least five years – which is the length of time that EC-LEDS has

¹ INDC: a term used under the [United Nations Framework Convention on Climate Change](#) (UNFCCC) for reductions in [greenhouse gas emissions](#) that all countries that signed the UNFCCC were asked to publish in the lead up to the [2015 United Nations Climate Change Conference](#) held in Paris, France in December 2015

been in operation. The goal of this process is to transform how countries plan and finance development so that all national development decisions are taken in regard to LED considerations. This requires a substantial transformation in attitudes, systems, policies and actions. The EC-LEDS program has achieved considerable progress in moving this transformation forward in all countries reviewed.

In the six countries reviewed most closely by this evaluation, three countries have made considerable progress in mainstreaming LED into their national planning systems, and specific emissions reductions programs were being implemented (Colombia, Mexico, Vietnam). In each of these countries, the LED process had been initiated prior to the establishment of the EC-LEDS program; however, EC-LEDS' assistance was vital in helping these countries further advance their efforts.

In the other three countries most closely reviewed (Indonesia, Malawi and the Philippines), significant progress had been created in building the foundation for LED, but progress had not yet reached a stage whereby the governments were financing and implementing activities as integral components of their national development plans.

Examples of LED actions that will lead to increased emission reduction for the countries that have made the most progress is presented below:

- **Colombia's** national LED process has resulted in the development of a number of Sector Mitigation Action Plans (SMAPs) and Nationally Appropriate Mitigation Actions in the waste, transport and sanitation sectors. The eight SMAPs completed are projected to mitigate nearly 830 million tonnes of CO₂e by 2040. This work is an outcome of the process EC-LEDS supported to integrate mitigation planning into ministries across government.
- In **Kenya**, EC-LEDS supports the implementation of the National Climate Change Action Plan and the Climate Change Response Strategy, which were designed to meet Kenya's Nationally Determined Contribution (NDC) target of abating 30% GHG emissions by 2030 relative to the business as usual scenario. EC-LEDS' efforts have resulted in the enactment of Kenya's first Climate Change Act, one of the few on the continent, which mandates the national and county governments to mainstream climate change mitigation and adaptation measures in all development processes. EC-LEDS assistance in developing and implementing Kenya's climate finance budget codes will result in transparent tracking of climate finance and climate activities at national and county levels once fully operational.
- In **Mexico**, EC-LEDS supported the use of a Grid Integration Road Map and updated solar resource maps for energy planning. Mexico used this information in setting its 35% renewable energy target, and in developing plans to realize this objective. Mexico's subsequent energy auctions (2016) are expected to result in a contribution that will total 5.8% of the country's total grid power.
- **Vietnam** recently received Green Climate Fund approval for a coastal resilience project, which is an outcome of the EC-LEDS supported provincial green growth planning process. This project contains both adaptation and mitigation objectives, and is expected to result in a lifetime equivalent of 1,860,720 tonnes of CO₂e reduced or avoided through mangrove restoration.

Conclusions: EQI (overall)

In a relatively brief period, EC-LEDS has made great progress in helping countries adopt the tools, skills, and systems that are required to develop LED. This has included critical contributions to helping partner countries develop systems to analyze emissions and identify cost-effective emission mitigation strategies.

Progress to analyze emissions and develop mitigation strategies was significant in all countries reviewed², and all EC-LEDS partner countries submitted INDCs based on such analysis. In countries where this effort is most advanced, the LEDS approach has been integrated into government planning and will contribute to significant future emission reductions. Countries that have stepped down national LEDS into sub-national and sectoral plans have advanced the furthest in terms of the implementation of LEDS plans and in achieving emissions reductions.

Objective measurable data is not available from the full set of countries supported by EC-LEDS to determine the degree to which EC-LEDS support for mitigation analysis and planning has translated into action. There are several EC-LEDS countries that have not yet translated LEDS planning into mitigation implementation actions, or are at an early stage in this process – although a substantial amount of the analytic groundwork required to advance this process has been completed. Among the six countries visited by the evaluation as part of the evaluation, three had progressed to implementing mitigation actions as an outcome of their national LEDS planning process (Colombia, Mexico and Vietnam), and three have made substantial progress in analysis and planning, but had not yet implemented actions (Indonesia, Malawi and the Philippines). Data from desk review countries was inconsistent as to progress in this area (partner countries translating LEDS into implementation programs).

Recommendations: EQI (overall)

- Considering the significant progress achieved to develop national LEDS, USAID should reassess the capacity needs of partner countries in key LEDS areas. A set of straightforward metrics should be developed to re-assess progress and to prioritize additional assistance needs. These metrics should be based on the progress partner countries have made in building the capacity required to implement core elements of the LEDS process.
- Increase the program's emphasis on the development of sub-national and sectoral mitigation plans. The EC-LEDS Colombia process was particularly effective in helping to integrate LEDS planning into ministries across government. This process has resulted in the development, financing, and implementation of mitigation programs across multiple sectors. EC-LEDS successful support to Colombia was the result of placing advisors in multiple ministries and having them focus on integrating mitigation planning into ministerial plans and mentoring ministry staff. This process can serve as an example for other countries.
- Create a road map for moving LEDS from planning to finance and implementation, and develop support structures to enable this. These support structures should focus on providing technical assistance to develop implementation plans that can meet the financing requirements of national and local government, private sector, and of international programs such as those supported by the GEF, the Green Climate Fund and other multilateral development partners. The Green Growth Strategic Fund in Vietnam and Colombia's Clean Energy Project Preparation Facility provide examples of how such assistance can be successfully structured.

Analysis of the achievements of EC-LEDS outcomes for the clean energy and sustainable landscapes pillars is based on program reporting and examines actual achievements and progress relative to each country's overall level of GHG emissions. Findings and conclusions are discussed separately for the sustainable landscapes and clean energy program pillars.

² The evaluation desk study reviewed progress in all 26 countries, but EC-LEDS does not systematically track progress in building LEDS capacity as per the program's intermediate results, and it was not always clear the degree to which countries had fully built this capacity, or if this capacity had directly translated to mitigation implementation. However, there is sufficient information for team to assess progress in proposed broad brush strokes, and in detail for the countries visited.

EQ2: How has the EC-LEDS program contributed to partner countries' progress toward LEDS outcomes?

Findings: Clean Energy Outcomes

Under CE, the EC-LEDS program has contributed to the potential addition of approximately 2,768 MW³ of renewable energy (RE), resulting in a projected GHG emission reductions from completed and underway projects of 371 million tCO₂e through 2030.⁴ The largest contributors were Mexico (1,860 MW), India (372 MW), Kenya (310 MW), and Indonesia (287 MW). To date, EC-LEDS assistance has resulted in approximately \$5.1 billion in CE investment mobilized.

EC-LEDS has made nationally significant contributions to clean energy development in a number of countries. The following are examples of this success:

Ethiopia:	1,000 MW of projected added capacity; representing 42.5% of national energy production
Georgia:	755 MW of projected added capacity; representing 17% of national energy production
Kenya:	602 MW of projected added capacity; representing 27.4% of national energy production
Mexico:	5,5580 MW of projected added capacity; representing 8.7% of national energy production

Findings: Sustainable Landscapes Outcomes:

Of the 15 countries with EC-LEDS sustainable landscapes funding:

- Twelve countries are reporting reduced emissions as a result of EC-LEDS support.⁵ In total, EC-LEDS support for sustainable landscapes has reduced nearly 34 million tCO₂e during 2011-2015, with the most significant reductions in Malawi and Cambodia. Ongoing projects supported by EC-LEDS are expected to produce reductions beyond 2030. For example, nearly 30 million tCO₂e is expected to be reduced from existing projects in Colombia.
- Seven countries have generated nearly \$175 million in funds for communities. In Vietnam, EC-LEDS support for the national scaling of the Payment for Forest Ecosystem Services program generates more than \$60 million per year in payments to forest protection communities in key watersheds.
- EC-LEDS has leveraged \$8.4 million in forest support readiness funds and grants from UN-REDD and the Forest Carbon Partnership Facility (FCPF). These funds are used to further advance planning and implementation of programs to further reduce emissions from forested landscapes. In addition, partner countries have received \$3.5 million in REDD payments from the sale of carbon credits.

³ MW of clean energy due to completed assistance includes MW of generation capacity installed, at financial closure or projected from completed policy implementation (such as a successful energy auction). This aggregation differs from standard USAID indicators, where MW of generation capacity due to USG assistance includes only MW of generation capacity installed or at financial closure, with financial closure added only recently.

⁴ Includes actual emissions reduction to date from CE plus projections through 2030.

⁵ Bangladesh, Cambodia, Colombia, Guatemala, India, Indonesia, Malawi, Mexico, Peru, Philippines, Vietnam and Zambia.

Conclusions: EQ2

EC-LEDs's work to date is expected to achieve large quantities of emissions reductions as a result of the approaches it has applied.

Clean Energy-Specific Conclusions

Clear CE policies, regulations and targets are needed. EC-LEDs has had the most success in increasing CE where partners have a strong enabling environment for renewable energy, or where EC-LEDs has improved the enabling environment. Programs have been unsuccessful in countries with unsupportive policy environments and a lack of strong targets.

Energy sector transformation takes time. The most successful programs, such as in Mexico, took many years to achieve results.

Cost and pricing has a big effect on mitigation opportunities. Wind and solar photovoltaic energy has recently become cost competitive in developing countries; however, most countries do not consider these technologies to be a large part of their future energy mix (as per current national plans).

Successful programs decrease financial barriers and/or increase investor confidence for renewable energy and energy efficiency development. Moderate success has been achieved in renewable development by increasing access to finance on a transactional basis (in Indonesia, the Philippines and Kenya). Success at a larger scale requires increasing investor confidence through policy development and the development of more focused and efficient institutional arrangements. In Mexico, assistance with documenting RE potential and with the energy auction design and related IT platform increased investor confidence by increasing the transparency of the auction. In Indonesia, the creation of a separate institution to buy renewable energy led to additional investment and renewable energy development.

Not all EC-LEDs programs are focused on long-term, transformative change. Several EC-LEDs programs instead focus on small-scale renewable and energy efficiency projects that will result in measurable emission reductions in the short term but that are unlikely to result in transformative change of energy sector emissions. Energy efficiency projects are prevalent in countries that lack a sufficiently supportive enabling environment for scaling up RE. This applies to programs in Bangladesh, Indonesia, the Philippines, Vietnam and Ukraine.

Sustainable Landscapes-Specific Conclusions

EC-LEDs sustainable landscapes outcomes are greatest where they include a focus on accessing sustainable landscapes financing, or where EC-LEDs sustainable landscapes programs have been operating the longest, offsetting the initial impact of lengthy startup times. Approaches that are widely adopted and generating multiple outcomes include REDD+ and payments for ecosystem services.

SL approaches that emphasize meeting the criteria of international finance standards have been effective in numerous countries and regions. Such approaches, and particularly those of REDD+ and the FCPF, serve to indicate a country's commitment to emission reduction objectives, reduce investor risk, and enhance the long-term financial viability of REDD+ and other projects.⁵

The lack of analytical rigor and technical capacity is a limiting factor for many EC-LEDs countries. Not all EC-LEDs country programs place a sufficient emphasis on developing systems to measure forest emission reductions, or include funds for third-party verification.

EC-LEDs indicators and monitoring systems are inadequate to gauge EC-LEDs SL outcomes and ensure progress toward international finance and markets requirements. A series of qualitative benchmarks will be needed to support this.

Payments for ecosystem services (PES) have generated substantial financial community benefits in Vietnam, and nascent efforts in the Philippines have met with initial small-scale success. The Vietnam PES program generated \$58 million in 2015 and this amount is expected to double over the next few years due to a USAID-supported regulatory change on hydroelectric payment rates. This is by far USAID's most successful program in terms of the generation of SL-related community benefits.

Recommendations: EQ2

Clean Energy-Specific Recommendations

Continue to focus on removing barriers to clean energy implementation. Programs should go beyond identifying barriers and focus interventions on removing barriers. Examples of interventions that have this potential include: (1) remove financial barriers, as in Indonesia through support for a new renewable off-taker, in Mexico through the design of support for the renewable energy auction, and in Kenya through direct financing and loan guarantees; (2) remove administrative barriers, as with the Philippines' Energy Virtual One Shared System (EVOSS); and (3) remove technical barriers, as in India through the grid integration program.

Re-engage with partner countries on renewable energy development in light of record-low prices, especially solar photovoltaic. The perception in many countries is that renewable energy is expensive and will raise electricity prices. Recent energy auction prices in Mexico and Peru demonstrate that renewable energy can be cost competitive with fossil fuels. In particular, NREL can help countries to become more familiar with cost-effective technology and approaches for future renewable energy development, and NREL should be given an increased role in this effort.

Sustainable Landscapes-Specific Recommendations

Encourage more rigorous monitoring and reporting of emission reductions (actual and projected). Data should be disaggregated by land use type and source of emission reductions. While GHG reporting has been mandatory for many years, there remain challenges with developing national reporting systems that can connect EC-LEDs interventions with measurable reductions in emissions. In many cases, softer measures, such as the number of hectares under improved management are reported, but these accomplishments are not always paired with emissions reduction reporting.

Program design should support an "end game" for emission reductions. Designs should consider the financial and technical resources for validation and verification as well as climate, community, and biodiversity co-benefits.

Consider increasing program emphasis on meeting the requirements and standards of international funding sources and investors (REDD+ and FCPF). Countries can receive valuable finance for planning and program startup; sources like the FCPF and other public and private investors can provide critical, sustainable sources of finance for management and permanence of emission reduction.

Examine the feasibility of expanding efforts to develop PES programs, and use the Vietnam program as a model. This should include examining how the Vietnam PES program has helped to lay a foundation for the country's REDD+ efforts.

EQ3: How has the EC-LEDs program contributed to partner countries' engagement in international climate change mitigation efforts?

Findings

All EC-LEDs partner countries were engaged partners in the UNFCCC process prior to the conception of the EC-LEDs program. The focus of the evaluation team's effort to answer this question was to examine how EC-LEDs supported the development of partner country *capacity* to participate in international climate mitigation efforts. In this case, "capacity" reflects a country's ability to analyze GHG missions and conduct economic modeling of mitigation options, including development of business-as-usual (BAU) emissions projections to be able to complete UNFCCC reporting requirements.

Seventeen of the 26 EC-LEDs partner countries received USG support for their INDC development process—either directly for the development of their INDC reports or through support provided for emissions measurement and mitigation analysis.⁶ Technical support included: (a) operationalization of INDC policy frameworks, (b) development or enhancement of sustainable GHG inventories, (c) development of national and sectoral BAU scenarios, (d) development of national climate action plans, and (e) review of previous climate data to support INDC implementation. As detailed under EQ1, EC-LEDs has provided significant support to build mitigation analysis capabilities.

In many EC-LEDs countries, the level of support provided for INDC development was substantial and greatly appreciated, including and especially for Malawi and the Philippines. EC-LEDs reporting indicates that there was extensive support provided in developing INDC-related analysis in the following countries: Colombia, Guatemala, Jamaica, Malawi, Mexico, the Philippines, and Zambia.

In terms of helping foster the willingness of partner countries to participate in international climate change processes, it is not possible to make a conclusion about EC-LEDs' influence. Countries have largely demonstrated their willingness by submitting INDCs, but it is not clear how or to what degree this was influenced by EC-LEDs. The evaluation team did hear several anecdotal examples of how EC-LEDs increased countries' willingness to participate in negotiations, but it is not possible to quantify this influence. One example is that the Philippines, over the course of working with EC-LEDs, dramatically shifted its view toward mitigation from opposing action to actively analyzing and identifying mitigation opportunities, and to being a vocal supporter of the need for mitigation action.

As noted under evaluation question 1, the most direct benefit of EC-LEDs assistance has been to help partner countries gain analytical skills and tools, and to provide support for their emissions analysis and mitigation planning. These tools were essential to enabling countries to meet UNFCCC process requirements and to produce INDCs. All EC-LEDs partner countries produced and submitted INDCs.

Conclusions: EQ3

Assistance to support partner countries' engagement in international climate mitigation engagement has been effective by building the capacity required to conduct GHG emissions measurement and analysis. The skills and tools that have been introduced by EC-LEDs have been used to develop science-based foundations to enable countries to understand emission sources, identify cost-effective mitigation actions, and to develop plans to implement low emission development pathways.

⁶ Cambodia, Colombia, Ethiopia, Gabon, Georgia, Guatemala, India, Jamaica, Kazakhstan, Kenya, Malawi, Mexico, Peru, Philippines, Ukraine, Vietnam, and Zambia.

The conclusion that EC-LEDS assistance was effective in building partner analytic capacity is based on discussions with agencies in partner countries—many of whom received extensive support in this area and who indicated the support was highly effective. The evaluation team also heard several anecdotal examples indicating that EC-LEDS’ engagement led to more robust dialogue around setting emissions goals, and helped to provide U.S. agencies opportunities to engage with partners around developing robust climate mitigation strategies.

EC-LEDS Support to Malawi’s INDC Development

A representative from the Environmental Affairs Department stated, “We would not have been able to complete and submit our INDC without the assistance of USAID.” Malawi’s successful INDC submission was integral to increasing the country’s prominence at the Paris COP, where Malawi lead the Adaptation Team for the Least Developed Countries. One member of the negotiation team said of Malawi at the Paris COP: “Because of the INDC, we were able to punch above our weight.”

Recommendations: EQ3

Continue to support the analysis of mitigation options, as needed: each EC-LEDS country should receive continued support in data analysis of GHG inventories, cost-benefit analysis, and marginal abatement cost curves, if required to further define and implement their mitigation priorities. However, and as stated under the EQ1 analysis, additional support in this area should be based on an assessment of need as many countries have already built substantial capacity in this area.

The cost of mitigation is a major factor in partner countries’ willingness to implement emissions mitigation programs. It is critical that EC-LEDS continue and increase its focus on helping countries to reduce the cost of mitigation actions and access external finance. Assistance in this area could include helping countries gain familiarity with new CE technologies, support for feasibility analysis and expanding the use of market mechanisms, such as transparent energy auctions, to help make CE implementation more cost effective and feasible.

EQ4: How has the “whole-of-government” approach affected implementation of the EC-LEDS program?

Findings

In the EC-LEDS whole-of-government (WoG) approach, other agencies participate under the leadership of USAID, generally using funding from USAID. EC-LEDS WoG process includes participation from the full range of partner agencies in scoping missions and in the provision of technical assistance. The program is co-managed by USAID and DOS, although USAID is responsible for the day-to-day management of technical assistance activity. NREL has supported information management and coordination, and organizes periodic coordination calls among participating agencies.

An agency’s involvement in EC-LEDS generally begins with an interagency scoping trip to a partner country. The initial round of scoping trips included broad participation from all the agencies interested in being involved in a country program. Overall, the level of involvement of individual agencies varied greatly from country to country. Under the initial round of scoping trips, six country trips had more than three agencies involved whereas the WoG approach was not used in seven countries. The initial large interagency scoping trips, while perceived as useful, were expensive and unwieldy; later trips involved fewer participants.

A major benefit of EC-LEDS WoG process is the availability of a wide range of skills and tools. Agencies have applied several of their standard tools across the program. Some of the most frequently applied tools

have included the EPA's GHG Inventory Development Toolkit; NREL's Renewable Energy Geospatial Toolkit and its Grid Integration Analysis/Greening the Grid Toolkit; and Colorado State's Agriculture and Land Use GHG inventory software, which has been applied by EPA and USFS.

In all field visit countries, the evaluation was told by USAID and country partners that having access to the high-level technical expertise of specialized agencies was a significant benefit of EC-LEDS, and enhanced the program's value. In both Colombia and Mexico, NREL was identified as a particularly valuable partner, while the same was said of the DOS in Bangladesh and the Philippines, the USFS in Malawi, and of the EPA in the Philippines and Bangladesh. The inclusion of USG agencies in addition to USAID gives the program a breadth and depth that would be difficult for USAID to accomplish on its own.

In the case of USFS, support sometimes appeared to operate more in a stand-alone or parallel capacity without integration into longer-term projects that can guide the efforts and provide a mechanism for long-term capacity building, as was the case in Indonesia. The use of a long-term USFS embedded advisor in Malawi was critical to the successful development of the country's REDD+ Action Plan, and climate change embedded advisors have had a positive and wide-reaching impact on planning and policy development in a number of countries, and most especially in Colombia.

There was concern mentioned in several countries that EC-LEDS does not have a strong brand or identity (Malawi, Vietnam and Peru). For example, the Missions may not use EC-LEDS as an organizing principle, or only see it as a reporting exercise. In addition, it is not always clear to government and implementation partners which projects or support activities are part of EC-LEDS. In part, this is because projects are not identified as being part of EC-LEDS, or because mitigation is not managed holistically across projects and agencies. Also, USAID country programs and partner governments are not always familiar with the full range of tools and skills the program can provide.

EC-LEDS performance reporting consists of information provided by USAID Missions relating to standard reporting measures, and is supplemented by narrative submissions of highlight accomplishments.

Conclusions: EQ4

The WoG approach has worked well in enabling the development of country-level plans to support low emission development planning, in accessing a range of high-level technical assistance from specialized U.S. Government agencies, and in coordinating with EC-LEDS partner countries to prioritize and address needs. All agencies involved expressed satisfaction with the program's management and coordination.

A significant reason for the program's effective management and coordination is that USAID controls much of the funding and acts as a coordinator for the delivery of in-country assistance. Where the WoG approach has been actively coordinated by USAID Missions it has improved the implementation of EC-LEDS through the timely participation of a range of specialized USG agencies. This process has enabled the specialized skills of USG agencies to be applied in direct support of the objectives of in-country implementation programs, and in support of bilateral technical assistance projects.

Agencies that offer standard approaches and tools, such as the use of EPA's GHG inventory toolkit and NREL's use of solar and wind mapping tools, offer services that are easily understood and are available in packages that can be effectively transferred. The work of USFS, which uses custom approaches to fit the needs of each country, has more difficulty in consistently gaining traction in terms of the sustained application of their assistance.

Recommendations: EQ4

Continue to manage the program as per the current structure; however, revisit the performance reporting system to standardize performance information reporting across agencies and to focus on assessment of capacity achievements as per core LEDS components and the implementation of LEDS-related mitigation actions.

Develop an inventory of EC-LEDS tools to use as a guide for planning further assistance. EC-LEDS can provide a broad range of technical support, but the full suite of tools and skills available through the program are not necessarily familiar to USAID missions or partner governments. A clear documented inventory of EC-LEDS tools can serve as a basis for identifying the support required to help countries further their progress in LEDS development and help partners better understand the assistance that is available.

Better integrate USFS support into mission forestry programs and increase the use of embedded technical advisors to develop REDD+ and related programs. These efforts should be closely tied into and coordinated with bilateral forestry implementation projects and require host country commitment to transferring capacity to its own staff.

USAID should consider developing a communications strategy around EC-LEDS so that the program, its purpose, and its many components can be readily understood. Consideration should include: 1) clarifying the definition of the program, e.g., whether it is a broad climate change program, or is more targeted toward development and implementation of national LEDS, and; 2) re-branding and redefining the program to emphasize its core focus.

INTRODUCTION

This report presents the findings, conclusions, and recommendations from a performance evaluation of the Enhancing Capacity for Low Emission Development Strategies (EC-LEDS) program. The Global Climate Change Office in the Bureau for Economic Growth, Education, and Environment of the United States Agency for International Development (USAID/E3/GCC) commissioned the evaluation, and the E3 Analytics and Evaluation Project designed and conducted the evaluation.⁷ The purpose of the evaluation, which focused on the first five years of EC-LEDS (FY2010 – FY2015) was to review the program’s progress and make recommendations for the next five years of implementation. Annex A provides USAID’s Statement of Work for the evaluation and Annex B presents the evaluation team’s Evaluation Design Proposal (the annexes have been redacted).

The Enhancing Capacity for Low Emission Development Strategies Program

Launched in 2010, EC-LEDS is a flagship program of the United States’ Global Climate Change Initiative (GCCII) and is USAID’s key climate change mitigation program, encompassing both clean energy (CE) and sustainable landscape (SL) funding. The EC-LEDS program advances the international goals of the U.S. Climate Action Plan by providing technical assistance and building a shared global knowledge base on low-emission development strategies (LEDS). Low-emission, climate-resilient sustainable economic growth is highlighted as a U.S. diplomatic and development priority in the 2010 U.S. National Security Strategy, the President’s Policy Directive on Global Development, the President’s Climate Action Plan, and the 2010 Quadrennial Diplomacy and Development Review.⁸

Low Emission Development Strategies

LEDS are commonly defined as “forward-looking national development plans or strategies that encompass low-emission and/or climate-resilient economic growth.” Typically, LEDS comprise all or most of the following elements:

- A profile of a country’s emissions data and projections
- Economy-wide, broad long-term mitigation goals (in the range of 15 to 30 years)
- Analysis and prioritization of cost-efficient mitigation options
- Identification of specific short- and mid-term mitigation actions

LEDS are characterized by a strong focus on economic and social development in consideration of low-carbon-growth principles. LEDS may be national, sub-national, or sector focused.

The program began in 2010, currently works with 26 countries,⁹ and has obligated more than \$400 million to date. Funding for the program comes from the U.S. Government’s (USG’s) International Affairs budget under the area of combating global climate change. USAID is the main USG implementation agency for EC-LEDS and the majority of EC-LEDS funding is implemented through USAID missions under contracts and cooperative agreements.

⁷ Team lead Management Systems International, A Tetra Tech Company, implements the E3 Analytics and Evaluation Project in partnership with Development and Training Services, a Palladium company; and NORC at the University of Chicago.

⁸ Performance.gov, FY 2014-15 Agency Priority Goal: Climate Change.

⁹ The 26 EC-LEDS partner countries are Albania, Bangladesh, Cambodia, Colombia, Costa Rica, Ethiopia, Gabon, Georgia, Guatemala, India, Indonesia, Jamaica, Kazakhstan, Kenya, Macedonia, Malawi, Mexico, Moldova, Peru, the Philippines, Serbia, South Africa, Thailand, Ukraine, Vietnam, and Zambia.

The EC-LEDS program is a “whole-of-government” (WoG) initiative under the joint leadership of USAID and the U.S. Department of State (DOS). USG interagency partners include the Department of Agriculture (USDA), the Department of Energy (DOE), DOS, the Environmental Protection Agency (EPA), the United States Forest Service (USFS), and USAID.

The primary role of each USG participatory agency as is follows:

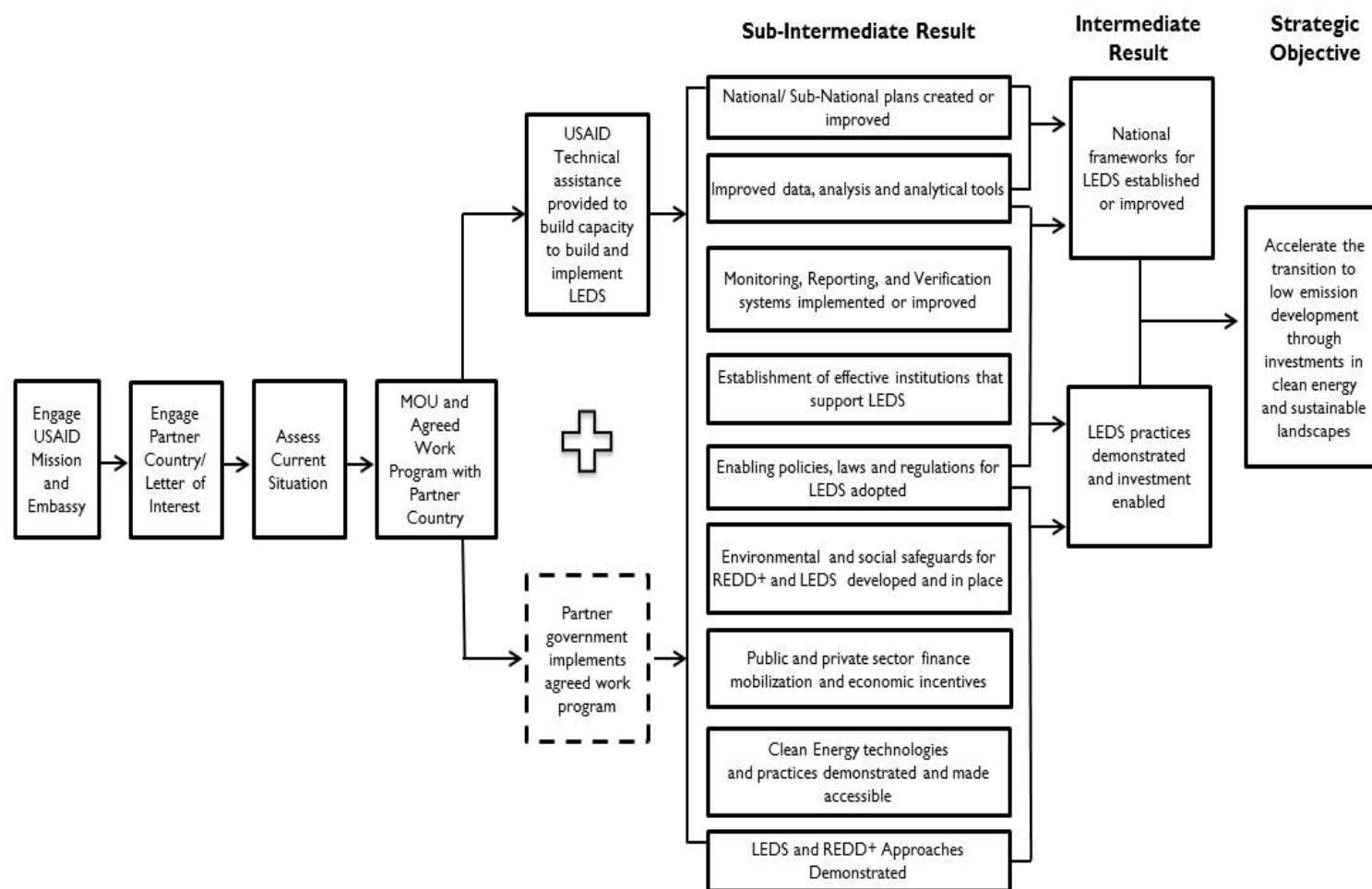
- **USAID** co-manages the program, and implements a majority of technical assistance activities through contracts and cooperative agreements. USAID also oversees inter-agency agreements with the USFS, DOE, and EPA.
- **DOS** co-manages EC-LEDS, supports international climate negotiations and manages an Inter-Agency Agreement with USDA.
- **EPA** provides technical assistance focused on the development of greenhouse gas (GHG) inventories.
- **DOE**, mainly through the National Renewable Energy Laboratory (NREL), provides a range of technical assistance related to analysis and development of renewable energy systems.
- **USDA** supports the development of climate-smart agricultural development.
- **USFS** provides support for forest management and the development of forest inventory monitoring systems, including for forest carbon measurement.

Technical assistance provided under EC-LEDS generally falls under the following categories:

- **Development of LEDS Frameworks** includes developing institutional management arrangements; GHG inventory development; economic modeling of mitigation options; and support for monitoring, reporting, and verification systems. LEDS planning is supported at the national, sub-national, and sector levels.
- **Clean energy implementation** includes support for renewable energy and energy efficiency policies, plans, and programs; facilitating renewable energy financing; and applying tools and platforms to increase the adoption of renewable energy.
- **Sustainable landscapes implementation** includes support for forest management and protection; REDD+ readiness and development; mangrove restoration; forest carbon inventory, monitoring; and climate-smart agriculture.

The results framework shown in Figure 1 illustrates the program’s sequential stages for achieving intended results. For each participating country, the EC-LEDS program is unique; the funding, presence of other donor activities, and country priorities determine the final package of USG technical support. Partner country agencies typically include ministries of energy, forestry, and agriculture, as well as provincial governments and program-focused offices, such as a climate change office.

FIGURE 1: THEORY OF CHANGE FOR THE EC-LEDS PROGRAM



LEDs typically include: (1) increased incorporation of renewable energy and lower-carbon fuels in the energy supply mix; (2) increased efficiency in the supply or end-use of energy; (3) forestry management and protection projects, such as REDD+, intended to generate verified emissions reductions; and (4) sustainable land use and agriculture projects that mitigate land-based emissions. EC-LEDs works toward two key intermediate results: (1) improved national frameworks for LEDs, and (2) demonstrated LEDs practices and investment enabled.

The EC-LEDs Approach

Whole-of-Government

The EC-LEDs approach is built upon whole-of-government cooperation, and a structured design process, as described below.

- **Whole-of-Government:** Part of the theory behind the EC-LEDs program is that country-driven strategies are more likely to be sustainable than those developed primarily by donors or other external technical experts. This requires engagement at multiple levels of government and across various ministries and other functional areas.
- **Initial Scoping:** The EC-LEDs engagement process typically begins with multi-agency country visits. Scoping trips identify priority areas of potential collaboration between partner countries and EC-LEDs. These priorities serve as a basis for the development of a memorandum of understanding (MOU), which formalizes the collaboration between the USG and partner country governments.
- **Agreed Work Program (AWP):** AWP are multi-year plans that specify areas of cooperation, expected milestone achievements, and the technical assistance roles of the EC-LEDs USG agencies. Following the development of AWP, the individual USAID missions and other USG agencies work directly with partner country counterparts to implement activities in each country

The Low Emission Development Strategy Process

To support countries' progress toward low-emission development, the NREL, the Technical Secretariat for the EC-LEDs program, has identified the following five LEDs steps:¹⁰

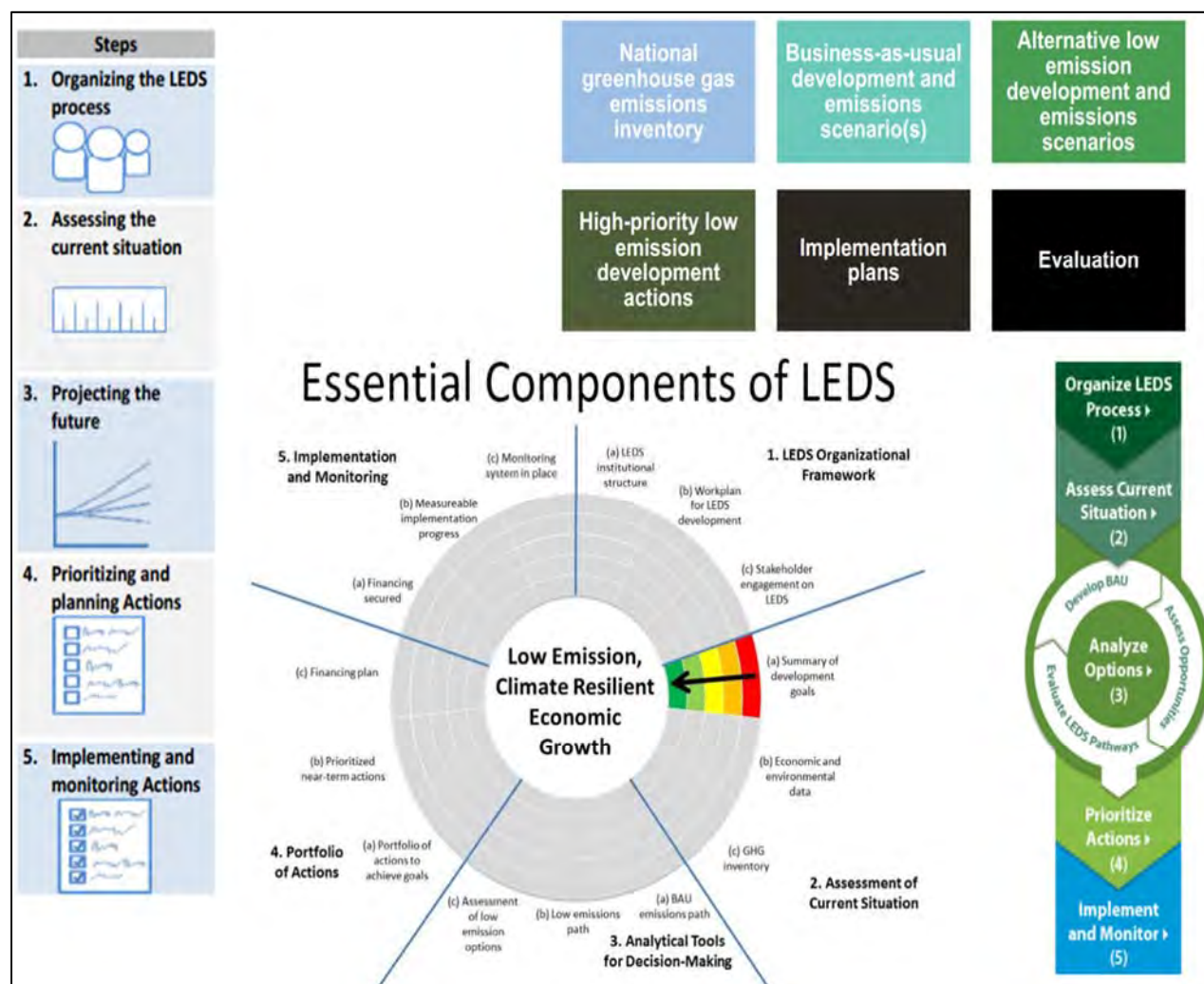
1. **Organize the LEDs Process:** Establish an institutional structure and process to develop a LEDs, including mechanisms for stakeholder engagement.
2. **Assess the Current Situation:** Collect data that describe the current context, such as development goals, national GHG emissions, and economic and resource data.
3. **Analyze Options:** Develop and compare long-term projections of business-as-usual (BAU)¹¹ and low-emission economic growth and GHG emissions trajectories. This includes the creation of alternative development scenarios to decouple economic growth from emissions growth.
4. **Prioritize Actions:** Identify and launch priority actions to achieve near-term concrete results. An implementation plan is developed to support these actions, which includes timetables and strategies for financing, attracting investment, and measuring progress.
5. **Implement and Monitor:** Implement the partner country's LEDs, including monitoring progress and updating LEDs.

¹⁰ Low Emission Development Strategy Process. NREL. <https://www.ec-leds.org/leds-tools/leds-process>

¹¹ "Business-as-usual" is an analysis that provides a projection of future GHG emissions based on current economic policies and projections, BAU emission projections are used as a baseline against which to measure the degree of emissions reduction that will result from future mitigation policies and programs.

There is no single, commonly used LEDS process framework; rather, variations of the LEDS process exist. Some common LEDS process frameworks are presented in Figure 2, which includes summaries from EC-LEDS (the circle), the NREL presentation (far left and right below), and a presentation used by the USAID/RDMA-supported Low Emissions Asian Development (LEAD) project (upper right).

FIGURE 2: MULTIPLE EXAMPLES OF LEDS PROCESSES



Sources: Far Left and Far Right – NREL's Open Energy Information Wiki, en.openei.org/wiki/Gateway:Low_Emission_Development_Strategies; Center – EC-LEDS 15 sub-set framework; and Upper Right – presentation used by USAID/RDMA-supported LEAD project.

For this study, the evaluation team, using a combination of the LEDS processes in Figure 2, has defined the LEDS process as having seven components¹², discussed in subsequent sections.

Planning Components:

- Establishment of institutional and management arrangements
- Development of GHG inventories

¹² Through extensive analysis of the desk review framework, coupled with data collected during the pilot field visit, the evaluation team adjusted their definition from the “eight step” process that was outlined in the Design Proposal to this collapsed version of a “seven components” process.

- Prioritization of mitigation efforts, including business as usual (BAU) projections and INDC submission
- Development of specific action plans (national, sub-national, sectoral)

Implementation Components:

- Supporting policies and regulations
- Finance for Implementation
- Implementation of LEDS action plans

EVALUATION PURPOSE AND METHODOLOGY

Evaluation Purpose

The purpose of the performance evaluation of the EC-LEDS program is to provide USG agencies, partner country stakeholders, and LEDS implementers with information to:

- Demonstrate results of the EC-LEDS program to key USG and partner country stakeholders;
- Improve the delivery of activities related to EC-LEDS to maximize results delivered in future years;
- Provide evidence to inform the development of USAID's development strategy; and
- Potentially inform national approaches to future international climate change negotiations.

This evaluation examines the results of the first five years of the program (FY2010 – FY2015), and focuses on the overall EC-LEDS program, rather than the performance of individual activities.

Evaluation Questions

The evaluation answers the following questions:¹³

EQ1: Which EC-LEDS interventions have been effective in contributing to partner countries' low-emission development, and why?

EQ1a: Has LEDS planning resulted in implementation?

EQ1b: Have LEDS implementation actions resulted in actual/projected emission reductions and development impacts?

EQ2: How has the EC-LEDS program contributed to partner countries' progress toward LED outcomes?

EQ3: How has the EC-LEDS program contributed to partner countries' engagement in international climate change mitigation efforts?

EQ4: How has the "whole-of-government" approach affected implementation of the EC-LEDS program?

¹³ The questions presented here differ from USAID's original evaluation questions presented in the SOW in Annex A. Following the Malawi scoping trip and numerous discussions between USAID/E3/GCC and the evaluation team, USAID approved a revised set of evaluation questions, which are the ones provide here.

Evaluation Methodology

This evaluation used a mixed-methods approach that incorporated a range of primarily qualitative data methods, with quantitative analysis used to analyze program outcomes. The evaluation's qualitative research components were built on a desk review framework, key informant interviews, and a multi-site field visit approach. A detailed description of the evaluation's methodology can be found in the Evaluation Design Proposal provided in Annex B. The main components of the evaluation's methodology are presented below and in Table I.

Desk Review

The desk review primarily focused on answering EQ1 and EQ2, while serving as the foundation for sub-questions EQ1a and EQ1b, as well as EQ3 and EQ4. It was comprised of the following main components: (1) preliminary desk review, (2) intervention-outcomes mapping, and (3) analysis of outcomes. The primary documents used for the desk review included: USAID Performance Portfolio Review reports; implementing partner activity reports; Annual Priority Goals (APG) reports; key issues narratives; and activity evaluation reports. The desk review also included data from other climate change data sources, such as WRI's Climate Action Tracker (CAT) and Notre Dame's Global Adaptation Index (ND-GAIN). The desk review team included the input of seven research analysts and subject matter experts and took place primarily between March and July 2016.

The desk review began by creating an inventory of all EC-LEDS implementing mechanisms (IMs), interventions, and outcomes reported for all 26 EC-LEDS partner countries. This inventory allowed the evaluation team to analyze interventions across all partner countries and to align program contributions to the achievement of LED-related outcomes. For the six field visit countries, up to four IMs were selected for in-depth review, and up to two for the 20 non-field visit countries. IMs were selected based on covering a mix of sustainable landscapes and clean energy financing and the timeframe in which the IMs took place. For the six field visit countries, the evaluation team produced a detailed field report, which included a general overview of the overall situation in the country, an overview of the country's current climate change actions, EC-LEDS accomplishments to date, relevant policies and frameworks, key institutions and APG, and other important milestones. It also included information about the principal IMs and the highlights of each program. These reports allowed the evaluation teams to go into the field prepared with a basic understanding of the program. For the non-field visit countries up to two IMs were selected for review from each country, including one with CE funding and one with SL funding. The primary interventions from these IMs, and the associated outcomes, were identified and catalogued. Eight of these non-field visit countries were also invited to take part in phone interviews, of which five participated (Bangladesh, Kazakhstan, Kenya, Peru and South Africa).

Multi-Country Fieldwork

The selection of field visit countries was based on key EC-LEDS interventions, GHG emissions, EC-LEDS program intensity, regional representation, and feasibility and practicality. The evaluation focused on countries with multiple agency involvement to better assess the success of the WoG aspect of the program. A detailed description of the selection criteria and process is provided in the Evaluation Design Proposal in Annex B.

The evaluation team visited six countries: Colombia, Indonesia, Malawi, Mexico, the Philippines, and Vietnam. Each team consisted of an evaluator, an international subject matter expert, and a local subject matter expert to both provide context and assist with logistics, meetings, and—where necessary—translation. Each team used the information from the initial field reports to inform preliminary phone calls with the USAID mission in each country. The calls shared the purpose and proposed structure of the

evaluation with the mission, requested initial contacts, added key informants recommended by mission staff, and made initial adjustments to the evaluation schedule as necessary. The informants included a range of stakeholders, including USG and partner country government officials, implementing partners, and other knowledgeable experts. The interviews focused on developing an understanding of EC-LEDS interventions and the outcomes associated with these interventions, including the actions of partner countries in developing and implementing LEDS. A fieldwork report was produced for each country visited; these reports are provided in Annex E.

Semi-Structured Interviews

A semi-structured interview questionnaire (provided in Annex G) was used to collect data in fieldwork countries. The questionnaire was tested during a pilot field visit to Malawi in April 2016 and further adjusted based on desk review activities and additional consultations with the USAID/E3/GCC staff. A list of informants interviewed for this evaluation is provided in Annex H. The evaluation team also conducted a series of interviews with U.S.-based staff from participating USG agencies, including USAID, DOS, DOE/NREL, USFS, EPA, and USDA.

LEDS Process Matrix

Across the desk review, fieldwork, and interviews, data collected was against a matrix listing the seven LEDS steps or components on the horizontal axis and the party responsible for the action on the vertical axis. This matrix was used as an organizing framework for collecting information about the activities in each country helped both the evaluators and the informants discuss the activities in an orderly way, and served as a reminder for smaller activities that might otherwise be forgotten. It also demonstrated the relationships between the actors for each action and allowed the evaluators to both trace forward the IM activities to the local government actions and trace back from the local government actions to see the contribution from the IMs. These data were then used to create Table 3 and Figure 4 that detailed the progress of each country through the planning and implementation steps: creation of institutional arrangements, GHG systems developed, analysis completed and mitigation priorities identified, and implementation begun, including funding secured.

Other evaluation questions (EQ3 and EQ4) addressed the partner countries' whole-of-government approach and explored partner countries' ability and willingness to participate in international climate change negotiations, successes and challenges from the program, and recommendations for future programming. This exercise provided insight across all EQs, affording the evaluation team a more in-depth understanding of the program's challenges and accomplishments, while validating and validated information from the desk review, as well as afforded the evaluation team a more in-depth understanding of the program's challenges and accomplishments.

Table I indicates the main sources that provided information to answer each of the evaluation questions.

TABLE 1: PRIMARY DATA SOURCE FOR EACH EVALUATION QUESTION

Evaluation Questions	Desk Review	IM Field Interviews	Local Government Field Interviews	USG Agency Contacts	Telephone Interviews
EQ1. Which EC-LEDS interventions have been effective in contributing to partner countries' low emission development, and why?					
EQ1a. Has LEDS planning resulted in implementation? *					
EQ1b. Have LEDS implementation actions resulted in actual/projected emission reductions and development impacts? *					
EQ2. How has the EC-LEDS program contributed to partner countries' progress toward LED outcomes?					
EQ3. How has the EC-LEDS program contributed to partner countries' engagement in international climate change mitigation efforts? *					
EQ4. How has the "whole-of-government" approach affected the implementation of the EC-LEDS program? *					

*Note that though the desk review served as the foundation for all EQs, however, it primarily addressed EQ1 and EQ2.

Analysis Framework

The evaluation team conducted a review of select IMs, and identified key interventions and mapped these to program outcomes, including for planning and implementation activities. Fieldwork explored the causal linkages between interventions and development results/EC-LEDS outcomes.

The following EC-LEDS outcomes were captured and analyzed:

- **Development of LEDS**, including national, sub-national, and sector-level strategies and plans and the capacities required to develop these plans.
- **CE implementation**, including:
 - Clean energy generation, as measured in kilowatts (KWs)
 - Energy savings, as measured in KWs
 - Clean energy finance, as measured in the dollar value of deals closed
 - Actual and projected emissions reductions, as measured in tonnes of CO₂e
- **SL implementation**, including:
 - The number of hectares of forest under improved management
 - Natural resource management funds distributed, as measured in dollars
 - REDD readiness funds received, including from UN-REDD and the Forest Carbon Partnership Facility (FCPF)
 - REDD payments received, as measured in dollars
 - Other SL funds leveraged to finance land management programs, as measured in dollars
 - Emissions reductions – actual and projected, as measured in tonnes of CO₂e

Limitations

The evaluation was confronted with several challenges, many of which are inherent to multi-site evaluations of large-scale programs composed of disparate activities. Limitations included:

- USAID provided more than 2,000 documents, but data for some key programs was limited or not available (e.g., there was limited data from India and reports received from some partners, such as EPA and USDA, was sparse or unavailable).
- Program complexity and context variances were concerns. The EC-LEDS program operates in a variety of differing country contexts, including countries with varying levels of resources, analytic and scientific capabilities, and governance systems. This presented a challenge in developing generalizable conclusions.
- Partner country LEDS receive support from a multiplicity of donors, as well as from national budgets. This presented a challenge in analyzing the contributions of EC-LEDS interventions.
- Since the evaluation was conducted while the EC-LEDS program was on-going, it intersected each partner country program at a different stage, with some having already completed several years of activities, while others may have just recently reach the technical assistance stage. In some countries, the major programs had finished and it was difficult to get information for program actors. An example is BIOREDD+ in Colombia, which completed activities in 2014, whereas EC-LEDS program activities did not begin in South Africa until 2014.
- Informants may not have properly recalled details of the projects and not understood which activities were carried out by which organization. For example, in Colombia the director of IDEAM told the evaluation team that the organization had worked only with USAID, but one of his employees reminded him that other agencies completed some work he had discussed earlier in the interview.
- In most cases, it was not possible to identify the relationship between LEDS implementation actions and partner country actions based on the desk review. The best analysis of the relationship between EC-LEDS interventions and country actions, including contribution analysis, was obtained during fieldwork, which was limited to six countries.
- The monitoring and reporting system used by EC-LEDS collects country-specific, often qualitative targets and milestones, as a result there is insufficient use of existing standardize performance indicators or outcome information. In some cases, performance information that is collected was only recently introduced, such as the reporting of future projected emissions reductions from CE projects. In particular, there is a shortage of data on progress toward building LEDS capacity, including individual country progress and the application of LED skills and system in national development planning by partner countries. EC-LEDS does not collect standardized performance information for several of its intermediate results, which makes it difficult to assess the degree of success of LEDS capacity building efforts.

The evaluation also faced several sources of potential bias, including:

- The key informant interviews were usually set up through the local mission, which may tend to bias the information toward larger and more successful programs.
- As most informants were in the capital city and time for travel was limited, most interviews took place in the capital. Programs in remote locations were less likely to be interviewed than those in the capital city.
- Some respondents may have been overly positive about the program, as they perceive that as a way to ensure continued funding.
- Many of the other USG agencies do not have a constant presence in the country, which made it difficult to interview them.

Evaluation Team Composition

This study was led by a core independent evaluation team composed of Team Leader David Callihan, evaluation specialists Samuel Schueth and Piper Purcell, and multiple subject matter experts with strong climate change diplomacy, clean energy, and forestry sector experience. Core evaluation team members conducted in-country research that was supported by country teams of one or two additional local researchers. Each country evaluation team was composed of up to four individuals, including an evaluation specialist, a subject matter expert, and at least one national evaluation expert and/or climate change expert. The country evaluation teams were supported by researchers, logisticians, and translators, as needed within each country and from the E3 Analytics and Evaluation Project home office. Brief biographies of the core evaluation team members are presented in the Evaluation Design Proposal provided in Annex B. Conflict of interest disclosure statements for evaluation team members are retained by the MSI home office and are available upon request.

- Evaluation Team Leader: David Callihan
- Activity Coordinator and Evaluation Specialist: Piper Purcell
- Evaluation Specialist: Dr. Samuel Schueth
- Subject Matter Experts: Stephanie Bogle, Nora Nelson, Keith Forbes
- Technical Associate, Desk Review: Mai Yang
- Project Manager and Subject Matter Expert: Meredith Waters

EC-LEDS PLANNING ACTIONS, OUTCOMES, AND RESULTING LEDS IMPLEMENTATION (EQI, EQ 1a & EQ 1b)

There is a range of views within USAID as to how extensively to define EC-LEDS activity. Some individuals, including those at some USAID missions, take a narrow interpretation of EC-LEDS by limiting the program's definition to the support and actions that help partner countries develop LEDS (plans and strategies). Others take a broader view and see EC-LEDS as including all actions intended to reduce GHG emissions, including from financing, policy reform, and technology transfer. These latter actions are not necessarily the outcome of a country-owned LEDS planning process (as defined by USAID and NREL LEDS process descriptions), but can lead to low emission development actions.

In terms of reporting, EC-LEDS performance reporting does not include measures on the program's core function of building LEDS planning and analytic capacity nor are there measures for the degree to which such capacity has been created. Rather, EC-LEDS program reporting tends to focus on broadly capturing USG efforts in the areas of emissions reduction and related co-benefits.

This evaluation section examines EQI in terms of the process of developing and implementing —low emission development plans and strategies with partner country governments to reduce emissions (the narrower definition). Many LEDS are broad, high-level plans, such as the national LEDS and intended nationally determined contributions (INDCs), which outline a country's sources of emissions and identify potential mitigation sector priorities. Once national LEDS are developed, specific mitigation programs need to be designed to provide the details required for implementation. Therefore, not all national LEDS can be directly linked to implementation actions, but rather additional intermediary steps are necessary.

Many of the capacity-building actions supported by EC-LEDS are focused on planning, and are designed to create analytic capacity, such as the measurement of emissions. There are few direct linkages to implementation actions. In some cases, however, EC-LEDS does support the development of sector or sub-national emission reduction plans, which more directly lead to implementation. Examples of such plans would be transportation sector mitigation plans, or provincial mitigation plans.

The review of EC-LEDS support in this section is limited to plans, actions, and outcomes related to partner government development and implementation of LEDS. The broader outcomes of USG emissions reduction assistance—whether or not they come from stand-alone USAID projects, policy reforms, or other activities not directly linked to partner country LEDS—are analyzed under EQ2, in the subsequent chapter of this report.

The sections below will separately discuss the findings for EQI and sub-questions EQ1a, and EQ1b, followed by conclusions and recommendations. Table 2 illustrates the framework used for answering EQI and sub-questions.

TABLE 2: FRAMEWORK FOR EQ I

Evaluation Question	Framework
EQ I: Which EC-LEDs interventions have been effective in contributing to partner countries' low-emission development, and why?	Actions to build LEDs capacity: This question focuses on the actions taken by EC-LEDs to help countries develop LEDs. This includes assistance in GHG inventory development, and the analysis of mitigation options based on the use of tools such as cost-benefit analyses (CBAs) and marginal abatement cost curves (MACCs). ¹⁴ The outcome of this support is the development of LEDs.
EQ Ia: Has LEDs planning resulted in implementation?	LEDs implementation by partner countries: This question focuses on whether the LEDs plans, once developed, lead to implementation actions by partner governments.
EQ Ib: Have LEDs implementation actions resulted in actual/projected emission reductions and development impacts?	Outcomes from LEDs implementation: This question focuses on analyzing whether actions taken as a result of LED implementation, when implementation does occur, lead to development impacts, including emissions reductions.

EC-LEDs Planning Actions and Contribution to Partner Country LEDs Progress (Findings)

EQ I: Which EC-LEDs interventions have been effective in contributing to partner countries' low-emission development, and why?

The evaluation began its analysis by reviewing the EC-LEDs actions designed to support partner country LEDs planning. This includes the following actions:

- **Partner country institutional and management arrangements.** Establishment and support for climate change planning and management units at the national, sub-national, and sectoral levels.
- **Development of greenhouse gas inventories.** Support to create systems to measure GHG emissions from all major economic sectors. GHG inventories are a fundamental tool for reporting to the United Nations Framework Convention on Climate Change (UNFCCC), as well as for designing emissions reductions strategies.
- **Analysis and prioritization of mitigation efforts.** This work involves analysis of emission sources and identification of opportunities for mitigation, including the development of business-as-usual emissions projections, marginal abatement cost curves, and cost-benefit analysis of mitigation actions. This includes developing high-level mitigation plans, as required for UNFCCC reporting, such as the development of Intended Nationally Determined Contributions (INDCs).¹⁵
- **Development of specific action plans.** The development of national, subnational, and sectoral LEDs, including green growth planning and the development of REDD+ action plans.

Table 3 provides an overview of the EC-LEDs planning actions supported in partner countries. USG assistance was not always provided for a LEDs planning task because it may have been covered by other donors or otherwise prioritized by the partner country. Mexico, for example, already had extensive

¹⁴ A marginal abatement cost curve (MACC) is a visualization to present carbon emissions abatement options relative to baseline emission levels and organized by the economic cost of emissions abatement.

¹⁵ In anticipation of UNFCCC Conference of the Parties (COP21) in Paris in December 2015, countries publicly outlined what post-2020 climate actions they intended to take under the new international agreement, known as their intended nationally determined contributions (INDCs). The climate actions communicated in these INDCs largely determine whether the world achieves the long-term goals of the Paris Agreement: to hold the increase in global average temperature to well below 2°C.

institutional arrangements in place. Planning outcomes in the table are illustrative and represent a subset of the overall planning outcomes achieved.

Of the 22 countries, 50% of the countries, through EC-LEDS assistance, established institutional and management arrangements, while 81% of the countries developed greenhouse gas inventories, as well as prioritized mitigation efforts; and 86% have developed specific LEDS action plans.

As mentioned in the limitations section, there are several reasons why the study is not able to comprehensively identify EC-LEDS achievements across the entirety of the program, including partner countries receive LEDS support from a multiplicity of donors; or partner countries are in different stages of receiving EC-LEDS support. Notably, eight of the 22 countries (36%) have received support across all four planning components (Colombia, Guatemala, Kenya, Malawi, Peru, Philippines, Ukraine and Vietnam).

TABLE 3: EC-LEDS PLANNING ACTIONS BY COUNTRY, WITH ILLUSTRATIVE EXAMPLES OF PLANNING OUTCOMES

Country	Institutional & Management Arrangements	GHG Inventories	Prioritization of Mitigation Efforts, Including BAU & INDCs	Action Plans	Illustrative Planning Outcomes
Total = 22¹⁶	11	18	18	19	
Bangladesh	Y	Y	N	Y	Collected emissions data from all power sector participants to establish a full GHG inventory, including methodologies.
Cambodia	N	Y	Y	Y	Draft of five-year management plan completed for the Central Cardamoms Protected Forest (Supporting Forestry and Biodiversity).
Colombia	Y	Y	Y	Y	Placed consultants in 8 ministries and produced 10 Sectorial Mitigation Action Plans. The sectors involved include Industry, Energy, Mining, Transport, Housing, Waste, and Agriculture.
Costa Rica	N	Y	Y	Y	USEPA provided assistance to produce Costa Rica's Third National Communication to the UNFCCC, and to improve its GHG inventory.
Ethiopia	N	N	Y	Y	Lead role in preparing proposals for the Green Climate Fund (GCF). If granted, will bring in more than \$200 million.
Gabon	N	Y	Y	Y	National Resource Inventory adopted as the national system and database. Completed the National Land Use Plan (2016).
Georgia	N	N	Y	Y	EC-LEDS finalized seven Sustainable Energy Action Plans for the cities of Tbilisi, Batumi, Kutaisi, Zugdidi, Gori, Telavi, and Akhaltsikhe (covers 37% of the country's total population).
Guatemala	Y	Y	Y	Y	Assisted the Ministry of Environment and Natural Resources in developing 2020–2030 emissions scenarios for use in the INDC.
India	Y	Y	Y	N	At least 10 distinct improvements in data management and availability for REDD, GHG inventory, and India's NFI. Two data systems for forest GHG inventory deployed.

¹⁶ Individual country reports are not available for Albania, Macedonia, Moldova, and Serbia, as their programs are reported under the Eastern European regional program and it is not always possible to determine the extent of country-level assistance based on these reports.

Country	Institutional & Management Arrangements	GHG Inventories	Prioritization of Mitigation Efforts, Including BAU & INDCs	Action Plans	Illustrative Planning Outcomes
Indonesia	N	N	N	Y	Supported BAPPENAS in the development of local action plans for GHG emission reduction in 33 provinces from 2012 to 2014.
Jamaica	N	Y	Y	Y	LEDS agricultural sector plan completed and aligned with the Government of Jamaica's Climate Change Policy Framework.
Kazakhstan	N	Y	Y	Y	Major input to national GHG reduction goals in the form of INDCs, formally submitted to the UNFCCC Secretariat.
Kenya	Y	Y	Y	Y	Supported national GHG inventory, including a review of institutional structures and procedures.
Malawi	Y	Y	Y	Y	National REDD+ Strategy drafted by the Malawi REDD+ Advisor and the Government of Malawi.
Mexico	N	Y	Y	Y	Finalized a Grid Integration Road Map and updated solar resource maps (2014) to support implementation toward the 2024 goal of 35% clean energy. Also supported the first national energy auction.
Peru	Y	Y	Y	Y	Developed the institutional mechanisms to implement LEDS across government agencies. In December 2014, the GOP approved a law for the creation of a National GHG Inventory System (CARBONO).
Philippines	Y	Y	Y	Y	With EC-LEDS support, in 2014, the Philippines issued an executive order to establish the National GHG Monitoring and Reporting System. Continuing support is provided to the Climate Change Commission for GHG inventory analysis and UNFCCC reporting.
South Africa	Y	N	N	N	Establishment of a Project Management Office to identify and develop LEDS projects.
Thailand	N	Y	N	N	Supported Thailand Greenhouse Gas registry in use by at least 75 organizations, with 3.75 million tCO ₂ e reported.
Ukraine	Y	Y	Y	Y	Supported the National GHG Inventory Report submission of 2015 and provided expert support in Energy and Transport Sectors.
Vietnam	Y	Y	Y	Y	Support for development of three Provincial REDD+ Action Plans.
Zambia	N	Y	Y	Y	Helped Zambia develop and submit its INDC by assessing GHG data and developing a new baseline GHG inventory.
TOTAL	11	18	18	19	
%	50%	81%	81%	86%	

In the 23 countries for which data were available, the following planning support was provided and are further discussed below:

- Institutional and management arrangement support – 11 countries, 50 percent
- Development of greenhouse gas inventories support – 18 countries, 81 percent
- Analysis and prioritization of mitigation efforts – 18 countries, 81 percent
- Development of specific action plans – 19 countries, 86 percent

Individual Planning Components and Country Highlights

This section provides an overview of EC-LEDS planning components and planning outcome highlights achieved by the countries that have received this assistance. EC-LEDS provided substantial support for mitigation analysis and planning support, as have other programs, such as the U.N.'s Low Emission Capacity Building Programme, which was funded by the European Union, Germany and AusAid. Because EC-LEDS did not methodically measure the success of its efforts to build partner country LED capacity, the evaluation team was not able to develop an objective comparative analysis of progress across countries. However, through the desk review research and supplemented with fieldwork examples, it was possible to identify activities undertaken, and in some cases to assess progress achieved as a consequence of EC-LEDS support. In the cases where the evaluation team was able to capture examples of successful capacity building, highlights from these efforts are presented in the sections below. While these examples do not provide an objective comparative analysis across the program, they can be used to identify successful interventions and approaches, and to identify lessons for future support. For the six field visit countries examined in-depth, each country realized significant gains in emissions analysis and planning capacity.

Institutional and Management Arrangements

The establishment of groups to manage the LEDS process is an important and critical first step to developing and implementing this process. This work generally begins with a decision on which agency or agencies will be responsible for the implementation of the LEDS, and designating a lead agency or office. The LEDS process is inherently inter-disciplinary and planning transects economic sectors, including energy, industry, transport, agriculture, and forestry. Likewise, LEDS processes require the involvement of a wide range of stakeholders, including, government, the private sector, and civil society.

Many countries had formed national climate change committees or task forces prior to the engagement of the EC-LEDS program. In such cases, such as in Colombia, the Philippines and Vietnam, this provided EC-LEDS a structure to work with and helped to accelerate the effectiveness of EC-LEDS technical assistance. For example, the Climate Change Commission in the Philippines was established by the 2009 Climate Change Act and was active prior to EC-LEDS' engagement. In addition to support for national structures, EC-LEDS has also supported sector-level planning. For example, in Malawi, EC-LEDS support has been critical to the formation of the REDD+ Expert Group and the Charcoal Task Force (to address deforestation).

Examples of EC-LEDS support in this area:

- **Bangladesh:** EC-LEDS provided energy planning consultants under the Catalyzing Clean Energy Program (CCEP) to work with the Bangladesh Energy Regulatory Commission to revise the organization structure to initiate the development of an enabling planning and policy environment for the adoption of renewable energy and technologies. As part of CCEP, in efforts to increase institutional capacity of the Government of Bangladesh to collect, catalog, and analyze GHG emission data to identify reduction opportunities within the power sector. A GHG emissions data repository and energy policy scenario screen tool was developed for future tracking and analysis of GHG emission sources. This included training over 50 government representatives to be energy auditors through the Association of Energy Engineers.
- **Colombia:** EC-LEDS supported the hiring of climate change planning consultants for eight ministries, including Environment, Housing, Industry, Transport, Mines, Agriculture, Water and Sanitation, and the National Planning Department. Government plans at all levels—from national to municipal—are now required to include mitigation components.
- **Guatemala:** LEDS specialists were embedded in Ministry of Environment and Natural Resources, Ministry of Agriculture, Livestock and Food, and National Institute of Forests, in consultation with

senior leadership and climate change units of each institution. GHG data collection protocols and joint workplans were developed to achieve the objectives of the EC-LEDS MOUs.

- **Malawi:** With EC-LEDS assistance through the PERFORM activity, the government is pursuing an inter-ministerial and multi-stakeholder approach to addressing climate change. As part of the recommendations from the PERFORM activity's institutional arrangements options paper, a LEDS advisor has been embedded in a cross-ministerial working group to help coordinate the National GHG Team (NGHGT), which works across 11 ministries and operates from within the Environmental Affairs Directorate. The NGHGT has signed memoranda of understanding (MOUs) and drafted standard operating procedures (SOPs) with partner ministries on responsibilities and protocols for data collection. Though the SOPs are still in the draft stage, this institutional arrangement would not likely have been established without EC-LEDS support. Nearly all stakeholders interviewed by the evaluation team cited creation of an improved coordination mechanism to manage Malawi's LEDS process as the most significant change created by EC-LEDS.

Development of Greenhouse Gas Inventories

GHG inventories provide an accounting of greenhouse gases emitted into the atmosphere. They typically measure a country's main sources of emissions, including from energy, industry, waste, transport, agriculture, and forestry. GHG inventories provide a quantitative base to assess how a country can reduce its emissions while also considering abatement costs and economic growth objectives. Globally, these measurements are required for the UNFCCC process of assessing progress toward managing the effort to keep global temperature rise below 2 degrees Celsius.

Much of the work conducted by EC-LEDS in this area (in 18 countries) has been directly or indirectly based on the EPA's GHG Inventory Development Toolkit. EPA's approach is twofold: 1) EPA works with each country to improve its institutional capacity to create a system for producing regular national GHG inventories; and 2) EPA provides technical assistance in collecting data, developing analytical methods, and documenting the inventory process.¹⁷ This process helps countries build upon their prior emissions data collection and analysis efforts, and gain the capacity required to self-manage a GHG inventory. In some cases, such as in Bangladesh and the Philippines, EPA provided this assistance directly.

In other cases, EC-LEDS' implementing partners have used EPA tools and methodologies to support the development of partner country inventories. For example, the USAID/RDMA LEAD and the Philippines Building Low Emission Alternatives to Develop Economic Resilience and Sustainability Project (B-LEADERS) projects provided extensive assistance that was based on the use of EPA's tools.

Examples of EC-LEDS support in this area include:

- **Cambodia:** EC-LEDS provided technical assistance to the development of Cambodia's National Forest Inventory (NFI). The NFI established the foundation for measuring emissions curves from forest resources, land use and other natural resources.
- **Guatemala:** USAID helped to provide reliable analytics for GHG inventories and tools to assist with long-term planning, which includes a national GHG inventory system with standard protocols.
- **Indonesia:** Indonesia has created the necessary institutional and management arrangements for GHG inventory management in the form of the National Action Plan for Reducing Greenhouse Gas Emissions (RAN-GRK). EC-LEDS has supported the work of an embedded staff member in the RAN-GRK Secretariat, which is the institution under the Planning Ministry (BAPPENAS) that is responsible for monitoring and reporting on progress toward the INDC targets.

¹⁷ National GHG Inventory Capacity Building, USEPA, <https://www3.epa.gov/climatechange/EPAactivities/internationalpartnerships/capacity-building.html#Approach>

- **Philippines:** The most significant accomplishment to date of EC-LEDS in the Philippines has been the Government of the Philippines (GPH) institutionalizing the GHG inventory process, and the development of the capacity to conduct GHG inventories and related analyses. This assistance was cited as the most important EC-LEDS accomplishment by three key GPH stakeholders, including the Philippine Climate Change Commission's (CCC) former assistant secretary and the individual responsible for producing the country's INDC. Analytical work has included completing a large number of cost-benefit analyses (CBAs) to identify priority actions to reduce future emissions.

Analysis and Prioritization of Mitigation Efforts

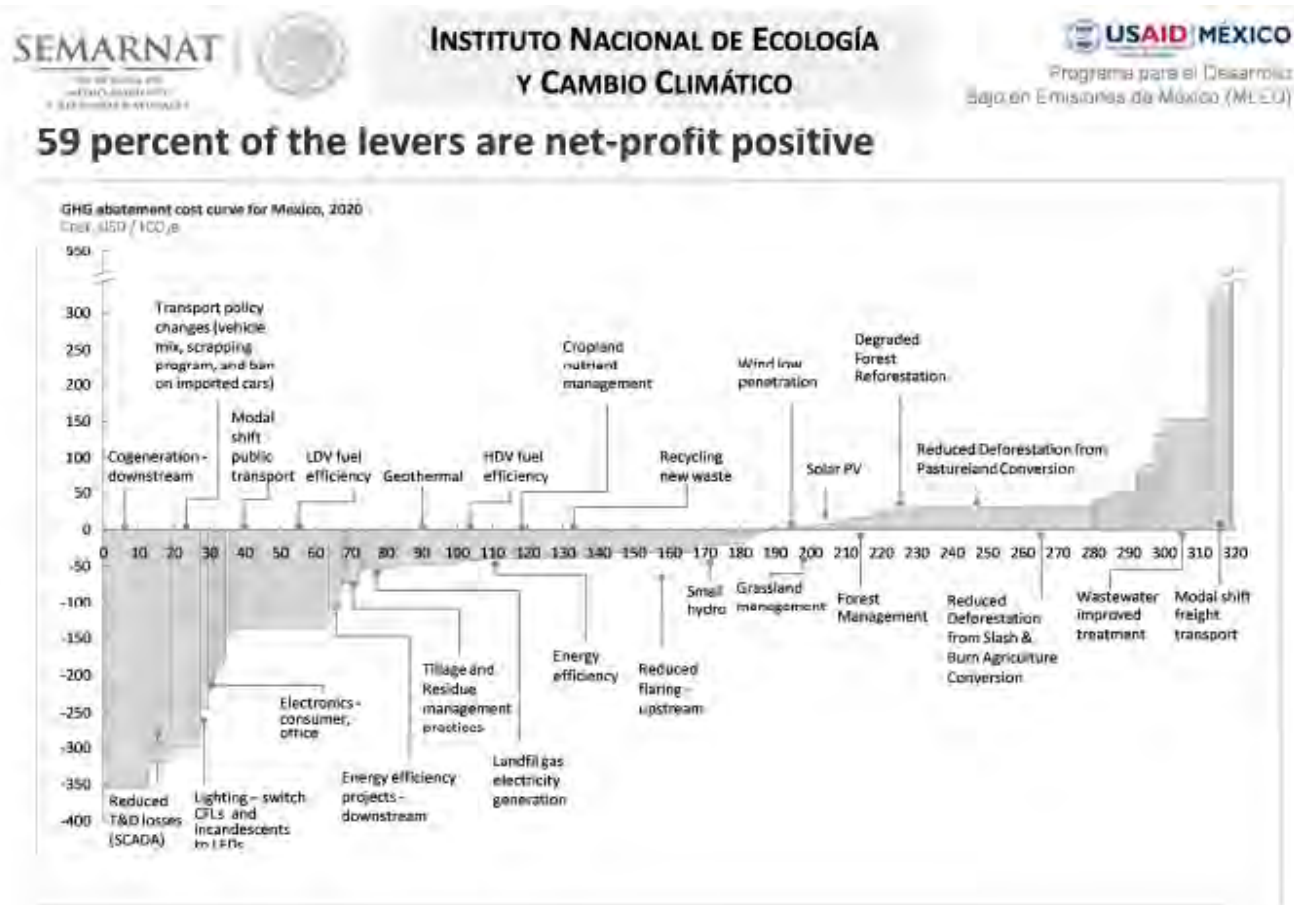
Mitigation analysis and planning work is often, but not always, based on GHG inventory data. Over the past year or so, a significant amount of effort has gone toward helping partner countries produce INDCs, which contain a profile of a country's emissions by sector and highlight priority areas for mitigation action.

Examples of EC-LEDS support in this area include:

- **Guatemala:** EC-LEDS provided substantial technical support for the revision of national-level GHG inventories, which included the development of a national marginal abatement cost curve; as well as provided technical assistance and facilitation to the development of Guatemala's INDC submission
- **Kenya:** Kenya has developed a National Climate Change Response Strategy (NCCRS 2010), National Climate Change Action Plan (NCCAP 2013), and a National Adaptation Plan (NAP) 2015-2030, which provide a vision for low carbon and climate resilient development. Kenya enacted the Climate Change Act 2016 and a National Climate Change Framework Policy (which is in the final stages of approval) to enable effective response to climate change. Kenya is operationalizing these policies and plans through the implementation of climate change actions in various areas such as afforestation and reforestation, geothermal and other clean energy development, energy efficiency, climate smart agriculture, and drought management. Kenya's Nationally Determined Contribution includes an ambitious mitigation contribution of a 30 per cent reduction in greenhouse gas emissions by 2030 relative to the business as usual scenario.
- **Indonesia:** The Long-Range Energy Alternatives Planning tool (LEAP), introduced by EC-LEDS with collaboration from the RDMA LEAD program, is being used to develop national and regional energy plans, including energy sector plans across 34 provinces. LEAP has been used to develop national sector plans and local energy planning documents (RUEDs), and for development of Indonesia's BAU and emissions trajectories. This planning work directly supports the Ministry of Industry's grid expansion work to enable the integration of more renewable energy into island grids.
- **Malawi:** An outcome of improved LEDS coordination in Malawi is that management of the country's mitigation efforts now actively involve an array of government agencies, and mitigation plans are being integrated into numerous ministries, most prominently the Directorate of Forestry and the ministries of Energy, Water, and Agriculture. A component of the plan developed to address deforestation calls for the Ministry of Energy to promote increased use of liquefied petroleum gas in urban areas for cooking, which is expected to decrease the demand for biofuel and thus reduce deforestation. Malawi's Director of Forestry summed up the importance of this accomplishment, stating: "For the first time in my career, effectively managing forests is no longer just a Department of Forestry problem. It is now an objective shared by multiple sectors, including agriculture, energy, and water."
- **Mexico:** EC-LEDS, through the Mexico LED activity, contributed to GHG mitigation analysis by modeling BAU emissions, producing a marginal abatement cost curve (MACC), and creating a GHG mitigation Project Portfolio Database, see Figure 3 below. The BAU allowed Mexico to

determine the most likely outcome of continuing on its current path, while the MACC considered the effect of 129 cost levers—or particular mitigation actions. These calculations allow the government to identify the most efficient way to implement GHG emissions in consideration of emissions volume, cost, and economic growth. In addition, the MACC and related analysis will be instrumental in the implementation of Mexico's INDC.

FIGURE 3: MEXICO'S MARGINAL ABATEMENT COST CURVE, DEVELOPED WITH EC-LEDS ASSISTANCE



Development of Specific Action Plans

EC-LEDS supported the development of LED action plans in 20 countries. This has included the development of REDD+ plans, forestry and protected area management plans, ministerial and provincial LEDS, and plans to increase the development of RE. These plans differ from national LEDS, such as INDCs, in that they recommend specific implementation actions to mitigate emissions. Examples of the planning work supported by EC-LEDS include the following:

- **Colombia:** EC-LEDS has provided support for the development of a number of Nationally Appropriate Mitigation Actions (NAMAs).¹⁸ NAMAs that have been supported include:

¹⁸ Nationally Appropriate Mitigation Action refers to a set of policies and actions that countries undertake as part of a commitment to reduce greenhouse gas emissions. NAMA was first used in the Bali Action Plan as part of the Bali Road Map agreed at the United Nations Climate Change Conference in Bali in December 2007.

- A transportation NAMA, which will contribute a two percent reduction in projected emissions;
- A waste NAMA, which will contribute a 15 percent reduction in projected emissions; and
- A Low-Carbon and Efficient National Freight Logistics Initiative, which received a \$1 million Global Environmental Facility (GEF) grant and is projected to reduce GHG emissions by 1.3 million tCO₂e.
- **Kenya:** EC-LEDS supported the Government of Kenya to carry out energy audits in public buildings and implement energy efficiency interventions. Kenya has initiated development and enforcement of Minimum Energy Performance Standards on electrical appliances imported into the country to ensure that only equipment with acceptable energy efficiencies are accepted into the country. Kenya has developed a NAMA that aims at transforming Kenyan geothermal sector by encouraging a shift from the historical model of a single national public entity developing geothermal to include private sector investments and participation. The NAMA aims at an estimated installed capacity of 820 megawatts of geothermal development.

Much of this work is an outcome of EC-LEDS support for the placement of climate change advisors in eight government ministries.

- **Malawi:** Through the deployment of an embedded advisor sponsored by USFS, a national REDD+ Strategy was developed and approved by the government. This enabled Malawi to gain membership in UN-REDD and to apply for and receive \$300,000 in funding for further development of Malawi's REDD+ program.
- **Philippines:** The EC-LEDS-supported B-WISER project has provided training and planning assistance to more than 50 local government units (LGUs) to incorporate emissions mitigation actions into their climate change plans. Thirteen LGUs have completed these plans, and several have implemented actions. This includes one public-private partnership between an LGU and a coal power company to offset emissions through funding an expansion of mangrove forests. At this point, however, only a few of the Philippines' 120+ primary LGUs appear to have developed or implemented mitigation actions.
- **Vietnam:** Through policy legislation and government planning, Vietnam is systematically integrating LEDS planning into most of its government programs (a notable exception being RE development, which is the country's major emissions sector; however, programs on energy efficiency are proceeding and making progress). In 2012, Parliament adopted a national Green Growth Strategy and in 2014, a national Green Growth Action Plan (GGAP) was approved. The program's current emphasis is to develop GGAPs for all provinces and ministries, and significant progress has been achieved. For example, at the time of data collection 32 provinces with developing GGAPs with 15 of these plans already approved; five of these plans received EC-LEDS support.

LEDS Planning Resulting to Mitigation Implementation (EQ1a and EQ1b - Findings)

EQ 1a: Has LEDS planning resulted in implementation?

EQ 1b: Have LEDS implementation actions resulted in actual/projected emission reductions and development impacts?

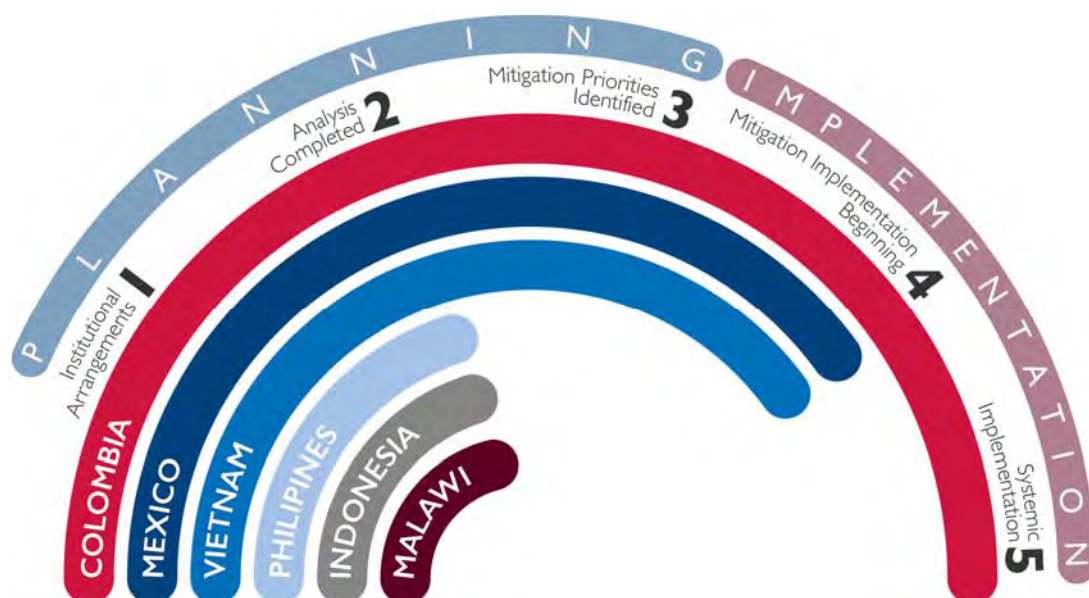
This section addresses the sub-questions EQ1a and EQ1b, reviewing whether EC-LEDS support to produce LEDS is resulting in the implementation of LED programs by partner countries. Information from the desk review was found to be insufficient to answer these sub-questions, and therefore these questions were limited in scope to the six field visit countries. The information draws on materials obtained through country field visits and interviews.

LEDS Implementation Actions in the Six Field Visit Countries

Figure 4 is an overview of LEDS implementation progress by partner countries for the six field visit countries. Progress ratings on LEDS implementation are based on a five-point scale, per the progression and completion of key LEDS framework components, and on the transition from planning to implementation.

The figure shows partner country progress in completing major LEDS planning steps (creation of institutional arrangements, GHG data analysis completed, and mitigation priorities identified), and in translating LEDS planning into implementation (mitigation implementation beginning and systematic implementation). Of the six field visit countries, all have institutional and management arrangements and have completed analysis of emissions. As the figure shows, three of the six countries have moved forward in identifying mitigation priorities, developing and implementing the initial stages mitigation programs, while the other three have not yet reached LEDS implementation phase. Of the six countries, Colombia was the only country to have thus far reached systematic implementation of LEDS.

FIGURE 4: PROGRESS OF SELECT COUNTRIES IN DEVELOPING AND IMPLEMENTING LEDS



Progress ratings and a summary of national LEDS progress follow for the field-visit countries visited.

⑤ **Colombia** has a national LEDS framework and has developed LED plans across government, which includes development of Sectoral Mitigation Action Plans (SMAPs) and NAMAs. All of these programs have received budgetary support from the Colombian Government, and many have received funding from external donors, including the United Nations Development Program (UNDP) and the GEF. These programs are in various stages of implementation and include mitigation actions in the waste, transport, and sanitation sectors. The eight SMAPs completed are projected to mitigate nearly 830 million tCO₂e by 2040.

In addition, EC-LEDS helped support the establishment of Colombia's Clean Energy Project Preparation Facility (CEPPF), which provides technical planning and financial support for energy efficiency and RE development. The CEPPF involves industry and UPME (Unidad de Planeación Minero Energética) and is working toward developing a potential portfolio of \$125 million, which is projected to avoid 200,000 t CO₂e. To date, interested parties have closed \$2 million of deals.

④ **Mexico** has conducted extensive LEDS planning work, including completing CBAs of more than 120 potential mitigation actions, and has made significant progress in implementing clean energy and energy efficiency programs. Mexico has produced a National Climate Change Strategy that aims to reduce emissions by 50 percent by 2050 compared to 2000 levels. The strategy is implemented through the "Programa Especial de Cambio Climático 2014-2018," which includes 28 mitigation measures. This plan, with some EC-LEDS support, is being stepped-down through the development of sub-national (state-level) LEDS.

EC-LEDS supported the use of a Grid Integration Road Map and updated solar resource maps for energy planning. Mexico used this information in setting its 35 percent RE target, and in helping develop the plans to realize this objective. Mexico's subsequent energy auction (2016) and its next planned auction for later in 2016 are expected to result in a contribution that will total 5.8 percent of the country's total grid power.

④ **Vietnam** has fully institutionalized a LEDS policy and planning process across government, and mitigation priorities are in the beginning phase of implementation. Through policy legislation and planning, Vietnam is systematically integrating LEDS planning into most of its government programs (a notable exception being RE development, which is the country's major emissions sector). The program's current emphasis is on the development of Green Growth Action Plans (GGAPs) for all provinces and ministries, and significant progress has been achieved. For example, 32 provinces are developing GGAPs, with 15 of these plans already approved—five of which EC-LEDS supported.

In 2015–16, Vietnam's Ministry of Planning and Investment developed a Green Growth Strategy Facility (GGSF), a technical assistance mechanism to assist provincial governments to develop project finance plans based on provincial GGAP objectives, with a specific aim being to access funds from the Green Climate Fund (GCF). In 2016, the GCF approved a proposal from Vietnam for \$29.5 million to improve the resilience of vulnerable coastal communities to climate change. While EC-LEDS did not support the GGSF, the early success of the facility was made possible by provincial green growth planning support, including support from EC-LEDS. Vietnam provides an example of how to structure support to facilitate LEDS financing and implementation, and may be relevant for EC-LEDS in other countries.

② **The Philippines** has conducted extensive mitigation analysis work, including completion of a large number of CBAs, and has an effective LEDS institutional arrangement in the form of the CCC. This work has yet to translate into the implementation of government policies or programs. The main exception to

this is that a few LGUs—perhaps three of more than 120—have included mitigation components in their climate action plans *and* have begun implementation of a few actions.

② **Indonesia** has not seriously pursued LEDS planning and, in particular, the forestry sector lacks an effective institutional arrangement to take such an effort forward. However, Indonesia has established a mechanism to assess GHG emissions, which will provide a foundation for future mitigation planning. Some decentralized planning has taken place for small-scale RE development.

② **Malawi** has made significant progress in establishing a functioning institutional structure to manage LEDS. This includes the Environmental Affairs Directorate taking the lead on GHG inventory management, and the Forestry Department chairing an inter-ministerial task force to implement REDD+ and address the drivers of deforestation. The effort, for the most part, is in the planning stage, although some pilot implementation actions are moving forward. Pilot actions include testing new methodologies for forest inventory monitoring and reforestation. Both of these methodologies should have direct relevance to developing natural resource plans and accessing external financing.

Conclusions: EQ I, EQIa, & EQIb

Conclusions: EQI. Which EC-LEDS interventions have been effective in contributing to partner countries' low-emission development, and why?

EC-LEDS has provided extensive support to help partner countries develop national-level LEDS and this assistance has been effective. The types of support that has been effective in creating LEDS has included developing institutional management arrangements, creating GHG analysis capacity, supporting the development of INDCs, and helping countries develop national, sub-national, and sectoral LED plans. In a relatively short period, EC-LEDS has made great progress in helping countries adopt tools, skills, and systems to develop LEDS. Perhaps most significantly, several EC-LEDS partner countries have made substantial progress in integrating LEDS planning into their national economic development planning processes.

In particular, substantial progress has been made in GHG emissions analysis and management, with Mexico and the Philippines serving as best-case examples. Mexico produced more than 120 cost analyses of mitigation opportunities and, by executive order, the Philippines has fully codified its GHG management system and procedures—a system that covers all of the country's major emission sectors. EC-LEDS has provided support to 18 countries in developing GHG management systems.

Support for LEDS development has been effective because the assistance has been of high quality and targeted in direct support of partner country UNFCCC commitments. The strong alignment between EC-LEDS assistance and partner country needs has fostered strong working relationships around the accomplishment of specific host country objectives. This process began through the collaborative scoping trip visits, which identified the interventions that were later delivered to help countries build needed capacity.

All EC-LEDS countries developed and submitted INDCs. Assistance provided by EC-LEDS has provided the support needed to address the basic planning requirements of GHG inventory development, and analysis of mitigation options based on volume of emissions, cost of mitigation, and effect on national development goals.

The delivery of LEDS development assistance has relied heavily on the use of standard tools and practices. The EPA developed a clear package of assistance—EPA Greenhouse Gas Inventory Toolkit—which it

applied directly in some countries, and which other EC-LEDS implementing partners have used. This approach has been effective at building capacity and appreciated by partner governments. The use of MACCs and CBAs, common tools in mitigation planning, have also been widely applied to develop INDCs.

A significant amount of EC-LEDS planning support is designed to create analytic capacity, which sets the foundation for LED implementation but does not directly result in implementation. This is particularly the case for GHG inventory work. In countries where the LEDS process has not proceeded to implementation, it is mainly due to the short duration of the effort, such as in Malawi, or because countries do not have institutional arrangements or policies to move actions forward, such as in Indonesia.

Conclusions: EQ1a. Has LEDS planning resulted in implementation?

In the few countries where LEDS planning is most advanced, LEDS have resulted in the implementation of emissions-reduction programs across a variety of sectors, including in the transport, waste, and housing sectors. In other countries, LEDS planning assistance has not yet resulted in LED implementation.

The LEDS process has been mainstreamed into government planning in a few countries; in these countries, this has led to funding and implementation of specific mitigation programs. Most notably, in Colombia, Mexico, and Vietnam, governments are transitioning from LEDS planning to LED implementation. These implementation actions receive domestic budget support and have secured external financing, including from the World Bank, the GEF, UNDP, and the GCF.

Several factors have affected the success of translating LEDS planning into action, including:

- EC-LEDS support that has resulted in partner country LED implementation has focused on sub-national and sector LEDS planning. This is evident from the development of SMAPS in Colombia, the development of REDD action plans in Malawi and Vietnam, and from support to ministry and sub-national programs in Vietnam and Mexico
- The development of strong national LEDS/green growth policies has set the stage for action in a number of countries. Implementation of mitigation actions, however, has occurred only after these plans have been stepped down into more detailed sector or sub-national plans. In each of these cases, EC-LEDS has provided support at the sub-national or ministerial level to support the development of specific sub-national LED plans.
- The use of embedded advisors to support sector-level LEDS development has been effective in several countries, particularly in Malawi and Colombia. EC-LEDS assistance in Colombia, which included embedding advisors in eight separate ministries and linking them through a common working group, provides a model for how LED can be mainstreamed into government planning and implementation.
- In several instances, the programs showing the highest level of results are initiatives that have been ongoing for years by partner governments. For example, Vietnam approved its Green Growth policy in 2012, and Colombia developed its Colombia Low Carbon Development Strategy in 2010.

Conclusions: EQ1b. Have LEDS implementation actions resulted in actual/projected emission reductions and development impacts?

In the few countries that have used LEDS as a basis for the development of specific mitigation programs, it appears that meaningful mitigation outcomes will be achieved, although these programs are in the early stages of implementation. Examples include:

- **Colombia's** national LEDS process has resulted in the development of a number of SMAPs and NAMAs. These programs are in various stages of implementation and include mitigation actions

in the waste, transport and sanitation sectors. The eight SMAPs completed are projected to mitigate nearly 830 million tCO₂e by 2040.

- In **Mexico**, EC-LEDs supported the use of a Grid Integration Road Map and updated solar resource maps for energy planning. Mexico used this information in setting its 35 percent RE target, and in helping develop the plans to realize this objective. Mexico's subsequent energy auction (2016), and its next planned auction for later in 2016, are expected to result in a contribution that will total 5.8 percent of the country's total grid power.
- **Vietnam** recently received GCF approval for a coastal resilience project, which is an outcome of its provincial green growth planning process. This project contains both adaptation and mitigation objectives, and is expected to result in a lifetime equivalent of 1,860,720 tonnes of CO₂e reduced or avoided through mangrove restoration.

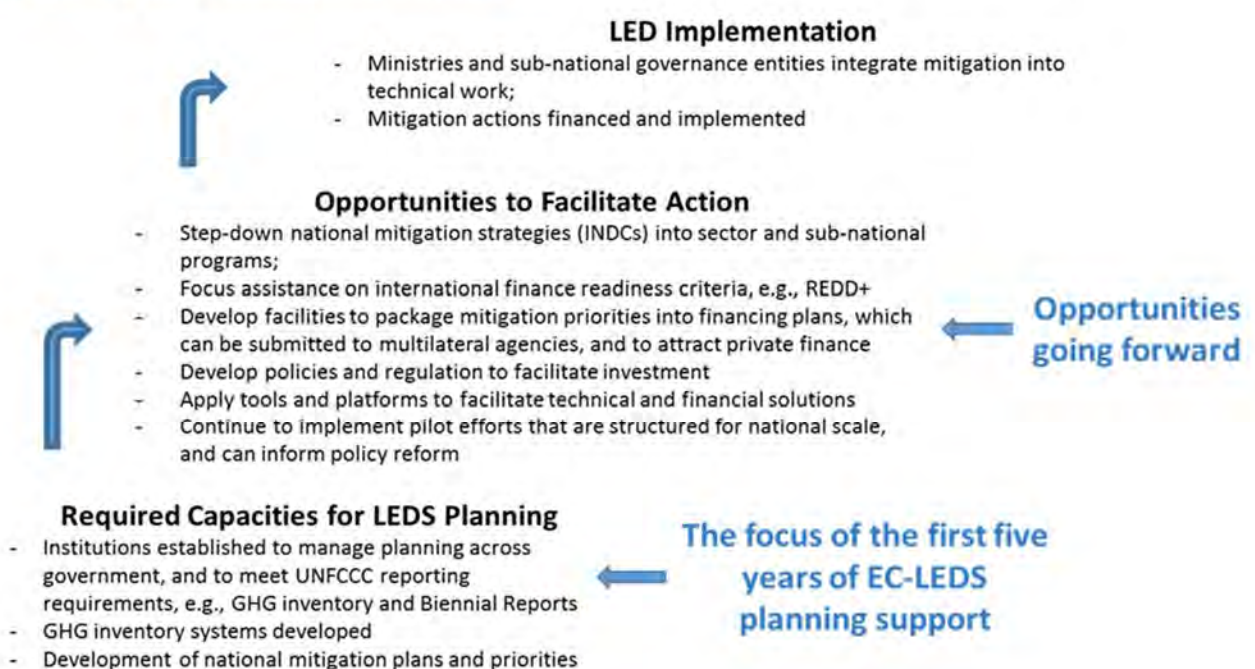
All EC-LEDs partner countries submitted INDCs in 2015; however, most countries have not yet announced, designed, or implemented the actions that will be required to achieve the additional mitigation targets included in their INDCs. This process is expected to take several years to work its way through national planning and budgeting systems. INDCs are designed to be a basis for mitigation planning, but additional support will be required to develop specific mitigation programs based on the higher-level goals contained in the INDCs.

Recommendations: EQI, EQIa & EQIb

In broad terms, Figure 5 provides the evaluation's overall recommendation concerning EQI. It portrays the progression of actions from LEDS development to LED implementation; indicates the type of support that the program has focused on in its first five years of implementation; and recommends focusing future support on activity that is more directly tied to implementation.

FIGURE 5: EQI RECOMMENDATION ILLUSTRATION

Bridge the Gap between Planning Capacity and LED Implementation



Specific recommendations include:

- Support of the development and implementation of partner country Nationally Determined Contributions.
- Reassess the capacity needs of partner countries in areas that are key to LEDS development, including GHG inventory development and prioritization and analysis of mitigation options. EC-LEDS has provided substantial support in this area, but currently no process assesses whether current capacities are adequate or if additional assistance is needed. Specific metrics to measure the stages of LEDS capacity development should be developed and used to assess and guide assistance.
- EC-LEDS should increase its emphasis on the development of sub-national and sectoral mitigation plans. This includes the use of embedded advisors and providing support for sectoral and provincial LEDS plans. Integrating LEDS planning across government can result in the development, financing, and implementation of mitigation programs across multiple sectors.
- Create a road map for moving LEDS from planning to finance and implementation, and develop support structures to enable this. Countries that have advanced the furthest in translating LEDS planning into action have developed mechanisms to facilitate the financing of LEDS-generated mitigation actions. This includes the development of the GGSF in Vietnam and Colombia's Clean Energy Project Preparation Facility, both of which serve as examples that may have relevance to EC-LEDS support for this objective in other countries. These and other mechanisms should be reviewed for their strengths and reliance to application in other countries.

ANALYSIS OF EC-LEDS PROGRAM OUTCOMES (EQ2)

EQ2: How has the EC-LEDS program contributed to partner countries' progress toward LEDS outcomes?

This section provides an analysis of the achievement of EC-LEDS outcomes for the clean energy and sustainable landscapes pillars. The analysis is based on program reporting and examines actual achievements as well as progress relative to each country's overall level of emissions. Annexes C and D in this report, contain outcome data for each pillar, clean energy and sustainable landscapes.

Clean Energy



Clean energy activities through the EC-LEDS program have encompassed a range of activities, including support for the development of renewable energy and energy efficiency policies, plans, and programs; support for GHG inventory systems; support for improved data analysis and decision-making; support for increasing private finance for small-scale renewables; and investment mobilized from international financial institutions and public-private partnerships.

For many EC-LEDS partner countries, the energy sector is the largest contributor to national emissions and is projected to increase significantly. Electricity generation capacity has been growing at a rapid rate in many EC-LEDS partner countries; more than 300,000 MW¹⁹ of electricity generation capacity has been added since the beginning of the EC-LEDS program, with the vast majority coming from non-renewable sources. Small increases in renewable energy will have little impact on emission trajectories. Decoupling economic growth from growth in GHG emissions will require transformational change in the energy sector of many partner countries.

The EC-LEDS program has coincided with a steady decline in the levelized cost of electricity from renewable energy sources, with photovoltaics (PV), also known as solar, reaching prices falling from an average of USD \$285/MWh in 2010 to as low as USD \$80/MWh in 2014, which makes solar PV competitive with traditional fossil fuels in some cases. Onshore wind prices have also fallen from an average of USD \$71/MWh in 2010 to USD \$60/MWh in 2014. Figure 6 shows that significant decreases in the costs of solar PV and wind energy globally since 2010 have coincided with a large increase in renewable energy installations across EC-LEDS partner countries.²⁰

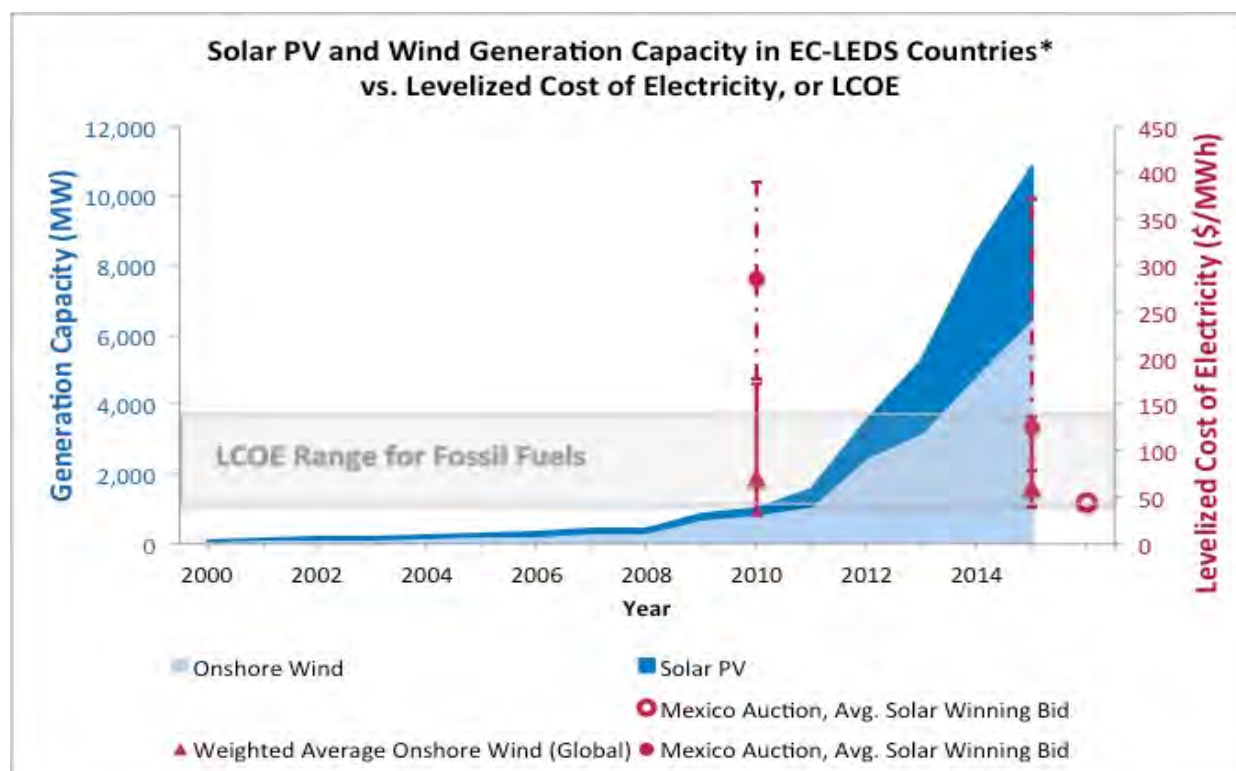
EC-LEDS Helped Secure Record-Low Solar Energy Prices in Mexico

In the 2016 energy auction in Mexico, the average winning solar PV bid was less than \$45/MWh, which compares to an average price of USD \$285/MWh in 2010. A second auction is planned for September 2016 and is expected to add up to 5.8 percent of Mexico's current production.

¹⁹ Total generation capacity added between 2009 and 2014. Sources: <http://global-climatescope.org/en> and <http://data.un.org>

²⁰ Includes all EC-LEDS partner countries except India. The adoption of RE in India dwarfs the adoption of RE in other developing countries. The start of significant RE adoption also occurred several years prior to the rest of the EC-LEDS partner countries. Source: <http://resourceirena.irena.org>.

**FIGURE 6: SOLAR PV AND WIND ENERGY GENERATION CAPACITY
VERSUS COST OF ELECTRICITY**



*Excludes India from totals

Findings: Clean Energy Overall Program Results

EC-LEDS country programs have supported clean energy planning and implementation in a variety of ways, including policy and regulatory support for renewable energy, individual project-level support for RE and energy efficiency projects of both small and large scales, improving access to finance, and supporting small-scale, off-grid development to increase energy access in rural areas. A review of program documents revealed that most EC-LEDS programs adopted an approach that includes both technical assistance (TA) for small-scale renewable energy or energy efficiency projects (< 10 MW for RE or individual buildings for EE) and TA to improve national-scale energy policy and enabling environments. The focus on small-scale renewable implementation has led to a moderate amount of clean energy implementation in countries where policy implementation has been unsuccessful or slow to make progress. Transformation of the energy sector, however, hinges more on the successful implementation of improved policies and regulation. Policy support in most countries has been slow to produce results or significant progress. In the last several years, there has been some notable progress in several countries, including establishment of the General Law on Climate Change in 2012 in Mexico and Law 1715 on Renewable Energy in Colombia in 2014. However, many recently reformed laws still lack sufficient regulatory detail to encourage investment (per interviews in Colombia, the Philippines, and Vietnam). Many countries have also recently announced new RE targets, with most still needing to fully flesh out plans to meet the new targets.

Table 4 summarizes clean energy results from completed assistance and anticipated results from ongoing assistance. The table lists total megawatts (MW) of clean energy generation capacity, finance mobilized, and projected emissions reduced from EC-LEDS programs from 2010 to present. The table focuses on MW of renewable energy-generation capacity due to USG assistance; most of the emissions-reduction results to date from energy efficiency activities are small in comparison to those projected from future

renewable energy increases. However, the “emissions reductions projected” column captures emissions reduced from both energy efficiency and renewable energy activities.

MW of clean energy due to completed assistance includes MW of generation capacity installed, at financial closure or projected from completed policy implementation (such as a successful energy auction). This aggregation differs from standard USAID indicators, where MW of generation capacity due to USG assistance includes only MW of generation capacity installed or at financial closure, with financial closure added only recently. This evaluation used program reports to identify the following:

- MW of generation capacity installed, at financial closure or due to policy implementation that were not previously identified.
- Generation capacity due to policy implementation was included to correspond to the new indicator of “projected emissions reduced to 2030,” which includes projections due to policy implementation.
- Anticipated generation capacity includes assistance for projects that have yet to reach financial closure or from policy implementation that is expected, but not complete. Anticipated results were included to show the direction of future programs, but should not yet be considered a result.
- Generation capacity is also expressed as a percentage of the total electricity generation capacity of the country to allow for a comparison of scale between countries.
- Projected emissions are calculated only from completed assistance. Where projected emissions were not reported by the mission, the evaluation team used USAID’s Clean Energy Emission Reduction (CLEER) Tool to estimate the projected emissions through 2030.²¹

Unfortunately, none of these metrics are required EC-LEDS indicators and the results had to be estimated from project documents, APG milestones, and PPR key issue narratives. Thus, it is expected that this data under-represents the total results of the EC-LEDS program, especially for countries where limited data was available.

²¹ Estimates were only made by the evaluation team for renewable energy generation capacity as there was insufficient information reported on energy efficiency programs to estimate using the CLEER tool. Estimations were made only if there was sufficient information on the type of renewable energy, total MW, and estimated date of implementation. Country data already available in the CLEER tool was used for estimations.

**TABLE 4: EC-LEDS RESULTS IN CLEAN ENERGY IMPLEMENTATION
ACHIEVED TO DATE AND PROJECTED**

Country	MW Capacity Added (% of national generation capacity)		Finance Mobilized (Million USD)	CE Projected Emissions Reduced through 2030 (tCO ₂ e) ²²	Description of Intervention/ Implementation Action
	Completed Assistance	Total Anticipated from Ongoing Assistance ²³			
Total	2,769 MW (0.4%)	16,978 MW (2.6%)	\$5,108	371,573,703	
Mexico	1,860 MW (2.9%)	5,580 MW (8.7%)	\$4.877	38,286,390	USAID provided support by developing the IT platform and Verification Service for Mexico's first Renewable Energy Auction.
India*	372 MW (0.1%)	7,365 MW (2.8%)	\$2,660	96,145,730 ²⁴	MW from completed assistance reflects financing through OPIC as part of PACE-D. Anticipated MW reflects solar roof program support.
Kenya**	310 MW (14.1%)	602 MW (27.4%)	\$282	8,647,243	Transaction support for Lake Turkana Wind Project and other large RE projects
Indonesia	288 MW (0.5%)	1,223 MW (2.2%)	\$337	22,696,006	TA for small-scale RE
Georgia	185 MW (4.2%)	755 MW (17%)	\$244	4,428,775	Electricity model development that led to two hydropower projects (175 MW + 10MW) by improving investor confidence
Philippines	64.3 MW (0.4%)	464 (2.7%)	\$139	5,202,022	TA for small-scale RE and IT support for processing RE permits (projected for Mindanao)
Bangladesh	4.6 MW (0.04%)	4.6 MW (0.04%)	\$4.8	54,296	Solar home systems and industrial energy efficiency
Colombia***	0.03 MW (0%)	0.03 MW (0%)	\$30.5	38,381	Rural, off-grid RE installations and industrial energy efficiency
Ethiopia	0.0 MW (0%)	1,000 MW (42.5%)	-	0	Transactional support for single large geothermal project
Serbia	0.0 MW (0%)	300 MW (3.4%)	-	0	Development of standard PPA; projected to help bring large wind project to financial close
S. Africa	0.0 MW (0%)	0.0 MW (0%)	\$400 ²⁵	0	Loan guarantees for small-scale RE projects
Ukraine	0.0 MW (0%)	0.0 MW (0%)	\$311	1,149,404	Developed Municipal Energy Plans and identified investment needs of municipalities, leading to investment in CE in 17 cities

* Includes all PACE-D results, including financing from OPIC; GHG emissions from this work could not be calculated due to no information on installation dates.

** Includes Power Africa Results

*** Projected emissions for Colombia are expected to be higher due to the transportation NAMA supported by the EC-LEDS program; however, there was insufficient information available to estimate a number for the 2030 timeframe

²² Includes actual emissions reduction to date from CE plus projections through 2030 from on-going programs. An additional 7.3 million tCO₂e will be reduced through energy efficiency programs.

²³ Includes projected from on-going assistance plus MW already installed/completed

²⁴ Projected emissions are from solar PV programs, and do not include PACE projections due to insufficient data.

²⁵ Includes projected finance from a DCA activity in the final phase of negotiation.

Highlights of Country Renewable Energy Programs

The following section provides a description of different EC-LEDS CE approaches that led to varying degrees of success in increasing renewable clean energy implementation.

Kenya - EC-LEDS and Power Africa

Clean energy programming in Kenya includes both the Power Africa program and targeted EC-LEDS support. The EC-LEDS MOU with Kenya was signed in 2012, but only limited work through partner USG agencies was completed before the main implementing mechanism, the Low Emission and Climate Resilient Development (LECRD) project began in October 2014. The LECRD project is implemented by the UNDP and is an integrated climate change mitigation and adaptation program. Relevant to this evaluation are its tasks to strengthen the national climate change coordination processes, including support for the development of Kenya's INDC, enhance access to clean and efficient energy systems, largely through off-grid, small-scale implementation of CE, and to support development of a national sustainable GHG inventory system.

Power Africa, on the other hand, is supporting large-scale renewable energy by providing transactional and grid management support to multiple large clean energy projects, including the 310 MW Lake Turkana Wind Project. This support has included financing from the Overseas Private Investment Corporation (OPIC), loan guarantees, development of a standard power purchase agreement (PPA), and revision of national grid codes to incorporate renewables. The support for these projects is largely on a project-by-project basis. Some aspects, such as a standardized PPA and revisions to the grid code, are more general, but there is little indication how this will affect renewable energy adoption going forward. Currently, Kenya expects clean energy to play a role in its large growth in power generation capacity, with 45 percent of its capacity in 2033 to be from renewables, but with no role for large-scale solar PV.

Mexico - Supporting National Climate Change Mitigation Policy Implementation

One of the most successful EC-LEDS programs in terms of the implementation of clean energy is the program in Mexico. Through this program, the U.S. Government has been supporting the implementation of the Mexican Climate Change Law, which requires that 35 percent of energy in the national grid should come from clean energy by 2024, with nearly half from new sources. USAID supported technical studies completed by the U.S. National Renewable Energy Lab, such as one on mini-hydroelectric plants and a roadmap for integrating renewable energy into the electricity grid, which helped inform the interim targets. On April 28, 2014, Mexico passed the Special Program for Increasing the Use of Renewable Energy, which set technically achievable targets of 24.9 percent clean energy by 2018, as well as targets for 2035 (40 percent) and 2050 (50 percent).



USAID also supported Mexico's first energy auction, held in March 2016. Mexico's state utility, Comisión Federal de Electricidad (CFE), departed from almost 80 years of state-owned monopoly and let private companies bid to supply solar, wind, hydro, cogeneration, combined-cycle gas, and geothermal energy.

In this auction, all technologies competed against each other. Of a total 5.38 million megawatt-hours of energy awarded, solar PV won 74 percent and wind won the remaining 26 percent, with no contracts won by any of the other technologies. It was widely believed that solar energy would win only a minor

portion of the bids in the Mexico energy auction based on historic costs.²⁶ However, Mexico has significant solar sources and fewer robust wind sources.²⁷ Winning contracts will add approximately 1,860 megawatts of generation capacity.²⁸ The auction was considered a great success with PV prices reaching a record low of \$35.5/MWh and an average of \$45.15/MWh. A second auction is planned for September 2016 and is expected to add up to 5.8 percent of Mexico's current production. While the Mexican Climate Change Law required the auction to take place, the Mexico Low Emissions Development (MLED) Program provided crucial assistance to the development of the auction, including creating the auction design, rules, participant requirements, and the IT platform that supported the auction. This support increased the overall transparency of the auction, which may have contributed to the record-low energy prices.

Indonesia and the Philippines – CE Programs prior to EC-LEDS Launch

In Indonesia and the Philippines, the main clean energy programs were designed before the launch of the EC-LEDS program. As such, there was limited ability to adjust the contracts to reflect the new focus on LEDS. The follow-on programs, B-LEADERS and the current Indonesia Clean Energy Development program (ICED II), started in January 2014 and May 2015 respectively, have been adjusted to reflect a new focus on LEDS and/or transformative change in the energy sector, but with significant components focused on small-scale RE development.

In Indonesia, the ICED and ICED II programs have resulted in 120 MW installed of small to medium-sized clean energy projects (predominantly under 10 MW each) and an additional 746 MW in the pipeline to be installed by 2018. This accomplishment, however, is dwarfed by the 3,500 MW of predominantly fossil fuel-based generation capacity being annually added by Indonesia. The EC-LEDS work in Indonesia that is most likely to result in transformation of the electricity sector are efforts aimed at improving the enabling environment for adding clean energy at large scale. ICED I saw little progress on encouraging the development of large-scale projects; the focus was predominantly on supporting small-scale projects. PLN, an Indonesian government-owned corporation with a monopoly on electricity distribution, is required to buy power from projects 10 MW in size or less, but has opposed buying power from projects larger than 10 MW from RE efforts due to cost-recovery concerns. The implementation of demonstration projects, however, has resulted in a strong understanding of the specific challenges for renewable energy producers.

EC-LEDS in Indonesia has also worked with the government on adopting new regulations, feed-in tariffs, and the impending creation of a new institution to buy renewable energy at the feed-in tariff rates and sell it to PLN at cost-recovery rates. Combined with the reductions for fossil fuel energy subsidies announced in 2014, the new regulations may make development of larger-scale projects more attractive. In 2014, Indonesia also set a target of reaching a 23 percent renewable energy share in the total energy mix by 2025. ICED II is supporting Indonesia to reach this target. The experience, expertise, data, and analysis that the program provides have led to a significant demand for its services. This has enabled the program to build a productive relationship with the Ministry of Energy, through which ICED II is having substantial influence on regulatory actions that promote the expansion of clean energy. ICED II has been asked to provide support for Indonesia's plan to achieve a target of 25 percent renewable energy and provided a detailed analysis of Indonesia's grid capacity.

26 <http://www.pv-tech.org/news/mexico-secures-1860mw-of-pv-projects-through-first-clean-energy-auction>

27 IRENA (2015), Renewable Energy Prospects: Mexico, REMap 2030 analysis. IRENA, Abu Dhabi. www.irena.org/remap

28 Using an average capacity factor of 33 percent for the 5.38 million MWh awarded.

In the Philippines, a component of the country's primary EC-LEDS program, B-LEADERS, was designed to build on the success of the USAID-supported Private Financing Advisory Network (PFAN) program. B-LEADERS has facilitated the financing and approval of new RE production facilities, leveraging \$120 million in private sector clean energy investment for six power plants (two bio-mass and four solar), with an output of 74 MW. However, this work is on a transactional basis and at small-scale relative to overall capacity. B-LEADERS also assisted with the design of EVOSS, which should improve the efficiency of the RE permit process. The system is intended to speed up the approval of permits for CE developers, and to help facilitate coordination between the 17 agencies involved. The improved permitting process is expected to result in installation of 400 MW of solar PV generation capacity in Mindanao.

A significant transformational increase in RE energy in the Philippines will require improved energy policies. The EC-LEDS program in the Philippines has had limited success in supporting effective implementation of clean energy policy. Both the EC-LEDS program and energy programs prior to EC-LEDS in the Philippines have provided technical assistance to improve energy policies, including the development of a feed-in-tariff, but tariffs were set too low to spur investment. USAID continues to provide support for improved policies, such as the proposed Renewable Portfolio Standards (RPS) policy, in combination with efforts to upgrade distribution systems, including building on the type of assistance provided by NREL under the Greening the Grid program. It is unclear when the RPS will be passed and implemented.

Highlights of Country Energy Efficiency Programs

Energy efficiency (EE) is often more politically acceptable than large-scale renewable energy development due to low barriers to entry and ease of adoption, and several EC-LEDS programs have incorporated energy efficiency projects as either part of their clean energy effort or its main focus. For example, in Colombia and Bangladesh, EC-LEDS is helping industrial companies reduce emissions by supporting demonstration projects and providing investment-grade energy audits. Ideally, these demonstrations will encourage other companies to follow suit. In both cases, these programs have resulted in real emissions reductions and an increase in EE investment; however, similar to the impacts of the small-scale RE projects discussed above, their impact is small and is unlikely to result in large-scale emissions reductions.

Bangladesh - Limited LEDS focus in EE Programming

Although the CE programs in Bangladesh are also working on the clean energy enabling environment and small-scale energy projects (primarily solar home systems and individual industrial energy efficiency projects), the primary CE program in Bangladesh, the Catalyzing Clean Energy for Bangladesh (CCEB) program, was not designed to encourage the incorporation of significant RE in the power sector. Through CCEB, USAID is supporting the Bangladesh Energy Regulatory Commission (BERC) and Power Cell and has primarily focused on improving the capacity of BERC, demand-side management, improved cook stoves, and industrial energy efficiency. CCEB did recently review the draft Feed-in-Tariff (FIT) regulation for renewable energy at the request of the Government of Bangladesh, and there has been limited engagement by CCEB on utility scale RE development in Bangladesh. CCEB does have some engagement with the new Sustainable Renewable Energy Development Agency (SREDA) of Bangladesh, but it is rather limited. SREDA is leading Bangladesh's efforts to reach its established targets of five percent RE by 2015 and ten percent by 2020. NREL is engaging with SREDA through their wind energy study. In general, the Bangladesh Mission sees the EC-LEDS program there as rather "siloe," with U.S. interagency work separate from bilateral support.

Vietnam – Policy Intervention Support

In Vietnam, EC-LEDS is supporting a multi-pronged approach that includes both policy interventions and the development of EE building demonstrations. Policy intervention support through capacity building is happening at both the national and municipal levels. EC-LEDS is providing TA to the Ministry of

Construction in the development of its Green Growth Action Plan (GGAP) and is generating data required for benchmarking emissions and developing energy efficiency standards. This work has supported the development of a voluntary national green building certification standard. Currently, four demonstration buildings are being supported by EC-LEDS to showcase building techniques and materials that reduce electricity consumption. One example is applying energy-saving window coatings or adjusting the angle of construction to reduce solar heat absorption. However, construction of the buildings is incomplete. This program has potential to have large impacts, but is still several years away from having measurable impacts.

Sustainable Landscapes



EC-LEDS sustainable landscape (SL) work is taking place through two primary means: providing support for low-emissions planning, and for the implementation of low-emissions actions. The former comprises support for institutional capacity and arrangements, the development and completion of GHG inventories, and data collection and analysis, while the latter includes a number of implementation activities. Implementation actions include REDD+ and international finance and markets readiness; mangrove restoration; forest carbon inventory monitoring and management; and a suite of best practices in low-emission agriculture and related emissions management.²⁹

Broadly, SL program support falls in the areas of improved forest protection and management; improved livelihoods and income opportunities for forest communities; and support that will enable the monetization of forest carbon. Low emission agriculture is also supported by EC-LEDS; however, because EC-LEDS' emphasis on agricultural support is relatively new the program has not yet produced significant outcomes and thus it is too soon to review its effectiveness.

Particular areas of EC-LEDS SL support include:

- Improved forest protection and management, including support for state forest departments and community-based management programs;
- Support to monetize forest carbon, including support for REDD+ policy development and implementation;
- Fire suppression and management, such as provided by the USFS in Mexico and Vietnam;

²⁹ EC-LEDS reporting and documentation does not adequately and consistently disaggregate sources of emission reductions by land use type, but the overwhelming majority of reductions resulting from sustainable land use practices being supported by EC-LEDS are coming from forestry and forest-related management practices.

- Forest restoration planning, including the introduction and application of the Restoration Opportunities Assessment Methodology;
- Forest inventory and monitoring work, including the placement of USFS resident advisors in several countries;
- Development of payment for ecosystem programs, which provide income to communities to support sustainable land management practices;
- Improved policy development, including for REDD+, PES and decentralized management;
- Area-wide LEDS economic planning that emphasizes a balance between economic growth, sustainability and low emission development;
- Financing of pilot projects to test and refine to approaches to low emission development, including sub-national implementation of REDD+ and PES projects;
- Agro-forestry programs to help communities use forest resources to generate income and to develop agricultural practices that reduce pressure on forest loss; and
- Climate smart agriculture, to help farmers adapt to changing climate conditions and produce food in a manner that reduces emissions.

EC-LEDS SL approaches vary between countries and are selected through close collaboration with partner governments. This process begins with consultations undertaken during EC-LEDS scoping trips and is refined as work proceeds.

EC-LEDS SL outcomes are measured using the following indicators:

- Hectares under improved natural resource management;
- Natural resource management-related funds distributed within communities or other organizational structures, including payments for ecosystem services and sales of non-timber forest products;
- Public and private sustainable landscapes investment leveraged as a result of EC-LEDS support, which is often funding provide by partner governments; and
- Total emission reductions from land use.

EC-LEDS has achieved many results in the above categories of outcomes; however, the programs long-term goal is to reduce emissions. Some EC-LEDS activities, such as generating increased income from non-traditional forest projects, do not have an immediate measurable emission reduction impact, but they do contribute toward improved sustainable natural resource management. These activities contribute to an overall strategy to reduce deforestation, which is critical to reducing forest-based emissions.

Carbon finance. Pursuing international finance for sustainable landscapes, particularly for landscape restoration and carbon finance, is an important way for countries to achieve their emission reduction goals and signals to institutional, private sector, and other investors that the country takes its commitments seriously due to the rigorous and highly technical requirements. Emission reduction programs of greatest relevance to EC-LEDS are the UN-REDD Program, the Forest Carbon Partnership Facility (FCPF) of the World Bank (and its Carbon Fund), and the Green Climate Fund. Each is briefly described below.

- UN-REDD draws on the technical capacity of three UN agencies—the Food and Agricultural Organization (FAO), the United Nations Development Program (UNDP), and the United Nations Environment Program (UNEP)—to support REDD+ planning and implementation, with an emphasis on traditional and indigenous communities when applicable. UN-REDD funds come from a multi-donor trust composed primarily of European donors.

- FCPF is a multi-stakeholder organization of governments, private sector, civil society, and indigenous groups focused on REDD+. Like UN-REDD, FCPF provides both financial and technical assistance and has a similar emphasis on activities that can generate co-benefits for forest communities and biodiversity. The process of completing the steps required for implementation of an Emissions Reduction Purchase Agreement (ERPA) is technical and time-consuming, and countries must receive approval of their Emissions Reduction Program Idea Note (ER-PIN) before being accepted into the Fund's pipeline.
- The GCF is a fund within the framework of the UNFCCC that focuses on mitigation and adaptation in developing countries. Thematic funding windows determine how funding is allocated, and the first two tranches of funding have had an emphasis on coastal adaptation and resilience, particularly in small island states. While the GCF was hoping to close \$100 million annually through 2020, international delivery on pledges to the fund remain below target.

Carbon market context. According to *State of the Voluntary Carbon Markets 2016*, buyers in the voluntary market³⁰ in 2015 transacted over 84.1 million tonnes globally, an increase of 10 percent from 2014. However, the average price of voluntary emissions reductions (VERs) has steadily declined over the last several years, averaging just \$3.30/tonne (compared with \$4.19/tonne and \$3.80/tonne in 2013 and 2014). However, prices per tonne varied wildly based on a number of factors, selling as low as \$.10/tonne and as high as \$44.80/tonne. This price per tonne resulted in a 2016 market value of \$278 million, a decrease in value of 7 percent over 2014. In 2015, 92 percent of customers were repeat buyers; less than one in 10 tonnes was transacted to new buyers.

The Verified Carbon Standard (VCS) remained the most transacted of all the standards, with 49 percent of market share in 2015. Buyer preferences for project types (REDD+), standards such as VCS, vintage, and location remained influential but not the ultimate determinant for price per tonne. Buyers demanded significant volumes of VERs from India, Indonesia, Turkey, Kenya, and Brazil. Despite this, nearly 56 million unsold tonnes of CO₂e remained in portfolios at the end of 2015, and issuance of new VERs in 2016 is expected to exceed 70 million tonnes, primarily from agriculture, forestry, and other land use (AFOLU) and renewable energy projects.

Findings: Sustainable Landscapes Overall Program Results

Thirteen EC-LEDS partner countries receive SL funding and report outcomes indicators. Table 5 provides the reported outcomes for all 14³¹ SL-funded countries (6 field visit countries and 8 non-field visit countries) for each of the program's main four outcome indicators.

³⁰ Unlike compliance markets, which are regulated by mandatory national, regional, or international carbon reduction schemes (such as that created by California Assembly Bill 32 [AB-32]), demand in voluntary markets is generated by governments, businesses, NGOs, and individuals. Verified emissions reductions transacted in voluntary markets are generally cheaper because those VERs cannot be used in compliance markets.

³¹ Gabon, which receives SL funding, is not included in the table because it has no reported outcomes. Assistance in Gabon has focused on forest and spatial planning.

TABLE 5: SUSTAINABLE LANDSCAPES OVERALL PROGRAM RESULTS

Country	Hectares Under Improved Management	NRM-Related Funds Distributed (PES, NTFPs)	Other SL Investment Leveraged ³²	Emission Reductions, tCO ₂ e (2011–2015) ³³	Description of Intervention/ Implementation Action
Bangladesh	928,087	3,800,000		308,000	Creation of policy working group and co-management agreement with Government of Bangladesh
Cambodia	919,730 ³⁴		2,600,000	8,535,396	Activities supporting REDD+ and SL management resulted in emission reductions across three priority landscapes ³⁵
Colombia	703,974	1,326,209	2,439,000	1,000,000	MOU with Government of Colombia generated more than \$2 million in public finance for sustainable landscapes. BioREDD and the Stand for Trees Platform generated nearly \$500,000 in revenue from carbon sales.
Guatemala	1,420,888	75,000	3,800,000	2,252,392	USAID support for improved management in the Mayan Biosphere Reserve has increased incomes for SMEs and CBOs. Support for carbon market readiness helped Guatemala secure \$3.8 million in readiness grants from the FCPF.
India	1,144	50,604	1,634,746	815,472	Support for strengthening forest and forest-based livelihoods through agroforestry, community farming, and forest regeneration activities.
Indonesia	6,249,416		3,702,062	11,477,921	Promotion of reduced impact logging in forest concessions resulting in agreements with local governments and private sector partnerships, and stimulating further investment in improved management.
Kenya	461,182				USAID support for improved management through Northern Rangeland Trust (NRT) and Laikipia Wildlife Forum.

32 Includes readiness funds/grants received from sources like FCPF and UN-REDD, REDD+ payments resulting from carbon monetization, and any other sustainable landscape investment leveraged as a result of EC-LEDS

33 For detailed country emission reduction results, see Table 4.

34 An audit conducted by the Office of the Inspector General of the Supporting Forests and Biodiversity project was unable to verify any of these hectares.

35 Prey Long, the Central Cardamoms Protected Forest, and Mondulkiri Province, which includes the Keo Seima Wildlife Sanctuary.

Country	Hectares Under Improved Management	NRM-Related Funds Distributed (PES, NTFPs)	Other SL Investment Leveraged ³²	Emission Reductions, tCO ₂ e (2011–2015) ³³	Description of Intervention/ Implementation Action
Malawi	455,130		1,139,609	1,052,022	Kulera Landscape REDD+ Program has brought an extensive area under improved management and successfully executed two carbon transactions with Microsoft. Support for REDD+ action plan development by embedded REDD advisor. ³⁶
Mexico	829,466		342,560	193,602	Laws, policies and regulations supported by USAID have been instrumental in advancing quantitative SL outcomes and creating an enabling environment for REDD+ in Mexico.
Peru	3,317,052	3,326,708	38,838,853	7,000,000	USAID support in the Cordillera Azul and Loreto regions for improved forest resource management has stimulated investment and brought more than 7,000,000 tCO ₂ e under validation and first and/or second verification for future transactions
Philippines	54,000	107,000	35,649,925	784,219	At the national level, technical assistance and capacity building for implementation, and activities to support skills, systems and tools for reforestation. Sub-nationally, training on forest and riparian restoration
Vietnam	3,455,000	165,000,000	4,300,000	207,403	Support for PFES pilot implementation and scaling, as well as development of three Provincial REDD Action Plans (PRAPs). Work on MRV and forest management is helping meet requirements for international finance and markets.
Zambia	1,200,874			314,192	The Community Forest Program is supporting REDD+ implementation and improved livelihoods for forest communities.
TOTAL	19,995,943	\$173,685,521	\$94,446,755	33,940,619	

**Figures do not include data reported by regional initiatives that do not adequately disaggregate between EC-LEDS program countries, or data reported that does not disaggregate between biodiversity and sustainable landscapes funding.*

³⁶ Kenya does not receive SL funds, but does report hectares under improved management achieved through the use of biodiversity funds.

Increasing hectares under conservation. Regardless of the generation of emission reductions, bringing additional hectares under improved management is a cornerstone of EC-LEDS sustainable landscape implementation, as doing so sets the stage to achieve outcomes related to other indicators. For the period covering 2011-2015, EC-LEDS helped 13 countries improve management of nearly 20 million hectares in protected areas, buffer zones, watersheds, and in and around forest communities that depend on these resources for their livelihoods.

In **Vietnam**, EC-LEDS support to improve management of almost 3.5 million hectares has enabled the scaling-up of Vietnam's PFES system.

In **Malawi** and **Guatemala**, EC-LEDS support expanded the area conserved in three protected areas and the Mayan Biosphere Reserve, respectively, generating co-benefits for biodiversity, tourism, and forest livelihoods. **Peru** has taken a blended approach, working with timber producers to improve the sustainable management of forest concessions to improve the overall health and sustainability of the entire forest system. In the case of EC-LEDS countries, even where emission reductions cannot be explicitly demonstrated, it can generally be assumed that areas under improved management are reducing emissions if forest coverage rates are improving, though the extent to which this may be nationally significant (Table 5) is not quantified.



A ranger in Malawi conducts forest monitoring under the Kulera Project, which has generated over \$500,000 in carbon sales. The funds have been used to support community and government forest management programs.



Than Hoa Province, Vietnam, EC-LEDS provided pilot support for the development of Vietnam's Payment for Forest Ecosystems Services Program, and helped to scale the pilot into a national program. Since 2010, over USD \$165 million has been collected in payments and 85 percent of these funds have been returned to forest communities under sustainable management agreements.

EC-LEDS SL emission reduction programs: In general, EC-LEDS countries that report results across multiple indicators are aware of and have taken steps to secure finance from international funding sources, either with the support of EC-LEDS or other international programs. Since this is a key means of signaling to investors that countries are serious about their emission reduction commitments, it is not surprising that the countries highlighted here have pursued these sources of funding for readiness grants and later tranches of finance. Among the 13 countries reporting outcomes in Table 5, seven countries,³⁷ primarily in Latin America, have received UN-REDD funds, including readiness grants; are members of the FCPF and have received FCPF grant funding; and have been accepted into the FCPF's Carbon Fund for access to additional financing.

EC-LEDS was instrumental in supporting **Guatemala** and **Vietnam** to receive and max out their readiness funding \$3.8 million in FCPF funds were secured by each country in association with support

³⁷ Cambodia, Colombia, Guatemala, Indonesia, Mexico, Peru, and Vietnam.

provided by EC-LEDS. In Vietnam, this was done through supporting provincial forest inventory work and helping develop provincial plans that detail how forest carbon can be increased through better forest management and increased forest coverage. EC-LEDS is also supporting Vietnam to complete its emissions reduction program document (ER-PD) for FCPF with an eye toward the country's eventual ERPA. The other countries in the table have been accepted into UN-REDD, but only Kenya and Bangladesh have advanced beyond this step to be approved for funds, and have done so without EC-LEDS support. Most countries achieving sustainable landscape outcomes under EC-LEDS have also pursued multiple avenues for international finance. In particular, **Malawi** has achieved robust national support for implementation of low carbon sustainable landscapes activities, notably REDD+, and has generated verified emission reductions. EC-LEDS support to Malawi was critical in its ability to achieve status as a UN-REDD country. This support included the work of a USFS forestry advisor who helped Malawi complete its REDD+ Action Plan.

Four countries have completed transactions of verified carbon units (VCUs) or other carbon credits: **Peru, Zambia, Malawi, and Cambodia**. Zambia sold more than 150,000 credits for 39,000 hectares of land under improved management. In Malawi, the Kulera Landscape REDD+ Project, which received triple gold recognition³⁸ for its co-benefits under the Climate, Community, and Biodiversity Standard (CCB), completed two sales to Microsoft of 1,052,022 tonnes, for a total of \$509,934. In Cambodia, the Walt Disney Company purchased 360,000 tonnes of upcoming vintages (2017 through 2019) from the Keo Seima Wildlife Sanctuary for a total of \$2.6 million. While Peru has sold only 8,000 credits to date, the Alto Mayo REDD+ Project also received money from the Walt Disney Company in the form of a grant for sustainable landscape management totaling \$3.5 million. In Colombia, VCUs produced in three verified REDD+ projects under BioREDD have not yet been sold, but based on verification reports,³⁹ Colombia can expect to bring 23,548,277 VCUs to market for a total of 28,306,345 tCO₂e reduced.

Malawi's Kulera Landscape REDD+ Program for Co-Managed Protected Areas targeted over 65,000 households (350,000 people) living in rural communities in the border zone of the project protected areas, and resulted in the sale of verified carbon credits of \$509,394 to Microsoft Corporation.

Achieving outcomes from sustainable landscapes under EC-LEDS is heavily reliant on the creation and maintenance of an enabling policy and regulatory environment that can support the long timeframes needed to achieve EC-LEDS outcomes. Regulations and policies must be in place to support sustainable landscape (including forestry and/or REDD+) mitigation activities at multiple scales, attract new and sustainable sources of funding from sources public and private, and support participation in domestic and international markets. This includes the carbon development process and the long-term generation of additional⁴⁰ credits that can result in a revolving source of funding for improved NRM and sustainable landscape management.

Meeting the international requirements for finance and improving investor confidence and meeting international negotiation commitments requires rigorous, verifiable, and replicable carbon accounting, as

38 Projects developed using the Climate, Community and Biodiversity (CCB) Standard are verified as Gold Level projects if they confer exceptional co-benefits in addition to carbon benefits in any or all of the three benefit areas of the standard: climate, community, and biodiversity. Projects that are found, through an external audit, to confer exceptional benefits in all three areas are considered Triple Gold. Projects will have to continue to deliver these benefits in subsequent verifications to maintain Triple Gold status.

39 VCS-CCB validation reports for Cajambre, Concosta, and Siviru-Usaraga-Pizarro-Piliza (SUPP) REDD+ projects developed through BioREDD; available at <http://database.v-c-s.org>

40 Carbon credits are additional when they would not otherwise have occurred in the absence of a REDD+ or other carbon development program.

well as addressing safeguards⁴¹ and other readiness elements. Some EC-LEDS countries, like Colombia, are early movers in this regard, with prior or concurrent USG or international support providing a foundation for startup of EC-LEDS activities that are more likely to have quantifiable outcomes at this stage of programming. Other EC-LEDS countries, particularly outside of Latin America, are just now on the cusp of implementing actions that will begin to generate emission reductions, results-based payments, and other quantitative outcomes. Therefore, it is important to remember that while implementation resulting in emissions reductions is the ultimate objective, most EC-LEDS countries with sustainable landscape funding did not have these components in place at the outset of EC-LEDS. Having not yet moved from planning to implementation should not necessarily be viewed as a failure in this regard.

Emissions Reductions from Sustainable Landscapes

Of 14 countries receiving sustainable landscapes funding, 12 are generating emissions reductions from sustainable landscapes implementation actions, as indicated in Table 6.

TABLE 6: EC-LEDS SUSTAINABLE LANDSCAPES EMISSION REDUCTIONS RESULTS AND PROJECTIONS

Emission Reductions (tCO ₂ e)						
Country	Actual Total ERs (2011-2015)	Five-year Annual Average	Projected ⁴²	Actual + Projected	Average Annual Emissions from Deforestation (2011-2014) ^{43,44}	EC-LEDS Annual Contribution as % of Total Average Annual Emissions
Bangladesh	308,000	61,600	0	308,000	2,000,000	3%
Cambodia	8,535,396	1,707,079	0	8,535,396	62,000,000	2.8%
Colombia	1,000,000	200,000	28,306,345	29,306,345	58,000,000	.3%
Guatemala	2,252,392	450,478	0	2,252,392	15,000,000	3%
India	815,472	163,094	0	815,472	29,000,000	.5%
Indonesia	11,477,921	2,295,584	0	11,477,921	543,000,000 ⁴⁵	.4%
Malawi	1,052,022	210,404	7,142,090	8,194,090	3,000,000	3.5%
Mexico	193,602	38,702	432,855	626,457	37,000,000	.1%
Peru	7,000,000	1,400,000	0	7,000,000	76,000,000	.2%
Philippines	784,219	156,843	5,300,000	6,084,219	19,000,000	.8%
Vietnam	207,403	41,480	8,000,000	8,207,403	46,000,000	.09%
Zambia	314,192	62,838	0	314,192	25,000,000	.7%

While emissions reductions are at the center of EC-LEDS sustainable landscapes implementation, it is an insufficient measure to capture implementation progress in the short-term when accounting for the startup time required to develop emission reductions, especially those destined for international markets.

41 The UN REDD+ process requires safeguards to ensure that social and environmental issues are taken into account in design, implementation, and evaluation of activities. Safeguards aim to avoid potential risks and social and environmental damage resulting from activities and ensure social and environmental benefits. <http://www.redd-standards.org/key-issues>

42 "Projected emissions reductions" is a new indicator as of 2015; the absence of a projection is not indicative of no future emission reductions from implementation activities. Where possible, projections were verified using third-party audits.

43 <http://climate.globalforestwatch.org>

44 Because EC-LEDS monitoring and reporting does not reliably disaggregate specific sources of emissions reductions, annual average national deforestation rates are used as a baseline to determine the relative impact of sustainable landscapes emission reduction efforts.

45 293 million tCO₂e/year are from primary forest.

In addition, emission reduction achievements do not include the many co-benefits that have been achieved by the program, including improved management practices and the generation of income for forest communities.

In general, most EC-LEDS countries are not achieving outcomes at scale when using emission reductions as the sole measure of EC-LEDS progress, though the relative impact of emission reductions generated from EC-LEDS implementation is fairly consistent. The mean percentage of annual average emissions from deforestation offset by annualized EC-LEDS emissions reductions to date across 12 countries is 1.28 percent, with a range of 3.41. The generation of emissions reductions is ramping up in many countries, and countries currently at the low end of the spectrum like Malawi, Colombia, and Vietnam are projected to reduce millions of tCO₂e through 2030 and beyond.

Highlights of Country Sustainable Landscapes Program

Colombia

The REDD+ projects established under BioREDD—Cajambre, Concosta, and Siviru-Usaraga-Pizarro-Piliza (SUPP)—that have received third-party validation and first verification establish a potential long-term source of emission reductions from forests and a potential long-term source of revenue from carbon transactions and other forest-based livelihoods. Colombia has received substantial support for finance and markets readiness from USAID through programs like BioREDD and Forest Carbon, Markets and Communities (FCMC). To monitor carbon inventories, particularly in the Pacific region, USG support has contributed to a cutting-edge approach using different sources of remote sensing data, and has supported methodological modifications that enhance the potential for private finance for REDD+.

Malawi

Malawi is unique among EC-LEDS countries in that its emissions from deforestation and forest degradation substantially eclipse emissions from agriculture, energy, and waste combined. While emissions from forestry are currently 79 percent of the total, forestry is expected to lead Malawi's emissions profile in 2040, with 65 percent of total emissions. Addressing drivers of deforestation, particularly charcoal production, has been a central focus of EC-LEDS support. Efforts to address charcoal production include increasing the use of liquefied petroleum gas for cooking in urban areas and increasing the efficiency of charcoal production.

Like Colombia, embedded advisors supported by EC-LEDS, most notably in a cross-ministerial working group for the national GHG inventory and in the Department of Forestry, have contributed to mainstreaming and national-level coordination of climate change mitigation planning and implementation. EC-LEDS support enabled the Government of Malawi, for the first time, to take a serious multi-stakeholder and inter-ministerial approach to addressing climate change and development challenges. In the Department of Forestry, a dedicated USFS advisor assisted the department in drafting a five-year National REDD+ Action Plan, which establishes a comprehensive framework for achieving Malawi's national REDD-readiness priorities, developing a long-term (30-year) REDD+ strategy, and reducing emissions from deforestation; REDD+ is now part of Malawi's Climate Change and Forestry Policy. EC-LEDS support in Malawi for its REDD+ Action Plan resulted in nearly \$300,000 in funding from UN-REDD to further develop the country's REDD+ program.

The Kulera REDD+ agreement, signed between Malawi's Department of National Parks and Wildlife, the Nyika-Vwaza Community Association, and Terra Global Capital, was a landmark moment of EC-LEDS support in the country, and was a key step in implementing activities aimed at improving livelihoods from sustainable landscapes, reducing deforestation, and generating emissions reductions in buffer zones around protected areas. The Kulera Landscape REDD+ Project has also resulted in substantial revenue generation,

most notably from two sales to Microsoft, and benefit-sharing from transactions of carbon credits. The project has also generated co-benefits including increased water availability and irrigation potential due to improved forest management.

The Philippines

Under the flagship USAID/Philippines SL project, Biodiversity and Watersheds Improved for Stronger Economy and Ecosystem Resilience (B+WISER), the Philippines is making noteworthy progress in improved forest protection and management, and in implementing a PES pilot projects.

Launched as a pilot in March 2016, LAWIN is a GPS-based forest management and protection system that combines use of the Spatial Monitoring and Reporting Tool (SMART) and the Cybertracker open source software system to enable on-the-ground reporting of natural resource management conditions and forest threats. The system is used by the Philippine's Department of Natural Resources (DENR), as well as by community rangers, to provide real time forest condition updates and to instantly relay law enforcement violations to authorities. The LAWIN forest protection system has been approved for national application following successful application in seven B+WISER sites. The system is now being scaled by DENR to cover an additional seven conservation hotspots totaling 6.5 million hectares. DENR is providing all personnel and equipment, and has committed US \$6.8 million for the system in 2016 and US \$8.6 million for 2017.



DENR staff participate in LAWIN forest protection training. 850 forest patrollers were trained during the pilot phase and in 2017 the system will be scaled for national application.

Also of promise, early PES pilot work has generated revenue that is significantly above management costs, with payments linked to community forest protection and management performance. In one site in Bago, PES collection is \$107,000-172,000 per annum, whereas the costs for forest protection and management is \$21,000/year. Excess funds are going toward community livelihood programs. The work supported by B+WISER (and by GIZ) is being used to identify best practices as a basis for developing national policy guidance. LAWIN is expected to contribute to 3.4 million metric tons of greenhouse gases emission reduction by December 2017.

Vietnam

In Thanh Hoa, the development of the provincial Green Growth Action Plan is now moving from planning to implementation, with EC-LEDS support focused on the implementation of the recently launched Bamboo Action Plan. The action plan supports the development and implementation of improved bamboo varieties that are more productive; the processing and creation of different products; and support for improved market access and partnerships with the private sector. Approval by the Provincial Peoples' Committee means that activities supporting the plan can be integrated into the provincial Socio-Economic Development Plan, and the budget allocation and implementation process can begin.

EC-LEDS planning and implementation in Vietnam is a frontrunner in Southeast Asia with regard to emphasis on REDD+ and international markets, and there is a shared perception that "if REDD+ is going

Vietnam's REDD+ Success

Current support for completion of Vietnam's emissions reductions program document (ER-PD), and eventual negotiation of an emissions reductions purchase agreement (ERPA), is expected to result in as much as \$60 million in additional finance in the next five years from the World Bank's Carbon Fund. The FCPF process has resulted in changes to provincial forest management plans, including reductions in forest harvest and increases in reforestation programs.

to work anywhere, it is going to work in Vietnam.”⁴⁶ Though Cambodia has also had limited success in developing and monetizing carbon from forestry/REDD+ as a result of EC-LEDS support, most notably a transaction of credits from the Monduliri Province to the Disney Corporation, a lack of strong enabling environment, including poor monitoring and enforcement, coupled with sluggish international markets, have hindered success and further development in this area.

In the next five years, Vietnam Forests and Deltas (VFD) is projecting that at least 8,000,000 tonnes of emission reductions will be generated from REDD+ in three provinces, including 1.5 million tonnes/year in

Thanh Hoa. Vietnam is more focused on utilizing EC-LEDS support in pursuit of international finance than perhaps any other EC-LEDS country, and USAID support has helped Vietnam max out its FCPF readiness grant funding. In addition, Vietnam was recently approved to receive \$29.5 million in the first global tranche of funding from the Green Climate Fund for coastal adaptation and mitigation. This achievement, which is expected to reduce nearly 2 million tonnes CO₂e, was possible with foundational support for green growth planning from EC-LEDS. With EC-LEDS support, Vietnam is establishing itself as a regional leader in REDD+ implementation and access to international mitigation finance

One of the most notable achievements resulting from EC-LEDS support in Vietnam is the piloting of PFES, which has since been scaled nationally in dozens of Vietnam's provinces and has generated \$165 million (currently \$58 million/year) in revenue for forest communities in key watersheds around hydroelectric dams. EC-LEDS has supported revisions to Decree 99, which establishes payment per kilowatt-hour to recipients, and for revisions to Decree 40 (PFES compliance). Through support from EC-LEDS, PFES revenues are expected to nearly double in the next year as compared to the amount collected over the past year. Eighty-five percent of PFES payments are returned to communities in exchange for agreements to sustainably manage forests.

To meet its international commitments, Vietnam aims to reduce its emissions from agriculture by 20 percent by 2020. Emissions from agriculture are second only to emissions from energy. Emissions from deforestation and forest degradation are not one of Vietnam's top three emitting sectors. EC-LEDS has supported low-emissions agriculture work in both rice and livestock production, improving water, fertilizer, and waste management to reduce emissions. However, work on this area by USG partners like the USDA has limited one-off support relative to other areas of sustainable landscapes, such as watershed management and PFES.

Conclusions: EQ2

Several conclusions relevant to both the CE and SL pillars are presented in the section that follows. Conclusions specific to CE or SL programs follow general conclusions.

Overall, the EC-LEDS program has contributed to partner countries' progress toward LED outcomes in both the CE and SL sectors, as indicated in Tables 7 and 8.

⁴⁶ Interview response.

TABLE 7: CLEAN ENERGY OUTCOMES

MW Capacity Added (% of National Generation Capacity)		Finance Mobilized (Million USD)	Emissions Reduction from CE	
Completed Assistance	Anticipated from Ongoing Assistance		ERs from Installed, Completed, Financial Closure, or Policies ⁴⁷	Projected Through 2030 (tCO ₂ e)
2,769 MW (0.4%)	16,978 MW (2.6%)	\$5,108	83,759,476	371,573,703 ⁴⁸

Under CE, the EC-LEDS program has contributed to the addition of approximately 2,769 MW⁴⁹ of renewable energy, resulting in a projected GHG emission reduction of over 85 million tCO₂e⁵⁰ through 2030. The largest contributors were Mexico (1,860 MW), India (372 MW), Kenya (310 MW), and Indonesia (288 MW).

EC-LEDS has made nationally significant contributions to clean energy development in a number of countries. The following are examples of this success:

- Ethiopia:** 1,000 MW of projected added capacity; representing 42.5% of national energy production
- Georgia:** 755 MW of projected added capacity; representing 17% of national energy production
- Kenya:** 602 MW of projected added capacity; representing 27.4% of national energy production
- Mexico:** 5,5580 MW of projected added capacity; representing 8.7% of national energy production

The total amount of RE generation capacity due to completed USG assistance, however, is small compared to total generation capacity overall (0.4 percent) in the countries where EC-LEDS works; thus GHG emission impacts are small relative to global emissions. Several country programs have been successful at contributing to the addition of renewable energy that represents significant portions of total generation capacity, including in Mexico (2.9 percent), Georgia (4.2 percent), and Kenya (14.1 percent).

TABLE 8: SUSTAINABLE LANDSCAPES OUTCOMES

Co-Benefits		SL-Related Financing and Investment		Emissions Reductions from SL (tCO ₂ e)	
Hectares Under Improved Management	NRM-Related Funds Distributed (PES, NTFPs)	Readiness Funds/Grants Received (UN-REDD, FCPF)	REDD+ Payments Received (Carbon Monetization)	Actual ERs (2011-2015)	Total ERs (Actual + Projected Through 2030)
19,534,761	\$173,685,521	\$8,400,000	\$3,548,934	34,401,801	83,583,091

Of 15 countries with sustainable landscapes funding under EC-LEDS:

⁴⁷ Represents projected emission reductions from projects completed, finance closed, and policies already approved.

⁴⁵ Includes actual emissions reduction to date from CE plus projections through 2030 from on-going programs. An additional 7.3 million tonnes will be reduced through energy efficiency programs.

⁴⁹ This includes MW of renewable energy installed, at financial closure, or projected due to implemented policies.

- Ten countries are reporting emissions reduced as a result of EC-LEDS support. In total, EC-LEDS support for sustainable landscapes has reduced nearly 34 million tonnes of carbon during the period 2011-2015, with the most significant reductions in Malawi and Cambodia; these two countries also completed the most significant carbon transactions, with over \$3 million in carbon sales to Microsoft and Disney. Projects in Malawi and Colombia are expected to produce reductions beyond 2030, with nearly 30 million tonnes expected from the three BioREDD REDD+ projects discussed previously.
- Seven countries have generated natural resource management-related funds, including payments for ecosystems services and the sale of non-timber forest products. These seven countries, primarily in Latin America and Southeast Asia, have generated nearly \$175 million in funds for communities. In Vietnam, EC-LEDS support for PFES pilots and the national scaling of the PFES program has generated more than \$165 million in payments to communities in key watersheds. This work has created a foundation for meeting REDD+ requirements by mapping and monitoring forests and improving protection systems. Though implemented at a much smaller scale, the Philippines has also successfully used PES to demonstrate that revenue can be earned at levels significantly above the costs required to cover forest management and protection.
- Ten countries have received support in obtaining other sustainable landscapes-related financing and investment from public and private sources. These funds are primarily in the form of readiness funds or grants received from sources like UN-REDD or FCPF; REDD+ payments received as a result of the carbon development and monetization process; and other sustainable investments, including investments in REDD+ that support the development process. EC-LEDS has leveraged \$8.4 million and just over \$3.5 million in the former two categories respectively.
- Important accomplishments in the areas of improved forest monitoring have moved forward in several countries. This includes a national roll-out of the LAWIN forest management and protection system in the Philippines, and support for Vietnam's Forest Inventory Planning Institute in Vietnam, which has improved its inventory methodology and provided substantial support to the country's REDD+ effort.

EC-LEDS has achieved important accomplishments that offer promise in terms of approaches and lessons. The following are examples of notable EC-LEDS accomplishments that offer promise in terms of approaches and lessons for future programming:

- In **Colombia**, the REDD+ projects under BioREDD that receive third-party validation and verification may be a potential long-term source of emission reductions from forests and revenue from carbon transactions and other forest-based livelihoods. While there have not yet been any transactions of VCUs produced in three verified REDD+ projects under BioREDD, Colombia can expect to bring 23,548,277 VCUs to market for a total of 28,306,345 tCO₂e reduced⁵¹.
- **Mexico** has one of EC-LEDS' most successful clean energy programs. Through this program, the U.S. Government supported the implementation of Mexico's Climate Change Law, which requires that 35 percent of energy in the national grid should come from clean energy by 2024, with nearly half of this coming from new sources. This assistance included support for Mexico's first energy auction, held in March 2016. The auction was a great success, as photovoltaic generation prices set a record-low price of \$35.5/MWh. A second auction is planned for September 2016; in total, the two auctions are expected to add up to 5.8 percent in renewable energy to Mexico's total energy production (from all sources).
- The development of **Vietnam's** PFES program, which has generated \$165 million in forest protection revenue and is expected to cover 10 million hectares of forest, set the stage for the

51 VCS-CCB validation reports for Cajambre, Concosta, and Siviru-Usaraga-Pizarro-Piliza (SUPP) REDD+ projects developed through BioREDD; available at <http://database.v-c-s.org>.

progress being achieved under the FCPF REDD program. Likewise, the Philippines has demonstrated early success in its support of PES projects and the approach can be used to expand the effort and influence the development of a national performance-based PES system.

The following are program-level conclusions that are drawn from EC-LEDS experience across countries:

- **Cost and pricing has a big effect on mitigation opportunities:** The EC-LEDS program has coincided with a steady decline in the levelized cost of electricity from renewable energy sources. Solar PV prices have fallen from an average of USD \$285/MWh in 2010 to as low as USD \$80/MWh in 2014, which in some cases makes solar PV competitive with traditional fossil fuels. On the SL side, the opposite is true. In 2014 the average price of voluntary carbon offsets reached an all-time low of USD \$3.8, and more than 10.9 million voluntary carbon credits were sold for less than USD \$1 in 2014.⁵² This has likely affected the enthusiasm of some countries to pursue REDD as the costs of developing these programs are substantial.
- **Not all EC-LEDS programs are focused on long-term, transformative change.** Some EC-LEDS country programs were not designed to achieve large-scale change and do not have the potential to significantly reduce emissions. For example, activities that focus exclusively on small scale or residential RE development are unlikely to have significant mitigation impacts, but may have development co-benefits. On the SL side, program scoping does not always include necessary follow-on work or consideration for third-party emissions reduction validation and verification, which is necessary to monetize carbon credits.
- **Policy environments in several countries are not conducive to large-scale change.** In countries where RE policy efforts have produced little or only incremental progress, additional renewable capacity, especially solar PV due to the perceived high cost, are not currently envisioned to be a significant part of the future energy mix. This can lead to a heavy focus on small-scale RE, where programs can report progress in RE implementation due to a more favorable policy environment for small-scale RE, but where prospects for large-scale change are not currently promising.
- **In the SL program, REDD+ programs are not being given priority due to a lack of government enthusiasm and support.** Countries may lack the institutional arrangements and enabling policies required to develop programs to sustain emissions reductions over time, or ensure permanence.

Clean Energy-Specific Conclusions

Factors that have contributed to success include:

Clear RE policies and targets. In successful programs, either the partner country has already established a strong enabling environment for renewable energy or EC-LEDS has improved the enabling environment, including clear policies and regulations, and setting renewable energy targets. For example, in **Mexico**, the EC-LEDS program provided assistance in developing realistic targets and supporting the implementation of the Climate Change Law by supporting the design and implementation of the 2016 energy auction. Even in cases where the activity would likely have moved forward without EC-LEDS, tools and analysis can be an effective way to leverage USG technical assistance to support policy implementation and improve outcomes. Tools such as, the GEMM 2015 model in **Georgia**, the IT platform used to support Mexico's Energy Auction, or the EVOSS system in **the Philippines** can increase investor

⁵² REDD and voluntary carbon markets: Prices falling as supply exceeds demand. <http://www.redd-monitor.org/2015/11/20/redd-and-voluntary-carbon-markets-prices-falling-as-supply-exceeds-demand/>

confidence by increasing transparency, speeding up administrative processes and/or providing solid analytical backing to RE planning.

Successful programs have decreased financial barriers and/or increased investor confidence for RE development. The perceived and real costs of renewables are significant barriers to large-scale renewable energy adoption. The levelized cost of electricity from renewables has dropped significantly; however, significant cost variability persists across countries due to a variety of factors, including the cost of financing and the availability of resources.

- Many EC-LEDS programs have been successful in increasing RE implementation by providing technical support and increasing access to finance on a transactional basis, including in **Kenya, Indonesia, and the Philippines**. Transactional support, especially small-scale, is unlikely to lead to transformational change in the energy sector. However, experience with the implementation of demonstration projects can result in a strong understanding of the country-specific challenges for renewable energy adoption.
- EC-LEDS programs have increased investor confidence by supporting clear policies and regulations and creating new institutional arrangements. In **Indonesia**, the government has decided to pursue development of a separate institution to buy renewable energy, similar to **India's** National Solar Mission, which USAID is supporting. In **Mexico**, assistance with the Energy Auction design and IT platform development increased investor confidence by increasing the transparency of the auction.

Energy sector transformation takes time. Some clean energy programs have been implemented for a relatively short time, such as in **South Africa, Jamaica, and Kazakhstan**. Even programs that have been established longer may need more time to demonstrate results. The four years between the 2012 Law on Climate Change in **Mexico** and its successful energy auction in 2016, with installation expected by the end of 2018, was fast compared to other countries. Mexico had strong electricity sector targets and policy to drive implementation. In some cases, the main EC-LEDS clean energy programs were designed before the launch of the EC-LEDS program. Follow-on activities or those designed after the EC-LEDS launch have included a stronger long-term focus.

Sustainable Landscapes-Specific Conclusions

Emissions reductions can be a lagging indicator and are not currently an adequate measure of EC-LEDS implementation progress. This is because emissions reductions may be calculated using different tools and degrees of rigor from project to project, or country to country, and because they do not capture information about progress in other key areas that are part of a well-rounded approach to low emission development and sustainable landscapes, such as access to finance and areas under conservation. Verified emissions reductions are generated over a timeline that generally exceeds that of the first phase of EC-LEDS planning and implementation, particularly in countries without earlier completed groundwork. As such, EC-LEDS implementation is best examined by the extent to which sustainable landscapes implementation is producing outcomes that contribute to the elements of a robust low-emission development strategy, and the degree toward which countries are committed to implementing carbon emission verification systems.

Enabling factors for success: Outcomes resulting from EC-LEDS support for sustainable landscapes are greatest in countries with a specific prioritization or emphasis on sustainable landscapes funding, or where EC-LEDS sustainable landscapes programs have been in place the longest, offsetting the initial impact of startup times and latency periods. Approaches that are both widely adopted and generating multiple outcomes include REDD+, payments for ecosystem services, and improved forest resource management in watersheds, protected areas, and other forests. EC-LEDS work in the agricultural sector

has been initiated relatively recently and thus outcomes to date have been modest; virtually all outcomes reported in Table I are forestry-related.

Other factors for success include:

- **Projects that are forward-looking and long-term:** Progress toward sustainable SL management relies on timelines that are significantly longer than traditional development or investment models. Projects that report outcomes across multiple indicators rely on short-, medium-, and long-term outcomes that build on prior results. Bringing more hectares under improved management can be the first step in generating later finance and investment, and can eventually scale up emissions reductions over time, which appears to be happening in Vietnam and Colombia. Successful countries under EC-LEDS have also focused on activities that generate tangible co-benefits, such as improved biodiversity, or livelihood activities that also have mitigation benefits. Successful projects in **Cambodia, Colombia, and Malawi** also included technical and financial support for the validation and verification process, which can set individual projects up to begin receiving carbon payments after first verification, including forward purchases for future “vintages,” as is the case in Cambodia.
- **International Finance Approaches:** Planning approaches that have focused on meeting international finance requirements, such as accessing UN-REDD and FCPF, have met with success in countries such as **Malawi, Cambodia, Colombia, and Vietnam**. EC-LEDS countries reporting outcomes related to finance and market readiness have worked on identifying, understanding, and navigating the process to secure readiness grants and other funding from FCPF, UN-REDD, and the GCF. In addition to these funding sources, countries report additional sources of public and private finance and investment, including PES and REDD+. Countries with established success, like Colombia and Vietnam, are working to achieve market readiness, including signaling would-be investors by working to meet international finance and other standards that boost investor confidence. In general, working to meet these standards is a good indication of a country’s commitment and progress toward SL emission reduction.

Factors inhibiting success: Despite notable progress across indicators in a handful of countries, other EC-LEDS efforts are not yet reporting outcomes from implementation for a variety of reasons:

- **UNFCCC and other international requirements:** Countries may not structure their programs and policies to achieve compliance with or meet the standards of international processes; thus EC-LEDS also may not emphasize these standards.
- The need for analytical rigor to keep pace with international requirements and standards for finance and markets is a limiting factor for many EC-LEDS countries. This is a weak point in otherwise well-rounded country implementation, primarily due to a lack of emphasis, technical expertise, or adequate tools and technology. In **Vietnam**, a lack of personal data collection technology in the field has limited the capabilities of the Forest Inventory and Planning Institute (FIPI) to conduct national forest inventories.
- **Inadequate indicators and reporting for EC-LEDS monitoring:** EC-LEDS monitoring and reporting is inconsistent with regard to disaggregation of key data (by country for regional programs, land use type, funding source, etc.), and documentation is often incomplete or inadequate, particularly where quantitative outcomes are concerned. Some reported data could not be verified in a third-party audit, which makes it difficult to accurately determine outcomes. Program scoping does not always include necessary follow-on work or consideration for third-party validation and verification. This is a limiting factor for long-term success, as rigorous measurement systems are required for participation in carbon markets.
- **Lack of transformative, long-term approaches:** At this stage in the EC-LEDS process, it can be difficult to determine the long-term transformative nature of implementation, particularly the

permanence of emissions reductions and the ability of hectares of land to remain under improved natural resource management over time.

Recommendation: EQ2

Overall Recommendations

Examine the program's best-performing efforts to identify success factors and opportunities to transfer lessons across the EC-LEDS program.

- For CE programs, this may include reviewing the energy auctions in **Mexico** and **Peru**, as well as in other developing countries to determine what made them so successful. Study tours to Mexico from other EC-LEDS countries may provide useful insights to countries interested in completing an RE auction for the first time.
- For SL programs, this would include providing increased support for PES programs, based on lessons from Vietnam, the Philippines and other countries, and looking at the feasibility of support for project-based REDD+ projects, such as **Cambodia**, **Malawi**, and **Colombia** have done. Project-based REDD+ support may be a viable path forward in countries that do not have a policy environment or institutional focus conducive to development of a national REDD+ program, such as in the Philippines and Indonesia.

Encourage reporting on projected reduced emissions. The introduction of this indicator is a step in right direction toward keeping the focus on medium- to long-term reductions in emissions. By reporting on projected emissions reduced from programs, technical assistance can focus on projects that will have the highest long-term emission benefits, such as policy implementation, instead of focusing on short-term emissions benefits from small-scale CE projects that can be installed and measured over the life of the project. For SL programs, this should include disaggregating key data (by country for regional programs, by land use type, funding source, etc.). Program designs should also include support that will lead to or fund third-party validation and verification.

Clean Energy-Specific Recommendations

Keep the focus of EC-LEDS projects on national-level emissions trajectories. Programs that focus on renewable energy or energy efficiency implementation at scale (usually focused at the national level) are more likely to result in large impacts. Clear communication about what constitutes “success” in the EC-LEDS program can help keep programs focused on the most effective assistance. Project designs should include expected emissions benefits and judge their potential achievements in this area.

Continue to focus on removing barriers to clean energy implementation. Barriers can include both economic (access to finance, etc.) and non-economic (grid integration, administrative barriers) factors. Programs should go beyond identifying barriers and focus interventions on removing them. Examples of interventions that have the potential to remove significant barriers include financial relief in **Indonesia** (via support for new RE off-taker), **Mexico** (via design and information technology support for the RE auction), and **Kenya** (via direct financing and loan guarantees); administrative facilitation in the **Philippines** (EVOSS system); and technical solutions in **India** (through the grid integration program).

Re-engage with partner countries on RE development in light of record-low prices for RE, especially solar PV. The perception in most countries is that renewable energy is expensive and will raise electricity prices. Recent energy auction prices in **Mexico** and **Peru** demonstrate that RE is now competitive with fossil fuels. Thus, EC-LEDS countries may be more receptive to large-scale RE implementation. Assistance in this area could include placing an increased emphasis helping countries gain

familiarity with new CE technologies, support for cost feasibility analysis and expanding the use of market mechanisms, such as transparent energy auctions, to help make CE implementation more cost effective and feasible.

Sustainable Landscapes-Specific Recommendations

Continue to focus on the achievement of co-benefits, i.e. benefits in addition to emissions reductions. A focus on generating income for local communities from sustainable forest use can help to improve forest management practices and build commitment from local communities. EC-LEDS has contributed to impressive success in income generation under the **Vietnam** PFES program, and has made notable progress in the development of non-traditional forest income on **Peru**. These programs can help to inform future programming.

Increase the emphasis on meeting the compliance requirements of international funding sources. International funding programs have rigorous and time-consuming compliance requirements; however, experiences in **Guatemala** and **Vietnam** demonstrate that meeting the criteria of the various funding programs also enables access to the next level of preparedness funding. Vietnam, which is closing in on completing ERPA negotiations, is expected to receive up to \$60 million from the Carbon Fund upon completion of this process. It is also recommended that completion of FCPF documentation and access to UN-REDD and FCPF readiness funds be considered as performance indicators for EC-LEDS' sustainable landscape program.

EC-LEDS SUPPORT FOR PARTNER COUNTRIES' PARTICIPATION IN INTERNATIONAL CLIMATE CHANGE NEGOTIATIONS (EQ3)

EQ3: How has the EC-LEDS program contributed to partner countries' engagement in international climate change mitigation efforts?

This question focuses on the support EC-LEDS provided to partner countries to participate in international climate change negotiations, particularly the assistance to help countries develop their intended nationally determined contribution (INDC) submissions to the UNFCCC Paris Conference of the Parties in 2015 (COP21). This review is based on qualitative field interviews, and from examining country commitments to emissions reduction, mainly per INDC commitments.

The focus of the evaluation question is the *capacity* to participate in negotiations. "Capacity" reflects a country's ability to analyze GHG missions and conduct economic modeling of mitigation options, including development of business-as-usual (BAU) emissions projections to be able to complete UNFCCC reporting requirements.

What Is an Intended Nationally Determined Contribution?

An INDC is a written plan for climate change emissions reductions that all UNFCCC signatory countries were asked to publish in the lead-up to the 2015 United Nations Climate Change Conference in Paris, France, in December 2015.⁵³ The term was a compromise between "quantified emissions limitation and reduction objective" (QUELROs) and "nationally appropriate mitigation actions" (NAMAs) that the Kyoto Protocol used to describe the different legal obligations of developed and developing countries. Under the Paris Agreement, adopted in December 2015, the INDC will become the first nationally determined contribution (NDC) when a country ratifies the agreement. Once the Paris Agreement is ratified, the NDC will become the first greenhouse gas targets under the UNFCCC that apply equally to both developed and developing countries.⁵⁴

INDCs are the primary means for governments to communicate the steps they will take to address climate change. An analysis of the total of all countries' emissions projections and mitigation commitments is used by the UNFCCC to determine if total global mitigation actions will be sufficient to avoid the worst effects of global climate change. The UNFCCC's current goal is to keep global temperature rise to below 2°C (compared to average pre-industrial levels).

INDCs are technically and politically driven, reflecting each country's ambition to reduce emissions while pursuing economic growth. INDCs include: (1) national context for how their actions fit with sustainable development priorities, current plans, and strategies; (2) mitigation contributions, ensuring fair and ambitious targets; (3) current and future adaptation actions; (4) planning processes for monitoring and supporting the implementation of the INDC; and (5) means of implementation (financial, capacity-building,

53 "Decisions adopted by the Conference of the Parties of the UN Framework Convention on Climate Change at its nineteenth session" (PDF). United Nations. 31 January 2014. Retrieved 15 December 2015.

54 "What is an INDC? | World Resources Institute." wri.org.

technology transfer or other types of international support). INDCs consider existing policies and economic trajectories when developing mitigation priorities.

EC-LEDS Support to Malawi's INDC Development

A representative from the Environmental Affairs Department stated, “We would not have been able to complete and submit our INDC without the assistance of USAID.” Malawi’s successful INDC submission was integral to increasing the country’s prominence at the Paris COP, where Malawi lead the Adaptation Team for the Least Developed Countries. One member of the negotiation team said of Malawi at the Paris COP: “Because of the INDC, we were able to punch above our weight.”

Emissions scenarios and mitigation opportunities use various analysis tools, including BAU scenarios of future emissions, cost-benefit analysis of mitigation opportunities, marginal abatement cost curves, and identification of development co-benefits.

All EC-LEDS partner countries submitted INDCs at the 2015 UNFCCC Paris conference. In addition, on August 3, 2016, China and the U.S. ratified the 2015 agreement on INDCs. Together, the two countries constitute 38 percent of total global GHG emissions; their ratification provides great momentum to the widespread adoption and ratification of INDCs by the larger international community.

EC-LEDS Support for INDC Development

Seventeen of the 26 EC-LEDS partner countries received USG support for their INDC development process—either directly for the development of the INDC report or through support provided for emissions measurement and mitigation analysis.⁵⁵ Technical support included: (a) operationalization of INDC policy frameworks, (b) development or enhancement of sustainable GHG inventories, (c) development of national and sectoral BAU scenarios, (d) development of national climate action plans, and (e) review of previous climate data to support INDC implementation. As detailed under EQ1, EC-LEDS has provided a significant amount of support to build mitigation analysis capabilities.

In many EC-LEDS countries, the level of support provided for INDC development was substantial and greatly appreciated, including and especially for Malawi and the Philippines. EC-LEDS reporting indicates that there was extensive support provided in developing INDC-related analysis in the following countries: Colombia, Guatemala, Jamaica, Malawi, Mexico, Philippines, and Zambia.

Examples of INDC-related support include:

- In **Georgia**, EC-LEDS developed BAU scenarios for energy consumption-related sectors of energy, transport, industry, and agriculture, and the analysis served as input into Georgia’s INDC.
- In **Guatemala**, EC-LEDS provided significant support to a national marginal abatement cost curve developed to support Guatemala’s INDC submission. The INDC process is closely linked to Guatemala’s LEDS development, through which USAID is helping to establish reliable analytics for GHG inventories, and strengthening government capacity to work with and monitor inventories.
- In **Mexico**, EC-LEDS created an updated GHG analysis, which included a BAU calculation, a Cost Abatement Curve Analysis, and a Project Portfolio Database.
- In the **Philippines**, USAID’s B-LEADERS project conducted a cost-benefit analysis of mitigation options for energy, forestry, agriculture, industry and infrastructure, and waste sectors in support of the Philippine Climate Change Commission’s work to develop and submit the country’s INDC.

⁵⁵ Cambodia, Colombia, Ethiopia, Gabon, Georgia, Guatemala, India, Jamaica, Kazakhstan, Kenya, Malawi, Mexico, Peru, Philippines, Ukraine, Vietnam, and Zambia.

The CBAs quantified the co-benefits of mitigation actions in areas that included health, income generation, traffic congestion, climate resilience, energy security, and gender.

- EC-LEDS helped **Zambia** develop and submit its INDC by conducting an in-depth technical assessment of previous GHG efforts to develop a new baseline GHG inventory. The USG also completed a resource and policy review, created a BAU projection, and provided feedback to the Government of Zambia on their GHG data collection and inventory processes to promote capacity building for the country to self-perform future work.

In other countries, such as Vietnam and Indonesia, assistance for INDC development was not needed or was provided by other donors, such as by the UNDP/EU's Low Emission Capacity Building Program. In some countries, analytic assistance was helpful, but direct contributions to the INDC's development were not required. For example, both Mexico and Colombia play a strong role in the international climate change discussions, both have a long history of progressive climate policy, and both were able to produce their own INDCs.

"The EC-LEDS program was critical to reaching a global consensus on climate action and to the approval of the UNFCCC COP21 Paris Climate Agreement."

Senior Climate Change Negotiator, U.S. Department of State

Support to Increase Capacity to Participate in International Climate Negotiations

The SOW for this evaluation was written prior to the UNFCCC Paris conference. The clearest indication of EC-LEDS partner countries' capacity to participate in international climate change negotiations is that all of these countries submitted INDCs in late 2015.

One metric the team explored to gauge the commitment of EC-LEDS partner countries to implement mitigation actions is the level of mitigation they are willing to implement unconditionally, per their INDC submissions. Table 9 presents the unconditional and conditional commitments of EC-LEDS partner countries per their INDC commitments and includes income rankings based on per capita GDP.

TABLE 9: INDC COMMITMENTS AND INCOME LEVELS

Country	INDC Unconditional	INDC Conditional	Income	
			GDP (per capita)	Income Groups
Macedonia	0	30%	13,908	Upper Middle
Malawi	0	listed by sector	1,183	Low
Ethiopia	0	64%	1,626	Low
Kenya	0	20%	3,083	Low
India***	0	34%	6,089	Lower Middle
Philippines	0	70%	7,359	Lower Middle
Albania	0	11.50%	11,301	Lower Middle
South Africa	0	See Notes	13,165	Upper Middle
Gabon	0	50%	20,010	Upper Middle
Bangladesh	5%	15%	3,333	Low
Jamaica	7.80%	10%	9,063	Upper Middle
Vietnam	8%	25%	6,023	Lower Middle
Serbia	9.80%	N/A	13,671	Upper Middle
Guatemala	11.20%	22.60%	7,707	Lower Middle

Country	INDC Unconditional	INDC Conditional	Income	
			GDP (per capita)	Income Groups
Georgia	15%	25%	9,679	Lower Middle
Kazakhstan	15%	25%	24,268	Upper Middle
Zambia	17%	3,853	1,308	Lower Middle
Colombia	20%	30%	13,801	Upper Middle
Peru	20%	30%	12,402	Upper Middle
Thailand	20%	25%	16,305	Upper Middle
Mexico	22%	36%/70%	17,277	Upper Middle
Cambodia	27%		3,483	Low
Indonesia	29%	41%	11,035	Lower Middle
Ukraine	40%	0	7,519	Lower Middle
Costa Rica	44%	0	15,377	Upper Middle
Moldova	64-67%	78%	4,983	Lower Middle

Further observations regarding Table 9:

- Of the nine countries that committed to zero unconditional levels of emission reduction, six were either low-income or lower-middle-income countries;
- Of the nine countries that committed to the highest levels of emission reduction, five are upper-income countries and only one is a low-income country (Cambodia).

Conclusions: EQ3

EC-LEDs has provided a great deal of assistance to build capacity to enable partner countries to participate in international climate change negotiations. By all accounts, this assistance has been of high quality and largely effective. Support has resulted in effective capacity development, including skills and systems, especially in the areas of GHG emissions measurement and analysis and in conducting economic modeling on potential mitigation actions. Much of this work relates to LEDs planning capacity and is detailed in Section II, “EC-LEDs Planning Actions, Outcomes, and Resulting LEDs Implementation.”

The conclusion that EC-LEDs has been effective in building capacity required for participation in international climate negotiation processes is based on the outcome of the effort, which is that all countries produced and submitted INDCs. The conclusion is also based on discussions with agencies in partner countries—many of whom received extensive support in this area and who indicated the support was highly effective. EC-LEDs, however, lacks a mechanism to systematically measure and report on this aspect of the program. The EPA has developed the Greenhouse Gas Inventory Project Progress Indicator (IPPI) Assessment tool to measure capacity in the GHG inventory area, but the tool has not been routinely applied and, when applied, it often provides only a baseline assessment (not an assessment of progress).

In terms of helping foster the willingness of partner countries to participate in international climate change processes, it is not possible to make a conclusion about EC-LEDs’ influence. Countries have largely demonstrated their willingness by submitting INDCs, but it is not clear how or to what degree this was influenced by EC-LEDs. The evaluation team did hear several anecdotal examples of how EC-LEDs increased countries’ willing to participate in negotiations, but it is not possible to quantify this influence. One example is that the Philippines, over the course of working with EC-LEDs, dramatically shifted its view toward mitigation from opposing action to actively analyzing and identifying mitigation opportunities, and to being a supporter of the need for mitigation action.

It is clear that one of the main determinants of a willingness to implement mitigation actions is cost and financing. Many countries are willing to increase mitigation actions on the condition that external funding is received to support proposed actions. This is illustrated in the Philippines' INDC submission, which makes any additional INDC mitigation actions 100 percent dependent on the availability of external support. It is also evident from the general correlation between vulnerability and INDC commitments, and between wealth (GDP) and INDC commitments. Countries that have the highest vulnerability generally have lower mitigation commitments – perhaps because they see adaptation as more of a budget priority. Similarly, countries that have a lower GDP generally have set lower mitigation targets.

Recommendations: EQ3

A primary EC-LEDS focus should be to help countries to development and implement UNFCCC NDC commitments.

Continue to support the analysis of mitigation options, as needed: Each country should receive continued support in data analysis of GHG inventories, cost-benefit analysis, and marginal abatement cost curves, as required to further define and implement their mitigation priorities. However, and as stated under the EQ1 analysis, additional support in this area should be based on an assessment of need.

A simple performance reporting process should be developed to assess and report partner country progress in developing the capacities to plan and implement LEDS/UNFCCC processes.

While obvious, the cost of mitigation is a major factor in partner countries' willingness to implement emissions mitigation programs. It is critical that EC-LEDS focus on helping countries develop mitigations actions that can meet external finance criteria, such as those of the GCF and the FCPF, and support tools, policies, and platforms to reduce the cost of mitigation actions. Ideas on technologies, platforms, and financing support mechanisms to facilitate mitigation implementation are discussed in other sections of this report (mainly Section III).

THE EFFECTIVENESS OF THE WHOLE-OF-GOVERNMENT APPROACH (EQ4)

EQ4: How has the “whole-of-government” approach affected implementation of the EC-LEDS program?

Part of the theory behind EC-LEDS is that country-driven strategies are more likely to be sustainable than those developed by donor agencies or other external technical experts. Therefore, the EC-LEDS approach to “whole-of-government” emphasizes building capacity within the partner country itself. The term **“whole-of-government”** when used by EC-LEDS is different from the phrase as used in the traditional sense. Traditionally, “whole-of-government” refers to an approach that integrates the collaborative efforts of the departments and agencies of a government to achieve unity of effort toward a shared goal where there is unity of effort and unity of purpose. This approach is a collaboration in which each agency brings both its own expertise and its own resources. For EC-LEDS, the whole-of-government (WoG) approach worked across a variety of institutions within the United States government (USG) and partner countries. This includes coordination and interactions both within a specific country or agency, and between countries or agencies. It’s important to also note that resources for USG partnering agencies were provided by USAID.

This distinction in definitions is important when evaluating the success of the WoG in EC-LEDS, as the other agencies are often brought in for very specific activities and may have little or no involvement in other activities. Therefore, when evaluating the successful integration of the different agencies in EC-LEDS, the responsibility rests with USAID.

An agency’s involvement in EC-LEDS generally begins with an interagency scoping trip to the country. This trip would include representatives from USAID/Washington, the USAID mission, and other agencies appropriate to the country context, with participation by the local government. These trips’ intent is to:

1. Strengthen host government understanding of, and commitment to, EC-LEDS;
2. Conclude a technical needs assessment;
3. Engage with donors and stakeholders to discuss EC-LEDS and related programs;
4. Support USAID mission and embassy leadership and staff; and
5. Identify a path forward.

A sample of the positions on the scoping team includes:

1. USAID/Mission Lead;
2. USAID/Washington Scoping Trip Lead;
3. State Department Scoping Trip Lead;
4. Technical Scoping Team Lead; and
5. Technical Scoping Team.

The initial scoping trips included broad participation from all of the organizations interested in being involved in a country program. For example, the scoping trip to Georgia included team members from USAID, USDA, EPA, USFS, and NREL. The USG agencies the evaluation was interviewed found the scoping trips to be useful in designing and implementing programs that were well-suited to meet the needs of the country. However, the initial large interagency scoping trips were expensive and unwieldy; later trips involved fewer participants.

The level of involvement of government agencies (both USG and the partner country) varied greatly from country to country. The WoG approach was not used in seven EC-LEDS countries, meaning that partnering USG-agencies were not involved in EC-LEDS support, and six countries had more than three agencies involved. Agencies involved in program implementation are presented in Table 10.

TABLE 10: USG AGENCIES' PRESENCE IN EC-LEDS

Country	USAID	DOE	DOS	EPA	USDA	USFS	Interviewed
Albania	•		•				
Bangladesh	•	•	•	•		•	•
Cambodia	•		•			•	
Colombia	•		•	•		•	•
Costa Rica	•		•	•	•		
Ethiopia	•		•				
Gabon	•		•			•	
Georgia	•		•				
Guatemala	•		•			•	
India	•	•	•				
Indonesia	•		•			•	•
Jamaica	•	•	•			•	
Kazakhstan	•		•				•
Kenya	•	•	•	•	•		
Macedonia	•		•				
Malawi	•		•			•	•
Mexico	•	•	•		•	•	•
Moldova	•		•				
Peru	•		•	•		•	•
Philippines	•	•	•	•		•	•
Serbia	•		•				
South Africa	•		•				•
Thailand	•	•	•	•		•	
Ukraine	•		•				
Vietnam	•	•	•	•	•	•	•
Zambia	•		•	•		•	
Total	26	8	26	9	4	14	10

As Table 10 shows, the level of participation among agencies varies significantly:⁵⁶

- USAID and DOS participate in all 26 countries. The Department of State's participation mainly involves engagement on climate change negotiations and support, whereas USAID is focused on funding, managing, and coordinating technical assistance activity.
- DOE, mainly through NREL, is involved in nine countries, and works only in countries having CE funding.
- EPA has worked in nine countries, but was more involved in the early years of the program; its work has mainly focused on GHG inventory systems development.
- USFS has worked in 14 countries having SL funding.

⁵⁶ This information is from USAID and supplemented with the evaluation team's research. It may be incomplete, as reporting was unavailable from some agencies.

- USDA has been the least engaged of all USG-partnering agency partners, working in just four countries.

As one of the criteria for the field countries was the involvement of multiple agencies, all of the field countries had some whole-of-government involvement. All of the evaluation field visits took place in countries with the involvement of multiple agencies. Each agency provided specialized knowledge and tools, including:

- **EPA's GHG Inventory Development Toolkit:** A set of tools, processes, and an assessment framework to support the institutionalization of a GHG inventory system. The toolkit has been applied in numerous countries by the EPA and other EC-LEDS implementing partners.
- **Long-Range Energy Alternatives Planning (LEAP) software:** LEAP is a software tool from the Stockholm Environment Institute that assists in energy policy analysis. LEAP is an integrated modeling tool used to track energy consumption, production, and resource extraction in all sectors of an economy and can account for both energy and non-energy sector GHG emissions and sinks. EC-LEDS has supported LEAP's use in several countries, including **Indonesia**, where it is used to monitor and report on energy sector emissions across 34 provinces, and the Philippines.
- **Agriculture and Land Use GHG inventory software:** The ALU software was developed by Colorado State and has been applied by several EC-LEDS partner institutions, including EPA, USFS, and the RDMA/LEAD project. The software estimates GHG emissions related to agricultural and forestry activities. In **Vietnam**, the government's Forest Inventory and Planning Institute has adopted use of the software in support of REDD+ program monitoring, and stated that it is one of USFS' most significant contributions to their program. The software is also being used to prepare Vietnam's 2018 Third National UNFCCC Communication.
- **NREL's Renewable Energy Geospatial Toolkit (GST):** This toolkit is an open-source, map-based software that identifies renewable energy resources (e.g., for solar, wind, and biomass) in relation to enabling infrastructure like roads and transmission lines, and provides information required for deploying new clean energy generation.⁵⁷ In **the Philippines** and **Bangladesh**, the GST is used to manage data from NREL's wind atlas work to help the government and investors with decision-making on the development of new wind energy facilities.
- **NREL's Grid Integration Analysis/Greening the Grid:** Greening the Grid offers a toolkit of information and guidance materials to define and develop grid-integration road maps. Toolkit resources provide 1) concise and comprehensive overviews of emerging practices for addressing grid-integration challenges through policy, market, and regulatory mechanisms; and 2) guidance on applying these mechanisms to develop robust grid-integration roadmaps. Under EC-LEDS, NREL has provided Grid Integration/Greening the Grid analysis and training in several countries, including through regional workshops for 10 countries in Latin America and eight in Asia.
- **Development Impacts Assessment (DIA) Visualization Tool:** The DIA visual tool provides an approach to identify, document, and communicate the potential impacts LEDS actions have on a country's social, economic, and environmental development priorities. It can support decision-makers by exploring policy implications on the achievement of development goals and help build consensus for action among stakeholders. In **Zambia**, EC-LEDS collaborated with local technical institutions and stakeholders to assess and communicate the development impacts of LEDS actions. Zambia also used the DIA process to inform its INDC and prioritized mitigation actions.
- **The Energy Virtual One Shared (EVOS) System:** In the Philippines, EC-LEDS supported the development of EVOSS to harmonize the processing of RE permits and allow web-based monitoring of RE applications. EVOSS endeavors to shorten RE project processing time by

⁵⁷ Mapping the Future of Renewable Energy, USAID, June 2016.

streamlining the approval process, which currently takes up to three years and can require approvals from as many as 17 different agencies. The system became operational in June 2016.

- **Energy Auction platform:** In Mexico, EC-LEDS provided support for the first RE auction. This included developing and managing the software platform used to accept and assess bids. The auction was a great success and resulted in 11 solar contracts awarded, for a total capacity of 4 million megawatt-hours per year. The projects accepted from the auction will result in savings of up to 23 million tCO₂e through 2030, if they are all operational by 2018.

Findings: EQ4

In numerous countries, USAID indicated that having access to the high-level technical expertise of specialized agency programs was a significant benefit to the program, and enhanced the program's value. In both Colombia and Mexico, NREL was identified as a particularly valuable partner, while the same was said of NREL, the DOS in Bangladesh and the Philippines. The inclusion of other USG agencies gives the program a breadth and depth that would be difficult for USAID to accomplish on its own, and gives EC-LEDS entry into areas of government that might otherwise not be as open for involvement. Agencies that offer standard approaches and tools, such as the use of EPA's GHG inventory toolkit and NREL's use of solar and wind mapping tools, offer services that are easily understood and they bring these skills in packages that can be effectively transferred. The work of USFS, which uses custom approaches to fit the needs of each country, has more difficulty in consistently gaining traction in terms of the sustained application of their assistance.

In some cases, short-term work by USFS and USDA did not appear to be integrated into programs that could sustain and advance the skills being offered. Systems should be in place for the retention of data and lessons learned so that when the intervention is over, the learning remains. The data from EPA's work on the GHG inventory in Malawi has disappeared, and there is concern that Vietnam could have the same issue due to the intermittent nature of some of the interventions. It is also important that the agencies work out any administrative issues before going to the field. Colombia's EC-LEDS initially received different guidance from USAID and USFS, which meant a duplication of effort and time wasted trying to meet separate reporting schedules. These issues were worked out by the beginning of the LCRD follow-on, which helped in the success of that project. It is also important that technical support be appropriate for the country context. NASA created a GHG Inventory for the Pacific region of Colombia that is far in advance of what the country as a whole is using and cannot be integrated into its current system.

Findings: Field Visit Countries

During the field visits to the six selected countries, the evaluators interviewed local USAID mission and local government personnel to establish the relative success of the WoG approach. Below is a synopsis of evaluation findings on the WoG approach.

Colombia: The degree of success of the whole-of-government approach reported by informants in Colombia differed across projects and programs. The multi-agency project SilvaCarbon was universally reported as having been highly successful and well-integrated with the rest of EC-LEDS, while BIOREDD+ (with input from the National Aeronautics and Space Administration, or NASA) was perceived as being focused on its own objectives and unwilling to engage at a broader national level. The local government described BIOREDD+ as providing a sports car when they needed a pick-up truck. Informants from the original EC-LEDS in Colombia also reported that USAID and the USFS did not always have good coordination. The Government of Colombia (GOC) informants who were aware of the WoG in that country were happy with the level of integration of USG agencies, with the exception of the BIOREDD+ Inventory work, but some informants were not aware that there were partners other than USAID.

Indonesia: The WoG was not an important aspect of EC-LEDs in Indonesia. The USAID Mission had already designed and awarded its main SL and CE programs before EC-LEDs launched, and could not redesign its programs following a prescription from EC-LEDs. The USFS interventions consisted mainly of study tours and small community forestry activities that appear to have had little impact, as per reporting and interviews.

Malawi: USAID, EPA, and the USFS have been actively engaged in Malawi through USAID assistance (contracts, cooperative agreements, and IAAs). NREL was involved in work to map solar potential. A USFS advisor in Malawi's Forestry Department was credited by local government officials for the completion of Malawi's REDD+ Action Plan, which enabled Malawi to become a member of UN-REDD. EC-LEDs had a strong identity in Malawi, and the Mission reported using it as an organizing principle for the Mission's work. The Mission's main EC-LEDs implementation activities were designed based on the objectives in the MOU, as was the case in the other EC-LEDs countries visited.

Mexico: Respondents report that the agencies work well together and provide valuable assistance to the program. Local government representatives report that there is good integration between the various agencies, although the USAID Mission reported that the agencies work well together, but separately. Because many US agencies are unilaterally involved in Mexico, it was sometimes unclear to the local government officials what work was a part of EC-LEDs.

Philippines: Informants in the Philippines reported that there is a strongly perceived "one-team" approach across the agencies involved in the two pillars (USAID, DOS, USFS, and NREL). USAID's role as program coordinator was said to help ensure a single point of responsibility for coordination, as the other agencies operate under USAID IAAs. It was reported that USAID frequently uses the involvement of other agencies in roles that directly support its IMs and overall development

Vietnam: Most EC-LEDs agencies have at least some footprint in Vietnam, but certain activities appear to be of a more one-off nature, without a plan for sustained engagement. USFS was reported to have limited and only periodic involvement, which primarily focused on providing data sets or software/models in support of GHG and forest inventories. In general, respondents said EC-LEDs did not have a strong identity in Vietnam, nor did it appear to serve as an organizing principle for the portfolio of EC-LEDs activities. At least one of USAID's main implementing partners was not familiar with EC-LEDs and did not realize they were part of the program. It should be noted that while USAID/Vietnam coordinates closely with all of its development partners, the illustrative once-off activities mentioned here are managed out of Washington and are not necessarily related to other on-going in-country initiatives.

Findings: Phone Interviews with Non-Field Visit Countries

Bangladesh: The EPA and NREL are involved in Bangladesh, and the Mission reports having seen visible changes in the GOB due in capacity building, GHG inventory development and overall ways of thinking about GHG emissions as a result of their interventions. Their assistance has been reported to have helped build the relationship with the GOB. Other respondents reported that WoG in Bangladesh has not been effective. USAID/Bangladesh staff indicated that they did not believe the term EC-LEDs works well as an identifier or branding concept for the program as it is not widely understood, not used as a strategic communication approach and that projects funded under EC-LEDs are not always understood to be part of EC-LEDs.

Peru: Officials found the WoG approach confusing because no one agency took the lead in coordination. The agencies involved include USAID, FAS, and DOS in Peru and the EPA and DOE in Washington, D.C. "There needs to be a more strategic approach," was a suggestion offered by USAID/Peru.

South Africa: The DOS and USAID were reported to work together to link political and development objectives and this approach is seen as very successful. The key issue going forward is said to be enhanced interest by DOS in climate change issues, which makes the relationship between State and USAID very important.

Conclusions: EQ4

Overall, the WoG approach works well and is effective. A significant reason for this is that USAID controls much of the funding and acts as a coordinator for the delivery of in-country assistance; the Agency can thus direct assistance as needed and in collaboration with existing field projects. However, no clear guidelines or routine practices seem to govern the WoG approach as managed in individual countries. This means the coordination approach varies from country to country and EC-LEDs' identity and programmatic approach is dependent on the enthusiasm and skill of individual USAID managers.

When the WoG approach has been actively coordinated, as for example in the Philippines and Malawi, it has improved the implementation of the EC-LEDs program. The approach seems to work best with strong coordination of the USG agencies by USAID so that assistance is delivered when and where it is needed, and when the interventions are well integrated into longer-term efforts. In both Mexico and Colombia, some informants insisted they had not worked with any agency besides USAID, then proceeded to discuss work done in their country by other agencies, which indicates that EC-LEDs operates as a seamless interagency effort.

Where other agencies oversee short-term or smaller projects, care is needed to ensure that the input of other agencies is well-integrated into related projects so that the input is not lost. This may require a more active strategy and coordination process several countries use.

There was some concern mentioned in several countries that EC-LEDs does not have a strong brand or identify (Malawi, Vietnam and Peru). For example, the Missions may not use EC-LEDs as an organizing principle, or only see it as a reporting exercise. In addition, it is not always clear to government and implementation partners which projects or support activities are part of EC-LEDs. In part, this is because projects are not identified as being part of EC-LEDs, or because mitigation is not managed holistically across projects and agencies.

Recommendations: EQ4

Strong coordination by USAID will ensure that efforts are not duplicative and that gaps in the countries' abilities are supported. Currently, management and coordinating structures are left largely to the preferences of individual country programs, and this has resulted in significant variances in approaches. Guidance on management and reporting requirements may help standardize and improve the process.

- Administrative organization should be agreed upon before assistance starts. Where possible, use one set of standardized in-country reporting requirements, which should focus on outcomes.
- Technical assistance should be integrated with ongoing government activities. Programs should have flexibility to adapt to changes in administration, political party, or legislation affecting climate change programs, as when partner countries pass new legislation or policy.
- Protocols should be in place to ensure that data program outcomes and data are recorded, especially for short-term or limited projects.
- Develop an inventory of EC-LEDs tools to use as a guide for planning further assistance. EC-LEDs is capable of providing a broad range of technical support, but the tools and skills available through the program are not necessary familiar to USAID missions or partner governments. A clear

documented inventory of EC-LEDS tools can serve as a basis for identifying the support required to help countries further their progress in LEDS development and implementation and help partners better understand the assistance that is available.

- Better integrate USFS support into mission forestry programs and increase the use of embedded technical advisors to develop REDD+ and related programs. USFS support sometimes appears to operate more in a stand-alone or parallel capacity without integration into longer-term projects that can guide the efforts and provide a mechanism for long-term capacity building, as was the case in Indonesia. The use of a long-term embedded advisor in Malawi was successful in the development of the country's REDD+ Action Plan, and embedded advisors related to climate change more generally have had a positive and wide-reaching impact on policy precedent and uptake in countries like Colombia.
- USAID should consider developing a communications strategy around EC-LEDS so that the program, its purpose, and its many components can be readily understood. Consideration should include a re-branding and an emphasis on an integrated approach to mitigation management across projects and agencies.

ANNEXES

Annex A: Evaluation Statement of Work

Performance Evaluation of the Enhancing Capacities for Low Emission Development Strategies (EC-LEDS) Program

Activity Description

Launched in 2010, Enhancing Capacity for Low Emission Development Strategies (EC-LEDS) is a flagship program of the United States' Global Climate Change Initiative (GCCCI) and is the United States Agency for International Development's (USAID) key climate change mitigation program, encompassing both RE and Sustainable Landscapes funding. The EC-LEDS program is a "whole-of-government" initiative under the joint leadership of USAID and the U.S. Department of State (DOS) designed to support partner countries' efforts to pursue long-term, transformative development and accelerate sustainable, climate-resilient economic growth while slowing the growth of greenhouse gas (GHG) emissions. The EC-LEDS program, which advances the international goals of the U.S. Climate Action Plan, enhances partner country efforts by providing targeted technical assistance and building a shared global knowledge base on low emission development strategies (LEDS). The program began in 2010, currently works with 26 partner countries⁵⁸ and has obligated over \$200 million to date. Other U.S. government interagency partners include the Department of Energy (DOE), Environmental Protection Agency (EPA), United States Forest Service (USFS), and Department of Agriculture (USDA).

LEDS are development plans that promote sustainable social and economic development while reducing GHG emissions over the medium- to long-term. They are country-led and country-owned road maps for sustainable, long-term development that achieves national development goals while reducing the growth rate of GHG emissions. LEDS reflect a country's unique circumstances and build on existing frameworks and country progress in addressing climate change by integrating national development plans and budgets with sound analysis, specific policy recommendations, and implementation of priority interventions.

There are several types of technical assistance available to partner countries, such as (1) support in the development of new strategies and/or enhancing and strengthening existing strategies, (2) work with government and civil society partners to strengthen in-country human and institutional capacity, including through the provision of tools and approaches to assist with LEDS, and (3) support in the implementation of LEDS. Types of technical assistance provided under EC-LEDS generally fall under the following categories:

1. Technical assistance activities that would be expected to result in improved **National LEDS Frameworks**, which may include: GHG inventory capacity development; economic modeling; data and resource assessment; stakeholder engagement support; financial analysis of LEDS opportunities; support for MRV systems; and strategic energy planning.
2. **RE implementation** activities, which may include: renewable energy and energy efficiency policies, plans, and programs; increasing private finance for small-scale renewables; and leveraging investments from international financial institutions and public-private partnerships.

⁵⁸ The 24 EC-LEDS countries are Albania, Bangladesh, Cambodia, Colombia, Costa Rica, Gabon, Georgia, Guatemala, Indonesia, Jamaica, Kazakhstan, Kenya, Macedonia, Malawi, Mexico, Moldova, Peru, the Philippines, Serbia, South Africa, Thailand, Ukraine, Vietnam, and Zambia. USAID also has a separate LEDS program in India.

3. Sustainable Landscapes **implementation** activities, which may include: REDD+ readiness; mangrove restoration; forest carbon inventory, monitoring, and management; precision fertilizer applications; and manure management for livestock.

To complement its investments in its EC-LEDS program, USAID has commissioned a performance evaluation of the program under the E3 Analytics and Evaluation Project. This study will focus on the first five years of the program (FY2010 - FY2015) and inform the future direction of the program and the development of USAID's next five-year Global Climate Change and Development Strategy (to begin in 2017).

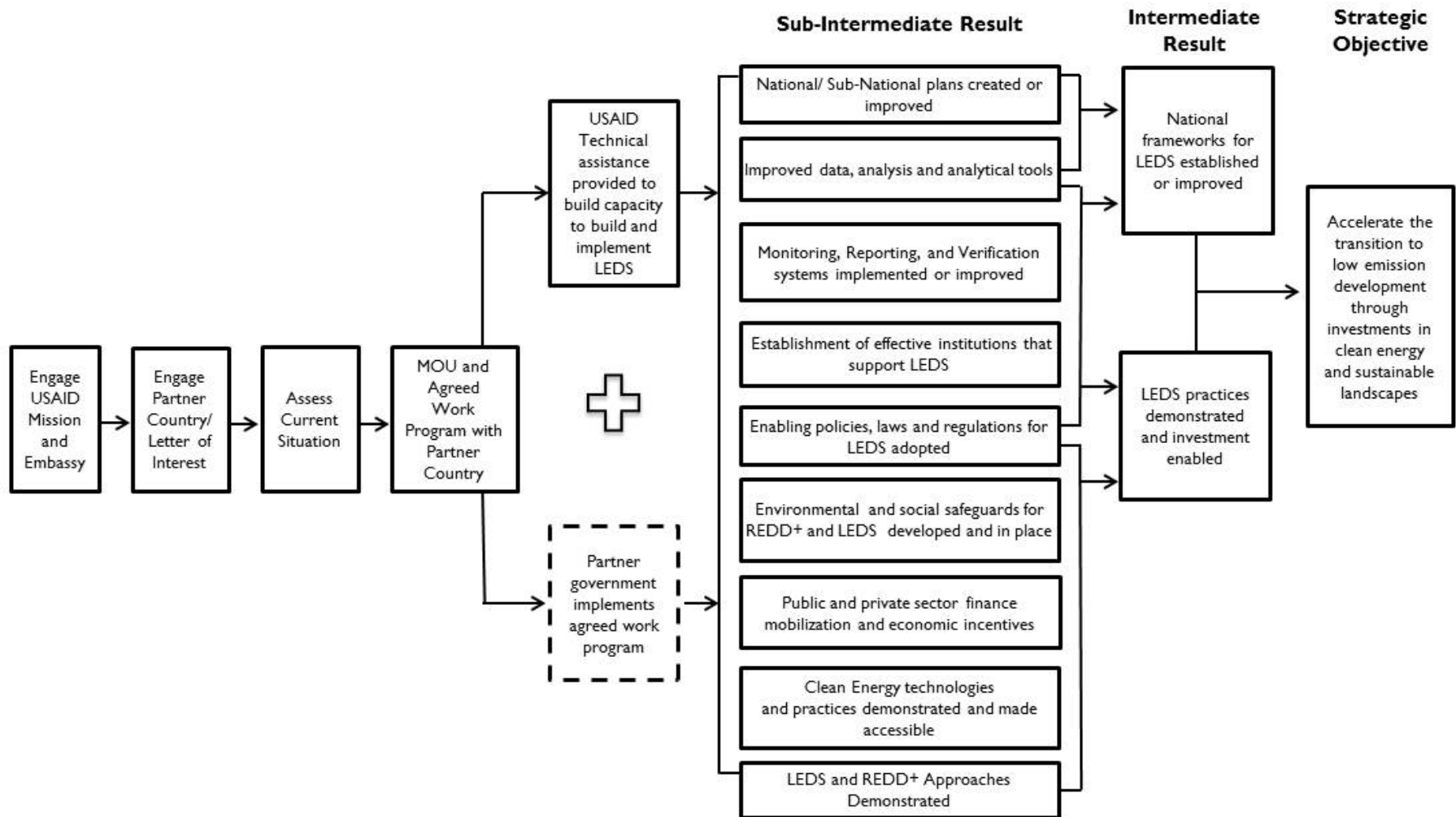
Development Hypothesis

Supporting partner countries' efforts to pursue long-term, transformative and sustainable economic growth, while slowing the growth of GHG emissions, is the cornerstone to USAID's climate change mitigation efforts, as well as the foundation of the GCCI. The theory of change diagram shown in Figure 1 illustrates the causal linkages that USAID and DOS envision for translating results under the EC-LEDS program's components. The diagram depicts the sequential stages of the program, with the development of a Memorandum of Understanding (MOU) and Agreed Work Program (AWP) both leading to the provision of U.S. government technical assistance aimed at increasing partner country government capacity to do low-emission development as well as partner countries' implementation of the AWP. For each partnering country, the EC-LEDS program is unique; the funding, presence of other donor activities, and partner country needs, priorities, and capabilities will determine the final package of U.S. government technical support.

The right half of this diagram draws on USAID's results frameworks for Clean Energy and Sustainable Landscapes to show the intended results from the technical assistance, including the sub-Intermediate Results (sub-IRs) that are essential components for low-emission development and may be supported by other actors, including the partner country government.

The sub-IRs lead to the program's two key intermediate results (IRs): (1) improved national frameworks for LEDS, and (2) demonstrated LEDS practices and investment enabled. The IRs, in turn, are expected to result in improved prospects for accelerating sustainable, climate resilient economic growth while slowing the growth of GHG emissions in the long-term.

Figure1: Theory of Change for the EC-LEDS Program



Existing Information Sources

The Global Climate Change Office in USAID's Bureau for Economic Growth, Education and Environment (USAID/E3/GCC), in coordination with USAID missions, regional bureaus and DOS, has already provided the E3 Analytics and Evaluation Project team with access to the following key background and performance documents related to EC-LEDs:

1. EC-LEDs scoping and planning documents (including MOUs and AWP's)
2. Agency Priority Goals (APG) database information related to EC-LEDs as well as EC-LEDs program information not captured by the current database
3. Operating Plan (OP) and Performance Plan Report (PPR) key issue narratives on Clean Energy and Sustainable Landscapes
4. Country Development Cooperation Strategies for relevant USAID missions
5. Guidance documents and results frameworks for EC-LEDs, Clean Energy, and Sustainable Landscapes
6. APG reports and presentations related to EC-LEDs

The following additional documents have not yet been provided to the Project team but will be shared prior to the start of the evaluation, unless the respective missions indicate that these documents are not available:

1. Activity documents relating to the EC-LEDs program from USAID missions, USAID/Washington, and participating U.S. Government agencies, including quarterly, annual, and final reports, work plans, log frames and results frameworks, Project Appraisal Documents (PAD), Statements of Work, as well as indicator and other performance data
2. List of all EC-LEDs interventions, as available, including points of contact for each

Evaluation Purpose, Audience, and Intended Uses

Purpose

The purpose of the performance evaluation is to examine how effective the EC-LEDs program has been in meeting both its program and bilateral objectives to date, and identify ways to improve coordination, communication, and knowledge sharing between USAID/E3/GCC, missions, and regional bureaus, as well as other U.S. government agencies and external stakeholders.

Audience

The primary audiences for this evaluation will be the USAID missions supporting the EC-LEDs program, USAID/E3/GCC, other USAID bureaus, DOS, other participating U.S. government agencies, and USAID staff managing activities under the EC-LEDs program.

Intended Uses

The information to be provided by this performance evaluation is expected to be used by USAID and DOS staff to:

- Improve the delivery of activities related to EC-LEDs to maximize results delivered in future years of the EC-LEDs program
- Demonstrate results of the EC-LEDs program to key U.S. government and country stakeholders

- Inform the development of USAID’s new Global Climate Change and Development Strategy
- Potentially inform national approaches to future international climate change negotiations

Evaluation Questions

To guide this evaluation, USAID has identified the following five questions. Additional themes that the evaluation team may explore are provided as bullets under each question.

- EQ1.** Which EC-LEDS interventions have been effective in contributing to partner countries’ low emission development and why?
- EQ2.** How has the EC-LEDS program contributed to partner countries’ progress towards LEDS outcomes?
- EQ3.** How has the EC-LEDS program contributed to partner countries’ engagement in international climate change mitigation efforts?
- EQ4.** How has the “whole-of-government” approach affected the implementation of the EC-LEDS program?

Gender Considerations

In accordance with USAID’s Automated Directives System (ADS) 203.3.1.5, the research design for this evaluation will consider gender-specific and differential effects of the EC-LEDS program. The evaluation team will explore gender-differential access to and participation in the program at multiple points along the theory of change diagram. If the evaluation conducts a survey of stakeholders, the team will ensure that the questionnaire is gender-disaggregated to identify gender differences with respect to results, benefits, and lessons learned from female stakeholders. The team will base further inquiry on gender themes that emerge during data analysis. Annex B summarizes, by evaluation question, illustrative gender considerations inclusive of gender disaggregation and information on expected gender-specific or differential effects.

Evaluation Design and Data Collection Methods

The E3 Analytics and Evaluation Project team responding to this Statement of Work will propose a comprehensive design for addressing the evaluation questions and will address how choices will be made related to selecting country/geographic focus and intervention activities/results, to maximize the ability of the evaluation to develop findings based on evidence and that will be relevant to the broadest possible range of activities. It is anticipated that the evaluation will use a mixed methods approach.

Within this design, the Project team will propose the best and most rigorous methods for data collection appropriate to address the evaluation questions. Annex C provides an illustrative “Getting to Answers” Matrix, including a range of potential data collection methods that may be suitable for each evaluation question. This Matrix will be further developed by the Project team in its Concept Paper and Evaluation Design Proposal.

Data Analysis Methods

Data analysis methods to be proposed by the Project team will follow closely from the methods used to collect each type of data needed to answer the evaluation questions. Whatever data analysis methods are chosen for this evaluation, they should be justified in terms of their fit with the data collected for each question and the types of answers that USAID seeks. Time and cost considerations are also important in this area. The Project team’s proposed design for this evaluation should consider the most appropriate sequence for answering each question, based on the data that will be collected and analyzed for each question.

Strengths and Limitations

There are several significant challenges anticipated for this evaluation. In its design documents responding to this SOW, the Project team should consider these limitations and describe possible mitigation strategies for the evaluation.

1. Given the number and geographic spread of EC-LEDS country programs, it is unlikely that the evaluation team will be able to examine in-depth every relevant country program.
2. Each EC-LEDS country program is unique, and the types of interventions to pursue are individually determined with the partner country based on the current state of LEDS development in the country as well as available resources. Country programs may have Clean Energy or Sustainable Landscapes funding, or both, and funding amounts vary widely. As such, there is a large variety in the types of interventions carried out under the EC-LEDS program and it may not be possible to easily compare interventions in different countries.
3. Due to the EC-LEDS capacity development approach, the complexity of the program, and the political nature of climate change negotiations, it is not expected that this evaluation will be able to attribute results to particular USAID interventions.
4. The sustainability and full impact of the EC-LEDS program can only be determined ex post. The methods proposed for Evaluation Question 2 may assess factors that theoretically would contribute to the sustainability of EC-LEDS interventions. As there is a long time horizon expected for being able to observe the impact of the program on GHG emissions, the proposed approach for Evaluation Question 5 should instead look at short- and medium-term results, such as the effect of the program on LEDS development and decision-making.
5. Since the evaluation will be conducted mid-stream while the EC-LEDS program is ongoing, it will intersect each country program at a different stage, with some having already completed several years of activities, while others may have just recently reached the technical assistance stage.

Deliverables

The Project team will be responsible for the following deliverables. Specific due dates will be proposed in the Project team's Evaluation Design Proposal.

Deliverable	Estimated Due Date
1. Evaluation Concept Paper, including preliminary methodological options for the evaluation	o/a 30 days from USAID approval of SOW
2. Evaluation Design Proposal, including description of the evaluation methodology, drafts of data collection instruments and a sampling plan and travel schedule, as relevant	o/a 30 days from USAID approval to move forward with preparing Evaluation Design Proposal
3. Interim products, briefings, and presentations	To be proposed by the Project team in its Evaluation Design Proposal
4. Field debrief for USAID mission staff prior to field team's departure at each country	As agreed with USAID/E3/GCC and appropriate mission staff
5. Draft Evaluation Report	o/a 60 days from completion of all field research
6. Oral presentation(s) of Draft Evaluation Report key findings, conclusions and recommendations for USAID and its invitees	TBD
7. Final Evaluation Report	o/a 21 days following receipt of USAID feedback on Draft Evaluation Report

Deliverable	Estimated Due Date
8. Debrief for EC-LEDS program staff and partners (tentative)	As agreed following USAID approval of Final Evaluation Report

All documents and reports will be provided electronically to USAID no later than the dates indicated in the approved Evaluation Design Proposal. All qualitative and quantitative data will be provided in electronic format to USAID in a format consistent with Automated Directives System (ADS) 579 requirements. All debriefs will include a formal presentation with slides delivered both electronically and in hard copy for all attendees.

Prior to the submission of the Evaluation Design Proposal, the evaluation team will discuss with USAID whether its preliminary dissemination plan for this evaluation indicates other deliverables that should be prepared, such as translation of evaluation materials into other languages and additional presentations or workshops. Such additions as agreed with USAID will then be included in the Evaluation Design Proposal.

Team Composition

The evaluation will be delivered by a core evaluation team and may be supported by additional evaluation specialists, subject matter experts, in-country researchers, and project management specialists. Members of the core team will be subject to USAID Activity Manager approval. The Project team's Evaluation Design Proposal will include proposed roles and team members for this evaluation, including CVs for core evaluation team members. Evaluation team members will be provided with USAID's conflict of interest statement that they will sign before conducting any field research. Illustrative qualifications for the core evaluation team are provided below.

Team Leader/Evaluation Specialist

A Team Leader/Evaluation Specialist with extensive experience leading multi-disciplinary teams conducting field evaluations of complex projects will oversee the evaluation implementation process including field data collection, analysis, and report preparation. The Team Leader should hold at least a master's degree with at least 10 years of experience as an evaluation team leader or team member. The Team Leader may be responsible for developing the Evaluation Design Proposal, including designing data collection instruments and data analysis plans, and for drafting the final evaluation report. Relevant experience and knowledge of climate change mitigation programs is preferred.

Subject Matter Expert(s)

One or more Subject Matter Expert will provide expertise and guidance to the core evaluation team on topics relevant to the evaluation including climate change, climate change mitigation policy, clean energy, and sustainable landscapes. They should have familiarity with the relevant literature in their technical area. The Subject Matter Expert(s) should be knowledgeable about USAID mitigation programs including EC-LEDS, and may also facilitate the collection of relevant documents from USAID/Washington and mission staff. The Subject Matter Expert(s) should hold an advanced degree in a relevant field, with at least 5 years of experience in their technical sector including experience working on evaluation teams.

USAID Participation

Regular communication between the evaluation team and the designated USAID Activity Manager for this evaluation will be essential to the successful execution of the evaluation activities. Cooperation and communication with USAID's regional bureaus and the participating missions will be critical for successful implementation of the evaluation. The evaluation team will keep USAID apprised of changes and

developments that necessitate/require any significant decision-making or modification of the approved Evaluation Design Proposal.

Possible USAID participation in the data collection phase of the evaluation will be determined prior to the start of field work.

As previously noted, the EC-LEDS program is an inter-agency U.S. government effort under the joint leadership of USAID and DOS. Several other agencies are involved in the implementation of the program, and representatives from these agencies will need to be consulted during the development of the evaluation design and possibly during implementation of the evaluation. This communication will be facilitated by the USAID Activity Manager and supported by the evaluation team.

Scheduling and Logistics

The following Gantt chart provides a general overview of the estimated timeframe for evaluation activities and deliverables. A final schedule, including specific delivery dates, will be proposed in the Project team's Evaluation Design Proposal. The planned period of performance for the design and implementation of this evaluation is approximately one year. This schedule is assuming USAID approval of this SOW by late August 2015. In its proposed schedule for the evaluation implementation, the Project team will consider relevant local holidays as well as USAID staff availability.

Illustrative EC-LEDS Performance Evaluation Timeline (2015-2016)

Task/ Deliverable	2015			2016								
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Evaluation Concept Paper												
Evaluation Design Proposal												
Evaluation Preparation												
Field Work												
In-Country USAID Debriefs												
Analysis & Report Writing												
Presentation of Draft Evaluation Report												
Draft Evaluation Report												
Final Evaluation Report												

The evaluation team will be responsible for procuring all logistical needs such as work space, transportation, printing, translation, and any other forms of communication. USAID will offer some assistance in providing introductions to partners and key stakeholders as needed, and will ensure the provision of data and supporting documents as possible.

Reporting Requirements

The format of the evaluation report should follow USAID guidelines set forth in the USAID Evaluation Report Template (<http://usaidlearninglab.org/library/evaluation-report-template>) and the How-To Note on Preparing Evaluation Reports (<http://usaidlearninglab.org/library/how-note-preparing-evaluation-reports>) (see Annex A).

The final version of the evaluation report will be submitted to USAID and is not expected to exceed 30 pages, excluding references and annexes.

All members of the evaluation team will be provided with USAID's mandatory statement of the evaluation standards they are expected to meet, shown in Annex A, along with USAID's conflict of interest statement that they sign and return to the E3 Analytics and Evaluation Project Home Office where necessary before field work starts.

Budget

The Project team will propose a notional budget in its Concept Paper for this evaluation, including cost implications of the methodological options proposed. A full detailed budget will then be prepared and included in the Evaluation Design Proposal for USAID's approval.

Appendix I: USAID Evaluation Policy, Appendix I

USAID EVALUATION POLICY, APPENDIX I

CRITERIA TO ENSURE THE QUALITY OF THE EVALUATION REPORT

- The evaluation report should represent a thoughtful, well-researched and well organized effort to objectively evaluate what worked in the project, what did not and why.
- Evaluation reports shall address all evaluation questions included in the scope of work.
- The evaluation report should include the scope of work as an annex. All modifications to the scope of work, whether in technical requirements, evaluation questions, evaluation team composition, methodology or timeline need to be agreed upon in writing by the technical officer.
- Evaluation methodology shall be explained in detail and all tools used in conducting the evaluation such as questionnaires, checklists, and discussion guides will be included in an Annex in the final report.
- Evaluation findings will assess outcomes and impact on males and females.
- Limitations to the evaluation shall be disclosed in the report, with particular attention to the limitations associated with the evaluation methodology (selection bias, recall bias, unobservable differences between comparator groups, etc.).
- Evaluation findings should be presented as analyzed facts, evidence and data and not based on anecdotes, hearsay or the compilation of people's opinions. Findings should be specific, concise and supported by strong quantitative or qualitative evidence.
- Sources of information need to be properly identified and listed in an annex.
- Recommendations need to be supported by a specific set of findings.
- Recommendations should be action-oriented, practical, and specific, with defined responsibility for the action.

Annex B: Evaluation Design Proposal

(Note: Annexes have been redacted for this report.)

EVALUATION DESIGN PROPOSAL

PERFORMANCE EVALUATION OF ENHANCING CAPACITY FOR LOW EMISSIONS DEVELOPMENT STRATEGIES

Contracted under AID-OAA-M-13-00017

E3 Analytics and Evaluation Project

DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

INTRODUCTION

This document describes the proposed design, research methodologies, and work plan for a performance evaluation commissioned by the Global Climate Change Office in the Bureau for Economic Growth, Education, and Environment of the United States Agency for International Development (USAID/E3/GCC) of the Enhancing Capacity for Low Emission Development Strategies (EC-LEDS) program. The evaluation is being design and implemented by the E3 Analytics and Evaluation Project.⁵⁹ USAID/E3/GCC's Statement of Work (SOW) for this evaluation is included as Annex A.

Summary of Evaluation Design Process

This Evaluation Design Proposal is the final step in the evaluation's design process, and has been preceded by the development of a Statement of Work, Concept Paper, desk research, and scoping interviews carried out by the E3 Analytics and Evaluation Project. Background research carried out by the E3 Analytics and Evaluation Project to date sought to gain a deeper understanding of the EC-LEDS program and key contextual issues, as well as clarify USAID's key questions and objectives for the evaluation. Based on this research, the E3 Analytics and Evaluation Project submitted a Concept Paper for the evaluation to USAID on November 24, 2015, which described a number of methodological options for answering the key evaluation questions. This Evaluation Design Proposal is based on USAID's selection of design options described in the Summary of Design Options from the Concept Paper (see Annex B), as well as agreements reached during subsequent consultations with USAID/E3/GCC during January and February 2016.

Revisions made to this version of the Evaluation Design Proposal incorporate lessons from a pilot data collection effort that took place in Malawi, from May 9-13, 2016 as well as subsequent consultations with USAID/E3/GCC. The main changes incorporated into the design include:

- A more focused data collection and interview questionnaire process, which directly aligns with the steps of the LEDS process.
- A clearer definition of the outcomes the evaluation will analyze, which draws directly from the latest version of the USAID GCC Indicator Handbook (June 2015). Primary outcome indicators of interest include greenhouse gas (GHG) emissions reduced, sequestered or avoided; projected GHGs reduced or avoided through 2030 (when available); amount of clean energy investment mobilized; clean energy capacity installed or rehabilitated; and clean energy capacity that has reached financial closure. Additional outcomes include benefits generated and shared, increased area under improved NRM management (sustainable landscapes), and progress toward Reducing Emissions from Forest Degradation and Deforestation Plus (REDD+) readiness and meeting the requirements of the United Nations Programme on Reducing Emissions from Deforestation and Forest Degradation (UNREDD), the Forest Carbon Partnership Facility.
- An analysis to determine if and how EC-LEDS planning actions led to implementation and the achievement of outcomes.
- Revised evaluation questions based on subsequent consultations with USAID/E3/GCC.

⁵⁹ The E3 Analytics and Evaluation Project is implemented by team leader Management Systems International (MSI) in collaboration with partners Development and Training Services (dTS) and NORC at the University of Chicago.

PROGRAM OVERVIEW

EC-LEDs Program Description

Launched in 2010, EC-LEDs is a flagship program of the United States' Global Climate Change Initiative (GCCII) and is USAID's key climate change mitigation program, encompassing both Clean Energy and Sustainable Landscapes funding. EC-LEDs, a multiagency U.S. government (USG) team is working with partner countries to identify and advance effective economy-wide low emission development (LED). Low-emission, climate-resilient sustainable economic growth is highlighted as a U.S. diplomatic and development priority in the 2010 U.S. National Security Strategy, the President's Policy Directive on Global Development, the President's Climate Action Plan, and the 2010 Quadrennial Diplomacy and Development Review.⁶⁰

The EC-LEDs program is a "whole-of-government" initiative under the joint leadership of USAID (overseen by USAID/E3/GCC) and the U.S. Department of State (DOS). EC-LEDs enhances partner country efforts by providing targeted technical assistance and building a shared global knowledge base on LED. USG interagency partners include the Department of Agriculture (USDA), the Department of Energy (DOE), DOS, the Environmental Protection Agency (EPA), the United States Forest Service (USFS), and USAID.

The program began in 2010, currently works with 26 countries,⁶¹ and has obligated over \$400 million to date. Funding for the program comes from the USG's International Affairs budget under the area of combating global climate change. USAID is the main USG implementation agency for EC-LEDs, and some USG agencies also directly implement activities via Inter-Agency Agreements (IAAs). DOS oversees a complementary program called the LEDs Global Partnership, which is outside the scope of the evaluation. In the case of USAID, a majority of funding is implemented through the budgets of USAID Missions under contracts and cooperative agreements.

The 2009 Copenhagen Agreement, and outcome of the United Nations Framework Convention on Climate Change (UNFCCC) process, emphasized the importance of Low Emission Development Strategies (LEDs) in development. LEDs are forward-looking national economic development plans or strategies that encompass low-emission and/or climate-resilient economic growth. One of the multiple purposes of a LED is to help advance national climate change and development policy in a more coordinated, coherent and strategic manner.

TABLE 1: HISTORY OF LEDS IN UNFCCC AGREEMENTS⁶²

Copenhagen (2009)	"A low emission development strategy is indispensable for sustainable development"
Cancun (2010)	"Decides that developed countries should develop low carbon strategies or plans"... "Encourages developing countries to develop low carbon development strategies or plans in the context of sustainable development"
Durban (2011)	"Invites developed country Parties to submit information related to progress towards the formulation of their low- emission development strategies"... "Encourages developing country Parties to develop low-emission development strategies, recognizing the need for financial and technical support by developed country Parties for the formulation of these strategies."

⁶⁰ Performance.gov, FY 2014-15 Agency Priority Goal: Climate Change

⁶¹ The 26 EC-LEDs partner countries are Albania, Bangladesh, Cambodia, Colombia, Costa Rica, Ethiopia, Gabon, Georgia, Guatemala, India, Indonesia, Jamaica, Kazakhstan, Kenya, Macedonia, Malawi, Mexico, Moldova, Peru, the Philippines, Serbia, South Africa, Thailand, Ukraine, Vietnam, and Zambia.

⁶² https://unfccc.int/files/cooperation_and_support/capacity_building/application/pdf/df2cbm04.pdf

According to the Organization for Economic Cooperation and Development (OECD):

“a LEDS may serve a range of domestic purposes for government, the private sector and the general public as well as other institutions and stakeholders. For example, the process of establishing a LEDS can enhance co-ordination across different ministries, improve communication with other stakeholder groups such as businesses and civil society, and increase public awareness of climate change science and policy. A LEDS can help guide the diversification of an economy (e.g., away from fossil-fuels). Clarification on economic development and climate change priorities can in turn help provide early signals to the private sector for possible directions for investment, research and development.”⁶³

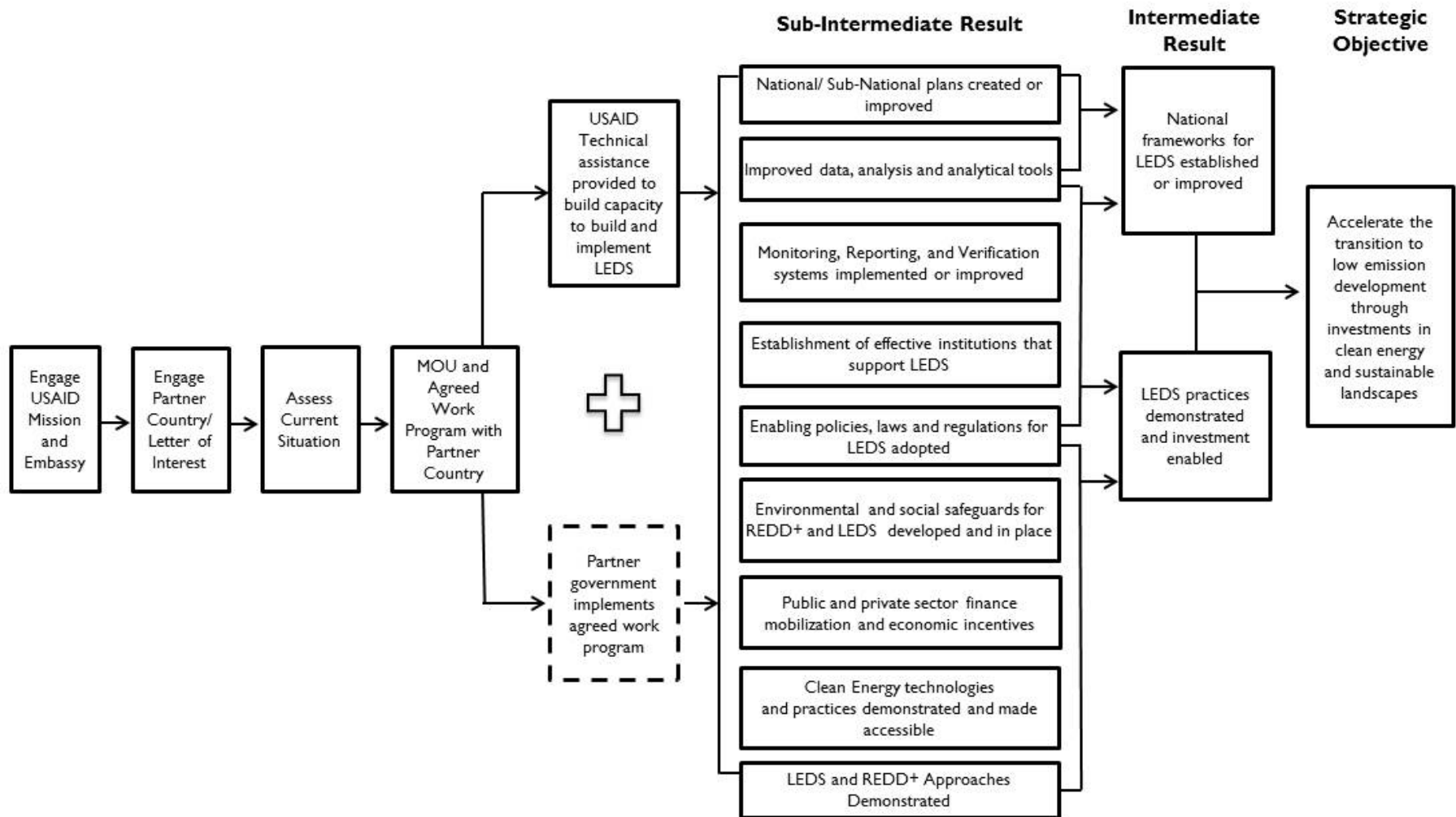
Another important purpose of a LEDS is to highlight gaps and identify priority actions for funding to the international community. From an aid donor’s perspective, financing for climate change programs that also contribute to poverty reduction and development objectives can reduce the risk of fragmenting funding sources.”⁶⁴

The results framework shown in Figure I illustrates the linkages envisioned under the EC-LEDS program for achieving intended results. The diagram depicts the sequential stages of the program, with the development of a Memorandum of Understanding (MOU) and Agreed Work Program (AWP) leading to the provision of USG technical assistance. For each participating country, the EC-LEDS program is unique; the funding, presence of other donor activities, and country needs, priorities, and capabilities determine the final package of USG technical support. Partner country counterparts are determined by the priorities listed in the MOU and AWP, but agencies typically involved in the program include ministries of energy, forestry, and agriculture, as well as provincial governments and program-focused offices, such as those implementing REDD+ programs.

⁶³ See: <http://www.oecd.org/env/cc/46553489.pdf>

⁶⁴ Low-Emission Development Strategies (LEDS): Technical, Institutional and Policy Lessons. Christa Clapp, Gregory Briner and Katia Karousakis (OECD) November 2010. <http://www.oecd.org/env/cc/46553489.pdf>

Figure1: Theory of Change for the EC-LEDS Program



Development Hypothesis

According to the GCC Mitigation Results Framework (RF)⁶⁵, the EC-LEDs program seeks to “enable partner countries, through investments in clean energy and sustainable landscapes, to advance economic growth and improve the lives of their people in such a way that achieves a long-term economy-wide reduction in net GHG emissions compared to a business-as-usual trajectory. “Accelerate the transition” means that USAID seeks to facilitate the transition of partner countries to low emission, sustainable economic development in a faster time frame than would otherwise be achieved without USAID intervention. It is expected that this support will generally be part of an aggregate effort by a number of donors, NGOs and partner country leaders.”

EC-LEDs works towards two key intermediate results: 1) improved national frameworks for LEDs, and 2) demonstrated LEDs practices and investment enabled. The 2015 U.S. Foreign Assistance Standardized Program Structure and Definitions (SPSD)⁶⁶ defined low emissions development (LED) as having two distinct steps: (1) planning, and (2) implementation and use.

Planning: National Frameworks for LEDs

National frameworks refer to having an economy-wide national LED strategic framework in place. This sets the stage for widespread and scaled up implementation of actions to reduce emissions within the context of a country’s overall development goals.

According to the Mitigation RF, a strategic national framework can be established once:

1. An economy-wide national LED plan or plans have been created or improved and formally adopted by a national government;
2. Data and analytical tools needed for national LED planning are in use;
3. Systems to monitor, report, and verify the GHG emissions and related mitigation funding streams are fully operational;
4. The national and sub-national institutions needed to implement and fully support national LED are in place; and
5. The national and sub-national policies, laws, and regulations needed for implementation of the national LED plan(s) have been adopted.

Implementation: Investment in and Use of Low Emission Development Practices

Implementation is the desired step after the LEDs planning process, as it represents the realization of the plans and activities described in the strategy(-ies). In many cases, implementation is the carrying out, execution, or practice of a plan, method, standard, or policy. However, partner countries may also implement activities where a need has been identified through a variety of other contextual factors such as changing partner country government priorities, economic incentives, or environmental factors.

Low carbon systems are those that reduce GHG emissions pathways over the long-term or are low GHG emitting from the outset. Such measures include, for example: (1) increased incorporation of renewable energy and lower-carbon fuels in the energy supply mix; (2) increased efficiency in the supply or end-use of energy; (3) REDD+ projects and programs intended to generate verified emissions reductions through

⁶⁵ GCC Clean Energy Results Framework with Narrative. July 15, 2014; and GCC Sustainable Landscapes Results Framework with Narrative. July 15, 2014.

⁶⁶ Standardized Program Structure and Definitions. Department of State. <http://www.state.gov/f/c24132.htm>

improved forestry management; and (4) sustainable land use and agriculture projects that mitigate land-based emissions.

EC-LEDS implementation activities are those that are likely to result in actual or projected emission reductions. Many of the same USG supported interventions that are used to improve planning and national frameworks are also used to facilitate implementation. These include institutional capacity building, improved data availability and analysis, and enacting enabling policies, laws, and regulations. Implementation many include addressing social and environmental safeguards, removing financial and institutional barriers to investment, and improving technologies, practices or infrastructure. The program's overall goal is to help partner countries decouple emissions growth from economic growth.

EC-LEDS Approach

The following section describes the EC-LEDS program's approach, which is built upon whole-of-government cooperation and a structured design and analysis process.

Whole-of-Government

Part of the theory behind the EC-LEDS program is that country-driven strategies are more likely to be sustainable than those developed primarily by donors or other external technical experts. Therefore, the EC-LEDS approach emphasizes building capacity within the partner country itself. In most cases, this requires engagement at multiple levels of government and across various ministries and other functional areas.

USG foreign assistance agencies have been encouraged to coordinate and collaborate on overseas climate change considerations and in 2010 the Global Climate Change Initiative (GCCII) was formed.⁶⁷ Under this multi-agency umbrella and through additional IAAs, the EC-LEDS program is able to leverage the relevant technical expertise from each USG agency in an effort to maximize efficiency. Overall, the whole of government approach integrates the need to work across multiple ministries or agencies both within the USG and partner country governments.

Initial Scoping

The EC-LEDS program engagement process began with multi-agency country visits ("scoping trips"). Scoping trips identify priority areas of potential collaboration between partner countries and EC-LEDS. These priorities are used as a basis for the development of a MOU, which formalizes the collaboration between USG partner country agencies and partner country governments.

Subsequent to the development of a MOU, an AWP is developed. AWP are multi-year plans that specify areas of cooperation and identify expected milestone achievements and the technical assistance roles of the various EC-LEDS USG agencies. Following the development of AWP, the individual USAID Missions and other USG agencies worked directly with partner country counterparts to implement the various activities in each country.

⁶⁷ The Global Climate Change Initiative: Budget Authority and Request, FY2010-FY2016.

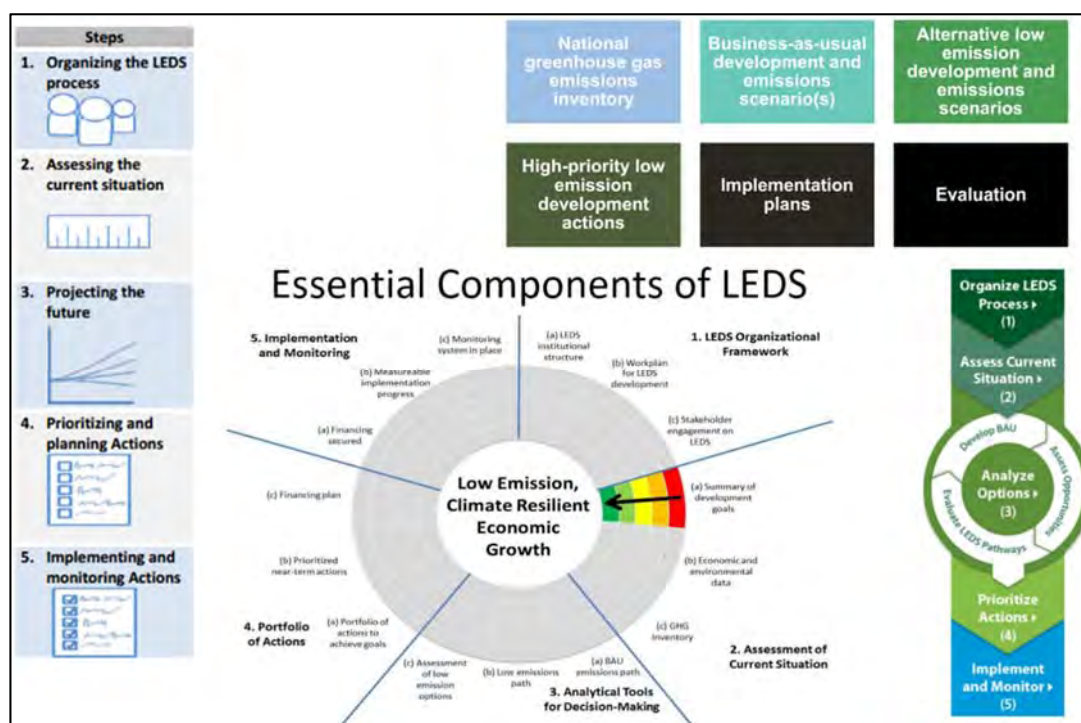
Low Emission Development Strategy Process

To support countries' progress towards low emission development, the Department of Energy's National Renewable Energy Laboratory (NREL), the Technical Secretariat for the EC-LEDS program, has identified the following five steps:⁶⁸

1. **Organize the LEDS Process:** Establish an institutional structure and process to develop a LEDS, including mechanisms for stakeholder engagement.
2. **Assess the Current Situation:** Collect data that describe the current context such as development goals, national GHG inventory, and economic and resource data.
3. **Analyze Options:** Develop and compare long-term projections of business-as-usual and low-emission economic growth and GHG emissions trajectories. This includes the development of alternative development scenarios to uncouple economic growth from emissions growth.
4. **Prioritize Actions:** Identify and launch high-priority actions to achieve near-term and concrete results. An implementation plan is developed to support these actions, which includes timetables and strategies for financing, attracting investment, and measuring progress.
5. **Implement and Monitor:** Implement the partner country's LEDS, including monitoring progress and revising LEDS as necessary.

There is no single, commonly used LEDS process framework, but rather variations of this process exist. Some common LEDS process frameworks are presented in Figure 2, which includes summaries from EC-LEDS (the donut), the NREL presentation (far left and right below), and a presentation used by the USAID/RDMA-supported LEAD project (upper right).

FIGURE 2: MULTIPLE EXAMPLES OF LEDS PROCESSES



⁶⁸ Low Emission Development Strategy Process. NREL. <https://www.ec-leds.org/leds-tools/leds-process>

Technical Assistance

Technical assistance available to partner countries through EC-LEDS include:⁶⁹

1. Support for the development of new strategies and enhancing or strengthening existing strategies;
2. Support for government and civil society partners to strengthen in-country human and institutional capacity, for example through the provision of tools and approaches to assist with LEDS; and
3. Support for LED implementation.

The types of technical assistance provided under EC-LEDS generally fall under the following categories:

- Technical assistance to improve national LEDS frameworks, including GHG inventory development; economic modeling; data and resource assessment; stakeholder engagement; financial analysis of LEDS opportunities; support for monitoring, and reporting, and verification systems.
- Clean energy activities, including: support for the development of renewable energy and energy efficiency policies, plans, and programs; support for increasing private finance for small-scale renewables; and investment mobilized from international financial institutions and public-private partnerships.
- Sustainable Landscapes activities, including: reducing emissions from deforestation and forest degradation (REDD+) readiness; mangrove restoration; forest carbon inventories, monitoring, and management; and support for climate smart agriculture (CSA).

Individual USAID activities are structured as implementing mechanisms (IMs). IMs are multi-year technical assistance activities that are awarded to USAID's implementing partners (IPs). EC-LEDS IMs may be stand-alone activities or be integrated with existing activities, for example, sustainable landscapes funding may be combined with biodiversity funds to improve the management of forested landscapes (for mitigation and conservation purposes).

To date, the EC-LEDS program has supported the implementation of over 200 activities. These IMs range in value from small studies totaling \$40,000 to large, \$20 million, multi-year activities.

PURPOSE, AUDIENCES, AND INTENDED USES

Evaluation Purpose

The purpose of the performance evaluation of the EC-LEDS program is to provide USG agencies, partner country stakeholders, and implementing partners with information to:

- Demonstrate results of the EC-LEDS program to key USG and partner country stakeholders;
- Improve the delivery of activities related to EC-LEDS in order to maximize results delivered in future years of the program;
- Provide evidence in which to inform the development of USAID's next Global Climate Change and Development Strategy; and
- Potentially inform national approaches to future international climate change negotiations.

⁶⁹ Enhancing Capacity for Low Emission Development Strategies Fact Sheet. USAID and DOS. Nov 2010.

This evaluation will focus on the first five years of the program (FY2010 - FY2015), and will primarily focus on the overall EC-LEDS program rather than the performance of individual IMs.

Audiences

The primary audiences for this evaluation are USAID/E3/GCC, USAID Missions involved in the EC-LEDS program, other USAID Bureaus, DOS and other participating USG agencies. Existing and prospective partner country government counterparts and stakeholders may also find the evaluation useful for gaining a better understanding of how EC-LEDS operates, and what resources it may provide for the advancement of LEDS. Current and future implementers of EC-LEDS activities may also draw lessons from the evaluation.

Intended Uses

The evaluation will yield detailed findings, conclusions, and lessons learned from the EC-LEDS program. Based on this information, the evaluation will provide actionable recommendations for future programming to enhance LEDS and meet international commitments on climate change mitigation.

EVALUATION QUESTIONS

The evaluation, based on the approved Statement of Work by USAID (Annex A), was initially intended to answer the following questions:

- EQ1:** What actions have partner countries taken as a result of the EC-LEDS program?
- EQ2:** Which EC-LEDS interventions have been effective in contributing to partner countries' low emission development, and why?
- EQ3:** How has the EC-LEDS program contributed to partner countries' engagement in international climate change mitigation efforts?
- EQ4:** How has the "whole-of-government" approach affected the implementation of the EC-LEDS program?
- EQ5:** How has the EC-LEDS program contributed to partner countries' progress towards LEDS outcomes?

Following the Malawi scoping trip and numerous discussions between USAID/E3/GCC and the evaluation team, USAID approved a revised set of evaluation questions, which are listed below. Note that the original EQ1 was removed and the original EQ2 was expanded to have two sub-questions.

- EQ1:** Which EC-LEDS interventions have been effective in contributing to partner countries' low emission development, and why?
 - Sub EQ1a:** Has LEDS planning resulted in implementation?
 - Sub EQ1b:** Have LEDS implementation actions resulted in actual/projected emission reductions and development impacts?
- EQ2:** How has the EC-LEDS program contributed to partner countries' progress towards LEDS outcomes?
- EQ3:** How has the EC-LEDS program contributed to partner countries' engagement in international climate change mitigation efforts?
- EQ4:** How has the "whole-of-government" approach affected the implementation of the EC-LEDS program?

The evaluation team provides the following operational definitions to ensure a common understanding of how these EQs will be examined and answered:

- **Interventions** are defined as USAID supported assistance, such as a task or subtask as part of an implementing mechanism or activity, that is intended to contribute to the achievement of an EC-LEDS related output or outcome.
 - **Milestones:** Since 2014, EC-LEDS country programs have reported framework and implementation milestone achievements, which are highlights of program accomplishments, as part of the 2014-2015 and 2016-2017 Agency Priority Goal (APG) metrics.⁷⁰ There is not a standard menu of milestones used by EC-LEDS, but milestones are generally either program outcomes or country actions. Milestones are identified and reported after an intervention begins, and were not developed as part of activity designs, or intended to be used as intervention targets. Typical milestones include achievements such as the development of a national LEDS; the development of a monitoring, reporting, and verification (MRV) system; clean energy investment contracts reaching closure; or the development of a sector or sub-national LEDS plan, such as a provincial green growth plan.
 - **Implementing mechanisms:** IMs are a structure for implementing components of a program or project to achieve identified results, generally through the use of a legally binding agreement between a USG executing agency and an implementing entity (e.g., contractor, grantee, partner country government entity, USG inter-agency agreement, international organization). Examples of IMs used under EC-LEDS include contracts, cooperative agreements, grants, and inter-agency agreements.
 - **Country actions** are accomplishments or decisions taken by or within partner countries to complete the steps of the LEDS process to meet their mitigation objectives within the context of their development goals. Examples of partner country actions include:
 - Creation of institutions or fora to design and manage LEDS programs nationally or in one or more mitigation sectors (e.g., energy, transportation, buildings, forestry)
 - Development of GHG emission measurement systems and GHG inventories
 - Development of national, sub-national, or sector LEDS
 - Development of LEDS-related policies and regulations
 - Public/private investment mobilized for CE or SL
- “Actions” are not limited to government outcomes, but include outcomes within a country as well. It includes both planning and implementation achievements.
- **Whole of Government:** The whole of government approach denotes USG and partner country public service agencies working across portfolio boundaries to achieve a shared goal and an integrated government response to particular issues, whether through formal or informal means. This includes coordination and interactions both within a specific country or agency, and between countries or agencies.
 - **Mitigation and Development Impacts:** are the results achieved within a country (with contributions by EC-LEDS) to reduce emissions and/or improve partner country development.
 - Actual or potential (projected) mitigation of greenhouse gases
 - Development impacts, such as improved forest management, income benefits from the sustainable use of natural resources, and increased access to energy.

⁷⁰ Strategic Goal 3: Promote the Transition to a Low-Emission, Climate-Resilient World while Expanding Global Access to Sustainable Energy. USAID and DOS. <https://www.performance.gov/agency/departments-and-usaid/view=public#stgob>

EXISTING INFORMATION

The evaluation team will review existing EC-LEDS documentation to understand the program globally, as well as to collect performance reporting metrics and narratives at the regional, country, and IM levels. EC-LEDS-related documents that will be reviewed include:

- Program summary documents, including Scoping Trip Reports, MOUs, AWP, country plans, Performance Plans and Reports (PPRs), Key Issue Narratives, Internal Status Reports, Case Studies, PPR metrics, and APG narrative milestone accomplishment reports.
- IM design and implementation reports, including independent evaluations. These documents will include standard reports from USAID implementing partners.
- Context documents, including country reports and plans on low emission development, Intended Nationally Determined Contributions (INDCs), and third-party reports on the actions and progress of countries related to low emission development.

USAID/E3/GCC, in coordination with USAID Missions, regional Bureaus, and DOS, has provided the evaluation team with access to key EC-LEDS background and performance documents. Additional documents from Missions, such as quarterly and annual reports, work plans, SOWs, Project Appraisal Documents, and indicator/performance data will be shared prior to the start of the evaluation, depending on their availability.

Annex C lists the types of documents and resources that the evaluation team intends to review. As the evaluation proceeds, a bibliography of available documents and data sources will be developed and regularly updated.

Design Lessons from the Literature

Existing literature provides some lessons regarding the evaluation of programs such as EC-LEDS that lack a pre-established framework for measuring progress towards program objectives. The lack of a ready model for the evaluation requires an innovative approach to answering the evaluation questions in a way that cuts across a large number of different countries and activities, but without losing sight of how specific interventions contributed to concrete outcomes.

Reports from evaluations of several of the USAID activities that fall under the EC-LEDS umbrella were reviewed to inform this Evaluation Design Proposal. Evaluations reviewed included: (1) Final Performance Evaluation of the Biodiversity – Reduced Emissions from Deforestation and Forest Degradation (BIOREDD+) Climate Change Component in Colombia, (2) Indonesia Forest and Climate Support (IFACS) Final Impact Assessment, (3) Mid-Term Evaluation of Vietnam Forests and Deltas Program, (4) Performance Evaluation of the Mexico Low Emissions Development (MLED) Program, and (5) Mid-Term Evaluation of the Low Emissions Asian Development (LEAD) Program. Each individual report provides important information for evaluating an activity under the EC-LEDS umbrella.

The review also covered two evaluation reports on USG interagency climate change programs: Silvacarbon, which is ongoing, and the Asia Pacific Partnership on Clean Development and Climate, which has been succeeded by the LEDS Global Partnership. Silvacarbon is perhaps the most similar program to EC-LEDS, although its scope and level of funding is much smaller. Silvacarbon is an interagency initiative funded by USAID and DOS that is mobilizing the technical expertise of USG agencies to build the capacity of partner governments to develop systems for the MRV of carbon stocks in forests and other land use cases. As such, Silvacarbon is focused on the Sustainable Landscapes pillar of EC-LEDS.

In addition to the USG evaluations the team reviewed the GEF Climate Change Mitigation Impact Evaluation. This evaluation looked at GEFs efforts to reduce GHG emissions of developing countries and countries with economies in transition. Major emerging market economies were considered important in terms of their climate change mitigation potential. The evaluation found that projects demonstrating high progress towards impact were those that adopted comprehensive approaches to address market barriers and specifically targeted supportive policy frameworks. Eight of the implementation activities where GEF found major impact were in developing the processes that would lead to impact, seven related to speeding up the processes that would lead to impact and two addressed processes to ensure continued improvement.

EVALUATION DESIGN

Two of USAID's four questions for this evaluation ask, in some way, about cause-and-effect relationships between EC-LEDS interventions and desired country-level outcomes (revised EQs 1 and 2). Some of these questions look forward from EC-LEDS interventions and ask what effects they produced. Broadly understood, this type of question expresses an interest in both planned and unplanned effects. Some EQs also ask about cause-and-effect relationships by looking backward from outcomes of interest (country actions), to consider whether they can be attributed to EC-LEDS interventions, or whether those interventions, along with other factors, contributed to such outcomes.

As a performance evaluation, the design does not consider the use of counterfactuals or experimental design.⁷¹ Instead, based on the options in the previously submitted Concept Paper, and in consultation with USAID/E3/GCC, the evaluation team will answer the three EQs related to program effectiveness in achieving outcomes through a hybrid design that combines both trace forward (determining the effects of EC-LEDS interventions) and trace backward (linking country-level outcomes to their likely causes) approaches.

This approach will mitigate sources of subjective reporting bias by focusing initially on identifying concrete actions taken by EC-LEDS partner countries. The MOUs and AWP, which set out the parameters for bilateral assistance, will be used as the starting point for identifying country actions on LEDS, and the evaluation team will then use forensic methods to trace backwards, eliminating alternative explanations until conclusions can be drawn on the extent to which an EC-LEDS intervention was a contributory cause of that country action. The key indicator of EC-LEDS success will be the extent to which causal links and contributions can be identified between EC-LEDS interventions and low emissions development actions taken by or within partner countries. A further analytic step will be to explore the association between EC-LEDS-supported country actions and progress on emissions reduction and development impacts.

Considering the challenges noted in the previous section when evaluating “umbrella” programs that lack a formal indicator-based monitoring and reporting framework, the evaluation team proposes a multi-site, cross-country comparative approach to data collection and analysis. This approach focuses on specific country LEDS-related actions, and then assesses the extent to which one or more EC-LEDS interventions contributed to those actions. Comparative analysis of the findings from across EC-LEDS countries will provide a set of data to compare and contrast the effectiveness of particular interventions, as well as provide information that can be used to identify factors that contribute to an intervention's success.

The analytic process for the evaluation is detailed in the remainder of this section. This includes a description of the LEDS steps that will be examined, and the analysis process that will be used to identify

⁷¹ ADS Chapter 203, Assessing and Learning. USAID/PPL. Nov 02, 2012.

and validate the relationship between EC-LEDS interventions, country actions, and emission reductions (trace forward, trace backward, and most significant contribution analysis).

Analysis of LEDS Steps

The evaluation will examine interventions and country actions based on the EC-LEDS program's contribution to low emission development.

The following eight steps of the LEDS process will be used by this evaluation as a structure for reviewing EC-LEDS interventions and progress. They are divided between planning steps and implementation steps.

Planning Steps:

1. Creation of institutional and management arrangements
2. Development of GHG inventories
3. Analysis of emissions and prioritization of mitigation efforts, including Business as Usual (BAU) projections and INDC submission
4. Development of specific action plans (national, sub-national, sectoral)
5. MRV

Implementation Steps:

1. Implementation of action plans, including demonstration projects
2. Supporting policies and regulations
3. Finance for implementation/benefit sharing

Selection of the above steps was based on a review of existing frameworks, and in consideration of pilot analysis completed in Malawi in May 2016. These steps are more detailed than the general five-step NREL framework, but not as detailed as the 15 sub-steps in the USAID EC-LEDS donut (see Figure 2). The evaluation team concluded that this was the right level of detail to capture key steps supported by EC-LEDS, while at the same time permitting an efficient interview process that would allow review of all steps with interviewees within a reasonable period of time (i.e., within a one-hour interview).

Analysis of EC-LEDS support will be a multi-step process, which will: (1) identify the EC-LEDS interventions undertaken and match these interventions with one or more of the eight LEDS steps; (2) determine country progress in implementing and completing each LEDS step; and (3) determine the association between the implementation of the LEDS steps and emission reduction related outcomes. The program's overall hypothesis is that development and implementation of LEDS will lead to emission reductions.

For each LEDS step, and for all interventions in each country, the following basic typology will be used to categorize interventions:

- **Clean Energy:**
 - Renewable energy generation
 - Energy efficiency and savings
 - Transmission and distribution
 - Other
- **Sustainable Landscapes:**
 - Forest management and protection

- REDD+
- Other PES
- CSA
- Other

These categories will enable the evaluation team to: (1) analyze all EC-LEDs interventions by sector type; (2) draw lessons on successful approaches in relation to the completion of LEDs steps (when applicable), and as per sector of focus; and (3) analyze outcomes achieved, including by sector, and identify that approaches that led to the achievement of outcomes. If there is a benefit to further subdividing categories, for example looking at PES programs under forest management and protection, then this will be done through further research of individual IMs.

Tracing Forward from EC-LEDs Interventions

Tracer studies are a well-established method for determining the effects of interventions either over time or in environments where other possible contributing factors exist.⁷² Conceptually, such studies depend on a team's ability to identify points along a trajectory where a link to the intervention is evident. Many, but not all, tracer studies follow the individual(s) affected by an intervention.

A portion of the data collection for the evaluation will focus on detecting and describing the country outcomes that can be associated with EC-LEDs interventions. This will serve two purposes: (1) verify the country outcomes to which EC-LEDs contributed, and (2) generate insights as to why particular programming approaches and interventions did or did not result in the achievement of particular milestones or country actions. The evaluation team will seek to confirm the outcomes achieved, and the implementation process that led to their achievement. As part of this process, the evaluation team will identify key contextual characteristics common to each country to use in the analysis of how such factors affected performance. For each set of country interventions, the evaluation team will also inquire about unanticipated results. Information collected across interventions and outcomes that are common to the EC-LEDs process across countries will provide a sound basis for the cross-country analysis of program effectiveness.

Tracing Backward from Country Outcomes

Evaluation designs that start with outcomes and trace backward to their causes build on forensic principles common to detection strategies used to identify the causes of epidemics as well as crimes.⁷³ For this study, country outcomes will serve as the starting point for tracing backwards to causes. This is intended to reveal all causes that country stakeholders credit with contributing to those outcomes. Country stakeholders who are knowledgeable about the outcomes of interest will be the primary sources for collecting this type of information, as well as documentary evidence describing how outcomes were achieved and the contribution that country partners attributed to EC-LEDs.

⁷² Such studies are routinely used in the health sector and for determining the effects of education programs, particularly higher education. More recently, the International Labor Organization has adapted this type of design for determining the effects of child labor interventions.

⁷³ As the basis for numerous studies carried out overseas, as well as domestically by the U.S. Centers for Disease Control and Protection, these approaches are used in program evaluations and are most often associated with the terms *modus operandi* or General Elimination Method coined by Michael Scriven. This was the approach used by USAID's Democracy and Governance Office to examine the effects of ten years of rule of law assistance in countries that became independent after the fall of the Soviet Union.



As part of this backward tracing approach, the evaluation team may identify other factors that contributed to the achievement of country-level outcomes. Borrowing from the Most Significant Change (MSC) method, a well-established technique for identifying unplanned results, the evaluation team will consider “What were the most significant causes of outcome X?” Starting from this open-ended question will help the evaluation team to elicit information on possible causes that, in addition to EC-LEDS, may have contributed to a given outcome. Additional questions will be used to probe the nature of the contribution that EC-LEDS made to achieve a given outcome, and the same will be done for other causes that the data indicate also made a contribution. Data obtained on all of the reported causes will make it possible for the evaluation team to integrate what it learns about causality from this backward tracing approach into a contribution analysis (see the Data Analysis Methods section). If tracing backward unearths multiple explanations for achievements, or explanations that require understanding degrees of contribution, then explanations will be examined for plausibility and then discarded or refined as needed.

Once successful interventions are identified for countries where fieldwork is conducted, they will be matched and compared to the overall typology of interventions for all 26 EC-LEDS partner countries (using information from the desk research). Outcomes from countries where fieldwork will not be conducted may be individually investigated (e.g., through interviews) to identify or refute supporting evidence obtained for similar milestone achievement from across the fieldwork countries. As there is limited time and the possibility of difficulties interviewing all relevant Mission staff and/or partner country representatives, for the purpose of this evaluation, USAID/E3/GCC has approved the assumption that existing evaluation reports, implementing partners’ reports, and documents approved by the AOR/COR are acceptable in validating claims/findings from the trace forward research.

This analysis will be used to develop conclusions and recommendations for future EC-LEDS programming.

As data are collected and analyzed based on the design elements described above, those EC-LEDS interventions that appear to be more successful will be identified. Where the forward and backward tracing approaches converge in identifying EC-LEDS interventions as a driver or cause of subsequent country-level outcomes, the evidence of success will be considered quite strong, given that the data sources used by the two design approaches differ and this convergence will be the result of triangulation. Where only one of the two design approaches connect EC-LEDS interventions to the outcomes of interest, the evaluation team will attempt to probe further to clarify the causal relationship. This may include additional or follow-up interviews to determine whether the absence of convergence stems from a lack of awareness on the part of the respondents or is due to other information that may have led respondents to discount the role of EC-LEDS when thinking about what led to country outcomes.

Design elements used to examine cause-and-effect relationships in response to the EQs are shown below:

LEDS Step	EC-LEDS Intervention	Country Action/ Uptake	EC-LEDS contribution
LEDS Step	Trace forward from intervention to country action 		Contribution Analysis: Determine EC-LEDS relative contribution to outcomes and impact
	 Trace backward from country action to invention		GHG, RE generated/saved; finance, benefits (financial & non-financial)

As per the above table, when trace forward and trace backward methodologies both confirm the contribution of an EC-LEDS intervention to a country outcome the evidence of effectiveness and contribution will be considered particularly strong. The LEDS step refers to the steps that are required to complete country LED activities, such as creating necessary institutional arrangements and developing development of GHG inventories.

Multi-Site Design

In addition to the approach for examining causal linkages between EC-LEDS interventions and country outcomes, the other defining aspect of the evaluation design is how to evaluate a program that spans 26 countries covering USG programming in climate change mitigation. The evaluation team's proposed design is a multi-site study in which the EC-LEDS approach and interventions will be examined across different partner countries.⁷⁴ This multi-site approach will focus on answering the EQs at the program level, using findings from different sites, rather than answering the EQs separately for each country examined. The multi-site approach will allow for the most efficient use of resources for data collection and analysis across the selected EC-LEDS partner countries.

Desk Review

A full set of profile data will be developed for the entire EC-LEDS program based on desk research. This will include information on USG interagency involvement, EC-LEDS milestones, IMs, and partner country LEDS-related actions. Documents to be reviewed at a minimum are: annual reports for each implementing mechanism, evaluation reports, internal country reports, CLEER case studies, key issue narratives, PPR indicators, LEDS milestones and other LEDS database resources. A more in-depth desk review will be conducted for each of the countries selected for fieldwork. This will include detailed information on EC-LEDS interventions, performance information, lessons from prior evaluations, and an overview of partner country strategies and accomplishments.

In addition, contextual factors that may influence program performance will be considered. These factors will include governance (World Bank Effective Governance measurement), climate vulnerability (ND GAIN), and climate readiness (ND GAIN).

Considering the resources available and timeframe for this evaluation, and in consultation with USAID/E3/GCC, field research will be conducted in six EC-LEDS partner countries, where up to four IMs will be examined per country. The sampling approach for selecting the six fieldwork countries is described in the Multi-Site Approach and Selection Criteria section.

Gender Considerations

In accordance with USAID's Automated Directives System (ADS) 203.3.1.5, the design for this evaluation involves the consideration of gender-specific and differential effects of the EC-LEDS program. An initial analysis of gender requirements by EQ is provided in Annex D. This evaluation's initial review pointed primarily to the participation of individuals in program activities as a basis gender consideration analysis, for example *information on the number of men/women participating in capacity development activities relative to the total number in their target group (analysts, decision makers, etc.)*. While participation levels in individual activities may be an important entry point for analyzing gender issues in mitigation, this analysis primarily

⁷⁴ A multi-site approach differs from a comparative case study approach in that a case study approach seeks deep understanding of each case, or country, prior to comparison. In contrast, the multi-site approach draws comparisons between the different ways in which similar interventions take place in different countries.

rests at the activity output level (people trained, for example) and this evaluation will not be analyzing data at this level. The primary analysis for this study is at the level of country actions. And as the steps in the LEDS process are gender-neutral and emission reduction outcomes do not contain a reporting dimension related to analysis of differential gender roles or benefits, analyzing gender impacts of the LEDS steps is not feasible. Given these limitations, the evaluation will focus analysis on the appropriateness and completeness of the gender plans created by the implementing mechanisms, and to the extent that it can be determined the implementation of these plans in the interventions.

DATA COLLECTION METHODS

This section describes the proposed methodology for collecting and analyzing data to answer the EQs based on the research design described in the previous section. The evaluation will employ a mixed-methods approach that will incorporate a range of primarily qualitative as well as some quantitative data methods, gathering information from a range of sources to increase confidence in the validity and reliability of the evaluation results. The Getting to Answers Matrix provided in Annex E presents a detailed, question-by-question table of the data sources, data collection methods, sampling approaches, and data analysis methods that will be used.

Desk Review

The evaluation research will commence with a desk review of EC-LEDS secondary data and technical reports (see Annex C). The desk review includes two components: (1) a review of available secondary documentation on USG interagency involvement, EC-LEDS milestones, IMs, and partner country LEDS-related actions across all 26 EC-LEDS partner countries, and (2) a more in-depth review for the six EC-LEDS partner countries selected for field research, including include detailed information on EC-LEDS interventions, performance information, lessons from prior evaluations, and an overview of partner country strategies and accomplishments. Guidelines for evaluation team members conducting the desk review are included in Annex F.

First, the evaluation team will prepare an inventory of interventions for all 26 EC-LEDS partner countries. This inventory will include key information such as implementation country, period of performance, USG agencies involved, sector (national, sustainable landscapes, clean energy), intervention types (e.g. policy support), outcomes reported, and other significant country LEDS-related actions. This inventory will allow the evaluation team to identify interventions across all 26 EC-LEDS partner countries and analyze if they are associated with the achievement of LEDS-related outcomes.

Second, additional desk research will be conducted for the six countries that have been selected for fieldwork, which will result in the creation of country profile reports (briefers). Annex G provides a draft template for the country profile reports. This information will draw from the preparatory research conducted for all 26 EC-LEDS partner countries and will also include information on country characteristics, challenges, policies, and country actions, including a summary of third-party climate change negotiation data and climate change diplomacy resources that describe or illustrate partner countries' engagement in international climate change mitigation efforts. These country profile reports will be used by the evaluation team members to prepare for country visits, identify and coordinate interviews with key stakeholders in each country, and to inform any adjustments needed for the data collection instruments for each country.

The desk review will serve as research that will inform evaluation findings across all of the EQs as well as further the development of the research framework for fieldwork.

Stakeholder Mapping

As part of the desk review process, the evaluation team will also carry out a stakeholder mapping exercise necessary for applying the tracing forward and tracing backward approaches, and to identify a preliminary list of informants. Informants will include Mission staff, EC-LEDS points of contacts from USAID and DOS, implementing partners, and partner country agency representatives. The stakeholder mapping will allow the evaluation team to gain a better understanding of perspectives, interests, and challenges faced by the EC-LEDS program, as well as assist in the prioritization of in-country and U.S.-based research activities. Once partner country-based stakeholders are identified, a list will be shared with each respective Missions for verification and refinement. A complete updated list of stakeholders will be provided in the final evaluation report, which will be organized by country and include institutional affiliations.

Following the completion of this initial stakeholder mapping exercise, the evaluation team will work with USAID/E3/GCC and Mission points of contact to identify respondents who can provide first-hand knowledge of each implementation activity that will be examined during fieldwork. It is expected that these respondents will include individuals from the following groups:

1. USAID officials responsible for each IM;
2. Officials from other USG agencies responsible for each IM;
3. Officials from international organizations responsible for, or engaged in the implementation of, each IM;
4. Implementing partner staff responsible for each IM; and
5. Partner country officials and stakeholders involved in the implementation of each IM.

During fieldwork preparation and while in country, the evaluation team may contact additional informants identified through referrals from other respondents.

Semi-Structured Key Informant Interviews

In the six countries where field research will be conducted, the evaluation team will carry out semi-structured key informant interviews (KIs) with respondents identified from the stakeholder mapping exercise to inform the answers to all EQs and validate or explore information collected from the desk review. Information collected from KIs will allow the evaluation team to understand the challenges and accomplishments of developing and implementing LEDS and to understand the association between EC-LEDS interventions and country LED actions.

This semi-structured interview questionnaire (see Annex H) was developed prior to the Malawi country field visit and was pre-tested in that environment. It was substantively refined during the field visit. One of the lessons from the pilot fieldwork activities is that countries may likely be addressing all of the steps in the LEDS process, as opposed to selective supporting a sub-set of steps, and this led the evaluation team to develop a questionnaire and analysis process that directly explores progress and outcomes related to each step in the LEDS framework.

As a result, one questionnaire will be used for all visits, although some questions may not apply to all interviewees. The questionnaire, in its final form, asks for details on the EC-LEDS interventions and country actions as related to each of the eight steps of the LEDS process. Additional questions are included to answer questions related to the whole-of-government approach, and on countries' ability and willingness to participate in international climate negotiations in association with EC-LEDS support. Instructions to field team on using this questionnaire instruct them to review the various factors USAID indicated might warrant exploration in bullets below each evaluation question in the study SOW. This

will help field teams guide these semi-structured interviews in directions that may provide interesting qualitative information, without making every area of interest under various evaluation questions a compulsory element of the interview protocol. A completed matrix of the interventions and country actions for the EC-LEDS program in Malawi is included as Annex I to illustrate the information that will be collected and the process of linking interventions to country actions.

Multi-Site Approach and Selection Criteria

Country Sampling

The evaluation team and USAID/E3/GCC have applied a structured process for selecting the six EC-LEDS partner countries where fieldwork will be conducted under this evaluation. Since time and cost constraints prevent the evaluation team from traveling to all 26 EC-LEDS partner countries, it was necessary to draw a sample of countries for in-country research to allow the team to focus its resources. The evaluation team drew a systematic sample from the full set of EC-LEDS partner countries using the following criteria:

- **Criterion 1: Key Interventions** – Countries included in the field work sample should have at least two out of the three key EC-LEDS intervention types listed below:
 - Enabling laws, policies, and regulations for LEDS;
 - Public and private sector finance mobilization and economic incentives; or
 - Data, analysis, and analytical tools

These intervention types were used in the sampling criteria because they are the three most common intervention types across the EC-LEDS program. Focusing on this core set of interventions will allow for robust comparative analysis across countries, and drawing lessons about the effectiveness of interventions that cut across the program as a whole.

These intervention types align with required LEDS steps, as follows:

Key EC-LEDS Interventions	LEDS Step
Enabling laws, policies, and regulations for LEDS	<ul style="list-style-type: none"> • Supporting policies and regulations
Public and private sector finance mobilization and economic incentives	<ul style="list-style-type: none"> • Implementation of action plans, including demos • Finance for implementation/benefit sharing
Data, analysis, and analytical tools	<ul style="list-style-type: none"> • Development of GHG inventories • Prioritization of mitigation efforts, including BAU projections and INDC/NDC submission • MRV

- **Criterion 2: High Emissions** – Selected countries should have an emissions per capita, inclusive of land use change and forestry (LUCF), that is higher than the median for the EC-LEDS countries of 1.67 tCO₂e per capita, and/or emissions higher than the median total emissions of 284 MMtCO₂e (including or excluding LUCF).⁷⁵ This criterion will ensure that fieldwork countries represent those with high emissions from energy, high emissions from LUCF, and the biggest overall emitters. Focusing data collection on countries with relatively high emissions will ensure that the evaluation findings, conclusions, and recommendations are relevant to promoting more effective LEDS where emissions are highest.

⁷⁵ Emissions data are from the World Resources Institute's CAIT Climate Data Explorer, using 2012 data. (<http://cait.wri.org/historical>)

- **Criteria 3: Program Intensity:** Selected countries should have large EC-LEDS funding commitments greater than \$6 million, and with substantial programmatic disbursements before January 1, 2014. The application of this criterion is necessary to ensure that substantial EC-LEDS programming has advanced in each country to provide adequate data for answering the EQs.
- **Criteria 4: Regional Representativeness:** The sample as a whole should be representative of countries that span the regions in which EC-LEDS programming is implemented.
- **Criteria 5: Feasibility and Practicality:** Fieldwork should be feasible and practical in each selected country to promote the efficient use of time and resources. After the first four criteria were applied to the 26 EC-LEDS countries, each country that conformed to the criteria was assessed for feasibility and practicality.

The sample of fieldwork countries derived from these criteria is representative of key aspects of the EC-LEDS program, and also fulfills considerations of feasibility and practicality for conducting the fieldwork. The six fieldwork countries are expected to include:

- Malawi
- Colombia
- Indonesia
- Philippines (replaced initial selection of Georgia due to USAID Mission availability)
- Mexico
- Vietnam

If time and Mission availability allowed, the evaluation would include India and Bangladesh.

Selection of EC-LEDS Assistance Approaches for Field and Non-Field Visit Research

In order to understand the accomplishments of the EC-LEDS program, the evaluation will examine interventions and country actions related to the main programming emphasis in each of six fieldwork countries. To this end, EC-LEDS assistance approaches will examine activity related to four EC-LEDS IMs, purposefully selected IMs of focus from a list of 260+ IMs supported by the program. The selection of IM-related activities is based on covering a mix of sustainable landscapes and clean energy financing, and intended to cover the USAID EC-LEDS flagship activities in each country. Time and cost considerations require that the evaluation team focus its efforts on those assistance approaches that are most relevant for answering the EQs.

DATA ANALYSIS PLAN

The evaluation team will analyze the data gathered to derive an understanding of EC-LEDS as a whole and to answer the EQs. The evaluation team will use document analysis, descriptive statistics, triangulation and content analysis to answer the EQs. For each EQ, the evaluation team will first analyze data and prepare findings for individual countries, and will then compare country-level findings to answer the EQ across the EC-LEDS program.

There are two main types of analysis that the evaluation will focus on: (1) country-level completion of LEDS steps, as related to EC-LEDS assistance; and (2) country-level outcomes, with the main focus being GHG emissions reduced, sequestered or avoided, including projected declines through 2020/2030.

The analysis plan for this evaluation entails the concurrent use of data collection and analysis such that each new piece of evidence is evaluated in conjunction with a reexamination of the other data in the

corpus. Findings from the previous stage of analysis are revisited in each successive stage, building the base of evidence through an iterative process. The analysis plan outlined below will ensure that analysis is focused on extracting maximum value from the data for answering the EQs.

General Data Analysis Methods

Document Analysis

A document review process is being used to develop “briefers” for each fieldwork country. These briefers identify the focus IMs, list key institutions involved, highlight accomplishments and lessons from milestone reporting and evaluations, and identify a list of key stakeholders. These briefers ensure that the evaluation teams have key background information in-hand prior to visiting a country.

Additional use of the process will be to provide secondary research data after the fieldwork has been completed to gain further insights on lessons that emerge during fieldwork. For example, if it is found that central seed funds are critical to the implementation of sub-national green growth plans then research will be conducted to explore this relationship in additional countries. This secondary research will help to validate the relationship between intervention approaches and country actions, and will help to inform the identification of best practices.

Descriptive Statistics

Descriptive statistics provide simple summaries and quantitative descriptions in a manageable form. Descriptive statistics will be employed to understand the frequency with which selected variables are present for a particular data analysis point, such as distinct interventions designed to support a particular LEDS step. For example, the evaluation will examine how many countries are supporting REDD+ programs and identify the approaches that support these efforts in each country, which may include community-based forest management, forest inventory development, PES, or pilot projects. Descriptive statistics will enable the evaluation team to develop a profile of the program, including the frequency of different types of interventions and the relationship between types of assistance provided and country outcomes. Various cross-tabulations will be used to identify patterns across countries, e.g. the frequency with which certain types of assistance were provided in the different countries.

Triangulation

Once the evaluation team has collected data from the range of sources described in this document for each EQ, it will compare the information to understand the extent to which data from the different sources converge or diverge, or the extent to which the findings support cross-country conclusions. This technique helps to ensure accurate information when formal sampling procedures are not used, as differences in responses by types of respondents are readily apparent. Generally, agreement between respondents of different types on a given question tends to suggest that the underlying data are accurate. In the case of this study, individual findings and associated country actions will be identified for each fieldwork country through a triangulation process. An additional step of analysis will be to compare findings across countries, as per LEDS steps and outcomes, to determine common relationships between intervention approaches and results.

Contribution Analysis

Contribution analysis will be applied for assessing causal questions and inferring causality. This methodology offers a toolbox of methods and a step-by-step process to reach conclusions about the contribution that a program has made (or is currently making) to particular outcomes in relation to other

factors that may also have contributed to those outcomes. The essential value of contribution analysis is that it offers an approach designed to reduce uncertainty about the contribution the intervention is making to the observed results through an increased understanding of why the observed results have occurred (or not), and the roles played by the intervention and other internal and external factors.⁷⁶ For this evaluation, contribution analysis will be used to determine EC-LEDS relative contribution to a country outcome for cases when multi mechanisms of support may have been provided. This process will be based on inquiry with informed stakeholders once the trace forward and trace back methods have determined an association between EC-LEDS interventions and country actions.

Question-Specific Data Analysis Methods

Program Effectiveness: EC-LEDS Interventions and Country Actions (EQs 1 and 2)

EQs 1 and 2 concern the technical effectiveness of EC-LEDS interventions. They are as follows:

EQ1: Which EC-LEDS interventions have been effective in contributing to partner countries' low emission development and why?

EQ1a. Has LEDS planning resulted in implementation?

EQ1b. Have LEDS implementation actions resulted in actual/projected emission reductions and development impacts?

EQ2: How has the EC-LEDS program contributed to partner countries' progress towards LEDS outcomes?

There is one process being used to answer both EQ1 and EQ 2, as they both deal with program actions and effectiveness. Data will be gathered together for these two questions, and analyzed separately.

Step 1: Identification of Planning Actions for All Countries

- A. For the five LEDS planning components types (Institutional Arrangements, GHG Inventories, Development of Action plans and MRV), data will be gathered from field matrixes (field countries) will be identified for all countries from desk review documents.
 - 1. Component Name
 - 2. Component Type
 - 3. Implementation Type (if implementation is achieved)
 - 4. Pillar
 - 5. Level (national or sub-national)

The data for each planning type will be analyzed by type to determine which intervention types were more likely to result in implementation and impact. The data will also be analyzed by Governance (World Bank Effective Governance measurement), Climate vulnerability (ND GAIN), and climate readiness (ND GAIN) to determine if any of these factors may have influenced the likelihood of interventions leading to implementation and impact. Determination will also be made as to which types of planning are more likely to lead to implementation.

⁷⁶ Better Evaluation website: Sharing Information to Improve Evaluation, Approaches/Contribution Analysis

- B. For the three LEDS implementation components (Supporting Policies and regulations, Finance, and Implementation of Action Plans) data will be gathered from field matrixes (field countries) will be identified for all countries from desk review documents.

1. Implementation Type
2. Pillar
3. Level
4. Actual GHG emission reduction
5. Projected GHG emission reduction

The data for each intervention type will be analyzed by type to determine which intervention types were more likely to result in implementation and impact. The data will also be analyzed by Governance (World Bank Effective Governance measurement), Climate vulnerability (ND GAIN), and climate readiness (ND GAIN) to determine if any of these factors may have influenced the likelihood of interventions leading to implementation and impact. Determination will also be made as to which types of implementation will be more likely to lead to outcomes.

Step 2: CE and SL Outcomes Analysis

Further analysis will be done separately on:

Total GHG analysis

The evaluation will analyze the national level mitigation on all fieldwork countries by pillar and program providing examples and success stories on changes in national emissions. This will involve a review of APG data and information from project implementation reports, key narratives, evaluations and the 2103 internal status reports where available.

Outcomes achieved by each pillar, CE and SL

The evaluation will analyze the following outcomes: for CE, KWs generated or projected, energy savings, and energy investment; for SL, REDD readiness, carbon sales, GHGs sequestered, hectares of improved forest management, and benefits generated, for example through income generated by PES programs.

Outcomes related to policy support (as per the above types of outcomes);

These can include:

- Financial outcomes such as CE investment, REDD support, and SL benefits generated
- Data on GHGs reduced, saved or sequestered

This CE and SL data will also be analyzed by governance (World Bank Effective Governance measurement), climate vulnerability (ND GAIN), and readiness (ND GAIN) to determine if any of these factors may have influenced the likelihood of interventions leading to implementation and impact.

The relationships between EC-LEDS planning actions, as well as relationship between outcomes and contextual indicators, will be analyzed to determine correlations. Countries showing a high correlation between outcomes and independent variables will be further examined to identify factors that have contributed to effectiveness. The successful achievement of outcomes, once identified, will be

supplemented with desk review and notes from fieldwork reviews, to provide examples of success and best practices.

Data Collection Structure

The following data tables will be used as a guide for data collection and management.

CE the data points collected and analyzed will be as follows:

Benefits Related to EC-LEDS Program						
Country	Description	Actual CEG	Actual Energy Savings	Actual CE Generation	Actual Energy Savings	Financing
		(KW/s)	(KW/s)	(KW/s)	(KW/s)	CE Investment Closed (\$)

EC-LEDS Program Outcomes						
Country	Description	Actual CEG	Actual Energy Savings	Actual CE Generation	Actual Energy Savings	Financing
		(KW/s)	(KW/s)	(KW/s)	(KW/s)	CE Investment Closed (\$)

For SL the data points collected and analyzed will be:

EC-LEDS Program Outcomes					
Country	REDD	Co-benefits	Financing		
	Y/N	No. of hectares under improved management	REDD Payments Received	Readiness Funds Received	Funds Distributed

For policies, laws and regulations the following data will be collected:

Policies, Laws and Regulations				
Country	Description	Implementation	Impact	Description
		Y/N	Y/N	

Step 3: Summary Analysis of Outcome Data

The evaluation will also seek to identify emissions reduction outcomes that have been achieved in each country, or which are projected to be achieved through 2020/2030. When interviewees do have this

information, it will be collected, however in many cases, interviewees will not have this information. This data will also be collected through the desk review of existing reporting, for example by reviewing Mission PPR reports. To the extent possible, the following outcome data will be identified for all EC-LEDS countries:

- GHG emissions reduced, sequestered or avoided;
- Projected GHGs reduced or avoided through 2020/2030 (as available);
- Amount of emissions reduction investment mobilized;
- Clean energy capacity installed or rehabilitated; energy saved; and clean energy capacity that has reached financial closure (MWs).

Additional outcomes that will be considered will include benefits generated and shared, and increased area under improved NRM management (sustainable landscapes).

Contribution to Engagement in International Climate Change Mitigation Efforts (EQ 3)

EQ3: How has the EC-LEDS program contributed to partner countries' engagement in international climate change mitigation efforts?

The support provided to increase partner country capabilities in planning and capacity building will be identified through an EC-LEDS planning checklist, as per the table below.

Planning and Capacity Development Support

Country	LEDS Components				
	Institutional Arrangements	GHG Inventories	Prioritization – BAUs, CBAs, MACCs	Development of Action Plans	MRV Systems

The evaluation will create a rating of country willingness, based on a composite score from the following data:

- *The Climate Action Tracker* INDC assessment with a focus on:
 - Impact of INDCs or other commitments on emissions in 2020, 2025 and 2030 and beyond.
 - Effect of current policies on emissions
 - Fair share: whether the INDCs is a fair share of global effort to limit warming below 2°C (further detail on the rating is provided [here](#).)
- INDC targets/Unconditional: Projected emission reductions contribution assuming no additional international support – generally expressed in a percentage reduction in emissions as compared to business as usual scenario for 2020-2030 timeframe.
- INDC targets/Conditional: Projected emission reductions contribution assuming additional international support– generally expressed in a percentage reduction in emissions as compared to business as usual scenario for 2020-2030 timeframe.
- Notre Dame Global Adaptation Index (GAIN); disaggregate vulnerability and readiness ratings. May review the countries that have made the most readiness gains between 2010 – 2016: <http://index.gain.org/matrix>.

Analyze findings from fieldwork countries in terms of:

- Review the relationship between EC-LEDS assistance, and where the most assistance has been provided, and the relationship to contextual factors, such as INDC commitments (willingness).
- Provide qualitative examples of how EC-LEDS has helped countries meet international climate change requirements.

Based on fieldwork examples, the evaluation team will identify and classify some of the factors that may affect political will, and determine if and how these can be affected by EC-LEDS. Factors that affect political will may include:

- Participation allows an ability to leverage additional public sector funds through other donors (via NAMAs, other programs)
- Countries are concerned about their vulnerability to climate change impacts, and maybe motivated to increase their contribution to global mitigation efforts
- Climate change mitigation activities align with other development goals
- Poor governance
- Existing institutional/legal barriers

Whole-of-Government Approach (EQ 4)

EQ4: How has the “whole-of-government” approach affected the implementation of the EC-LEDS program?

This question will be answered based on qualitative information. The source of the information will be: (1) notes from direct questions asked during fieldwork interviews, and (2) follow-up interviews with POCs at all EC-LEDS participating agencies.

In addition, for fieldwork countries, the evaluation team will examine whether the various partner agencies participated in a scoping mission and, if so, if the participation has addressed the objectives developed during the scoping mission.

The analysis will be based on a qualitative review of data collected from fieldwork countries, as well as select follow-up interviews with EC-LEDS participating agencies.

EVALUATION LIMITATIONS

It is expected that the evaluation will confront a number of challenges, many of which are inherent to multi-site evaluations of large-scale programs composed of disparate activities, as with this study.

Partner Country Access and Availability

In the case that one or more countries becomes inaccessible at the time of fieldwork, the evaluation team will replace the inaccessible country with a similar one based on the country selection criteria outlined in the Multi-Site Approach and Selection Criteria section.

Data Source Access, Availability, and Assumptions

Given the large number of countries and IMs selected for inclusion in the sample of EC-LEDs programming, the success of the evaluation is heavily dependent upon the availability key documents for the desk review from Missions. It is therefore essential to ensure cooperation and information sharing between the evaluation team and the Missions that are responsible for managing each IM, as well as the other USG agencies engaged in the IMs and the implementing partner(s) for each IM. Inadequate cooperation and information sharing would create substantial challenges in the ability of the evaluation team to employ the data collection and analysis methods described in this document.

The quality of the evaluation findings will be directly affected by the extent to which representatives of Missions and other USG interagency partners are active participants in the interview and survey research. To encourage active participation, the evaluation team will make every effort to convey the importance of the evaluation to USG stakeholders.

Data Quality from Key Informants

The quality of the answers to the EQs will also be affected by access to key partner-country stakeholders, national institutions responsible for LEDS, and organizations that possess important information relevant to identifying the factors that have contributed to partner country LEDS-related actions. The evaluation team will rely on USG representatives for contact information and any necessary introductions and protocols for arranging meetings and interviews with partner country officials. The evaluation team will make every effort to make advance arrangements for interviews with local government and non-government stakeholders before each field trip.

Program Complexity and Context Variances

The EC-LEDs program operates in a variety of differing country contexts, including countries with varying levels of resources, analytic and scientific capabilities, and governance systems. In visiting six field countries, the evaluation team will look identify patterns of effectiveness; however, many country actions will be dependent on political will, governance effectiveness, and the availability of resources. This will likely present a challenge in developing generalizable conclusions.

DATA MANAGEMENT PLAN

Throughout the evaluation, data will be tracked and managed in accordance with ADS 579 on USAID Development Data. Qualitative data, such as field notes from interviews, will be stored in text-based data entry templates, while quantitative data will be stored in spreadsheets. Quantitative data will be prepared for submission in accordance with 579.3.2.2. Data will be labeled by all relevant subgroups. All personally identifiable, classified, proprietary, and other sensitive information will be removed. Data will be prepared in machine-readable formats, such as comma-separated value (.csv) files, along with codebooks. The data will be accompanied by survey protocols and instruments used to collect and analyze the data. Data will be reviewed for quality standards relating to validity, integrity, precision, reliability, and timeliness (ADS 203.3.1.1.1). Final datasets will be submitted to USAID in a format consistent with ADS 579.

Data Capture and Summaries

Unless proscribed by the respondent, the evaluation team intends to record KIs. As determined useful by the lead evaluator, interview recordings will be transcribed for later reference. Interview notes will

also be prepared from all interviews. Interview notes will be taken in English or, if in a language other than English, summaries of the interviews will be prepared in English. All interview notes, summaries, recordings, and transcripts will be stored in a secure folder to which only the evaluation team and E3 Analytics and Evaluation Project staff working on this evaluation will have access.

Data Storage

All individual and summary interview notes, recordings, and transcripts conducted under the evaluation will be stored in a secure folder to which only the evaluation team and E3 Analytics and Evaluation Project home office staff supporting the evaluation will have access.

Data Transfer

The storage and transfer of data collected as part of this evaluation will adhere to ADS 579 requirements. All data generated from this evaluation will be deposited in a unified, cloud-based digital Dropbox repository, which has a backup feature that will allow the team to access unlimited versions. Final datasets will be submitted to USAID in a format consistent with ADS 579 at the conclusion of the evaluation following appropriate application of procedures for data cleaning and the protection of anonymity of respondents. Metadata will be generated in the form of codebooks and data summaries as necessary. To ensure transparency and replicability, all data will be submitted as annotated datasets clearly defined with codebooks and annotated analysis of files, as appropriate.

Required Permissions

There is no anticipated need for an Institutional Review Board (IRB) for any countries where field work will be carried out for this evaluation. A review of the relevant research standards in each country will be conducted prior to the initiation of in-depth research to confirm any requirements that should guide the research. This review will confirm or clarify the applicability any local IRB requirements that are focused on the use of human research subjects.

All data collection will be conducted according to the professional standards of the American Evaluation Association and all data will be handled in such a manner as to protect the identities of informants in any situations where their comments could potentially have a negative impact on their employment or security. Where data are collected from individuals not acting in their professional capacity as representatives of an organization, the evaluation team will obtain signed informed consent.

WORK PLAN AND TIMELINE

As of the writing of this report, the desk review research is ongoing. The evaluation team expects to begin field work in May 2016. The evaluation will then field three teams to conduct field visits of one to two weeks in duration per country, with each team having approximately one week after each visit to analyze and summarize their data, and one week to prepare for the next country visit. The actual schedule will be determined by Mission availability. It is currently anticipated that all field work will be completed by July 2016. At that time, the team will analyze and begin to synthesize the data collected in order to prepare the evaluation report. USAID/E3/GCC has requested that the evaluation team present preliminary findings at the beginning of August 2016.

	May-16			June-16					July-16				August-16					September-16				
	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	5	1	2	3	4	5
Desk Review																						
Stakeholder mapping																						
US interviews																						
Malawi																						
Colombia																						
Indonesia																						
Philippines																						
Mexico																						
Vietnam																						
Analysis & Report Writing																						
Preliminary Evaluation Briefing																						
Draft Evaluation																						
USAID Comments																						
Final Evaluation Report																						

DELIVERABLES AND REPORTING PLAN

The evaluation team will be responsible for the following deliverables.

Deliverable	Estimated Due Date
1. Revised Evaluation Design Proposal	o/a 21 days following receipt of USAID comments on draft Evaluation Design Proposal
2. Field debriefs for USAID Mission staff prior to field team's departure at each country	As agreed with USAID/E3/GCC and appropriate Mission staff
3. Preliminary Evaluation Briefing to USAID/E3/GCC and its invitees	o/a August 10, 2016
4. Draft Evaluation Report	o/a September 16, 2016
5. Oral presentation(s) of Draft Evaluation Report key findings, conclusions and recommendations for USAID and its invitees	As agreed with USAID/E3/GCC
6. Final Evaluation Report	o/a 21 days following receipt of USAID feedback on Draft Evaluation Report
7. Debrief for EC-LEDS program staff and partners (tentative)	As agreed following USAID approval of Final Evaluation Report

All documents and reports will be provided electronically to USAID. All qualitative and quantitative data will be provided in electronic format to USAID. All debriefs will include a formal presentation with slides delivered both electronically and in hard copy for all attendees.

The format of the evaluation will follow USAID guidelines set forth in the USAID Evaluation Report Template (<http://usaidearninglab.org/library/evaluation-report-template>) and the How-To Note on Preparing Evaluation Reports (<http://usaidearninglab.org/library/how-note-preparing-evaluation-reports>).

The final version of the evaluation report will be submitted to USAID and is not expected to exceed 30 pages, excluding tables, figures, references, and annexes.

All members of the evaluation team will be provided with USAID's mandatory statement of the evaluation standards they are expected to meet, shown in Annex A, along with USAID's conflict of interest statement that they sign and return to the E3 Analytics and Evaluation Project Home Office where necessary before field work starts.

TEAM COMPOSITION

The evaluation will be led and managed by a core evaluation team composed of a Team Leader, two evaluation specialists, and subject matter experts with strong climate change diplomacy and sector experience. The core evaluation team members will also participate in the in-country research, supported by country teams of one or two additional local researchers.

Each country research team will be composed of up to four individuals, including an evaluation specialist, a subject matter expert, and at least one national evaluation expert and/or climate change expert. The country research teams will be supported by researchers, logisticians, and translators as needed within each country and from the E3 Analytics and Evaluation Project home office.

Brief biographies of the core evaluation team members are presented below and their CVs are included in Annex J.

Evaluation Team Leader: David Callihan

David Callihan is a management specialist with over 20 years of experience in evaluations, strategic planning, program management, and institutional analysis. Mr. Callihan's professional focus is on improving the effectiveness of complex programs, particularly concerning the management and governance of complex environmental programs. Notable accomplishments have included team leader for an evaluation of the USAID/Vietnam Forests and Deltas activity, leading an evaluation on the effectiveness of the US National Wildlife Refuge System; leading an evaluation of the effectiveness and efficiency of the US Endangered Species Act (Habitat Conservation Program); developing a results management system for the United Nations Development Program; and serving as a long-term technical advisor on a community conservation program in Namibia and as a Director for the United States–Asia Environmental Partnership Program. Mr. Callihan received his BS in Organizational Analysis for Management from Wheeling Jesuit University and his MA in International Administration from School of International Training.

Evaluation Specialist: Dr. Samuel Schueth

Dr. Samuel Schueth is a data scientist with over 10 years of experience leading the design, implementation, and analysis of quantitative and qualitative research for international development programs. He provides expert consulting and analytical services for performance management and optimization, designing performance indicators, measurement indices and logical frameworks, building monitoring, evaluation, and learning systems, data quality assessments, designing research methodologies, capacity development, leading evaluation teams, and preparing analytical articles and reports to inform programming strategy. Dr. Schueth received a BA in Geography from the University of Colorado at Boulder, an MA in Geography at the University of Colorado at Boulder and a PhD in Geography from the University of Minnesota-Twin Cities.

Activity Coordinator & Evaluation Specialist: Piper Purcell

Piper Purcell is the Activity Coordinator supporting the evaluation team and will be acting as an evaluation specialist on one of the country research teams. She has more than 15 years' experience in monitoring, evaluation, and program analysis, has experience conducting multi-site evaluations, in Africa and South-East Asia. She has worked on evaluations in health, nutrition and child labor, and has extensive experience in qualitative and quantitative data analysis. Ms. Purcell received a BA in Sociology from Southwestern University and a MA in Sociology from the University of Chicago.

Subject Matter Expert: Keith Forbes

Keith Forbes has 21 years of experience working internationally on climate change, land use, and international development. In international development, Mr. Forbes has worked on technical assistance and business development aspects of climate change and broader environmental areas for USAID, DFID, EU/EC, and AUSAID (DFAT). He has also worked on key federal climate change programs for U.S. EPA and DOE, such as Climate Leaders, the EPA Greenhouse Gas Reporting Program (GHGRP), the DOE Voluntary Reporting of GHG Program, and authored the land use chapter of the U.S. GHG National Inventory (Energy Information Administration, DOE) from 2004-2011. His areas of specialization include the interface between climate change and land use (LULUCF), climate change adaptation, resilience, and GHG inventories. His short term international assignments have spanned Mozambique, Nigeria, Ghana, South Africa, Brazil, Colombia, Peru, Nepal, Bhutan, and Vietnam. He has been on the UNFCCC roster of experts for the U.S. for 10 years, and has been an expert reviewer for the IPCC. He holds a Master's of Science degree in Environmental Science from Indiana University's (Bloomington, Indiana, USA) School of Public and Environmental Affairs, and has taught climate change science and policy at Skidmore College.

Subject Matter Expert: Stephanie Bogle

Dr. Stephanie Bogle is an internationally experienced project manager and scientist with over 10 years of experience in international development, climate change mitigation, renewable energy technology development and materials science research. Dr. Bogle has worked as an Independent Climate Change Consultant since 2014 and previously served as a Climate Change Science Advisor and AAAS Science & Technology Policy Fellow at the U.S. Agency for International Development. While at USAID, she was a core member of the Low Emission Development Strategies (LEDS) team, specializing in clean energy and monitoring and evaluation support. Prior to joining USAID, Dr. Bogle was a Postdoctoral Fellow at the Max Planck Institute for Intelligent Systems in Stuttgart, Germany. Her background includes a Ph.D. in Materials Science and Engineering from the University of Illinois at Urbana-Champaign and B. S. degrees in Science, Technology, and Society, and Materials Science and Engineering from North Carolina State University.

Project Manager & Subject Matter Expert: Meredith Waters

Meredith Waters will provide project management support across this evaluation and will also act as a subject matter expert on a country research team. Ms. Waters has designed, implemented and monitored community-based climate change and disaster management projects. She has also provided analysis and observations on climate change negotiations as a Civil Society Observer at the United Nations Framework Convention on Climate Change in Mexico. Ms. Waters received a BS in Environmental Science at Mercer University and a MA in Global Environmental Policy at American University.

Local Evaluation Team Members

One to two local team members will support each country research team. One will be an experienced local evaluator, preferably with subject matter experience. The local evaluator will participate in the KIs will be asked to provide information about the local context when necessary. Once the country research team members depart, the local evaluator may be tasked to conduct KIs with informants who were not available in the original timeframe, or to follow up with additional questions as necessary. Additional translation and logistical support personnel may also be provided assistance to country research teams.

Home Office Support

Home Office support by the E3 Analytics and Evaluation Project team members will be provided to the core evaluation team, including desk review research, quantitative and qualitative data analysis, technical guidance, quality control assurance, administrative oversight, and logistical support.

Annex C: Outcome Data for Clean Energy Pillar Funding

Country	MW Capacity Added (% of national generation capacity)		Finance Mobilized (USD)	CE Projected Emissions Reduced through 2030 (tCO ₂ e) ⁷⁷	Description of Intervention/ Implementation Action
	Completed assistance	Total Anticipated from on-going assistance ⁷⁸			
Total	2,769 MW (0.4%)	16,978 MW (2.6%)	\$5.108 Billion	371,573,703	
Mexico	1,860 MW (2.9%)	5,580 MW (8.7%)	\$4,876,517	38,286,390	USAID provided support by developing the IT platform and Verification Service for Mexico's first Renewable Energy Auction.
India	372 MW (.01%)	7,365 MW (2.8%)	\$2.660 billion	96,145,730 ⁷⁹	MW from completed assistance reflects financing through OPIC as part of PACE-D. Anticipated MW reflects solar roof program support.
Kenya	310 MW (14.1%)	602 MW (27.4%)	\$281,757,080	8,647,243	Transaction support for Lake Turkana Wind Project and other large RE projects
Indonesia	288 MW (0.5%)	1,223 MW (2.2%)	\$336,671,087	22,696,006	TA for small-scale RE
Georgia	185 MW (4.2%)	755 MW (17%)	\$244,358,951	4,428,775	Electricity model development that led to two hydropower projects (175 MW + 10MW) by improving investor confidence
Philippines	64.3 MW (0.4%)	464 (2.7%)	\$138,718,000	5,202,022	TA for small-scale RE and IT support for processing RE permits (projected for Mindanao)
Bangladesh	4.6 MW (0.04%)	4.6 MW (0.04%)	\$4,790,000	54,296	Solar home systems and industrial energy efficiency
Colombia	0.03 MW (0%)	0.03 MW (0%)	\$30,487,121	38,381	Rural, off-grid RE installations and industrial energy efficiency
Ethiopia	0.0 MW (0%)	1,000 MW (42.5%)	-	0	Transactional support for single large geothermal project
Serbia	0.0 MW (0%)	300 MW (3.4%)	-	0	Development of standard PPA; Projected to help bring large wind project to financial close
S. Africa	0.0 MW (0%)	0.0 MW (0%)	\$400,000,000 ⁸⁰	0	Loan guarantees for small-scale RE projects
Ukraine	0.0 MW (0%)	0.0 MW (0%)	\$311,178,000	1,149,404	Developed Municipal Energy Plans, and identified investment needs of municipalities, leading to investment in CE in 17 cities
RDMA/ Thailand	0.0 MW (0%)	0.0 MW (0%)	\$164,956,990	1,094,173	PFAN-Asia mobilized \$157 million of public and private investment for clean energy

⁷⁷ Includes actual emissions reduction to date from CE plus projections through 2030 from on-going programs. An additional 7.3 million tonnes will be reduced through energy efficiency programs.

⁷⁸ Includes projected from on-going assistance plus MW already installed/completed

⁷⁹ Projected emissions are from solar PV programs, and do not include PACE projections due to insufficient data.

⁸⁰ Includes projected finance from a DCA activity in the final phase of negotiation.

Country	MW Capacity Added (% of national generation capacity)		Finance Mobilized (USD)	CE Projected Emissions Reduced through 2030 (tCO ₂ e) ⁷⁷	Description of Intervention/ Implementation Action
	Completed assistance	Total Anticipated from on-going assistance ⁷⁸			
Total	2,769 MW (0.4%)	16,978 MW (2.6%)	\$5.108 Billion	371,573,703	
					projects, including wind, solar, biomass, small-scale hydroelectric power, energy efficiency, and transportation. This includes investments in India, Indonesia, Thailand and Vietnam.
Albania	0.0 MW (0%)	0.0 MW (0%)	\$55,000,000	0	USAID assisted the Albanian Distribution System Operator (DSO) in reducing commercial losses and electricity theft, which in turn reduced overall electricity demand
Jamaica	0.0 MW (0%)	0.0 MW (0%)	\$4,538,950	40	DCA to strengthen the ability of banks to provide loans to micro and small and medium enterprises involved in the renewable energy activities
Moldova	0.0 MW (0%)	0.0 MW (0%)	\$3,527,337	0	DCA to increase access to financing for energy efficiency and renewable energy projects among small and medium enterprises, as well as individuals.
Macedonia	0.0 MW (0%)	0.0 MW (0%)	\$857,360	0	Local governments of Centar and Karpos provided funds for reconstruction of seven building façades
Vietnam	0.0 MW (0%)	0.0 MW (0%)	-	0	Construction energy efficiency project developing building codes and improved practices.
Kazakhstan	0.0 MW (0%)	0.0 MW (0%)	-	0	EE work proceeding to develop GHG trading system and improve power use efficiency.
Costa Rica	0.0 MW (0%)	0.0 MW (0%)	-	0	

Annex D: Sustainable Landscape Outcomes

Co-Benefits and Financing

Country	Co-Benefits		SL-related Financing and Investment		
	Hectares under improved management	NRM-related funds distributed (PES, NTFPs)	Readiness funds/grants received (UN-REDD, FCPF, etc.)	REDD+ payments received (carbon monetization)	Other SL investment leveraged (incl REDD+)
Total	19,534,761	173,685,521	8,400,000	3,548,934	82,497,821
Bangladesh	928,087	3,800,000			
Cambodia	919,730			2,600,000	
Colombia	703,974	1,326,209		439,000	2,000,000
Gabon					
Guatemala	1,420,888	75,000	3,800,000		
India	1,144	50,604			1,634,746
Indonesia	6,249,416				3,702,062
Malawi	455,130		300,000	509,934	329,675
Kenya					
Mexico	829,466				342,560
Peru	3,317,052	3,326,708			38,838,853
Philippines	54,000	107,000	500,000		35,149,925
Thailand					
Vietnam	3,455,000	165,000,000	3,800,000		500,000
Zambia	1,200,874				

Emissions Reductions

Country	Emissions			
	Actual ERs (incl some verified VCU's) (2011-2015)	VCUs issued (or projected over LOP)	Projected ERs thru 2030 (or other date as applicable)	Total ERs (actual + projected)
Total	19,534,761	173,685,521	8,400,000	3,548,934
Bangladesh	308,000			308,000
Cambodia	8,535,396	360,000		8,535,396
Colombia	1,000,000	23,548,277	28,306,345	29,306,345
Gabon				0
Guatemala	2,252,392			2,252,392
India	815,472			815,472
Indonesia	11,477,921			11,477,921
Malawi	1,052,022	1,052,022	7,142,090	8,194,112
Mexico	193,602		432,855	626,457
Peru	7,000,000	8,000		7,000,000
Philippines	784,219		5,300,000	6,084,219
Thailand				0
Vietnam	207,403		8,000,000	8,207,403
Zambia	314,192	160,982		314,192
Kenya	461,182			461,182

Annex E: Country Field Visit Reports

EC-LEDS Country Field Report: Colombia

Clean Energy Summary

Country	MW Capacity Added (% of National Generation Capacity)		Finance Mobilized (Million USD)	Projected Emissions Reduced through 2030 (tCO ₂ e)	Description of Intervention/ Implementation Action
	Completed Assistance	Anticipated from Ongoing Assistance			
Colombia	0.03 MW (0%)	0.03 MW (0%)	\$30.5	38,381	Rural, off-grid RE installations and industrial energy efficiency

Sustainable Landscapes Summary

Country	Hectares under improved management	NRM-related funds distributed (PES, NTFPs)	Other SL investment leveraged ⁸¹	Emission reductions, tCO ₂ e (2011-2015) ⁸²	Description of intervention/implementation action
Colombia	703,974	1,326,209	2,439,000	1,000,000	MOU with Government of Colombia generated over \$2 million in public finance for sustainable landscapes. BioREDD and the Stand for Trees Platform generated nearly \$500,000 in revenue from carbon sales.

General Program Background

The U.S. and Colombia have been collaborating on EC-LEDS since the signing of a Memorandum of Understanding (MOU) in December 2011. The principal aim of this collaboration is to help the government of Colombia (GOC) complete and implement its own country led and developed LEDS. The overarching EC-LEDS program works closely with GOC's National Climate Change Committee, the entity that oversees national climate change programs and enables the necessary inter-ministerial framework. The specific high-level goals of the collaboration between the U.S. and GOC in EC-LEDS are as follows:

- Creating the institutional framework needed to implement LEDS in Colombia
- Building tools for climate change decision-making
- Implementing priority clean energy (CE) actions and reduce emissions from land use

More specifically, the EC-LEDS program in Colombia consists of the following programs/projects:

⁸¹ Includes readiness funds/grants received from sources like FCPF and UN-REDD, REDD+ payments resulting from carbon monetization, and any other sustainable landscape investment leveraged as a result of EC-LEDS

⁸² For detailed country emission reduction results, see Annex C

Low Carbon Resilient Development Program (LCRD) Since 2011, EC-LEDS⁸³ has supported the Colombian Low Carbon Development Strategy (Estrategia Colombiana de Desarrollo Bajo en Carbono - **ECDBC**). The ECDBC, the National Adaptation Plan (NAP), and the Reducing Emissions from Deforestation and Degradation (REDD+) Strategy, are the three pillars of the GOC's approach to addressing climate change. The USAID LCRD program represents the continuation of the EC-LEDS project in Colombia, structured as a typical USAID project, as opposed to the USFS (U.S. Forest Service) administered original EC-LEDS project. LCRD therefore continues the work done under EC-LEDS, working on low carbon and adaptation interventions at the national, subnational and local levels.

Colombia Clean Energy Program (CCEP), 2011-2017, works to increase access to renewable energy (RE) sources and improve energy efficiency (EE). CCEP works with GOC energy institutions, municipal governments, local community organizations, municipal organizations, and the private sector, to achieve CE goals. A key element of CCEP is the Incentive Fund to promote investment in community-scale renewables and energy efficiency projects. CCEP also works with GOC to promote RE in off-grid zones (about 60 percent of the national territory). The Program works in the Pacific region, La Guajira and the Sierra Nevada de Santa Marta.

BIOREDD+, 2011-2015, is the flagship environmental program of USAID in Colombia. This program addresses climate change, protects biodiversity, and promotes the economic development with marginalized indigenous and *campesino* communities. The development of REDD+ projects is a core element of BIORREDD+, aiming both to prevent emissions from forest conversion, as well as strengthen existing and promote new livelihoods for forest communities. With a portfolio of eight REDD+ projects, located in four geographic nodes covering over 700,000 hectares, the program works both at the specific project level, and supports national REDD+ strategy through policy advice as well as the development of cutting edge scientific knowledge.

SilvaCarbon administered by the USFS and funded by USAID, SilvaCarbon worked to: i) build community MRV capacity in the Amazon; and ii) with IDEAM (Instituto de Hidrología, Meteorología y Estudios Ambientales), develop the subnational and national forest inventories for REDD+.

Emissions Context

Colombia is the second most biodiverse country in the world, housing more than 300 distinct types of ecosystems including one of the largest areas of intact tropical rainforests, and 60% of the world's páramo ecosystems (mountain wetlands). Colombia currently faces a number of significant challenges in sustainably managing this vast natural wealth during a post-conflict period of economic expansion. Colombia's most recent National Communications to the UNFCCC dates from 2010. It provides GHG inventory data for 2004 with sectoral shares as follows: LULUCF at 14%, agriculture at 38%, energy 37%, solid waste 6%, and industrial processes 5%. Combining LULUCF with agriculture shows that land use related GHG emissions are responsible for more than half (52%) of all 2004 national emissions. The first Colombian Biennial Update Report (BUR), submitted to the UNFCCC on December 2015, presents the country GHG emissions inventory for 2012. It shows that the total GHG emissions are about 178 MMtCO₂e of which 43% are agriculture, forestry and other land use (AFOLU) sector related emissions.

In September 2015, Colombia released its INDC two months prior to COP21, becoming the first South American nation to do so, adopting a national, economy-wide emissions reduction target for the first time. Juxtaposed to their previous international pledge, made in 2009, consisting of a series of mitigation actions, the Colombian INDC targets a reduction of GHG emissions by 20% below BAU by 2030, increasing this

83 In Colombia, the precursor project to LCRD was given the same name as the overall USG program name of EC-LEDS. For purposes of clarity, it should be noted that, here, EC-LEDS refers to the specific project in Colombia, and not to the overall USG program.

target to 30% with conditional international support. This target is a significant milestone as it not only pledges to reduce deforestation, but makes a commitment to do so under the broader scope of overall national emissions.

This target will allow for an increase in Colombia's emissions by absolute terms to 268 MMtCO₂e by 2030 (the INDC provided data show that 2010 emissions were 224 MMtCO₂e). This increase is lower than the projected Business as Usual (BAU, that is, emissions in the absence of any climate change mitigation) scenario of 335 MMtCO₂e. The fact that the 268 MMtCO₂e target is made in absolute terms is significant in that it demonstrates a high level of transparency and accountability by the GOC. In addition to the ECBDC, NAP, and REDD+ strategy mentioned above, GOC plans to meet its climate change goals through the Policy Document CONPES 3700, the National Climate Change Policy, and the National Development Plan (NDP) 2014-2019.

The NDP includes a Green Growth Strategy which defines and harmonizes mitigation, adaptation, and means of implementation of actions, attempting to reconcile “bottom-up” and “top-down” strategies to engage and coordinate stakeholders. As such, it prioritizes mitigation interventions through the Sectorial Mitigation Action Plans, which aim to maximize the carbon-efficiency of economic activities at the national and sectorial levels. Developed under the CLCDS framework and approved by the appropriate sectorial ministry, they are currently pursuing the development of sector-specific MRV and financing options.

The NDC also highlights the main points from the Colombian National Adaptation Plan (PNACC), formulated in 2011. This covers 11 specific and measurable territorial adaptation plans through 2030, including strengthening adaptation planning, land protection, water resource management and education to raise awareness. These efforts will be primarily implemented within the transport, housing, energy, agriculture, health, tourism and industry sectors.

Summary Findings by Evaluation Question

EQ1: Which EC-LEDS interventions have been effective in contributing to partner countries' LED, and why?

EQ1a: Has LEDS planning resulted in implementation?

EQ1b: Have LEDS implementation actions resulted in actual/projected emissions reductions and development impacts?

In Colombia, the implementation of EC-LEDS ground level activities which specifically reduce greenhouse gas emissions or increase CO₂ sequestration are primarily driven by two dynamics. The first has to do with the stage of the various activities, being implemented either unilaterally by the GOC, or together with international partners. Many activities have involved establishing the enabling conditions for concrete implementation to take place, or, have not reached the implementation stage at the time this evaluation was conducted (June 2016). The second dynamic has to do with the reality of limited administrative control (related to past conflict), and sub-national capacity, outside the principal cities of the country.

However, the depth and breadth of EC-LEDS activities and NAMAs (Nationally Appropriate Mitigation Actions) across multiple sectors, shows that Colombia has great promise in achieving its mitigation goals. It should be noted that most of concrete activities have, to date, been implemented locally. While not all activities have been financed by USAID, EC-LEDS has played the important role of catalyst in securing funding and collaboration from other international partners. The activities themselves are more impressive in their breadth and variety, and less so in terms of the scale of implementation (which could certainly occur in the future, but it is too early to tell).

CE activities (categorized by high, medium, and low, relative to how close they are to achieving actual GHG reductions) and SL Activities are provided below:

Clean Energy

High

- The Clean Energy Project Preparation Facility (CEPPF) of CCEP provides technical and financial support for Energy Efficiency (EE)/ Renewable Energy (RE). It involves industry and UPME (Unidad de Planeación Minero Energética) toward a potential portfolio of \$125 million, or 200,000 tons CO₂e. To date, \$2 million of deals have been closed.
- The Waste NAMA supported by the EC-LEDS consultant in the Ministry of Housing and territorial development, seeks to prioritize sustainable waste management through an increase of waste recovery and valorization (compost, recycling) and a shift from landfilling to alternative waste treatments (including waste to energy). The waste NAMA mitigation potential is not yet precisely quantified as its geographic scope is still in definition and pilots are being designed and under implementation. However, LCRD Program projections indicates that the nation-wide implementation of both recycle and compost activities will lead to a 10 MMtCO₂e cumulative reduction by 2040.
- The city of Valledupar, where LCRD currently provides assistance, has officially committed to reduce GHG emissions from 1.5 tCO₂e/hab in 2015 to 1.3 tCO₂/hab by 2019 in its development plan which is adopted by virtue of agreement 001 of April 2016 at the local level. This goal is mandatory and will be subject to monitoring from the national level and Governmental accountability offices.

Medium

- Assisted in the formulation and current planning of a project funded by the GEF to promote energy efficiency, energy management systems and GHG monitoring for industries located in Bogota and its surrounding areas. The project is led by UNDP and Bogota's of Chamber of Commerce, and is envisioned to be further developed into a NAMA. The project expects to generate direct reductions up to 23,202 Ton CO₂e per year, during the next ten years after its implementation.
- The TOD-transit oriented development NAMA supported by EC-LEDS consultants during 2013 and 2014 aims at eliminating barriers to move toward public transport oriented urban development, focusing on urban public and private infrastructure around massive transport systems stations. This in order to create neighborhoods where people can walk, live, work, shop and play, while improving citizens' quality of life and reducing GHG emissions. The initial projection for the TOD NAMA mitigation potential was 3.5 to 5.5 MMtCO₂e by 2050 (annually). However, such figures may have changed since the national urban transport baseline has been modified.

Low

- Helped develop TANDEM NAMA on creating coordinated road and river transportation networks with transportation hubs (currently at proposal stage)
- Assisted in developing a Habitat NAMA, creating baselines, choosing measures, and established a technical committee to provide support
- Assisted in the development of a GEF program to encourage eco driving and balanced loads: \$5 million (\$4 M from ministry of transportation, \$1 M from IADB). As a complementary measure attending the freight demand side, EC-LEDS consultant is leading the development of a routing optimization project, especially for large companies, fleet changes, and private managed hubs in early stages, i.e., developing baselines, designing indicators, and identifying sectors.
- Developed implementation plans for the most significant activities in each of the SMAPs

- Strategic lines established to implement SMAPs at the housing and territorial development ministry – solid waste (80% implemented), energy for water delivery (15%)
- Assisted the Ministry of Mines and Energy in developing energy law 1715/2014, regulations, and tax incentives for CE.
- Developing a system for corporate reporting of GHG emissions (building a national reporting platform, and doing capacity building with WRI)

Sustainable Landscapes

Implementation activities addressing sustainable landscapes are included below. These activities were primarily carried out under the BIOREDD+ project which was based in Cali, and had a very specific geographic target area (the Colombian Pacific Coast). As such, the accomplishments are much more locally focused, although the experience with implementing REDD+ projects, and the scientific detailed carbon inventory work, was of great value to the GOC in developing its national REDD+ strategy. After the culmination of the BIOREDD+ project, implemented by private contractor Tetra Tech, responsibility for the continuation of the projects with the communities was passed on to Fondo Accion, an environmental foundation. More focused activities were carried out with IDEAM through SilvaCarbon.

- Developed a carbon baseline for the Pacific zone, which can be used for jurisdictional REDD+ programs
- Developed tools to assess forest degradation and a remote sensing tool to detect degradation
- Supported forest carbon inventories in Amazon and Choco

EQ2: How has the EC-LEDS program contributed to partner countries' progress toward LED outcomes?

In 2011, in partial response to the establishment of the MOU with USAID, and reflecting GOC's proactive stance on the issue, climate change was transformed from a small office to a directorate within the Ministry of the Environment, with its budget increasing from \$0.5 to now \$3 million. Influenced by the presence of the EC-LEDS consultants within the ministry, the profile of climate change was greatly raised. Financing aspects related to climate change have been integrated into the FUT (Formulario Único Territorial), a process conducted by all mayors. To date, \$1 of national (Ministry of Environment) funding has leveraged \$25 of other public funds, and \$1 of national funding leveraged \$89 of regional funds.

The CCEP supported PERS (Planes de Energización Rural Sostenible), accelerating the use of CE and RE for off-grid areas of the country. CCEP also supported PIEC (Plan Indicativo de Expansión de Cobertura de Energía Eléctrica 2013) which seeks to expand the provision of electricity, and RETIE (Reglamento Técnico de Instalaciones Eléctricas) which refers to electricity installation code issues. With respect to sustainable landscapes, SilvaCarbon has provided invaluable assistance to IDEAM to help it develop the GHG inventories, key to the national REDD+ strategy.

BIOREDD+ as well, through its implementation of on the ground REDD+ projects, greatly influenced the national strategy. The accomplishments of these sustainable landscapes EC-LEDS activities point the GOC toward the realization that REDD+ alone could satisfy 5% of the INDC commitment. The BIOREDD+ project also supported CONPES (El Consejo Nacional de Política Económica y Social) on PES (payments for ecosystem services) looking at different avenues to support PES through biodiversity, water, and conservation. The greatest conceptual impact of this project was to enable the GOC to view conservation as an economic opportunity.

On a broader level, EC-LEDS has changed the perception of climate change from a Ministry of the Environment responsibility to a shared responsibility across Ministries and led the establishment of climate change teams in 8 Ministries. The EC-LEDS/ LCRD consultants have been involved in the majority of climate change mitigation activities in Colombia by leading, supporting or data provision, and have worked well with the government to operationalize needed change. Every ministry with consultants reported that the consultants were a benefit to their programming. EC-LEDS has been instrumental in changes in structures and regulations that promote the production of CE and RE in Colombia.

EQ3: How has the EC-LEDS program contributed to partner countries' engagement in international climate change mitigation efforts?

GOC representatives indicated that the country was well prepared to develop the INDC without external support; however, information generated by the EC-LEDS activities in Colombia was useful to the effort. The INDC was a top-down process, with the President himself pushing it through the various ministries. The GOC considers the INDC very seriously as a means to attract investment, showcase Colombia's environmental efforts, and its progress toward becoming a sustainable and prosperous post-conflict nation. EC-LEDS activities helped concretely through the coordination impact of the embedded consultants (Colombian "EC-LEDS" project as well as LCRD) within the various ministries; and their role in the development of NAMAs, and MACC (marginal abatement cost curves) done in 2011 through USFS for all sectors, were key to the GOC's efforts to develop the INDC.

EQ4: How has the "whole-of-government" approach affected the implementation of the EC-LEDS program?

The degree of success, as perceived by GOC entities interviewed, of the whole-of-government approach differed across the different component projects and programs of EC-LEDS in Colombia. SilvaCarbon, being an on-demand, hands on activity, with USFS working directly with IDEAM was regarded as highly successful. This was not the case for BIOREDD+. Since the research work conducted under this project was carried out in California (at Caltech), the degree of collaboration with Colombian counterparts at institutions such as IDEAM was insufficient, and, as such, represented a lost opportunity for knowledge transfer. BIOREDD+, working off of a highly specific mandate, was focused on its own objectives and didn't engage at broader national level. BIOREDD+ wasn't aligned with national strategies and left big gaps for IDEAM which were difficult to fill. IDEAM therefore has been unable to replicate the work done in BIOREDD+, and fully utilize it, given structural differences in the carbon inventory data bases. In contrast, SilvaCarbon worked at a broader level alongside Colombian technicians, and in line with national strategies.

Thus, SilvaCarbon, even though it involved various USG agencies such as USAID, the Department of State, the US Geological Survey (USGS), USFS, the Environmental Protection Agency (EPA), National Aeronautics and Space Administration (NASA), the National Oceanic and Atmospheric Administration (NOAA), and the Smithsonian Institution, was able to provide well regarded technical assistance to IDEAM, based on a series of short-term, targeted TDYs to Colombia.

With respect to the original Colombian "EC-LEDS" project, it was administered through a USFS Participating Agency Program Agreement (PAPA). Since USFS did not have status as a legal entity in Colombia, there were difficulties in recruiting and retaining staff; major barriers in implementing actions through contracts with partners due to the absence of legal representation, as well as confusion with scheduling meetings with GOC, who did not know USFS. Project staff reported being expected to report the same data in different formats and on different timetables for both USFS and USAID which made the

planning phase complex. This mechanism proved difficult and unwieldy, and those involved recommended that it not be used in the future in Colombia for long term - large scale implementation Programs Short term individual consultancies could be considered carefully attending all the legal requirements to guarantee that the consultants are provided with all items required by the Labor Law in every country.

EC-LEDs Country Field Report: Indonesia

Clean Energy Summary

Country	MW Capacity Added (% of National Generation Capacity)		Finance Mobilized (Million USD)	Projected Emissions Reduced through 2030 (tCO ₂ e)	Description of Intervention/ Implementation Action
	Completed Assistance	Anticipated from Ongoing Assistance			
Indonesia	287 MW (0.5%)	1272 MW (2.2%)	\$336.6	1,961,186	TA for small-scale RE

Sustainable Landscapes Summary

Country	Hectares under improved management	NRM-related funds distributed (PES, NTFPs)	Other SL investment leveraged ⁸⁴	Emission reductions, tCO ₂ e (2011-2015) ⁸⁵	Description of intervention/ implementation action
Indonesia	6,249,416		3,702,062	11,477,921	Promotion of reduced impact logging in forest concessions resulting in agreements with local governments and private sector partnerships, and stimulating further investment in improved management.

General Program Background

Indonesia a top ten emitter of GHG and is a global priority for climate change mitigation. Emissions from land use, with peatland conversion and deforestation, are currently the top two sources of national GHG emissions, but energy is the fastest growing source of emissions, and expected to overtake deforestation by 2020. Through the EC-LEDs program, Indonesia and the United States are partnering to enhance the foundation for low emission development strategy (LEDs) planning and implementation. The partnership is focused on advancing the conservation of carbon-rich forests and peatlands, supporting policy and regulatory reform for renewable energy, and facilitating private sector engagement and investment in low emission growth. USAID will support the Government of Indonesia (GOI) to extend natural resource governance across government and civil society, especially in communities that are affected by GCC. Private sector activities to reduce emissions and impacts on carbon-critical landscapes, such as tropical forests, peatlands, and mangroves are also vital. Facilitation of clean energy investments, especially in renewable power production, energy efficiency, and clean transport are essential to mitigating climate change. USAID and the GOI will work together to strengthen the foundation for low carbon energy systems and enhance low carbon land use and forest stewardship.

⁸⁴ Includes readiness funds/grants received from sources like FCPF and UN-REDD, REDD+ payments resulting from carbon monetization, and any other sustainable landscape investment leveraged as a result of EC-LEDs

⁸⁵ For detailed country emission reduction results, see Annex C

The overarching goal of EC-LEDS sustainable landscapes (SL) program is to support efforts to reduce GHG emissions from land use by advancing the conservation of carbon-rich forests and peatlands in select landscapes. This work is supported by national level policy, advocacy and financing work. The sustainable landscapes program, which is primarily implemented by USAID/Indonesia, emphasizes:

- Engaging the private sector, particularly with the palm oil sector, to improve industry practices with respect to low emission forest management and provide innovative financing for forest conservation;
- Improving low-emissions land use management at the district level;
- Strengthening constituencies for forest conservation;
- Addressing policy, fiscal and other barriers that impede low emissions forest management.

There is a two-pronged approach for Clean Energy:

- Increase the capacity for low emissions energy sector planning and implementation as well as supporting policy and regulatory reform for small and medium scale renewable energy (1-50 MW);
- Accelerate mobilization of public and private investment in clean energy by advancing RE project development, investment promotion and technological innovation.

In support of the 2010 Comprehensive Partnership Plan of Action, the USG and GOI are collaborating to promote prosperity and enhance cooperation in climate change. The USG and GOI seek to achieve the following objectives:

- Strengthen bilateral cooperation at the national and sub-national level on both the development and implementation of low emission development strategies
- Strengthen private sector engagement in low emission development at the national and sub-national levels
- Identify and advance opportunities to integrate public and private efforts across national and subnational levels⁸⁶

The USAID Mission had already designed and awarded its main SL and CE programs before EC-LEDS was launched. The Mission could not redesign its programs following a prescription from EC-LEDS. Rather, the effort has been to repackage the results of these programs after the fact to fit the EC-LEDS objectives. *Note: The State Department led the discussion that resulted in the Agreement Letter on EC-LEDS that was signed by the former Indonesian National Council on Climate Change (DNPI). The GoI, however, had no interest in codifying a detailed LEDS work plan or MOU. Thus, these documents were never created.*

Below are the projects/programs under EC-LEDS Indonesia:

Indonesia Forestry and Climate Support (IFACS) Tetra Tech is working with the Indonesian government to reduce the country's emissions of greenhouse gases from forest degradation and loss. Activities are designed to conserve Indonesia's forests, biodiversity, and ecosystems and encourage a shift toward low-emission development on land that is already degraded.

LESTARI (*continuation of IFACS*) supports the Government of Indonesia to reduce greenhouse gas (GHG) emissions and conserve biodiversity in carbon rich and biologically significant forest and mangrove ecosystems.

⁸⁶ Source: EC-LEDS Dashboard Report, MOU/AWP

Indonesia Clean Energy Development (ICED), 2011-2014, established a network of public and private sector partners involved in clean energy development and greenhouse gas (GHG) emissions reduction in the energy sector. Partners include national, provincial and district-level government agencies; banks and financial institutions; project developers; the national electric utility (PLN); industry trade associations; and research institutions.

Indonesia Clean Energy Development II (ICED II) 2015-2020, is a sixty (60) month project funded by the USAID (United States Agency for International Development) and implemented by Tetra Tech ES, is to assist the GOI in establishing an effective policy, regulatory and incentive environment for low-emission growth in the energy sector, while simultaneously attracting public- and private-sector investment in clean energy development.

Under the The Low Emissions Development Public Private Partnership - **Sustainable Landscapes Partnership (SLP)** brings together companies, governments and NGOs to identify, develop and test new solutions aimed at avoiding deforestation and associated greenhouse gas (GHG) emissions through the development of low emission business models, with an initial focus in district-level sites of high-conservation value in Indonesia.

US Forest Service (USFS) with World Wildlife Fund (WWF) undertook a survey of mangrove and swamp carbon stock and vegetation. Results from the study will be used to compile an improved vegetation map for mangroves and swamp forest and an above and below ground carbon stock assessment

Emissions Context

Deforestation, peatland degradation, and forest fires have put Indonesia among the top emitters of greenhouse gases in the world. The World Resources Institute estimates that Indonesia is the fifth biggest greenhouse gas emitter if forest losses are taken into account, behind China, the United States, India and Russia (2015).

Indonesia's emissions from the energy and industrial sectors are relatively small, but are growing very rapidly. Rising energy production to support a growing economy will soon contribute more to Indonesia's carbon emissions than forestry and peatland conversion unless major policy shifts and investment climate improvements drive transformation in energy efficiency, renewable power production, efficient power management, and smart clean transport solutions.

An increased understanding of the links between GHG emissions and climate change impacts is required to develop a strong domestic constituency in favor of conservation and reducing emissions. The GOI recognizes the need to address this global threat, but efforts to date are tentative and not yet firmly anchored in legislation and implementation to ensure achievement of calculated, well-defined targets. The next five years will set the foundation for Indonesia's future carbon footprint if significant high profile progress can be made on low emissions development.⁸⁷

Indonesia is a rapidly-developing middle-income country and has ambitious targets for economic growth and development. In 2009 at the G-20 summit in Pittsburg and the COP15 meeting in Copenhagen, Indonesia committed to an unconditional target of reducing GHG emissions by 26 percent by 2020 compared to a BAU projection from 2010. A 41 percent by 2020 target with international assistance was also established. Subsequently, the country created a detailed National Action Plan for Reducing Greenhouse Gas Emissions (RAN-GRK) and measuring progress toward meeting the 26 percent target.

⁸⁷ From USAID/Indonesia Country Development Cooperation Strategy (CDCS)

Through EC-LEDS, USAID supports the Government of Indonesia (GOI) to extend natural resource governance across government and civil society, especially in communities that are affected by GCC. Private sector activities to reduce emissions and impacts on carbon-critical landscapes, such as tropical forests, peatlands, and mangroves are vital. Facilitation of clean energy investments, especially in renewable power production, energy efficiency, and clean transport are essential to mitigating climate change.

Summary Findings by Evaluation Question

EQ1: Which EC-LEDS interventions have been effective in contributing to partner countries' LED, and why?

EQ1a: Has LEDS planning resulted in implementation?

EQ1b: Have LEDS implementation actions resulted in actual/projected emissions reductions and development impacts?

Institutional Arrangements to Address Climate Change: The current institutional arrangements to address sustainable landscapes:

- The BP REDD+ institution merged into the MoEF. BP REDD+ was a special cabinet-level institution tasked with forest conservation. The returns from REDD+ were less than was expected and REDD-readiness funding has been effectively abandoned by the government in favor of forest conservation and alternative sustainable agriculture funding, e.g. palm oil RSPO-ISPO.
- A new BRG – Peatland Restoration Agency was created to restore about 2 million hectares (5 million acres) of carbon-rich peatland that was damaged by fires in 2015. However, the agency missed its annual budget submission, so it remains unfunded with the GOI asking for donor support. Its institutional structure is still in formation. USAID is procuring a new project to work with the BRG.
- The ICCTF is the institution under BAPPENAS responsible for directing international donor funds toward the achievement of the 41% commitment. However, no structure has been created to measure progress toward the 41% target. It has been suggested that ICCTF will take over the administration of REDD+ funding from Norway, but Norway has said that the fund's financial systems are not strong enough.⁸⁸

The Indonesian National Council on Climate Change (DNPI) was merged into the MoEF. DNPI was established by then president Susilo Bambang Yudhoyono in 2008 to be the national coordinator for international negotiations on climate initiatives. The U.S. State Department had signed the Agreement Letter on EC-LEDS with the DNPI. The government of Norway had also signed a Letter of Intent with DNPI in 2010 to provide \$1 billion to reduce forest-based GHG emissions. This program had disbursed only \$60 million for REDD Readiness as of the end of 2015 before its partner agency was disbanded.

Indonesia lacks a LEDS; its emissions reduction strategy is generally divorced from its national development plan. EC-LEDS has not had a substantial influence at the strategic level of national development planning for low-carbon economic growth. The EC-LEDS program began after Indonesia committed to its mitigation targets and created the RAN-GRK. The major donor supporting RAN-GRK is GIZ, but the effort is very much led and directed by the Government of Indonesia through the economic planning ministry, BAPPENAS. Indonesia could thus be considered to have created the necessary institutional and management arrangements for GHG inventory, in the form of the RAN-GRK.

⁸⁸ <http://www.thejakartapost.com/news/2015/01/29/bp-redd-officially-disbanded.html>

EC-LEDs assistance at the national level can be best described as an ad-hoc, on demand process of filling in gaps in the capacity of the GoI. This on-demand assistance has been most effective when provided by the Indonesia Clean Energy Development (ICED) project, and its successor, ICED II, in the clean energy sector. USAID's IFACS project, and its successor, LESTARI, were not designed to intervene at the national level. Rather they work with district and provincial levels of government in their targeted landscapes. The IFACS contract included language that prohibited the project from working with the Ministry of Forestry.

Development of a National GHG Inventory System: Indonesia has created the necessary institutional and management arrangements for a GHG inventory, in the form of the RAN-GRK. Through EC-LEDs, there is an embedded staff member in the National Action Plan for Reducing Greenhouse Gas Emissions (RAN-GRK) Secretariat. RAN-GRK is the institution under the Planning Ministry (BAPPENAS) that is responsible for monitoring and reporting on progress toward the INDC targets.

The LEAP tool introduced by ICED, in collaboration with the USAID/RDMA LEAD program, is being used to monitor and report on emissions in the energy sector across 34 provinces.

Institutional and management arrangements for GHG mitigation in the forestry and land use sector are in a phase of rebuilding in an effort to replace failed institutions with new ones. Upon taking office, President Jokowi issued Presidential Decree No. 16/2015, which subordinated and merged the special institutions tasked with climate change mitigation with the Ministry of Environment, creating a new Ministry of Environment and Forestry (MoEF).

Clean Energy (ICED & ICED II)

Fostered the growth of the private market for CE: The most significant actions of EC-LEDs in Indonesia are in the creation of an improved enabling environment for the addition of substantial amounts of clean energy to the expanding supply of electricity. These include the adoption of new regulations, feed-in tariffs, and the impending creation of a new institution to buy renewable energy at the feed-in tariff rates, and sell it to state electricity monopoly (PLN) at cost-recovery rates. This will allow for a more effective and streamlined set of power purchasing agreements. The national financial regulator (OJK) has worked to facilitate workshops supported by ICED II on clean energy finance. These workshops have been attended by members of the banking and non-banking financial sector and are a key element in the creation of conditions that should allow the substantial expansion of clean energy development.

Implementation of clean energy generation projects: The most effective interventions were implemented by the ICED and ICED II program in the clean energy sector. In 2010 ICED focused on providing technical assistance, grants, and cost-sharing to support the implementation of renewable energy projects such as micro- and mini-hydro and geothermal power installations. The challenges ICED faced in attempting to implement these projects led to a shift in focus with the follow-on program, ICED II, which began in 2015.

Creating an enabling environment for the expansion of clean energy: The ICED II program has three components: 1) policy and enabling environment, 2) public and private investment promotion, and 3) public outreach. ICED II is building on the accomplishments of ICED by intervening simultaneously at national and provincial levels with public and private sector stakeholders in clean energy development. The ICED II program has been particularly effective in the policy realm by contributing directly to regulatory changes that are necessary to enable the expansion of clean energy generation, and task forces responsible for implementing these regulatory changes.

Providing on-demand assistance and useful data: USAID's CE programming in Indonesia has been successful at promoting the expansion of renewables in Indonesia because:

- Experience with the implementation of demonstration projects has imparted a strong understanding of the specific challenges for renewable energy producers that are presented by the local context.
- The program has collected and mapped a large amount of data on the electricity grid and renewables potential, and has substantial expertise in the use of data analysis tools that public and private stakeholders find valuable.
- The experience, expertise, data and analysis that the program is able to provide has led to significant demand for its services. This has enabled the program to build highly productive relationships with the Ministry of Energy through which ICED II is having a substantial influence on regulatory actions that promote the expansion of clean energy.

Sustainable Landscapes

No significant national country actions on SL: In an interview with the evaluation team about the USAID/Indonesia's SL programming (IFACS, LESTARI, and SLP), the head of forestry at BAPPENAS said that the programming had resulted in no significant country actions. The program focused on the sub-national, district and provincial levels of government. Interventions related to LEDS provided assistance in preparing district Strategic Environmental Assessments (SEAs) and Spatial Plans for land use. These plans incorporated recommendations on which areas within targeted landscapes that should be developed, and which areas of forest should be conserved. Tons of GHG emissions reduced or avoided were reported for square kilometers of forest that were recommended for conservation in SEAs, and then marked as conservation areas in Spatial Plans. Spatial Plans and associated development budgets are revised every five years, and thus areas marked for conservation may not maintain that status following revisions to the planning documents. The final impact assessment of the IFACS program noted:

- "The impact targets were ambitious, and according to data, have been or mostly been achieved. However, most of the activities that USAID IFACS has put in place via target audiences have yet to be implemented (SEA-LEDS, CMMPs, CCLAs). How can this be reconciled with the impact changes reported? Putting aside measurement challenges could it be that the figures for the impact target are assumed based on what is planned rather than implemented." (page 35)
- In the case of IFACS, it thus appears that planning outputs were reported as GHG reduction impacts.⁸⁹

EQ2: How has the EC-LEDS program contributed to partner countries' progress toward LED outcomes?

The ICED and ICED II activities in the clean energy sector have made the most significant contributions to Indonesia's progress toward LEDS outcomes. Through these activities, USAID is playing a transformative role in the CE sector. As a follow-on activity, ICED II has capitalized on the substantial momentum created by ICED and continued to support the achievement of the following GHG mitigation impacts:

"ICED's Clean Energy Project Pipeline contains projects for which ICED has signed a non-disclosure agreement and provided or had offered to provide assistance to the project sponsor, lender or off-taker (PLN). The total number of clean energy projects receiving ICED assistance as of 15 February 2015 was 118, with a total installed capacity of 866 MW. The results attributable to the pipeline are:

⁸⁹ https://www.dropbox.com/s/x54513yisif1r9h/USAID_IFACS_Final_Impact_Assessment.pdf?dl=0

- 3,904,449 tons of CO₂e per year in reduced or avoided GHG emissions
- 117,170,670 tons of CO₂e over the projects' lifetime in reduced or avoided GHG emissions
- \$1,773 million of leveraged public and private financing for commercial clean energy projects
- 9,292,044 persons with increased access to clean energy
- \$274,717,535 per year of reduced subsidy in the power sector.
- As of 17 February 2015, \$167.4 million had been leveraged, based on the statements of ICED partners on the status of their projects.”⁹⁰

While significant, these mitigation impacts may be substantially less than the impacts that will be enabled by the policy and regulatory changes that ICED has directly supported. These include:

- **Institutional design:** The design of a power purchasing institution to buy renewable energy at official feed-in tariff rates, and sell it to the national electricity company, PLN, at rates that will allow for cost recovery.
- **Long-term planning for transformation in the energy sector:** Support for a 23 percent target for renewable energy and based on a detailed analysis of grid capacity in the National Plan for Energy, which will guide the development of the energy sector for the next 35 years.
- **Scale-up of demonstration project:** Successful street lighting demonstration project in Makassar city that is being scaled up to Jogjakarta, Medan, and Palembang, and nationally through the Street Smart Lighting Initiative (SSLI) NAMA that is seeking funding through the UNFCCC process.
- **Policy reform to open the market to large-scale foreign direct investment:** Provided independent legal review for the Presidential Regulation 39/2014 that lifted restrictions on majority foreign ownership of renewable energy projects larger than 10 MW.

EQ3: How has the EC-LEDS program contributed to partner countries' engagement in international climate change mitigation efforts?

EC-LEDS has made minimal contributions to Indonesia's international engagement on climate change issues. GIZ is the key international donor that is supporting the RAN-GRK and providing on-demand technical capacity for the BAPPENAS Directorate of Environment in its international engagements.

USAID offered assistance to the GoI on the preparation of its INDC and BAU prior to its submission before COP21. The assistance was declined, with the GoI claiming that help was not needed. Indonesia's INDC reaffirmed the 26 percent by 2020 mitigation target, and offered a new target of 29 percent by 2030, which implies that the 26 percent target was overly ambitious or unrealistic.

The Climate Policy Initiative evaluated Indonesia's INDC as a missed opportunity. The INDC entailed a major shift in focus from GHG mitigation from land use to clean energy, based on the projection that electricity consumption will increase dramatically to supersede land use as the largest source of emissions. The BAU scenario was criticized in particular for not offering details of the assumptions underlying its targets and, “because inventory and monitoring systems have not been able to estimate progress to date, it is hard to decipher where Indonesia stands with respect to business as usual and where they could go.”⁹¹

⁹⁰ From ICED Final Report, February 2015, Pages 94-95

⁹¹ <http://www.ecosystemmarketplace.com/articles/indonesia-to-downgrade-forests-upgrade-energy-in-new-climate-strategy/>

The shift in focus from emissions from land use change in Indonesia's second national communication to the UNFCCC, to emissions from energy in Indonesia's INDC submission, was not a result of intervention by ICED II. The program provided some data and analysis inputs for the INDC, but there was no clear uptake. The projections for increased consumption of energy and resulting emissions that were included in the INDC did not match those prepared by ICED II. The projections were prepared internally by the GoI and were not independently verified by ICED II.

EQ4: How has the “whole-of-government” approach affected the implementation of the EC-LEDS program?

The whole-of-government approach was not a strong aspect of the implementation of EC-LEDS in Indonesia. The State Department led the discussion that resulted in the Agreement Letter on EC-LEDS that was signed by the former DNPI (see above). The GoI however had no interest in codifying a detailed LEDS work plan or MOU. Thus, these documents were never created, which complicates the effort to measure progress.

SFS interventions consisted mainly of study tours and small community forestry activities that appear to have had little impact, as per reporting and interviews.

The \$350 million “Green Prosperity” program is the largest component of the Indonesia MCA. This program is solely focused on giving grants rather than building technical capacity. It has found few grantees that meet its standards for technical capacity and financial management. Therefore the program has disbursed few of its funds.

The powerful national planning ministry, BAPPENAS, has been a key government partner for EC-LEDS in Indonesia. Where such a planning ministry exists, it should serve as a good partner for assisting with the implementation of a LEDS.

EC-LEDS Country Field Report: Malawi

Sustainable Landscapes Summary

Country	Hectares under improved management	NRM-related funds distributed (PES, NTFPs)	Other SL investment leveraged ⁹²	Emission reductions, tCO ₂ e (2011-2015) ⁹³	Description of intervention/implementation action
Malawi	455,130		1,139,609	1,052,022	Kulera Landscape REDD+ Program has brought an extensive area under improved management and successfully executed two carbon transactions with Microsoft. Support for REDD+ action plan development by embedded REDD advisor.

General Program Background

In May 2012, the United States Agency for International Development (USAID) proposed a partnership with the Government of Malawi (GoM) on the Enhancing Capacity for Low Emission Development Strategies program. On May 30, 2014, the GoM's Minister of Environment and Climate Change Management (MECCM) confirmed the GoM's interest in the EC-LEDS program through a letter to the USAID Mission Director. In July, a scoping mission composed of representatives from several USG agencies visited Malawi to hold meetings with GoM counterparts to identify key areas of support for LEDS implementation.

A second scoping mission was conducted in September 2012 that led to the development of the MOU, focusing on the following areas: enhanced coordination and capacity; development of GHG inventories; analytical decision making, and particularly for BUA and emission mitigation strategy; increase capacity for cross-sector and integrated planning, particularly concerning agriculture, forestry and charcoal production. All of these areas are addressed under EC-LEDS (although agriculture is not a priority, but is receiving assistance under Feed the Future). The areas of cooperation highlighted in the Scoping Report were used as a basis for developing PERFORM and other EC-LEDS assistance, including the assistance from the USFS.

On March 25, 2013, the GoM signed a MOU with the USAID/EC-LEDS program, outlining the collaboration between the GoM and USG to work together to address the primary drivers of deforestation at both national and local scales, improve planning and analysis for low emission development, and secure new sources of climate financing. USG technical assistance through EC-LEDS supports the core pillars of Malawi's National Climate Change Policy.

EC-LEDS support has included the following:

Malawi REDD+ Readiness Program (MRRP), 2012-2015, is a joint effort of the GoM, USAID/Malawi, and the United States Forest Service (USFS). Launched in August 2012, the MRRP includes three primary objectives: (1) to develop a zero-draft, national REDD+ strategy for Malawi, (2) secure the GoM's partnership with a multi-lateral REDD+ body (e.g., UN-REDD and/or World Bank Forest Carbon Partnership Facility), and (3) build capacity in REDD+ and climate change management at the Malawi

⁹² Includes readiness funds/grants received from sources like FCPF and UN-REDD, REDD+ payments resulting from carbon monetization, and any other sustainable landscape investment leveraged as a result of EC-LEDS

⁹³ For detailed country emission reduction results, see Annex C.

Directorate of Forestry (DOF) and other relevant institutions. The MRRP was based in the DOF and managed by an embedded REDD+ Advisor and a DOF counterpart.

Protecting Ecosystems and Restoring Forests in Malawi (PERFORM), 2014-2019, is one of USAID/Malawi's primary activities under the Presidential Global Climate Change Initiative. PERFORM works with the GoM and a wide range of Malawian organizations to mitigate Malawi's vulnerability to climate change. The program supports the GoM in implementing the national REDD+ strategy/action plan; establishing GHG inventory capacity priorities; providing technical assistance for Malawi's intended nationally determined contribution (INDC). Project support includes a demonstration of three test sites to address the drivers of deforestation, the generation of low-emission livelihood opportunities and development an updated forest monitoring system.

Malawi Kulera Biodiversity Activity (Kulera), 2010-2013, worked in the Central border zones of five protected areas in the Central and Northern regions of Malawi. The goal of the activity was to secure long-term biodiversity of Malawi's protected areas under a vision a program of government and community forest co-management. This activity was built on the premise of engaging stakeholder communities in the management of use of protected areas. Malawi Kulera Biodiversity Activity led to the follow-on program, Malawi Kulera REDD+ Program.

Emissions Context

Malawi presents an interesting case; it is part of the EC-LEDs programme despite being one of the poorest and least development nations in the world, and contributing a negligible fraction of global emissions. Evaluating the EC-LEDs programme in Malawi requires an understanding of why this process is important for this country.

In Malawi, the need for climate change adaptation is critical. The country recently has suffered recurrent failed harvest which have resulted from climate shocks. The 2014/15 season saw devastating floods hit the country immediately followed by dry spells, while 2015/16 has seen the nation in the midst of an El-Nino related drought. In 2015, an estimated 2.8 million people required food assistance. The number is expected to rise to anywhere between 5 and 8 million in 2016, which is a substantial proportion of the population.

Given these challenges, it can be said that the mitigation agenda is not a high priority for the government of Malawi. Areas where progress has been made along the EC-LEDs pathway have been those where there are broader sustainable development benefits to activities and interventions; such as livelihoods and broader catchment benefits to forest rehabilitation, cross sector collaboration on key issues such as charcoal and GHG inventories, and high level engagement in the UNFCCC process. One important aspect of the EC-LEDs steps is that they promote holistic approaches to sustainable development, and broader development benefits as part of the EC-LEDs outcomes. This is why Malawi has adopted the REDD+ agenda under a 'no regrets' approach, implying that the intrinsic benefits are of significant value irrespective of the carbon finance or mitigation potential of the initiative. These broader development bonuses are of particular importance for nations which fit the profile of Malawi. Malawi's per capita income is \$255 (2014, World Bank), the lowest per capita GDP income in the world.

As Malawi is a landlocked country with limited access to ports, it faces some of the highest transportation costs in the world, having to also import all of its fuel products. Between 2006-2010, Malawi experienced stable economic growth, averaging 7.1%. However, between 2010-2012, the economy faced a sharp decline, mainly due to inappropriate macroeconomic policy, which led to tight restrictions in foreign assistance support. With the new presidential administration of 2012, major policy reforms began to take shape. By 2014, Malawi's economy saw a 5.7% growth in real GDP, largely driven by agriculture, followed by manufacturing, trade, and services.

Malawi's greenhouse gas (GHG) emissions are very low, amounting to 0.04% of the total emissions (2015, Malawi INDC). The main sectors contributing to GHG emissions are energy, industrial processes and product (IPPU), waste, and agriculture, forestry, and other land use (AFLOU). As noted in the graphs below, forest-related emissions constitute the majority of sectoral emissions for both 2015 and projected 2040 rates.

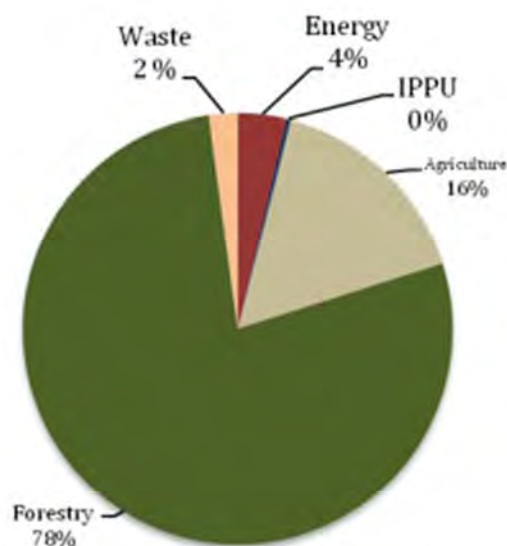


Figure 1: Sectoral emissions in 2015

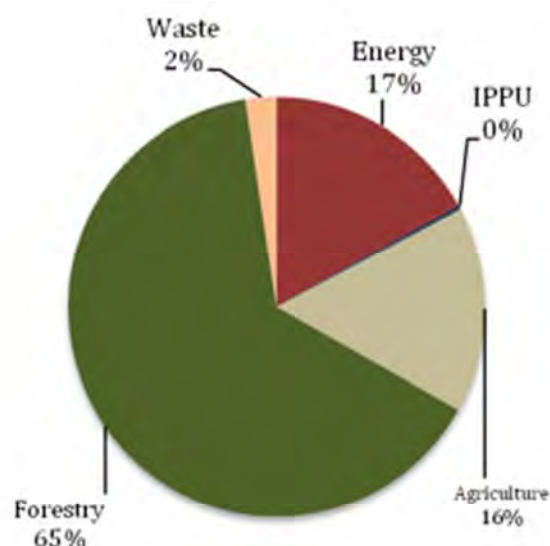


Figure 2: Sectoral emissions in 2040

Total GHG emissions are expected to increase between 2015 and 2040 from the current level of approximately 29,000 tonnes CO₂e equivalents to 42,000 tonnes CO₂e. There is uncertainty in future emission projections beyond 2020.

A high proportion of Malawi's population (97%) uses biomass for cooking fuel, which contributes to high rates of forest degradation and deforestation. Currently, Malawi's electricity generation capacity is 351MW against an estimated suppressed demand of 400MW, largely provided by hydroelectric power plants. Less than 2% of the population has access to grid electricity. Emissions from power generation will increase as new coal-based generation capacity by independent power producers (IPPs) comes on line to meet immediate energy needs. Forest degradation from charcoal production is the main driver of deforestation in Malawi.

Summary Findings by Evaluation Question

EQ1: Which EC-LEDS interventions have been effective in contributing to partner countries' LED, and why?

EQ1a: Has LEDS planning resulted in implementation?

EQ1b: Have LEDS implementation actions resulted in actual/projected emissions reductions and development impacts?

Development of a National GHG Inventory System: Malawi has established a cross-ministerial network to compile a GHG inventory, led by the environmental affairs Department with MOU's between the different government departments. Under PERFORM, data collection protocols and a computerized National GHG management systems are in the early stages of development.

Use of Embedded Advisors: As part of the recommendations from the PERFORM options paper regarding institutional arrangements, a LEDS advisor has been embedded in a cross-ministerial working group to help coordinate the National GHG Team (NGHGT). The NGHGT consists of 11 ministries and is developing the National GHG (NGHG) Inventory. The team and advisor operates from within the Environmental Affairs Directorate (EAD). The NGHGT has signed Memorandums of Understanding (MOUs) and drafted standard operating procedures (SOPs) with partner ministries on responsibilities and protocols for data collection and data sharing. Though the SOPs are still in the draft stage, this institutional arrangement would not have been established without EC-LEDS.

A second PERFORM-funded embedded advisor is located within the Department of Forestry and is focused on REDD+ work through coordination with the REDD+ Expert Group, supporting the Charcoal Task Force, and involved in Reforestation/ROAM district stakeholder planning processes⁹⁴ This advisor also works to help Malawi implement its National REDD+ Action Plan and provides support for development of a revised forest monitoring system.

Malawi REDD+ Readiness Programme: This programme set the ball rolling, helped to bring REDD+ into mainstream agendas and brought the forestry sector into focus both as a mitigation and broader development priority. The forestry department has been galvanised recently by the appointment of a new, technically skilled director who was (prior to being appointment) a prominent member of the REDD+ expert group, and working closely with MRRP. The capacity built and momentum gained during this time has given the forestry department the impetus to tackle the main source of Malawi's emissions.

PERFORM has built on the work done by the MRRP and is engaged both in higher level support for initiatives such as the National Forest Management Inventory as well as having 3 pilot sites. The project is laying the groundwork for Malawi to make serious emission gains in the forestry sector while also realising substantial adaptation and development benefits. The programme aligns closely with government priorities and there is evidence of a very strong working relationship between the department of forestry, environmental affairs department, PERFORM and USAID.

Institutional Arrangements to Address Deforestation: For the first time, with support from the PERFORM activity, the government is taking a serious inter-ministerial and multi-stakeholder approach to addressing climate change, and development in general. This has included forming an inter-ministerial task force to address deforestation caused by charcoal production. Actions have included producing an analysis and options paper, planning a study tour and looking at how to reduce charcoal demand by increasing urban LPG use.

A value chain analysis of charcoal use in Malawi was conducted under PERFORM highlighting options and strategies to reduce the effects of charcoal production on deforestation. The activity's report is under consideration by the multi-sector charcoal task force. One of the main recommendations of the task force was to reduce demand for charcoal by increasing the use of liquefied petroleum gas for cooking in urban areas – and activity that will be led by the Ministry of Energy.

Forest Management Inventory: Malawi does not have an existing Forest Management Inventory system or accurate inventory data available at the national level. Support was initially provided by the USFS (2012-2015) and follow-up support is currently provided by PERFORM. A forest inventory has not been done for the last 20 years.

⁹⁴ Will be used to test district process for integrated restoration (agriculture, forestry, water) that, if successful, can be scaled nationally. Will provide a basis to access AFR100 (Oct 2015) funds (Malawi first SADC country to be an official member).

Reforestation/Afforestation: PERFORM is pilot testing a Restoration Opportunities Assessment Methodology (ROAM) at 3 sites in mid-2016. This integrated effort involves the Department of Forestry, the Forestry Research Institute and local communities. If the EC-LEDS demo/pilot inventory process is successful, it will lead to the National Tier II Data System that will include forest carbon inventories and geospatial data, expected to be completed by 2018. It will also serve as the basis for how districts allocate their annual reforestation budgets. The methodology prioritizes areas for reforestation based on overall ecological impacts to forestry, water, and agriculture and would replace a “best guest” process for reforestation decisions.

The AFR 100 is an initiative launched at COP21 in 2016 which aims to restore 100 million hectares of forest across Africa. The initiative is looking at mobilizing \$1.6 billion toward achieving the goals. It is supported by the World Bank who are providing \$1 billion over the next 15 years, the remaining \$600 million will be provided through private sector investment. The initiative is also supported by BMZ, NEPAD and WRI.

Malawi is still finalising its hectare target, but are in a strong position to engage in this initiative building on previous work done by MRRP and currently by PERFORM. A few key points include:

- The National Forest Inventory will be instrumental in establishing and managing targets.
- Terra Global, the private sector partner of Kulera has committed \$100 million by 2030 to the AFR100 initiative.
- Kulera and PERFORM have provided the blueprints for scaling up. Malawi can point to these as examples of successfully implemented projects and will be better placed to access scaling up funding for AFR100.
- There is a link between engagement in climate negotiations and joining the AFR100, Malawi's position as an important player in the negotiations has facilitated this, despite the country being relatively small (area wise).
- Forest rehabilitation is now seen as having viable benefits, both financially and for adaptation.

National Policies: Under PERFORM, support for new policy amendments by the GoM include REDD+ as part of the Climate Change and Forestry Policy. The revisions are the result of EC-LEDS development of REDD+ Action Plan. The policies are pending approval by the cabinet. A forthcoming directive should, for the first time, establish the official definition of a forest for defining forest boundaries on land use maps.

Policy reforms in the energy sector seek to decouple energy generation, distribution and regulation by amending the Electricity Act. Construction of new infrastructure through MCCC is proceeding in tandem with regulatory reforms, but without conditionality of one of the other.

Climate Financing: The Kulera activity resulted in substantial revenue generation and benefit sharing. In addition to receiving a half-million plus in carbon funds, the results of the effort have included improved water availability and irrigation due to better management of the forest. This is having a direct livelihood and economic benefit for the neighboring communities. Activities under MRRP enabled Malawi to gain membership in UN-REDD, thus eligible to apply for funding. Roughly \$300,000 in funding was secured from UN-REDD as a result of completion of the REDD+ Action Plan. These funds will allow further development of Malawi's REDD+ program.

Malawi was the first Southern Africa Development Community (SADC) country to be accepted into AFR 100 plan. A specific funding proposal has not yet been submitted, but will be based on PERFORM-piloted methodology conducted under restoration opportunities analysis methodology (ROAM), later in 2016

with DoF as the lead agency. ROAM is a new AU/NEPAD (African Union New Partnership for African Development) program and has funding commitments of \$1.5 billion.

EQ2: How has the EC-LEDS program contributed to partner countries' progress toward LED outcomes?

In terms of actual verified mitigation, the current outcomes stem mostly from the Kulera project. However, it can be said that EC-LEDs has kept the mitigation agenda on the table, and helped to align that agenda with the predominant adaptation priorities that exist. As a result, there is current momentum toward low emissions development in the forestry and land-use sectors in Malawi. The Kulera project resulted in the sale of verified carbon credits of \$509,000 to Microsoft Corporation. Carbon sales (Kulera):⁹⁵ The following two tranches of funding were received: Jan 2015: \$241,350 – Microsoft using Verified Carbon Standards (VCS) accounting; Jun 2015: \$268,584 VCS to Microsoft. Carbon sale proceeds were used for capacity building and to support protected area management. This has included support for protected area management from the Malawi Department of Parks and Wildlife.

The Kulera project covers 217,000 hectares, and resulted in 7.2 million tonnes of emissions reductions. Other benefits include funds for co-management of the protected areas, improved eco-system services and protection of important biodiversity conservation areas.

Main Accomplishments to Date

IM Name	uSG Agency / Implementing Organization	APG Milestones (brief descriptions taken from EC-LEDS Dashboard Reports)	SL Funding (USD) ⁹⁶
	Years		
Malawi REDD+ Readiness Project (MRRP)	United States Forest Service	National REDD+ Action Plan finalized, vetted by senior Government of Malawi officials and formally approved by the Malawi REDD+ Expert Group.	\$100,000
	August 2014 – August 2015		
Protecting Ecosystems and Restoring Forests in Malawi (PERFORM)	Tetra Tech ARD	INDC Support – The Government of Malawi developed and submitted their Post-2020 Intended Nationally Determined Contribution (INDC) to the United Nations Framework Convention on Climate Change, with USG assistance	\$5,390,799
	September 2014 – September 2019		
Malawi Kulera Biodiversity Activity (Kulera)	Total Land Care	At least 500,000 tons of CO ₂ e reduced or sequestered through reduced deforestation and degradation	\$983,000
	2010 – 2013		

EQ3: How has the EC-LEDS program contributed to partner countries' engagement in international climate change mitigation efforts?

Enhanced ability to engage in UNFCCC negotiations: The support of USAID/PERFORM was critical for enabling Malawi to participate in the Paris COP. PERFORM provided a high level of direct

⁹⁵ <http://mw-nation.com/wildlife-reserve-associations-gain-from-carbon-trading/>

⁹⁶ Accurate funding figures are not available

support to producing Malawi's INDC. Without assistance from PERFORM, Malawi would not have been able to submit its INDC before the UNFCCC deadline, September 30, 2015.

Malawi's adherence to the LEDS emissions process helps the country be a full participant in the global community's. Several stakeholders mentioned that Malawi's active participation in UNFCCC negotiations, and its submission of a credible INDC, with a commitment to emissions reduction, has helped it to be seen as a serious participant in international climate negotiations, which opens up opportunities for additional funding. For example, Malawi received \$30 million in adaptation funds from GEF.

Malawi is currently working on its 3rd National Communication to UNFCCC, which will provide the country's GHG emissions and removals status by sources for the five major sectors in Malawi. A Nationally Appropriate Mitigation Action (NAMA) Strategy has been developed and includes policies and actions Malawi will undertake as a part of its commitment to reduce GHG emissions.

Through the REDD+ readiness program, EC-LEDS has built capacity to engage, particularly in REDD+ themes under the negotiations. The REDD+ focal points that have attended these negotiations have been strong proponents of REDD+ and have had an influence in the negotiating blocks. There has also been a broader impact in terms of bringing forestry management into the climate change umbrella.

Enhanced willingness to engage in UNFCCC negotiations: Malawi is a strong participant in the UNFCCC negotiations. It leads the LDC Adaptation Group; submitted a credible INDC with aggressive/serious mitigation goals; and has become a member of UN-REDD and AFR 100. Malawi was one of 10 countries that helped to launch the AFR 100, which aims to bring 100,000,000 hectares of land in Africa into restoration by 2030.

Malawi's participation in the UNFCCC process is strong. Because the country is considered a serious participant, it has access to meetings and funding that might not be available otherwise. The UN-REDD funds the country received would not have been possible had it not completed a REDD+ Action Plan with the support of the MRRP activity. Similarly, Malawi has received \$30 million in GEF adaptation support. This would not likely have been possible had Malawi not been seen as a full participant in the UNFCCC process. The case of being registered with AFR 100 is another example. Although the country has not yet received AFR 100 funds, it likely will. The initiative is being coordinated by the AU NEPAD (New Partnership for Africa's Development).

EQ4: How has the “whole-of-government” approach affected the implementation of the EC-LEDS program?

The LEDS framework provides an organizing principal and impetus for sustainable development, which is coordinated across government. For example, the emissions goals of the UNFCCC process encourage Malawi, and development partners, to focus on and address issues around deforestation and degradation, which is of benefit to development, even if carbon sales do not occur in the near future. This approach relies on a multi-stakeholder process, which the GoM considers to be valuable, and which has elicited better cross-ministerial cooperation that have past forest management efforts.

The LEDS process has resulted in a strong alignment of programs, and program development processes, between international partners and the GoM, including for USAID, as well as across intra-agencies of the GoM. USAID, EPA and the USFW have been actively engaged in Malawi through USAID assistance (contracts, cooperative agreements and IAAs). Through MCC, renewable energy programs have received attention, including NREL work to map solar potential and work to improve forest management in water catchment areas.

For the first time, with support from the PERFORM activity, the GoM is taking a serious inter-ministerial and multi-stakeholder approach to addressing their development and climate-related challenges. This has included forming an inter-ministerial task force, producing an analysis and options paper, planning a study tour and closely examining a range of options including community forestry, education outreach, reducing demand through increasing urban LPG use, and increasing the efficiency of charcoal making. On the side of the Malawian government, successfully fostering improved coordination within a whole-of-government approach to implementing Malawi's LEDS was the most significant change created by the program that was cited by nearly all stakeholders interviewed by the evaluation team. An example of this coordination is Malawi's emission management efforts that have actively involved an array of government agencies and plans are being integrated into numerous ministries, most prominently the Directorate of Forestry and the Ministries of Water, Agriculture and Energy.

EC-LEDS Country Field Report: Mexico

Clean Energy Summary

Country	MW Capacity Added (% of National Generation Capacity)		Finance mobilized (million USD)	Projected emissions reduced through 2030 (TCO ₂ e)	Description of intervention/implementation action
	Completed assistance	Anticipated from ongoing assistance			
Mexico	1,860 MW (2.9%)	5,580 MW (8.7%)	\$4.0	24,137,624	USAID provided support by developing the IT platform and Verification Service for Mexico's first Renewable Energy Auction.

Sustainable Landscapes Summary

Country	Hectares under improved management	NRM-related funds distributed (PES, NTFPs)	Other SL investment leveraged ⁹⁷	Emission reductions, tCO ₂ e (2011-2015) ⁹⁸	Description of intervention/implementation action
Mexico	6,249,416		3,702,062	11,477,921	Promotion of reduced impact logging in forest concessions resulting in agreements with local governments and private sector partnerships, and stimulating further investment in improved management.

General Program Background

The U.S. and Mexican governments signed a Memorandum of Understanding relating to the EC-LEDS program on January 19, 2012. This MOU laid the groundwork for the implementation of EC-LEDS activities in Mexico. The majority of these activities were encapsulated by the flagship MLED and M-REDD+ programs, addressing clean energy and sustainable landscapes, respectively. These programs were implemented by private sector and NGO partners. Additionally, USAID's EC-LEDS programming in Mexico also supported direct government-to-government collaboration, financing National Renewable Energy Laboratories (NREL) (working primarily with Secretaría de Energía, SENER), and the U.S. Forest Service, USFS, working mostly with the Comisión Nacional Forestal (CONAFOR).

The programs/projects and their principal goals are listed below:

Mexico's Reduced Emissions from Deforestation and Degradation (M-REDD+), is being implemented by the Nature Conservancy with its partners, the Rainforest Alliance, the Woods Hole Research Center, and Espacios Naturales y Desarrollo Sustentable. M-REDD+ works to support REDD+ both nationally and sub nationally in key states (Yucatan Peninsula, Oaxaca, Chiapas, and Chihuahua), by working in close collaboration with the Mexican government and civil society. The program further

⁹⁷ Includes readiness funds/grants received from sources like FCPF and UN-REDD, REDD+ payments resulting from carbon monetization, and any other sustainable landscape investment leveraged as a result of EC-LEDS

⁹⁸ For detailed country emission reduction results, see Annex C.

supports the implementation of climate effective rural development models that improve livelihoods and conserve forests, working directly with farming and ranching communities.

Mexico Low Emissions Development Program (MLED) 2011 – 2016, implemented by private sector consulting firm Tetra Tech provides a wide range of support activities to the GOM on the development and implementation of its Low Emissions Development Strategy. These activities promote clean energy through policy development, financing approaches, and institutional strengthening.

Mexico: Sustainable Landscapes, The USFS provides direct on-demand based support to CONAFOR in the areas of forest inventories (to support REDD+) and forest fires.

Enhancing Capacity for Low Emission Development Strategies, NREL works directly with primarily SENER, CRE and other GOM institutions to eliminate barriers to increasing the use of clean and renewable energy.

Emissions Context

Mexico is the only non-Annex I country to have submitted five National Communications to the UNFCCC. Mexico thereby has a rich history of national GHG inventories, for the years 1997, 2001, 2006, 2009, and 2012. The most recent year for which data is available in the national communication is 2010 (by UNFCCC reporting convention). In 2010, GHG emissions were 748 MMtCO₂e (million metric tons of carbon dioxide equivalent), representing an increase of 33.4% relative to the baseline year of 1990, or an average annual rate of increase of 1.5%. By emissions category, energy represented the highest share at 67.3%, agriculture 12.3%, industrial processes 8.2%, LULUCF 6.3%, and waste 5.9%. Business as Usual (BAU) projections of emissions show 960 (2020), 1,276 (2030), and 2,257 (2050) MMtCO₂e.

In line with its proactive policies on environmental issues over the years, Mexico has produced a National Climate Change Strategy that aims to reduce emissions by 50% by 2050 compared to 2000 levels. The Strategy is being implemented through the detailed “Programa Especial de Cambio Climático 2014-2018,” which includes 28 mitigation measures. With the General Law on Climate Change from 2012 these targets are confirmed and made binding on the national level, subject to international support.

The National Strategy on Climate Change (NSCC), published in June 2013, implements one of the requirements of the General Law. The 2nd Special Program on Climate Change (PECC 2014-2018) published in 2014, includes the most relevant mitigation measures to 2018. The program summarizes 23 quantified mitigation-relevant measures that lead to a reduction in emissions by 83.2 MMtCO₂e in 2018 compared to the baseline. In addition, the national renewable energy program was put forward in 2014, and includes indicative targets for RE development by technology for the years 2018 and 2024 of 22.81%, and 24.61% respectively.

In March of 2015, Mexico became the first developing country to release its Intended Nationally Determined Contribution, INDC. It includes an unconditional reduction of GHG emissions by 22% and black carbon by 51% by 2030 relative to BAU emissions from 2013 (business-as-usual, or emissions in the absence of climate change policies from 2013 onwards). With international support, Mexico plans to reduce GHG emissions by 36% and black carbon by 70% by 2030. In order to achieve this conditional target, Mexican emissions would have to peak in 2026. GHG emissions intensity per GDP would reduce by 40% from 2013 to 2030.

Mexico’s current policies will lead to emissions of between 785 and 799 MMtCO₂e in 2020, a reduction of between 16.8% and 18.2 % below BAU, and between 820 and 888 MMtCO₂e in 2030, including LULUCF. Historically, emissions have been increasing since 1990. GHG emissions have increasingly shifted away

from agriculture and LULUCF toward energy-related emissions. While, in 1990, agricultural and LULUCF emissions represented almost 24% of Mexico's GHG emissions, their share had declined by 2010 to 19%. In the same time period, energy-related emissions increased substantially, by more than 50%.

Summary Findings by Evaluation Question

EQ1: Which EC-LEDs interventions have been effective in contributing to partner countries' LED, and why?

EQ1a: Has LED planning resulted in implementation?

EQ1b: Have LED implementation actions resulted in actual/projected emissions reductions and

Clean Energy

Support for the Mexican Energy Auction. The Mexican Climate Change Law requires that, by 2024, 35% of energy in the national grid should come from clean energy. 18% of this figure can come from legacy providers but 17% must come from new sources. In March, Mexico's state utility, *Comisión Federal de Electricidad* (CFE), for the first time, allowed private companies to bid to supply solar, wind, hydro, cogeneration, combined-cycle gas, and geothermal energy to the national grid. Mexico held its first Energy Auction which included clean energy, power and Clean Energy Certificates for purchase by CFE, Mexico's only utility. 11 PV projects were awarded contracts worth 4 million megawatt-hours (DC) per year. That translates to 1,860 megawatts of capacity (using an average capacity factor of 33.6 percent). Additionally, all 11 projects have won contracts for a combined 4 million Clean Energy Certificates (CELs). Mexico defines clean energy quite broadly, so the auction was open to competition from wind, hydro, cogeneration, combined-cycle gas, and geothermal, as well as PV. Out of a total 5.38 million megawatt-hours of energy that was awarded, PV won 74 percent and wind won the remaining 26 percent, with no contracts won by any of the other technologies.

Assistance to carry out this auction was provided by MLED, which provided crucial assistance, including creating the auction design, rules, participant requirements, and the IT platform that supported the auction. MLED is currently supporting the second auction which will take place in September.

Updated GHG Mitigation Analysis. INECC develops the GHG inventories with SEMARNAT being one of the institutions within the overall GHG working group. Five GHG inventories have been completed, with the most recent one having used Tier Three calculation methodologies (the 2010 inventory used Tier Two). There is also a corporate GHG registry for industry emitters (over 25,000 tons of carbon dioxide equivalents).

MLED contributed to GHG mitigation analysis through modeling BAU emissions, Marginal Abatement Cost Curves (MACC), and a GHG mitigation Project Portfolio Database. MLED allowed Mexico to improve the modeling of mitigation measures to achieve its emissions goals. The BAU allowed Mexico to determine the most likely outcome of continuing on its current path, while the MACC considered the effect of 129 identified cost levers. This calculation allows implementers to identify the most cost efficient way of implementing mitigation activities. The project also included a Project Portfolio Database containing publically available information about all current mitigation projects in Mexico. Regarding the GHG impact, 483,000 tons of carbon dioxide equivalents have been realized, and an additional potential 1,000,000 tons of carbon dioxide equivalents from the energy auction (if implemented).

Support to Mexico City's Climate Change Plan MLED supported SEDEMA in the implementation of Mexico City's Climate Change Plan. Mexico City completed GHG inventories in 2006, 2008, 2010, 2012, and 2014. Since 2008, black carbon has also been included, mainly for its contribution to negative

health impacts. The city GHG inventory is more advanced than the national one, and is done for all sectors, and for all GHGs. While MLED did not specifically assist with the GHG inventories, which had been underway for some time before the start of the project, it did assist SEDEMA with technical advice on the mitigation in the plan, as well as prioritization of the mitigation measures.

A flagship effort of MLED's assistance has been in the specific topic of solar water heating (passive solar) for pediatric hospitals serving the poor. The "La Villa" hospital was the first to receive such a system, and it was such a success, that the city decided to expand such systems to other hospitals, and also included solar water heating within the environmental regulations for commercial and industrial buildings. MLED provided technical assistance for construction regulations and a solid waste management study for the city's largest Central de Abasto.

Selected additional efforts included:

- Local and City Assistance – Assisted the states of Morelos, Coahuila, and Baja California and the cities of Port of Veracruz, Valladolid in the creation and implementation of Low Carbon Development Plans and Climate Change legislation. The state of Morelos plan has 20 GHG reduction measures ranked according to GHG impact and cost.
- Emissions Inventory Registry – Created an Emissions Inventory software platform for CESPEDES (an association for private businesses) that allows major emitters in Mexico
- Systems strengthening for MRV of GHG emissions in Mexico – these systems will be used to calculate and report, using the methodologies and protocols approved by SEMARNAT.
- MLED is helping the Mexican development bank (NAFIN) promote energy efficiency in small and medium enterprises.
- MLED supported the development of wind and solar atlases which were key in the energy

Sustainable Landscapes:

MRV System including National Biomass and Biomass Change Map. The Biomass Map integrates field measurements with high-resolution radar and optical satellite data and builds upon the country's National Forest Inventory. The team layered spatial image data from the Japanese ALOS PALSAR radar and U.S. Landsat satellite sensors and contains complementary information on forest density and structure. These three datasets put together provide continuous estimates at ever-finer scales at which the National Forest Inventory is under sampled.

Yucatan Peninsula Climate Action Fund. The M-REDD+ project supported the design, establishment and launch of the Yucatan Peninsula Climate Action Fund. The Fund is the creation of Quintana Roo, Campeche, and Yucatan states and is a mechanism to attract, manage, and distribute funding for sustainable activities and operates through reimbursable funds, grants, guarantees, and by facilitating access to financial services. The first regional project proposed is the implementation of silvo-pastoral systems in cattle ranches located in key areas of the Peninsula. Livestock is the main cause of deforestation in the region, and contributes to the emission of approximately 2 MMtCO₂e per year.

Implement models of climate effective rural development. M-REDD+ is implementing model projects in four ejidos in rural Mexico. Ejidos are community land management organizations in Mexico and hold 55% of the land. Much of the deforestation and forest degradation are a result of people in the rural communities clearing land for agriculture or cattle. The model projects including:

- Ranching – More efficient methods of pasturing including pasture rotation and planting improved fodder to feed cattle more efficiently.

- Agriculture – Improved Milpa techniques (*Milpa* is an ancient agricultural methods of Maya peoples and other Mesoamerican people, *milpa* agriculture produces maize, beans, and squash. The milpa cycle calls for 2 years of cultivation and eight years of letting the area lie fallow.
- Forestry – Training in forest inventory methods for ejido members
- Agroforestry – Growing crops such as shade grown coffee that can be grown within existing forests.

All projects are aimed at improving the ability of people in rural communities improve their livelihoods while protecting the local forests. Projects include pasture management, conservation agriculture, forest and fuelwood management and shade grown coffee.

USFS Assistance USFS provided the methodology and a forest inventory tool to improve the National Forest Inventory conducted by CONAFOR (Comisión Nacional Forestal), which serves as a foundation of the MRV system. This system is currently being implemented and is an important element in the measurement of emissions from forestry. The USFS provided MRV support to complement that provided by Norway (allometric equations, C modeling, emissions factors, and the facilitating of south-south collaboration with Peru, Ecuador, Colombia, Honduras, Guatemala, and Costa Rica), and is currently helping CONAFOR with state level MRV.

Mexico reports on GHG sequestration/emissions from LULUCF using Tier 2 methods, and the forest inventory feeds the overall GHG inventory developed by INECC. The USFS also supported CONAFOR with a decision tree on how to report on biomass; protocols on reporting on below ground C and on mangroves; the use of mobile georeferenced devices in the field for forest inventory tasks, and with a pre-field tool to organize data. Together with M-REDD+, the USFS supported LIDAR flights as part of the detailed forest inventory studies. USFS also funds positions such as state MRV experts, equipment for intensive monitoring sites, fire management plans (salaries of associated staff) via grants. In addition to these specific climate change related forms of support, the USFS also provides extensive support to fire management, such as for the development of a national fire incident control system.

EQ2: How has the EC-LEDS program contributed to partner countries' progress toward LED outcomes?

EC-LEDS participation in the Mexico energy auction made an important contribution to LED outcomes in Mexico. The inclusion of additional CE into Mexico's grid is an important step toward reducing emissions, and the success of the auction has brought renewed attention to clean energy. The price was lower than expected, and solar energy projects won a greater than expected share of the contracts. A second auction is planned for September 2016.

MLED was involved in a demonstration project in Mexico City that provided solar water heating to a children's hospital. The project was so successful that Mexico City is now rolling out the solar water heating to other hospitals.

Interventions expected to lead to impact in the future:

- I) MREDD+ supported the establishment of a National REDD+ System. Their support includes:
 - Benefit-sharing architecture and principles
 - Nested MRV system
 - Cross-sector participation (especially Agricultural sector)
 - Safeguards system with gender considerations

This support is expected to lead to the implementation of a National REDD+ System in the near future. The REDD+ system will protect forests, lower emissions and provide benefits to people who use the forests for survival.

- 2) MREDD+ supported the establishment of subnational REDD+ models in key states including:
 - Jurisdictional REDD+ Program in the Yucatan Peninsula
 - State strategies developed in other states

These activities will feed into the National REDD+ System when it is implemented.

Highlights of EC-LEDS achievements in Mexico include the following:

Clean Energy
1) Managed the development of the IT platform and verification service for the first Renewable Energy Auction, widely considered to be a great success.
2) Conducted an update of the GHG baseline and created marginal abatement cost curves for various GHG mitigation measures
3) Worked closely with the Energy Ministry and the Energy Regulatory Commission to develop a regulatory framework for distributed solar Created a national NAMA registry
4) Assisted the states of Morelos, Coahuila, and Baja California, and the cities of Puerto de Veracruz and Valladolid, in creating Low Carbon Development Plans
Sustainable Landscapes
1) Helped develop a monitoring, reporting, and verification (MRV) system including a national biomass and biomass change map
2) Designed, established and launched f the Yucatan Peninsula Climate Action Fund
3) Implementation of models of climate effective rural development that improve livelihoods and protect forests

EQ3: How has the EC-LEDS program contributed to partner countries’ engagement in international climate change mitigation efforts?

Respondents were very clear that Mexico has been committed to climate change work for many years, and that the USG had no impact on their willingness or ability to define their INDC. However, the updated GHG mitigation analysis provided by EC-LEDS was important in developing the INDC as it provided a more accurate baseline from which to work. In addition, the MACC are expected to be instrumental in the implementation of the INDC, as they provide guidance on the most cost-effective methods to reach the INDC goals.

On 28 March 2015, Mexico submitted its Intended Nationally Determined Contribution (INDC), which the Climate Action Tracker rates as “medium,” the same rating given to the U.S. INDC.

EQ4: How has the “whole-of-government” approach affected the implementation of the EC-LEDS program?

The priorities identified in the MOU are:

- Increase Mexican capacity to update and modify current abatement cost models and develop Mexico-specific data on abatement options, particularly in the power, transport, forestry and key industrial sectors.

- Provide assistance to advance economic modeling capacity, particularly computable general equilibrium (CGE) models for climate change, to include non-CO₂ GHGs, land use changes and international trade impacts.
- Develop INECC's capacity to plan LEDS implementation from the design phase to project and program implementation

The primary actors in EC-LEDS Mexico have been USAID, USDA/FAS, USFS and NREL, and DOE with additional participation by US Trade and Commerce, Department of Transportation, the State Department and the EPA. USAID, USFS and NREL continue to be active participants in Mexico.

There is disagreement on the success of the whole-of-government in Mexico. Respondents from the government report that the agencies work well together and separately, and that there are no difficulties in coordination and cooperation. The representative from the Morelos said that interagency communication on the US side is "seamless". Both NREL and the USFS have conducted study tours for personnel from the GOM to study US methods by touring US facilities. These activities are extremely popular and seen as being very beneficial as seeing techniques in actions makes it easier to implement them. The USAID Mission in Mexico reports that the agencies work separately and that they do not see strong coordination.

On the Mexico side there is what was called by one respondent, "respectful separation." There are two inter-ministerial groups dealing with LED, the Inter-ministerial Commission on Climate Change (CICC) and the Inter-Ministerial Rural Sustainable Development Commission (CIDRS). Both of these groups meet regularly and have defined activities that they are expected to achieve. Communication is reported to be very formal and agencies are very focused on staying within their prescribed areas.

EC-LEDS Country Field Report: Philippines

Clean Energy Summary

Country	MW Capacity Added (% of National Generation Capacity)		Finance Mobilized (Million USD)	Projected Emissions Reduced Through 2030 (tCO ₂ e)	Description of Intervention/ Implementation Action
	Completed Assistance	Anticipated from Ongoing Assistance			
Philippines	64.3 MW (0.3%)	464.3 (2.7%)	\$138.7	1,462,788	TA for small-scale RE and IT support for processing RE permits (projected for Mindanao)

Sustainable Landscapes Summary

Country	Hectares under improved management	NRM-related funds distributed (PES, NTFPs)	Other SL investment leveraged ⁹⁹	Emission reductions, tCO ₂ e (2011-2015) ¹⁰⁰	Description of intervention/ implementation action
Philippines	54,000	107,000	35,649,925	784,219	At the national level, technical assistance and capacity building for implementation, and activities to support skills, systems and tools for reforestation. Sub-nationally, training on forest and riparian restoration

General Program Background

The EC-LEDS Philippines program has provided substantial assistance to all major emission sector agencies to develop GHG accounting inventories and analyze emission reduction scenarios. In addition, GHG inventory toolkits were developed for Local Government Units (LGUs) and training in the use of the tool was provided to over 50 LGUs.

Clean Energy

Interventions to increase clean energy investment and development have included:

- Design of the Energy Virtual One Shared System (EVOSS), which should improve the efficiency of the renewable energy (RE) permit process;
- Assistance to private RE developers to gain regulatory approval and financing for new projects;
- Policy support to increase the demand for RE through the development of the proposed Renewable Portfolio Standards (RPS) policy.

⁹⁹ Includes readiness funds/grants received from sources like FCPF and UN-REDD, REDD+ payments resulting from carbon monetization, and any other sustainable landscape investment leveraged as a result of EC-LEDS

¹⁰⁰ For detailed country emission reduction results, see Annex C.

Sustainable Landscapes

Principal support includes:

- Community-based forest protection and management in high value conservation sites within seven protected areas;
- Introduction of a GPS-based forest management and protection system (the LAWIN system, which combines use of the Spatial Monitoring and Reporting Tool – SMART – and the Cybertracker open source software system);
- Support for performance-based payments for ecosystem services in several sites;
- Capacity building in forest change monitoring, forest restoration, and forest land use planning; and
- Support to the GPH National Forest Monitoring Program.

Emissions Context

The Philippines, a middle-income developing country in Southeast Asia, consists of over 7,000 islands and has a population of roughly 100 million. The Philippine's is making significant strides toward inclusive growth aimed at reducing poverty and creating more equitable opportunities for prosperity. However, a major challenge has been to simultaneously pursue economic growth and address the impacts of climate change and natural hazards.

The Philippines has experienced high economic growth in recent years, with a 5.8% growth rate in 2015 and projected growth of 6% or more in 2016 (ADB). Due to the intensifying El Nino that has affected the region, the agriculture sector has continued to underperform over the past year, while the energy and transport sectors have remained the major sectors of growth. However, economic growth in the Philippines has been insufficient to reduce poverty, with an estimated 39 million people living on less than \$2 per day. Major constraints include ineffective governance, corruption, elite/state capture, poor health and social services, decaying infrastructure, environmental degradation, natural disasters, and high population growth. Prosperity and stability have also been undermined by armed conflict – especially in the southern Philippines.

The country leads the list of nations most affected by climate disasters. Due to its unique geography, the Philippines is extremely vulnerable to climate change events, including windstorms, floods and coastal inundation. The Philippines also experiences frequent volcanic eruptions and earthquakes. The Germanwatch Global Climate Risk Index (CRI) 2015 reported the Philippines as being in the top ten countries most affected by climate change between 1994-2013. In November 2013, Typhoon Haiyan struck the Philippines, causing 6,000 deaths and USD \$13 billion in economic losses. Typhoon Haiyan was the strongest tropical cyclone ever recorded to have hit land.

The Philippines' has historically experienced very high rates of deforestation. In 1575, before the Spanish colonization of the country, at least 92 percent of the Philippines was covered by rain forest. In recent times, forest cover has declined from 17.8 million hectares or about 60% of the land area in 1934 to about 7.17 million hectares or 24% in 2011 (PFS, 2011). From a position as one of the top ten deforestation countries contributing to global greenhouse gas emissions of 17-20 percent from global forest loss in 2000 (FAO, 2006), the country has since recovered, with modest forest cover increase and is now in the list of countries with positive forest growth (FAO, 2010).¹⁰¹ The main causes of deforestation include logging, illegal logging, agricultural clearing and expansion, and population expansion and settlement. To some

¹⁰¹ Analysis of Key Drivers of Deforestation and Forest Degradation in the Philippines, GIZ, 2014.

degree, the recent reduced rates of deforestation are due to a tightening of logging regulations, as well as reforestation initiatives and an increased emphasis on projects to value the ecological services produced by forests.

In terms of energy use, conventional fossil fuels (oil and gas) are the main source for the Philippine's primary energy demands. According to the 2011 primary energy consumption of the Philippines, 31% of the consumption was met by oil, 20% by coal, 22% by geothermal, 12% by biomass, 6% by hydro and 1% by other renewable energy like wind, solar and biofuel.¹⁰² The Philippine Energy Plan (PEP) 2009-2030, the DOE gives priority to fossil fuels such as oil, gas and coal. According to the plan, the department's number one policy thrust of energy security is to "accelerate the exploration and development of oil, gas and coal resources," much ahead of the "development and utilization of renewable and environment-friendly alternative energy resources/technologies."

When the Philippine's Renewable Energy Law was passed in 2008 the share of renewable energy in the power mix and the installed capacity were both at almost 34%. As of December 2014, the share of renewable energy in the power mix in MWh was down to 25.6%, while the share of the total installed capacity in MW declined to 32.8%. If the rate that new fossil-fired power plants that are being constructed continues, with capacities ranging from hundreds of MWs to GWs, the share of renewable energy is projected to continue to decline over the coming years. A principal reason why fossil-fired plants, especially coal, continue to be favored by the power sector over renewable energy is that the Philippines has one of the highest electricity rates in the world. Thus, any incentives or measures perceived to increase the power rates will encounter strong resistance from end-users and politicians.¹⁰³

In terms of emissions reduction, the Philippine's INDC is "premised on the philosophy of pursuing climate change mitigation as a function of adaptation." This means the country gives priority to emission reduction activities that also serve a disaster risk reduction (DRR) or adaptation function, such as increasing mangrove forest coverage. The country's climate change priorities are adaptation and DRR.

The Philippines' 2015 INDC report to the UNFCCC sets a target of a 70% reduction in emissions by 2030 relative to its business as usual (BAU) scenario. Potential emission reductions will come from the energy, transport, waste, forestry, and industrial sectors, with the energy and transport sectors offering, by far, the most significant potential for reductions. The INDC submission for additional emissions reductions is 100% conditional based on the availability of external financial support.

Summary Findings by Evaluation Question

EQ1: Which EC-LEDS interventions have been effective in contributing to partner countries' LED, and why?

EQ1a: Has LEDS planning resulted in implementation?

EQ1b: Have LEDS implementation actions resulted in actual/projected emissions reductions and development impacts?

GHG Inventories: The most significant accomplishment to date of EC-LEDS in the Philippines has been the Government of the Philippine's (GPH) institutionalization of the GHG inventory process, and the development of capacity to conduct GHG inventories and related analyses. This assistance was cited as the most important EC-LEDS accomplishment by a number of stakeholders, including by the Philippine Climate Change Commission's (CCC) former Assistant Secretary and the individual responsible for

¹⁰² https://energypedia.info/wiki/Philippines_Energy_Situation

¹⁰³ A Struggle between Coal and Renewable Energy in the Philippines, Energy Transition, July 2016

producing the country's INDC. This work has included the use CBA methodologies to analyze and prioritize emission reduction options. The Philippines now has the capacity to manage GHG analysis and reporting across all emission sectors, although on-going support is required to increase the accuracy of the system (currently considered to be +/- in the Tier II range).

The collection and analysis of data required for GHG reporting significantly increases data availability and analysis capacity across government. This will help the agencies involved, which include forestry, agriculture, transport and energy, to improve overall program planning and management, in addition to its use for emissions-related activity. The analysis work directly contributed to the development of the INDC and is being used to analyze emissions scenarios and identify priority actions within sectors. This work is ongoing.

A long-term sustained effort, which was systematic and based on the EPA's GHG Inventory Capacity Building process, has been an effective approach to building GHG inventory capacity across government. Assistance for this process has been provided over at least the past six years and included support from multiple implementing mechanisms (IMs) and agencies. Support mechanisms have included the Southeast Asia GHG project, the USAID/Philippine's Climate Change and Clean Energy (CEnergy) and B-LEADERS programs, and the regional Low Emissions Asian Development (RDMA/LEAD) program. The Philippines' CCC, which reports to the Office of the President, provided effective leadership and coordination for this process. Agencies representing all major emissions sectors now have dedicated units and personnel to manage the GHG inventory and analysis process.

The analytic capabilities required for the Philippines to manage its transition to cleaner economic growth are now in place. The Philippines has not yet designed or begun to implement priority emission reduction programs based on the analysis process used to develop the INDC. The Philippines itself is in an early stage of the LEDS process as the priority actions to achieve the additional INDC emissions reductions targets have not yet been specifically identified or implemented.

Clean Energy

The most significant outcomes to date have included:

- Assistance to enable six new RE producers to gain financial and regulatory approval of RE development projects;
- Building a small-island micro-grid CE system for 50 households on Green Island (Palawan), and
- Creating the EVOSS (Energy Virtual One Shared System) to harmonize the processing of permits and allow Web-based monitoring of renewable energy applications.

In regard to the emissions analysis and planning assistance provided to LGUs, training and technical assistance was provided to representatives of over 50 LGUs. Thirteen plans were completed and reviewed by an independent specialist (three were cited as acceptable). Several LGUs have moved forward with emission reduction implementation actions as components of their Climate Change Management Plans. This includes one public-private partnership between an LGU and a coal power company to offset emissions through funding an expansion of mangrove forests. Support to LGUs has been conducted through PLENRO (Philippine League of Local Environment and Natural Resources Officers), a nonprofit environmental organization composed of 352 environment officers of cities, municipalities, and provinces whose aim is to help LGUs to protect, care for, and preserve the country's environment.

Sustainable Landscapes

The LAWIN forest protection system has been approved for national application following successful site-level demonstrations by B+WISER. DENR is providing all personnel and equipment, and has committed US \$6.8 million for the system in 2016 and US \$8.6 million for 2017. Training is funded by a 50/50 cost-share with B+Wiser. This is expected to improve forest protection and management effectiveness and reduce deforestation and forest degradation. The system is not designed to measure emission reductions, but it will be used to measure protected forests and avoided emissions can be estimated based improved forest protection (although satellite imagery will still be required to determined forest coverage gains and loss).

Early PES work has generated revenue that is significantly above management costs, with payments linked to forest protection and management performance. In one site in Bago, PES collection is \$107,000-172,000 per annum, whereas the costs for forest protection and management is \$21,000/year. This work, which has been supported by B+WISER and GIZ, is being used to identify best practices and as a basis to develop national performance-based PES policy guidance. If the policy recommendations are adopted and the program is applied nationally, it will increase funding for forest management, provide additional incentives for forest protection, and increase forest-related income for participating communities.

Work is being undertaken to develop a highly accurate forest cover monitoring system, which can serve as a future MRV system for the sector. LANDSAT images and LIDAR measurements will be used to create high-resolution maps for detecting forest cover changes on an annual basis. This work is being led by a Climate Fellow who works at DENR/FMB, with support provided by the Department of State, USFS and USAID, and in coordination with USAID/Philippines and the B+WISER project. However, significant effort will be required before the system is operational. The DENR/FMB is the lead agency for this work, but additional technical assistance, dedicated specialized DENR/FMB staff, and government budgetary support are required to make the system operational. The next step is the development of a formal institutional staffing and management plan for GPH approval. If work continues in a positive direction, a system could be operational in 3-5 years that will form the basis of the forest sector emissions MRV system.

In addition, with the help of USAID through the USFS, DENR/FMB is reviewing the feasibility and practicality of developing a new forest inventory management methodology. The last inventory was conducted in the late 1990s using the UN Food and Agriculture Organization's (FAO) methodology, and a current inventory is being undertaken, which is expected to be completed in 2017. The current system being considered is based on Canada's National Forest Monitoring Inventory system, and actions are being support by USFS and B+WISER, including enlisting the help of an Australian consulting agency. An improved forestry monitoring system will enable assessment of forest cover rates and loss, and will be a tool to verify emissions reductions under REDD+ should the Philippine's carbon market development process continue.

EQ2: How has the EC-LEDS program contributed to partner countries' progress toward LED outcomes?

There is continued potential from B-LEADERS to facilitate the additional financing and approval of new RE production facilities. However, this work is on a transactional basis. A significant transformational increase in RE energy will likely require improved policies, such as the proposed RPS, in combination with efforts to upgrade distribution systems, including building on the type of assistance provided by NREL under the *Greening the Grid* program, and in combination with the significant RE sector assistance being provided by GIZ.

Substantial planning and emission reduction analyses have been completed by GPH agencies, with guidance and coordination support effectively provided by the CCC. This work sets the foundation for future emissions reductions by measuring current and projected emissions and identifying reduction priorities. However, this process will take time to transition into actual government programs. Detailed sector plans must be completed and approved, and budgets and policies will need to be developed – there is limited indication of specific progress in these areas. This multi-year process to fully transition emissions reduction planning into specific government programs is underway, but will require additional time to reach fruition. B-LEADERS has leveraged \$120 million in private sector clean energy investment – six power plants (two biomass, and four solar) with an output of 74 MW. The project’s overall goal is for a 200MW increase in CE over the life of project, which the project is on track to achieve. Projected emissions reductions from two operational power plants will equal 471,680.12 tCO₂e avoided (2016-2021).

The greatest EC-LEDS potential contribution to increasing renewable energy use in the Philippines will be the passage and implementation of the RPS. Legal/political passage of the policy is required, but the certainty and timing for such action is unknown. If passed, there will be a legal requirement to increase renewable energy production. When this policy is approved and implemented, and with B-LEADERS support, current EC-LEDS targets for increased RE can be expected to be achieved at levels above the current targets. A final public consultation was recently held to review the policy (June 2016).

DENR has adopted this system LAWIN SMART/Cybertracker for a nation-wide rollout. This work began with application in seven B+WISER sites and has now been expanded by DENR to cover an addition seven conservation hotspots totaling 6.5 million hectares. An assumption is that improved forest protection and management will contribute to an improved forest emissions profile.

Early PES work has generated revenue that is significantly above management costs, with payments linked to forest protection and management performance. In one site in Bago, PES collection is \$107,000-172,000 per annum, whereas the costs for forest protection and management is \$21,000/year. Excess funds are going toward community livelihood programs. The work supported by B+WISER (and by GIZ) is being used to identify best practices as a basis for developing national policy guidance. If a performance-based PES national policy is approved, and support is provided for a national rollout, then this could further strengthen nationwide forest protection and management. The precise effects on emissions reduction are uncertain and not quantified, but a national performance-based PES program would likely be an important future contribution to emissions reduction.

EQ3: How has the EC-LEDS program contributed to partner countries’ engagement in international climate change mitigation efforts?

Support for emissions inventory management and analysis was critical to the development of the Philippines’ INDC, which calls for 70% emissions reduction as compared to BAU scenario; however, all INDC emission reduction actions are “conditional.” Multiple stakeholders consider the government’s ability to produce this analysis (as based on GHG inventory and analysis work) as EC-LEDS’ most significant accomplishments (including CCC). The main purpose of this effort is to help the Philippines have the data and tools it will need to transition to a clean economy. USAID’s support has been critical to this effort, as was GIZ/UNDP support (under the Low Emission Capacity Building Programme).

Initially, the completion of BAU targets, based on cost-benefit analysis studies, called for an INDC target reduction of 40% as compared to the BAU scenario. Final political engagement resulted in a larger 70% target being proposed; however, the analysis to support this target was not included as part of the INDC submission. The CCC is currently organizing a process to review all completed CBAs for the purpose of refining sector targets and selecting specific emission reduction priorities.

The Philippines' INDC submitted for the Paris COP does not quantify its BAU projections, nor does it quantify future LULUCF emissions. The INDC was rated as “medium” by ClimateTracker.¹⁰⁴

EQ4: How has the “whole-of-government” approach affected the implementation of the EC-LEDS program?

There was broad inter-agency participation in the EC-LEDS scoping trip and MOU development (USAID, DOS, USFS, DOE/NREL, and EPA). Priorities identified included: 1) GHG Inventories; 2) Analytical Tools for Decision Making; and 3) Measurable Implementation Progress (clean energy policy analysis and implementation & support to DENR for REDD+). These activities form the core of EC-LEDS work in the Philippines.

The only slight exception to the above is that since the MOU was developed, the Philippines' effort to develop a REDD+ program appears to have decreased as a national priority. The focus of EC-LEDS' forestry support program is on improved forest management and the generation of co-benefits (PES and biodiversity protection).

There continues to be active participation by most EC-LEDS agencies in the Philippines program. USAID manages large programs in the forestry and clean energy sectors (B+WISER and B-LEADERS), there is a DOS-supported Forest Fellow assigned to the DENR, and DOE/NREL, with USAID funding, continue to have periodic involvement in activities related to GHG inventories and *Greening the Grid*. NREL's Greening the Grid work in the Philippines has included conducting studies on integrating more clean energy into the grid and reviewing grid reliability issues, as well as providing related periodic training and technical support. There has also been occasional continuing support by the EPA for GHG inventory work, and in coordination with the RDMA/LEAD project.

Whole-of-government coordination for the implementation of the EC-LEDS Philippines' program is highly effective. There is a strongly perceived “one-team” approach across the agencies involved in the two pillars (USAID, DOS, USFS, and NREL). USAID's role as program coordinator helps to ensure there is a single point of responsibility for coordination, as the other agencies mainly operate under USAID IAAs. On the Philippines' side, the CCC is a well-established operation, which provides effective cross-ministerial coordination and communication. The CCC played a critical and effective role in coordinating the development of the INDC through providing guidance to individual line agencies. The work to develop GHG inventories has been formalized through an Executive Order, and internal rules, regulations and guidelines are being formalized.

¹⁰⁴ <http://climateactiontracker.org/countries/philippines.html> If the target were (partly) unconditional, and directed at energy, industrial and agricultural emissions we would rate it “sufficient.” However, the Philippines has not put this forward and, given the large uncertainty around how much mitigation it plans for LULUCF emissions and how much emissions excluding LULUCF, we have given the Philippines the lower rate of “medium.” The “medium” rating indicates that the Philippines' climate commitments are at the least ambitious end of what would be a fair contribution.

EC-LEDS Country Field Report: Vietnam

Sustainable Landscapes Summary

Country	Hectares under improved management	NRM-related funds distributed (PES, NTFPs)	Other SL investment leveraged ¹⁰⁵	Emission reductions, tCO ₂ e (2011-2015) ¹⁰⁶	Description of intervention/ implementation action
Vietnam	3,455,000	165,000,000	4,300,000	207,403	Support for PFES pilot implementation and scaling, as well as development of three Provincial REDD Action Plans (PRAPs). Work on MRV and forest management is helping meet requirements for international finance and markets.

General Program Background

The Government of Vietnam (GVN) entered a partnership with the United States Government (USG) on Enhancing Capacity for Low Emission Development Strategies (EC-LEDS) in November 2011. On March 21, 2012, the U.S. and Vietnamese governments signed a Memorandum of Understanding (MOU) to formalize the EC-LEDS partnership. The MOU prioritizes collaboration in a number of LEDS areas: (1) national GHG inventory system; (2) systems to collect, archive, and distribute economic and emissions data; (3) agriculture, land use, land use planning, and forestry emissions modeling; and (4) energy, industry, construction, or transport modeling and policy analysis.

The joint commitment to work on low emission development has been further strengthened at high levels. In July 2013, Presidents Obama and President Truong Tan Sang launched the U.S.-Vietnam Comprehensive Partnership, an overarching framework for advancing the bilateral relationship. The Comprehensive Partnership includes climate change as one of five priority areas. More recently, during President Obama's May 2016 visit to Vietnam, the U.S. and Vietnam released a Joint Announcement on a Climate Change Partnership. Through this partnership, Vietnam and the U.S. agreed to work together to implement the historic Paris Agreement to achieve Vietnam's Nationally Determined Contributions.

Below are the bilateral projects/programs under EC-LEDS Vietnam:

Strengthening Capacity and Institutional Reform for Green Growth and Sustainable Development in Vietnam (CIGG) 2014-2018, is a key instrument to help Vietnam pursue a green growth, low emission development pathway through the implementation of the Vietnam Green Growth Strategy (Vietnam's LEDS) and Green Growth Action Plan at the national and provincial levels. Implemented through a partnership with the United Nations Development Program, the project's GVN counterpart is the Ministry of Planning and Investment.

Vietnam Clean Energy Program (VCEP) 2012-2017, helps Vietnam promote energy efficiency in one of the highest energy use sectors, the building sector. The program enhances GVN and other stakeholder capacity to acquire, manage, analyze, and apply energy sector data in decision-making. VCEP also assists in the development of construction sector green growth action plans. The GVN counterpart is the Ministry of Construction.

¹⁰⁵ Includes readiness funds/grants received from sources like FCPF and UN-REDD, REDD+ payments resulting from carbon monetization, and any other sustainable landscape investment leveraged as a result of EC-LEDS

¹⁰⁶ For detailed country emission reduction results, see Annex C.

Vietnam Low Emission Energy Program (V-LEEP) 2015-2020, seeks to strengthen the foundation for low emission energy systems. The project is developing a low emission strategy for the energy sector, working to enhance capacity and improve the enabling environment for renewable energy development, and promoting private and public investments for renewable energy. It also aims to increase energy efficiency adoption and compliance in energy-intensive industries. The GVN counterpart is the Ministry of Industry and Trade. This project has recently begun.

Vietnam Forests and Deltas Program (VFD) 2012-2018, helps Vietnam reduce and reverse emissions from deforestation and degradation of forests and agricultural landscapes, and increases climate change resilience in the Red River and Mekong Deltas. The program's GVN counterpart is the Ministry of Agriculture and Rural Development (MARD). The following are key activities that VFD's Sustainable Landscapes component supports: green growth planning in Thanh Hoa province; strengthening of Vietnam's Payment for Forest Ecosystem Services (PFES) program in two provinces (Thanh Hoa and Nghe An); and the development of Vietnam's Reducing Emissions from Deforestation and Forest Degradation (REDD+) program in three provinces. The project also has a livelihoods component, which promotes activities to increase household income while reducing emissions.

National Building Energy Efficiency Standard in Vietnam, 2015-2018, is supported by the Department of Energy's Pacific Northwest National Laboratory (PNNL), funded by USAID. PNNL is working with the Vietnamese Ministry of Construction and research institutes to develop technical standards and guidelines that support the implementation of the Vietnam Building Energy Efficiency Code.

Strengthening Capacity for Vietnam's Agricultural Extension System: Reducing Greenhouse Gas Emission in Agriculture (2011-2015), The U.S. Department of Agriculture/Foreign Agriculture Service helped build the capacity of Vietnam's National Agricultural Extension Center (NAEC) to reduce GHG emissions from the rice and livestock sectors while increasing profitability. Practical techniques, such as feed and manure management strategies for cattle and water management strategies for rice production, have been demonstrated at workshops and through pilot projects. Outreach materials have been developed and disseminated to extension staff throughout the country. The GVN counterpart was National Agricultural Extension Center.

Additionally, LEDS-related support has been provided in Vietnam through the following USG activities:

- Low Emissions Asian Development (USAID/RDMA)
- Private Financing Advisory Network-Asia (USAID/RDMA)
- Wind Power Generation (USTDA)
- Information Technology Roadmaps for Efficient Power Transmission and Distribution (USTDA)
- Global Climate Finance Readiness Program (USAID/Washington)
- SilvaCarbon (various USG agencies)
- Lowering Emissions in Asia's Forests (USAID/RDMA)
- Asia LEDS Partnership
- LEDS Global Partnership

Emissions Context

Vietnam is a lower middle-income country and a relatively low emitter, but under business-as-usual development pathways, projected future emissions are significant. As Vietnam develops, its greenhouse gas emissions from industry, energy production, transportation, and agricultural production are increasing. Vietnam's forests remain under pressure and their deforestation and degradation are a source of

emissions. Improved management and restoration programs offer opportunities to sequester carbon and leverage funding to further support management and livelihoods development.

In 1986, Vietnam introduced a series of market reforms that led to an extended period of high economic growth between 1990 and 2010 (the “Doi Moi renovation”). Vietnam's per capita GDP growth since 1990 has been among the fastest in the world, averaging 5.5 percent a year since 1990, and 6.4 percent per year in the 2000s. Vietnam's economy continued to strengthen in 2015, with estimated GDP growth rate of 6.7 percent.¹⁰⁷ However, there has been a growing concern over the quality and sustainability of growth given the resource-intensive pattern of growth, high levels of pollution, and lack of diversification.

Although Vietnam's greenhouse gas (GHG) emissions are still relatively low, the country accounted for the fastest growth in GHG emissions in Southeast Asia over the period 1990-2010 due to rapid economic growth and industrial expansion. Vietnam's total emissions and per capita emissions almost tripled in the period, while the carbon intensity of GDP increased by 48%. Vietnam's growth in GHG emissions was significantly higher than other countries in the region such as Malaysia, Thailand, Indonesia, Cambodia, and the Philippines. The rate of Vietnam's carbon intensity is still increasing. In 2008, the energy intensity was 260 kg of oil equivalence per US\$1,000 GDP (2005 PPP). In 2010, GHG emissions of Vietnam accounted for approximately 0.5% of global GHG emissions, and GHG emissions per capita were relatively low at 2.84 metric tons of CO₂e.

TABLE 1. GHG EMISSIONS (MMTCO₂E) IN 2010 AND PROJECTIONS FOR 2020 AND 2030

Sector	2010	2020	2030
Energy	141.1	389.2	675.4
Agriculture	83.3	100.8	109.3
Waste	15.4	26.6	48.0
LULUCF	-19.2	-42.5	-45.3
Total	225.6	474.1	787.4

Between 2000 and 2010, Vietnam's electricity demand grew by approximately 14% per year, and electricity generation reached 103,507 GWh in 2011, roughly four times national capacity in 2000. Vietnam's installed capacity in 2010 was 21,542 MW, and the country has laid an ambitious plan to attain an installed power capacity in the range of 69,000 MW to 75,000 MW by 2020. With about 55.0% of the electricity generation in 2010 sourced from coal, gas and oil-based thermal power plants, the country has significant scope to diversify into renewable energy sources.

Vietnam is proactively implementing climate change response activities, developing a low-carbon and green economy, strengthening the implementation of potential GHG mitigation measures in the energy, industry, transport, agriculture, and waste sectors, and enhancing carbon sinks in the LULUCF sector. Vietnam's INDC identifies the GHG reduction pathway from 2021-2030. With domestic resources, GHG emissions will be reduced by 8% by 2030 compared to the Business as Usual scenario (BAU). The above-mentioned contribution could be increased up to 25% with international support.

¹⁰⁷ The World Bank, Country Overview, 2016

Summary Findings by Evaluation Question

EQI: Which EC-LEDS interventions have been effective in contributing to partner countries' LED, and why?

EQIa: Has LEDS planning resulted in implementation?

EQIb: Have LEDS implementation actions resulted in actual/projected emissions reductions and development impacts?

GHG Inventories: EC-LEDS has supported the development of GHG inventories for a number of sectors, including for provincial planning, for a number of emissions sectors, including transport and building construction, and for forestry.

Vietnam's Ministry of Planning and Investment (MPI) is receiving green growth support from the UNDP, with \$2.4 million in EC-LEDS financial support being provided through the USAID "Strengthening Capacity and Institutional Reform for Green Growth and Sustainable Development in Vietnam" program. This support has resulted in five completed provincial GGAPs: Ha Nam, Quang Ninh, Cao Bang, Bac Kan, and the city of Dalat. The provinces are working to include GGAP into their provincial development plans. In addition, EC-LEDS, and the Ministry of Industry have supported the emissions measurement component of the Ministry of Transportation's GGAP and the Ministry of Trade has a GGAP in the pipeline, which will be developed with possible USAID support. Currently, GGAPs are being developed for 30 of Vietnam's 63 provinces, and the plans of ten provinces have been approved.

Notable among Vietnam's advances in the development of GHG inventories is support to the Ministry of Construction for the development of its Green Growth Action Plan (GGAP), as well as inventories for ten Ministry sub-sectors, including public lighting, landfills, water supply, wastewater treatment, and construction materials and cement. Currently, EC-LEDS is providing the only external support to the Ministry of Construction for this work. Support from EC-LEDS for methodology development within the GGAP generates key data required for benchmarking emissions and energy efficiency, and supports the future adoption of either an international green building standard, such as LEED, or a set of criteria developed internally by the Ministry of Construction. Decision support from EC-LEDS will be reflected in a forthcoming circular to be issued in the fourth quarter of 2016. Ongoing work in this area helps identify priority Ministry of Construction stakeholders to be targeted for capacity building after the GGAP is approved, and sets the stage for corporate buy-in or mobilization of other sources of private sector finance in initiatives related to green building and energy efficiency.

EC-LEDS is further supporting the development of GHG inventories in the forestry sector through its collaboration with the Forest Inventory and Planning Institute (FIPI) on improving and revising Vietnam's National Forest Inventory. EC-LEDS supports the development of three Provincial REDD Action Plans (PRAPs) and is primarily focused on improved forest monitoring, particularly through support for the development of a QA/QC methodology. Work related to forest monitoring is ongoing and is currently in an interim phase before a second full forest inventory is conducted (scheduled for 2018). This interim phase is being used to conduct a small-scale rollout of a new forest monitoring sampling methodology intended to streamline fieldwork and data collection needs for future inventories.

Additionally, EC-LEDS is supporting FIPI in determining provincial reference emission levels (RELs) that incorporates new data from 2010-2015, and which provides a baseline for the PRAPs and helps Vietnam to better meet the requirements to access international finance for REDD+ and sustainable landscapes. FIPI's involvement is contributing to a bottom-up approach to developing the PRAPs, and the organization is playing an important role in REDD readiness and eventual implementation. However, staff from FIPI and the Forestry Management Board within MARD confirmed that the RELs and sequestration potential

estimates remain very coarse due to the incomplete forest inventories, and that carbon measurements and forest classification in general remain difficult. Both organizations indicated that greater technical capacity is needed to address these challenges and develop measurements that are more rigorous.

Vietnam is benefitting from technology transfer and training catalyzed by EC-LEDS that enables FIPI to conduct mitigation options analyses and develop forward-looking emissions projections. FIPI, in conjunction with the Department of Meteorology, Hydrology, and Climate Change (DMHCC) within MONRE, used the Agriculture and Land Use (ALU) National Greenhouse Gas Inventory software to define Vietnam's INDC, and will continue to develop capacity in order to better use ALU to prepare the Third National Communication in 2018. Rolling out and operationalizing ALU is one of USFS' most significant contributions to the LEDS process in Vietnam. It is evident that there is a strong desire to mainline and scale new technologies between FIPI and other GVN departments for the purpose of measuring and monitoring emissions, as well as other parameters like forest cover. However, advances toward robust, comprehensive, and replicable approaches using these tools remain constrained due to the limited number of people within each agency that are proficiently able to manipulate new software tools.

Clean Energy

Vietnam has not made significant advances at this time in the renewable energy sector, in part due to the ongoing need for increased political will and a need for new policies that will make renewable energy production more economically feasible. Most importantly, the current business environment has not incentivized renewable energy developers and investment has not been sufficient to meaningfully increase grid-connected renewable energy supply.

Energy efficiency (EE) initiatives, however, have gained momentum in Vietnam. The business case for energy and building efficiency in Vietnam is politically more acceptable than that for renewable energy development. The strong support for energy efficiency from EC-LEDS has positioned Vietnam as an example that could help to inform similar efforts in other countries, particularly in instances where the integration of energy efficiency into building standards can be used as an entry point. EC-LEDS is working to overcome some of the barriers to energy efficiency in Vietnam by placing an emphasis on capacity building related to understanding and operationalizing the National Energy Efficiency Building Code (NEEBC), as well as how to determine whether retrofits and new construction are in compliance with the code. Work on energy efficiency and green building standards is closely related to the development of GHG inventories and the GGAP for the construction sector, which is primarily focused on infrastructure systems, building materials, and urban development and planning.

EC-LEDS currently supports energy efficiency in Vietnam through two key channels: policy interventions supported by capacity building and training for technical staff from Vietnam's five largest cities on compliance, energy use simulations, and other elements that will enable gains in energy efficiency at scale, and the development of EE building demonstrations. There are currently four demonstration buildings being supported by EC-LEDS, which are intended to simulate greenhouse gas emission reductions that could be achieved either through design modifications (for example, applying energy-saving window coatings or switching to LED lighting) or through using best practices in construction. The simulation software model used to demonstrate the efficiency of a building's design, which was developed by NREL, is available for use by the building industry. Data obtained from running the simulations can be used by design firms and the Ministry of Construction to design buildings for increased energy efficiency. To date, the simulation has been used for the design and construction of four buildings, but construction of the buildings is not yet complete. These buildings can serve as future demonstrations for the construction industry on best practices in energy efficient design. EC-LEDS support has been critical in this process,

but additional years will be required before standardized best practices in energy efficiency and construction can be adopted at scale.

To support medium- and long-term building efficiency objectives, EC-LEDS is supporting the construction of a national energy performance database, the first of its kind in Vietnam, for buildings in the country's five largest cities. The database currently contains nearly 300 buildings, most of which are institutional buildings, including schools and government buildings. Functionally, the database facilitates energy audits of individual buildings by applying a GHG emission methodology developed by the National Renewable Energy Laboratory (NREL) to determine which modifications are needed to comply with the NEEBC. However, there is currently no tracking of corrective actions taken by developers as a result of this audit, and compliance with the NEEBC is still voluntary at this time. While work is still ongoing to integrate data into the digital platform, multiple stakeholders indicated that this database will be key for future policymaking.

Sustainable Landscapes

EC-LEDS is supporting implementation of a number of forest development and protection tools. This work includes supporting Vietnam's payments for forest ecosystem services (PFES) system in two provinces (Thanh Hoa and Nghe An). With regard to PFES, EC-LEDS has supported revisions to Decree 99, which establishes payment per kilowatt-hour to recipients of payments in different watersheds. Support for key analyses and drafting of revisions by EC-LEDS is expected to contribute to increased PFES revenue collection, which is currently about \$58 million per year. Payments per kilowatt-hour are expected to increase from 20 VND to 38 VND under approved revisions to Decree 99. While the vast majority of PFES funds are currently derived from hydropower operations, the policy also permits ecosystem user fees to be derived from other sources, including tourism, industry and municipal water users.

EC-LEDS has also provided support to increase revenue collection from PFES by supporting the development of Decree 40 on PFES compliance. PFES work supported by EC-LEDS has been very well received, and Vietnam is viewed as a model in the region, particularly due to its ability to scale PFES to 32 provinces, and because it has a national decree mandating payments for ecosystem services.

Provincial REDD Action Plans (PRAPs) are being supported by EC-LEDS in three provinces and are expected to help catalyze the first REDD+ payments in Vietnam, estimated to be as much as \$60 million USD from emissions reductions within the next five years. The PRAPs fill the gap between the Emissions Reductions Program Idea Note (ER-PIN) and the Emissions Reductions Program Document (ER-PD), two documents required to access financing for REDD+ through the Forest Carbon Partnership Facility (FCPF) of the World Bank; EC-LEDS is providing support for the development of Vietnam's ER-PD. From an emissions reductions perspective, the scale of the action plans is significant, and the PRAPs are expected to be implemented consistently across all three focal provinces. Along with three other provinces supported by JICA and FCPF, Vietnam has the potential to generate \$50-60 million USD in REDD+ payments if it is able to successfully negotiate an Emissions Reductions Purchase Agreement (ERPA) with the FCPF.

Green Growth Action Planning and Finance: In Thanh Hoa, the development of the provincial Green Growth Action Plan is now moving from planning to implementation, and EC-LEDS support is focused on supporting the implementation of the recently launched Bamboo Action Plan. Specifically, the Action Plan supports the development and implementation of improved bamboo varieties that are more productive; the processing and creation of different products; and support for improved market access and partnerships with the private sector. The Action Plan is still in an early stage of development, however,

approval of the plan by the Provincial People's Committee means that activities supporting the plan can be integrated into the provincial Socio-Economic Development Plan (SEDP) and budget allocation process and implementation work can begin.

National and ministerial green growth action plans are being used to operationalize the National Green Growth Strategy through 2020. The National GGAP identifies 66 activities for its implementation, with corresponding leadership roles for national and provincial government bodies. For example, the Ministry of Construction is responsible for five activities. However, ministries are unable to begin implementation of their activities without ministry-specific GGAPs having been completed. Ministries with completed GGAPs are now in the process of identifying implementation activities and next steps.

Implementation is also constrained by the availability and allocation of financial resources. The Ministry of Planning and Investment estimates that \$30 billion USD will be needed to support the operationalization of the National Green Growth Strategy through 2020. Foreign direct investment and loan products will be an important component, and ODA will be an important catalyst not only for implementation of activities, but also for boosting private investor confidence about investing in Vietnam's green growth. The development of more rigorous and focused investment criteria will also help Vietnam prepare to access more sources of international finance, particularly for mitigation activities.

While there is still time to meet implementation goals ahead of 2020, and despite limited implementation to date, it is important to appreciate the widespread and vertical nature of the changes in political will and general enthusiasm about green growth and LEDS that have taken place in Vietnam at the national and provincial levels. In part, these changes can be attributed to support provided by EC-LEDS. Many GVN stakeholders attribute success thus far in being able to generate policy mandates and other pre-requisites for implementation to support from donors, and consider this shift in thinking about growth and development to be one of the most critical elements for successful and lasting implementation of the National Green Growth Strategy. The degree of ministerial involvement and planning to date is a testament to Vietnam's ongoing commitment to comprehensive implementation with an eye toward being a regional leader with regard to core elements of LEDS.

Overall, Vietnam is making significant progress on national-level green growth planning and implementation. In 2012, a national Green Growth Strategy was approved; in 2014, a Green Growth Action Plan was approved; and currently 32 provinces are developing GGAPs with ten of these plans already approved, five of which were supported by EC-LEDS. The next step in terms of financing and implementation will be for the provincial governments to incorporate specific green growth actions into their Social Economic Development Plans and budgets. EC-LEDS directly supported the development of one GGAP, and is indirectly supporting several other provincial plans through its support to the UNDP green growth support program.

In 2015/16, the MPI developed a Green Growth Strategy Facility (GGSF), a technical assistance and funding mechanism to support the green growth process and provide direct access to funds available through the Green Climate Fund under the UNFCCC. The facility provides technical assistance to provinces to help them develop projects that can meet international financing standards. In 2016, the Green Climate Fund approved a proposal from the GGSF for \$29.5 million for improving the resilience of vulnerable coastal communities to climate change related impacts in Vietnam. The GCF proposal was developed and submitted by the UNDP, in close coordination with the MPI/GGSF and several ministries. The project is expected to benefit up to 20,000 people by providing climate-resilient housing; increase climate protection for up to 3,865,100 people in the target coastal provinces through protection offered by mangrove regeneration; and protect up to 30,000,000 coastal residents by providing improved planning to increase storm resilience. This project contains both adaptation and mitigation objectives, and is expected to result

in a lifetime equivalent of 1,860,720 tonnes of CO₂e reduced or avoided. The establishment of the GGSF was supported by Belgium, but it is the type of project that could be supported by EC-LEDS in other countries. It is an effective demonstration of how to operationalize and fund green growth planning on a national level. The GGSF will help to provide funding for the types of actions that are identified through the provincial GGAPs supported by EC-LEDS.

For FY2017, budget priorities from the State Department and USAID include \$750 million USD in additional Funding for the Green Climate Fund. To date, the US has delivered \$500 million USD of its pledged \$3 billion USD in support to the GCF. This July, in the second tranche of GCF disbursements, Vietnam had its first project approved for funding, totaling \$29.5 million USD for improving the resilience of vulnerable coastal communities to climate change-related impacts.

Most EC-LEDS interventions have not occurred in Vietnam for a substantial enough amount of time to generate measureable, verifiable emissions reduction results. Most EC-LEDS-supported initiatives that are transitioning from planning to implementation remain in the early stage of this process, although significant momentum and accomplishments have been achieved.

The Vietnam Forests and Deltas Program reports an initial amount of 207,403 metric tons CO₂e reduced or sequestered as a result of USG assistance, with aims to reduce much higher amounts through its life. However, the sources of these emissions reductions are not clear, and payments for carbon services have not yet begun given the rigorous accounting and other elements that must be in place. Furthermore, 19,326 households are receiving economic benefits or incentives as a result of sustainable natural resource management, primarily from PFES.

EQ2: How has the EC-LEDS program contributed to partner countries' progress toward LED outcomes?

Despite being a soft measure of progress not directly traceable to any one-policy initiative, paradigm shifts and changing attitudes toward LEDS/green growth are directly attributed to the wide-reaching, shared commitment to low emissions development within GVN. Transformational, comprehensive impacts in the Vietnamese context would not be possible without this cultural shift. The biggest hurdle will be overcoming institutional arrangements that are currently discouraging more action and investment related to clean energy development, which appear almost unchanged over the last five years relative to other components of LEDS.

Vietnam has undergone extensive planning and preliminary emissions analyses that set the stage not only for future emissions reductions, but to achieve those reductions through rigorous methods that meet international standards for mitigation finance and/or carbon markets. Implementation actions related to REDD+ in three provinces have not yet generated significant emissions reductions, but estimates project up to 8 million metric tons over the next several years, including 1.5 million metric tons per year in Thanh Hoa province. By starting the multi-year process required to develop national and provincial REDD+ planning now, Vietnam will be able to more effectively scale results-based payment programs to include many more provinces and communes or households (Vietnam is currently pursuing REDD planning in 13 provinces). Emissions reductions generated through REDD+ may also provide additional development benefits related to climate change adaptation, community development, and biodiversity conservation, which may result in additional payments to communes or households.

While REDD+ remains in the early stages of planning and implementation, Decree 99 and other policies supporting the PFES system have had, and will continue to have, widespread benefits in watersheds around the country. Since 2008, PFES has generated at least \$165 million USD, with 85% of these funds distributed

to communities for improved forest management and protection. With EC-LEDS support for revising relevant policies, it is expected that beneficiaries of PFES will receive nearly double the amount currently being paid per kilowatt-hour. PFES is an important mechanism bridging LEDS and other development benefits, and even in the absence of rigorous carbon accounting thus far, it can be assumed that forest emissions will be reduced as a result of improved forest management activities required to generate ecosystem services for hydropower producers, particularly given the scale of PFES in the country.

The experience of Vietnam in improving energy efficiency and green building standards will undoubtedly provide useful lessons for implementation in other countries. However, this process is still somewhat nascent, compliance with building codes or energy efficiency standards is still in its voluntary phase, and data is very limited, so it is difficult to project the impact that energy efficiency will have on Vietnam's emissions profile and overall LEDS outcomes. Ideally, shifting attitudes around clean energy in the medium- and long-term and resulting policy changes will compliment work happening now related to energy efficiency in order to maximize emissions reductions and reduce energy consumption in line with Vietnam's INDC.

Vietnam is successfully undertaking a very systematic process to integrate LEDS/green growth decision-making into its national and provincial planning systems. This work is likely to have significant future impacts on emissions reductions. The establishment of a technical assistance and financing facility to support green growth initiatives is an important component of, and reinforcement to, Vietnam's efforts that can offer an example for EC-LEDS assistance in other countries.

EQ3: How has the EC-LEDS program contributed to partner countries' engagement in international climate change mitigation efforts?

EC-LEDS support for Vietnam's involvement in international climate change mitigation has primarily involved readiness planning, whether direct or indirect, that sets Vietnam up to access international sources of climate mitigation finance, including from the Green Climate Fund (GCF), the Carbon Fund of the FCPF, and UN-REDD, while also helping Vietnam meet its established commitments under the UNFCCC of 8% unconditional and up to 25% conditional reductions in emissions versus the BAU scenario. Indirectly, steps taken to develop and improve forest inventories and monitoring, reporting, and verification systems are supporting Vietnam in conducting rigorous and replicable data collection that will meet the standards of international funding sources and markets.

Vietnam has taken an 'all-in' approach to REDD+ and is a regional success story in terms of commitment and effort in accessing mitigation finance, and has taken advantage of readiness grants and other financial mechanisms that help the country achieve its LEDS objectives while setting the country up for additional funds. In 2012, Vietnam received a readiness grant from FCPF for \$3.8 million dollars. This grant provided additional support for readiness in areas supported by EC-LEDS, including development of RELs, improvements to social and environmental safeguards, and support for adopting REDD+ strategies at the national level. Vietnam presented its ER-PIN in Bonn in 2014 and was accepted into the FCPF pipeline on the basis of the country's progress toward readiness; political commitment; compliance with the FCPF Methodological Framework; adequate scale for carbon development in the North Central region; technical soundness; non-carbon benefits (climate, community, biodiversity); and learning value. The readiness grant received from FCPF is helping to support ER-PD development in conjunction with EC-LEDS support for the same. Vietnam's successful implementation of this grant helped catalyze the country's acceptance as an FCPF member. Vietnam is also a UN-REDD partner country, and is currently receiving a small amount of financial support for its national REDD+ program and targeted support for governance and capacity building.

EC-LEDs team members working on REDD+ have ambitiously planned to have details on monitoring of emission reductions determined within the next six months, particularly for the main three sources of emission reductions: reforestation/afforestation, avoided planned deforestation, and sustainable forest management by state forest enterprises, and with an eye toward the development of PRAPS and, ultimately, completion of Vietnam's ER-PD. These details will also take into consideration potential benefit sharing arrangements and whether or not to use the current PFES funds distribution system or to develop a system based on the use of local governance structures. EC-LEDs is supporting Vietnam through the consultation process with technical assessors from the FCPF; the most recent visit in mid-July focused on the initial framework for benefit sharing, as well as social and environmental safeguards. If EC-LEDs is able to successfully support Vietnam through the rigorous FCPF due diligence process to get the ER-PD approved and begin negotiating an Emissions Reduction Purchase Agreement (ERPA), this could secure the country's first REDD+ payments totaling as much as \$60 million USD.

EQ4: How has the “whole-of-government” approach affected the implementation of the EC-LEDs program?

The EC-LEDs scoping trip to Vietnam and resulting MOU with MONRE had broad inter-agency participation (USAID, DOE/NREL, EPA, and USFS). The MOU identified the following as key areas of cooperation: 1) national greenhouse gas inventory system; 2) economic analyses focused on low-carbon scenarios; 3) agriculture, land use, land use planning, and forestry emissions modeling; and 4) energy, industry, construction, and/or transport modeling and policy analysis. Signed in 2012, the MOU covered a period of 15 months. USAID chose not to extend the MOU with MONRE in 2013 citing a lack of need, but the priority areas of cooperation identified in the MOU have more or less remained the same in the various scopes of work under EC-LEDs.

Most EC-LEDs agencies have at least some footprint in Vietnam, but among agencies, certain activities appear to be of a more one-off nature without a plan for a longer engagement. For example, USFS appears to have limited and only periodic involvement, which is primarily focused on the provision of data sets or software/models in support of GHG and/or forest inventories. Under this approach, there is concern that progress made under certain EC-LEDs initiatives (particularly related to carbon mensuration and other heavily technical areas) will be lost due to short time frames for planning and implementation, sometimes inadequate monitoring of key indicators and no clear plan for follow-on activities that clearly link to work already conducted. Longevity and continuity are essential to achieving transformative changes on both the sustainable landscapes side and the energy efficiency/clean energy side.

There is a commitment to avoid duplication of efforts wherever possible, both between USG agencies and in working with GVN and other international counterparts. This is helped by the high degree of organization and planning taking place within various GVN ministries, which allows for improved identification of areas needing support. USAID's portfolio covers the vast majority of EC-LEDs support in Vietnam, and it coordinates this assistance closely with other USG agencies. In addition, NREL also plays a coordination role for EC-LEDs in Vietnam through the organization of periodic conference calls with USAID and other USG agencies, but its overall role may be somewhat peripheral to the larger program due to EC-LED Vietnam's emphasis on energy efficiency over clean energy at this time.

The GVN is pursuing a highly systematic approach to integrate low carbon planning into all of its main emission sectors. This approach began with the development of a Green Growth Strategy, and is being pursued through the development of ministerial and sectoral low carbon development planning. The Ministry of Planning and Investment plays a leadership role in agenda setting, planning, and organization across ministries, ongoing communication and a shared commitment between agencies has resulted in

each ministry or department having a clear understanding of how their work contributes to Vietnam's green growth/LEDS, even if capacity or technical tools are limited at this time.

This highly differentiated and compartmentalized organization within GVN is both helpful and problematic for EC-LEDS implementation. On the one hand, clearly defined roles and responsibilities make it easier to target assistance at those agencies with mandates explicitly linked to EC-LEDS goals, such as the Ministry of Construction. However, this also has the potential to limit cooperation and communication between stakeholders because the scale of what each ministry or department needs to undertake is often very broad, and many activities do not consider the larger transformative changes that need to take place in the medium- to long-term (or where synergies may be needed to advance multiple mandates), focusing instead on one small piece of a ministry's mandate, or getting a particular tool adopted.

Annex F: Selected IMs for the Evaluation

Selected IMs for Six Fieldwork Partner Countries

Country	Implementing Mechanism	Implementer	CE Funding (2011-2014)	SL Funding (2011-2014)	Start Date	Description
Colombia	Low Carbon Resilient Development	USFS	\$994,168	\$5,698,097	1-Apr-2007	The purpose of the Low Carbon Resilient Development Program (LCRD) is to support Colombia's climate change efforts framed under the Colombian Low Carbon Development Strategy (ECDBC) and the National Adaptation Plan (NAP) at both the national and subnational level.
Colombia	Bio-REDD+	USAID - Chemonics International Inc	\$0	\$7,347,057	1-Sep-2011	The USAID Biodiversity—Reduced Emissions from Deforestation and Forest Degradation (BIOREDD+) Program addresses climate change, protects biodiversity, and promotes the economic development of marginalized indigenous and <i>campesino</i> communities.
Colombia	Colombia Clean Energy Project	USAID - Tetra Tech	\$12,689,393	36,066	1-Jan-2012	The purpose of the USAID/Colombia Clean Energy Program is to increase access to renewable energy sources and improve energy efficient practices in Colombia. The Clean Energy Program is USAID/Colombia's flagship clean energy activity.
Indonesia	Indonesia Forestry and Climate Support (IFACS)	USAID - Tetra Tech		\$40,000,000 (total funding)	1-Nov-2010	IFACS strives to reduce carbon emissions in Indonesia's land use sector through the integration of forest and peatland conservation with LEDS. This is achieved by working with district governments, local communities and NGOs to promote spatial plans that reduce deforestation and ensure sustainable forest management. The project also works with private sector partners in forestry, plantation and mining sectors.
Indonesia	Indonesia Clean Energy Development (ICED)	USAID - Tetra Tech	\$9,342,089	\$0		The Indonesia Clean Energy Development (ICED) Project supports the government, private sector, and civil society in increasing the contribution of clean energy resources (renewable energy, energy efficiency, and energy conservation) in Indonesia.
Indonesia	The Low Emissions Development Public Private Partnership - Sustainable Landscapes Partnership	USAID	\$0	\$1,000,000		SLP is a public-private partnership that brings together governments, communities, businesses and NGOs to develop and test new landscape approaches to reducing emissions, conserving areas of biological significance and generating sustainable benefits for rural communities. SLP is developing innovative tools, methods, and approaches to increase agricultural productivity, while developing

Country	Implementing Mechanism	Implementer	CE Funding (2011-2014)	SL Funding (2011-2014)	Start Date	Description
						Low Emissions Development (LED) strategies, and Reduced Emissions from Deforestation and Forest Degradation (REDD+).
Indonesia	US Forest Service PAPA	USFS	\$0	\$841,000	Not Available	Not Available
Malawi	REDD+ Readiness Project (MRRP)	USFS	\$0	\$100,000	1-Aug-2012	The Malawi REDD+ Readiness Program (MRRP) is a joint effort of the GoM, United States Agency for International Development - Malawi (USAID/Malawi), and the United States Forest Service (USFS). The three primary objectives: (i) to develop a zero-draft, national REDD+ strategy for Malawi, (ii) secure the GoM's partnership with a multi-lateral REDD+ body (e.g., UN-REDD and/or World Bank Forest Carbon Partnership Facility), and (iii) build capacity in REDD+ and climate change management at the Malawi DoF and other relevant institutions.
Malawi	Protecting Ecosystems and Restoring Forests in Malawi (PERFORM)	USAID - Winrock International	\$0	\$5,390,799	1-Sep-2014	As one of USAID/Malawi's primary activities under the Presidential Global Climate Change Initiative, PERFORM works with the GoM and a wide range of Malawian organizations to advance Malawi's low-emissions, climate-resilient development. The Program supports the GoM in implementing the national REDD+ strategy/action plan; GHG capacity, and assistance with INDC submission.
Malawi	Malawi Kulera Biodiversity Activity (Kulera)	Not available		\$983,000	2010	Kulera worked in the Central border zones of five protected areas in the Central and Northern regions of Malawi. The goal of the activity was to secure long-term biodiversity of Malawi's protected areas of government and community forest co-management.
Mexico	Mexico's Reduced Emissions from Deforestation and Degradation (MREDD+)	USAID - M-REDD+ Alliance (The Nature Conservancy is lead implementer)	\$0	\$19,449,131	1-Aug-2011	MREDD+ works to support both national and sub-national REDD+ activities. Activities are: a) support in strengthening policies and laws for implementing the national REDD+ strategy; b) improve the institutional and technical capacities of government agencies, NGOs, academia and forest communities for REDD; c) develop the financial architecture necessary for sustainably implementing REDD strategies; d) establish robust systems for monitoring, reporting and verifying GHG emissions from deforestation and forest degradation.
Mexico	Mexico Low Emissions Development (MLED) Program	USAID - Tetra Tech	\$1,500,000	\$15,758,746	1-Sep-2011	MLED will support Mexican efforts to develop and implement a Low-Emissions-Development Strategy (LEDS) and strengthen system or Monitoring, Reporting and Verification (MRV) of emissions across all emitting sectors of the economy. MLED will also promote the

Country	Implementing Mechanism	Implementer	CE Funding (2011-2014)	SL Funding (2011-2014)	Start Date	Description
						widespread adoption of clean energy technologies and best practices through the development of energy policies, financing mechanisms, and institutional and technical capacity in Mexico.
Mexico	Enhancing Capacity for Low Emissions Development Strategies	DOE (NREL)	\$1,250,000	\$500,000	1-Mar-2014	The activity contributes to the overarching goal of the GCC Program to strengthen capacity in Mexico for the development of a Low Emissions Development Strategy (LEDS) and to help promote green growth. It focuses on two areas: 1) improving understanding and capacity at INECC to develop climate change mitigation actions and implementing emissions reduction activities; and 2) supporting SENER (and its constituent entities) in renewable energy implementation planning to reach targets set by the GOM.
Mexico	CONAFOR	USFS	Not Available	Not Available	Not Available	The USFS provides direct on-demand support to CONAFOR in the areas of forest inventories (to support REDD+) and forest fires
Philippines	Building Low Emission Alternatives to Develop Economic Resilience and Sustainability (B-LEADERS)	Engility/IRG	\$8,280,579	\$2,945,199		USAID's FY 2013 funds support the new Building Low Emission Alternatives to Develop Economic Resilience and Sustainability (B-LEADERS) activity to enhance the capacity of the Government of the Philippines and its key partners to plan, design and implement low emission development strategies (LEDS) contributing to the formulation of mitigation actions in the power, transport, and land use sectors. B-LEADERS works with the Climate Change Commission as its main bilateral partner under the EC-LEDS Program to achieve the following specific objectives: (1) Improve institutional capacity on National Greenhouse Gas Inventory; (2) Develop analytical tools for decision-making on climate-resilient, low emission policies, plans, and projects; and (3) Promote renewable energy, energy efficiency, and sustainable landscape strategies. Under the revised and amended EC-LEDS MOU which will be implemented for three years starting September 30, 2014, B-LEADERS will build upon the milestones achieved under the first MOU along with the CCC and other partners such as the Department of Energy, Department of Transportation and Communication, Department of Environment and Natural Resources and National Economic and Development Authority.
Philippines	Biodiversity and Watersheds	Chemonics	\$3,959,921	\$3,959,921		Biodiversity and Watersheds Improved for Strong Economy and Ecosystem Resilience (B+WISER) Project to contribute to improving

Country	Implementing Mechanism	Implementer	CE Funding (2011-2014)	SL Funding (2011-2014)	Start Date	Description
	Improved for Stronger Economy and Economic Resilience (B+WISER)					natural and environmental resource management and reduce risks from disasters in the Philippines. B+WISER aims to: (1) Conserve biodiversity in forest areas; (2) Reduce forest degradation targeted priority watersheds; (3) Build capacity to conserve biodiversity, manage forests, and support low emissions development; and (4) contribute to disaster risk reduction at the subnational level.
Philippines	PAPA USFS	USFS	Not Available	Not Available		USFS has been providing technical support to the Philippines, in partnership with USAID/Philippines, since 2011. Support has focused on capacity building for the Department of Environment and Natural Resources (DENR) on topics prioritized by DENR that also support USAID/Philippines initiatives, including forest monitoring using remote sensing and ground inventory, forest land use planning, and forest restoration. Recently USFS has been working with the USAID Biodiversity and Watersheds Improved for Stronger Economy and Ecosystem Resilience (B+WISER) program to support the DENR Forest Management Bureau (FMB) in the design of a forestry sector Measuring, Reporting, and Verification (MRV) system, as well as the design of a national forest inventory that will contribute to the MRV system and the National Forest Monitoring System (NFMS). USFS will continue this support to FMB on MRV and forest inventory design, as well as provide technical support to other national-level priorities such as the development and implementation of a national forest landscape restoration strategy.
Philippines	Low Emissions Asia Development (LEAD)	USAID/ RDMA	Not Available	Not Available	2012	The activities under the buy-in into the LEAD program of USAID Regional Development Mission Asia are being implemented for a period of two years, 2012-2014. The three major tasks under this component are: (i) coordination for the institutionalization of the national GHG inventory and LEDS; (ii) workshops/trainings on GHG inventory and MRV protocol and tools for the energy, transport and forestry and land-use sectors; and (iii) enhancement of data management systems for the energy sector.
Philippines	Analysis and Investment for Low-Emission Growth (AILEG)	Not Available	\$895,000, 50% USAID mission cost-sharing			In the Philippines, AILEG in partnership with the government and local groups assessed: climate financing markets and barriers for renewable energy; energy and forestry LEDS data management; marginal cost curves of demand-side management options; and LEDS

Country	Implementing Mechanism	Implementer	CE Funding (2011-2014)	SL Funding (2011-2014)	Start Date	Description
						emission baselines and case scenarios. AILEG facilitated signing of a Memorandum of Understanding between the Government of the Philippines and academic institutions to collaborate on LEDS training, data development and analysis.
Vietnam	EC-LEDS Enhancing Capacity for Low Emissions Development Strategies (EC-LEDS) in the Agricultural Sector	USDA	Not Available	Not Available	1-Aug-2011	The U.S. Department of Agriculture's Foreign Agricultural Service (USDA/FAS) is building the capacity of EC-LEDS partner countries to develop low-emission development strategies for their agricultural sectors. USDA/FAS is building the capacity of Vietnam's National Agricultural Extension Center (NAEC) to reduce GHG emissions from the rice and livestock sectors while increasing profitability. This work contributes to the GVN's goal of reducing agriculture-related GHG emissions by 20% by 2020.
Vietnam	Vietnam Clean Energy Program (VCEP)	USAID - Winrock International	\$7,800,000	\$4,000,000	1-Oct-2012	The Vietnam Clean Energy Program (VCEP) helps promote energy efficiency in one of the highest energy use sectors: construction. The program enhances GVN and other stakeholders' capacity to acquire, manage, analyze, and apply energy sector data in decision making. VCEP also assists in the development of the construction sector's green growth action plans.
Vietnam	Vietnam Forests and Deltas Program (VFD)	USAID - Winrock International	\$0	\$4,109,444	1-Oct-2012	The USAID/Vietnam Forests and Deltas Program helps to reduce and reverse emissions from deforestation and degradation of forests and agricultural landscapes, and increases climate change resilience in the Red River and Mekong Deltas. Activities include green growth planning, strengthening Vietnam's Payment for Forest Ecosystem Services (PFES), and the development of Vietnam's REDD+ program.
Vietnam	National Building Energy Efficiency Standard in Vietnam	DOE/PNNL			2015	Supported by US Department of Energy's Pacific Northwest National Laboratory (PNNL), and funded by USAID seeks to develop technical standards and guidelines that support the implementation of the Vietnam Building Energy Efficiency Code.
Vietnam	Strengthening Capacity and Institutional Reform for Green Growth and Sustainable Development (CIGG)	USAID - UNDP/UNDP			2014	Strengthening Capacity and Institutional Reform for Green Growth and Sustainable Development in Vietnam (CIGG) (2014-2018) is a key instrument to help Vietnam pursue a green growth, low emission development pathway through the implementation of the Vietnam Green Growth Strategy (Vietnam's LEDS) and Green Growth Action Plan at the national and provincial levels. Implemented through a partnership with the United Nations Development Program, the

Country	Implementing Mechanism	Implementer	CE Funding (2011-2014)	SL Funding (2011-2014)	Start Date	Description
						project's GVN counterpart is the Ministry of Planning and Investment.
Vietnam	Vietnam Low Emission Energy Program (V-LEEP)	USAID - Deloitte Deloitte	Not Available	Not Available	2015	V-LEEP seeks to strengthen the foundation for low emission energy systems. The project is developing a low emission strategy for the energy sector, working to enhance capacity and improve the enabling environment for renewable energy development, and promote private and public investments for renewable energy. It also aims to increase energy efficiency adoption and compliance in energy-intensive industries. The GVN counterpart is the Ministry of Industry and Trade.
Vietnam	Strengthening Capacity for Vietnam's Agricultural Extension System: Reducing Greenhouse Gas Emission in Agriculture	USDA	Not Available	Not Available	2011	The U.S. Department of Agriculture/Foreign Agriculture Service helped build the capacity of Vietnam's National Agricultural Extension Center (NAEC) to reduce GHG emissions from the rice and livestock sectors while increasing profitability. Practical techniques, such as feed and manure management strategies for cattle and water management strategies for rice production, have been demonstrated at workshops and through pilot projects. Outreach materials have been developed and disseminated to extension staff throughout the country. The GVN counterpart was National Agricultural Extension Center.

Selected IMs for Non-Selected Partner Countries

Country	Implementing Mechanism	Implementer	CE Funding (2011-2014)	SL Funding (2011-2014)	Start Date	Description
Bangladesh	EPA – Capacity Building for National Greenhouse Gas Inventory Systems	EPA	Not Available	Not Available	1-Jul-2012	The U.S. Environmental Protection Agency (USEPA) IAA - technical assistance for Bangladesh greenhouse gas (GHG) inventory activity strengthens the Government of Bangladesh's capacity to estimate and track GHG emissions and improves the institutional capacity to meet the country's reporting commitments under UNFCCC. The USEPA has developed a capacity-building framework designed to help countries build sustainable GHG inventory management systems, and also provides technical support for developing GHG emission and sink estimates for different sectors. The specific objective of the activity is to build a sustainable national inventory system in Bangladesh.
Bangladesh	Bangladesh Rural Electrification and Renewable Energy Development Project	World Bank	\$4,161,066	\$0	Sep-12	The objective of the Rural Electrification and Renewable Energy Development II (RERED II) Activity is to support the Government of Bangladesh's vision of providing electricity access to all by the year 2021. This is a multi-donor World Bank trust fund project. USAID's contribution will support the following components in the rural off-grid areas: 1. Solar Home Systems (SHS); 2. Remote Area Power Supply System (Solar minigrids, solar irrigation pumps, biomass and biogas); 3. Technical assistance support for (1) and (2).
Bangladesh	Catalyzing Clean Energy in Bangladesh (CCEB)	Deloitte Consulting LLP	\$8,428,098	\$1,000,000	1-Oct-2012	"USAID's CCEB, supports the development of a low greenhouse gas (GHG) economy and promotes clean energy, energy efficiency and energy conservation in Bangladesh. CCEB is a five-year program that commenced in 2012 and is implemented by Deloitte Consulting LLP. Key focal areas of the program include: <ul style="list-style-type: none"> • Improve the regulatory environment for clean energy development • Strengthen analytical capacity for energy sector planning and policy-making • Support industrial energy efficiency analysis and adoption • Promote demand side management programs for electric utilities • Conduct market analysis and promote use of improved cook stoves
Bangladesh	Climate-Resilient Ecosystems and Livelihoods (CREL)	Winrock International	\$0	\$3,740,816	1-Oct-2012	USAID/Bangladesh's CREL activity will scale up and adapt successful co-management models to conserve ecosystems and protected areas in Bangladesh, improve governance of natural resources and biodiversity, and increase resilience to climate change through improved planning and

						livelihoods diversification. The activity is being implemented by a team led by Winrock International. The team will build the capacity of resource users for financial literacy and entrepreneurial so they participate profitably in value chain activities that will increase access to inputs, credit, markets, information, and improved technology. The result will be viable livelihoods and enterprises that increase incomes, sustain resources and productivity, and improve resiliency, especially among marginal and vulnerable populations.
Bangladesh	DOE/NREL – Bangladesh Wind Resource Assessment	DOE	Not Available	Not Available	1-Jan-2013	The Bangladesh Wind Resource Assessment activity is collecting information on wind based on the currently available data. The assessment will gather wind data at a number of locations at higher altitudes to reassess the potential for the development of wind power generation in the country. The objectives of the activity are: • Gather raw wind and other atmospheric data from nine selected locations, coastal and inland; • Model gathered data to produce a Bangladesh country map showing its wind resource potential to locate possible wind power generation facilities; • Train and build capacity of relevant GOB agencies.
Cambodia	Helping Address Vulnerabilities and Ecosystem Stability (HARVEST)	Fintrac, Inc	\$0	\$1,903,011	Dec 2010	The program seeks to reduce poverty and malnutrition by diversifying and increasing food production and income for up to 70,000 rural Cambodian households. Cambodia HARVEST develops sound, agricultural-focused solutions to poor productivity, postharvest losses, malnutrition, lack of market access, environmental degradation, and the effects of climate change on vulnerable rural populations. The overarching goals of Cambodia HARVEST are to improve food security; strengthen natural resource management and resilience to climate change; and increase the capacity of the public and private sectors and civil society to support agricultural competitiveness.
Cambodia	Supporting Forests and Biodiversity	Winrock International	\$0	\$6,773,236	Nov 2010	The overarching goal of this project is to improve conservation and governance of the two most extensive forest landscapes in Cambodia, the Eastern Plains Landscape and the Prey Lang landscape. The participation of local communities, as well as other relevant stakeholders, in forest management decisions will be improved under the project and capacity building of communities and officials of sub-national and national authorities will cut across project elements through three inter-linked objectives: 1) To enhance effectiveness of government and other natural resource managers at national and sub-national levels to sustainably manage forests and conserve biodiversity, 2) To improve constructive dialogue on forest management and economic development at the national

						and sub-national levels, 3) To increase equitable benefits from the sustainable management of forests.
Cambodia, Lao PDR, Thailand, Vietnam, Papua New Guinea (PNG), Malaysia, Bangladesh, Bhutan, India, Indonesia, Nepal, the Philippines	Lowering Emissions in Asia's Forests (LEAF)	Not Available	\$0	\$15,291,272	1-Jan-2011	LEAF aims to strengthen capacities of developing countries in Asia to produce meaningful and sustainable reductions in greenhouse gas (GHG) emissions from the forest-land use sector. Program activities are designed to meet four primary objectives, including 1) Replicating and scaling up innovation through regional platforms and partnerships; 2) Improving policies and establishing market incentives for GHG reductions; 3) Building and institutionalizing technical capacity for economic valuation of forest ecosystem services and monitoring changes in forest carbon stocks; and 4) Demonstrating innovation in sustainable land management. LEAF employs a regional approach to meet its goal, working in six countries: Cambodia, Lao PDR, Thailand, Vietnam, Papua New Guinea (PNG), and Malaysia. LEAF also shares lessons learned and best practices in other Asian countries (Bangladesh, Bhutan, India, Indonesia, Nepal, and the Philippines) and supports the Agriculture, Forestry, and Other Land Use (AFOLU) Working Group of the LEDS Global Partnership.
E&E Regional	Energy Regulatory Partnership Program	NARUC	\$3,537,200	\$0	1-Sep-2007	The IM supports the development of the capacity of commissioners and staff at its partnering regulatory agencies to advance the quality of energy regulation. The Black Sea Regional Regulatory Initiative will provide special focus on clean energy and regulatory and market developments in electricity and potentially natural gas sectors in an expanded regional context, engaging regulators from Armenia, Azerbaijan, Georgia, Moldova, Turkey, and Ukraine. The Black Sea Regulatory Initiative supports the continued national and regional dialogue related to promotion and implementation of energy efficiency, diversification of supply through integration of renewables, increased harmonization in electricity trading, and the development and integration of regional markets.
E&E Regional (including former Europe regional & Eurasia Regional)	Low Emissions Strategies and Clean Energy Development	Not Available	\$7,000,000	\$0	1-Sep-2010	This IM provides legal support for cross border trade and establishes/supports institutions to monitor trade and improve the investment environment. It worked with countries to create Energy Balance Roadmaps to provide a detailed technical basis or preparation of draft legislation to support annual preparation of the National Energy Balance. It established market monitoring procedures being adopted by the Energy Community and supported the establishment of a coordinated auction office for the allocation of transmission rights.
E&E Regional (including	EBRD Eastern European Energy Efficiency &	Not Available	\$6,000,000	\$0	1-Oct-2011	The E5P Fund supports municipal heat and energy efficiency projects in Ukraine. USAID contributed \$6 million to the Fund that leverages 90 million Euro total for the regional energy efficiency projects.

former Europe regional & Eurasia Regional)	Environmental Partnership					
Ethiopia	Enhanced Capacity for Low Emission Development Strategies (EC-LEDS)	Not Available	\$1,000,000	\$0	Not Available	Not Available. Ethiopia missions has not entered data into the database.
Gabon	USFS Program	USFS	Not Available	Not Available	1-Mar-2011	USFS is implementing 3 parts of EC-LEDS in Gabon: 1) LEDS advising and coordination; 2) Forest Carbon Assessment; and 3) Land-use planning.
Georgia	Synenergy – Strategic Planning for the Energy Sector of Georgia	Tetra Tech	\$200,000	\$0	1-Sep-2012	Tetra Tech's work under this Task Order includes supporting the formulation of a regional energy strategy that provides a framework for facilitating investments in regional energy systems, promotes energy security, and looks beyond various national strategies to identify opportunities for promoting projects of regional significance. Mission buy-in into Tetra Tech contract provided a SWOT (Strength, Weakness, Opportunities and Threats) analysis for the energy strategy of Georgia, including a field trip and a final report. The buy-in also included the training of the Analytic Department of the Ministry of Energy for MARKAL program, and a software license.
Georgia	Black Sea Regional Transmission Planning Project (Phase 3)	US Energy Association (USEA)	\$854,775	\$0	1-Sep-2012	This project analyzes the existing high voltage networks from a regional perspective to identify investments that will improve the network's capacity to support electricity trade and exchange, while optimizing overall system security and reliability. The Project assists countries in the Southeast Europe Energy Community and the Black Sea region on developing policies, incentives and regulations to support European clean energy mandates and to accelerate integration of their domestic electricity markets with European regional electricity markets. There is heightened interest among private investors and international financial institutions in developing new, clean energy wind, photovoltaic and small hydroelectric generation plants in the Europe and Eurasia (E&E) region. BSTP is managed by USAID/Washington through a Cooperative Agreement with USEA. USAID/Georgia's buy-in to the Cooperative Agreement provides assistance to Georgia in increasing the efficiency and reliability of the country's electricity grid to transmit clean and renewable energy from hydropower plants. During the third phase of BSTP, the USEA will assist Georgia's transmission and dispatch systems operator, Georgian State

						Electro-systems (GSE), to improve its capacity in system planning and maintenance. The project will ensure greater efficiency and reliability of Georgia's electricity grid to transit clean and renewable energy from existing and newly-constructed domestic hydropower plants. It will also help Georgia to evaluate the cost effectiveness of new transmission systems that will allow greater regional and cross-border trade of efficient, lower-cost Georgian hydropower. Activity components include: (1) Transmission Analysis and Planning; (2) Azerbaijan-Georgia-Turkey (AGT) Power Bridge Program; (3) Armenia-Georgia Interconnection sub-regional project; and (4) Transmission Maintenance (U.S. and Georgian utility Partnership).
Georgia	Georgia EC-LEDs Clean Energy Program	Winrock International	\$5,695,818	\$0	1-Sep-2013	The program enhances partner country efforts by (1) providing targeted technical assistance and (2) building a shared global knowledge base on LEDs. This assistance supports the implementation of incentives and financing to generate alternative economic development practices. Regional programs also support this growth through expertise in modeling energy efficiency, green production marketing and other widely accepted practices. Mayors who are signatories to the EU Covenant of Mayors commitments will receive preference for assistance to implement lower emission development.
Georgia	USAID Interagency Agreement with US Forest Service	USFS	Not Available	Not Available	1-Oct-2013	The USFS provides technical assistance to Georgian natural resource management agencies and NGOs on the topics of natural resource management. USFS engaged on topics related to watershed and natural resource management in Georgia.
Guatemala	Climate, Nature and Communities in Guatemala (CNCG)	Rainforest Alliance	\$0	Not Available	1-Feb-2013	CNCG is designed to assist Guatemala to develop and institutionalize a process to mitigate the effects of climate change. CNCG's objectives are five-fold: 1) Develop and/or strengthen market-driven conservation strategies at the community level in focus areas and at the national level as appropriate; 2) Support the development and implementation of national and sub-national REDD+ strategies; 3) Enhance adaptation capacity to the impacts of climate change; 4) Strengthen Guatemalan non-governmental organizations, and; 5) Support the initial stages of a Guatemalan-led Low Emissions Development Strategy (LEDs). To achieve its objectives, CNCG uses a range of top-down and bottom-up approaches, including, but not limited to, demonstration projects, policy dialogue and support, technical advisory services, environmental governance dialogue and support, training and capacity building services, workshops and conferences, and logistical support. Local communities and community-based management will be key

						focus areas of the program, as well as the strengthening of local civil society capacity in Guatemala.
Guatemala	Low Emission Development Strategy in Guatemala (LEDS)	International Resources Group (Engility-IRG)	\$0	\$2,630,356	1-Jun-2014	This project partners with the Government of Guatemala (GOG) to develop and implement a LEDS and concurrently build institutional capacity to reduce the effects of climate change and mitigate greenhouse gas (GHG) emissions from key sectors. To achieve this objective, USAID has identified avenues to support the GOG in the planning, design, policy development, and implementation of the LEDS, as well as to promote participatory processes and lasting engagement with the private sector and civil society. Critical components of the Guatemala LEDS project include support to the GOG and other key stakeholders in: 1) Establishing reliable science and analytics; 2) Building institutional capacity; 3) Developing participatory processes and transparency; 4) Promoting implementation through demonstrations, and; 5) Supporting communication and education. By the end of the project, Guatemala will have in place a policy and institutional framework that enables sound decision-making informed by climate science and economic modeling, as well as stakeholder buy-in and collaboration for low-emission development.
India	IAA USFS	USFS	\$0	\$750,000	1-Sep-2011	Under this IM, USAID and USFS are supporting peer-to-peer collaboration between Indian and U.S. foresters to build upon and support scientific and technical collaboration and exchange in the forestry sector, specifically under the Forest-PLUS program.
India	Partnership to Advance Clean Energy Deployment (PACE-D)	Nexant, Inc	\$7,250,000	\$0	1-May-2012	The overall aim of the PACE-D TA Program is to accelerate the deployment and use of clean energy produced, expand U.S.- India trade and investment linkages, and facilitate exchange of information and best practices. It supports India's emissions avoidance goals by providing technical assistance in energy efficiency and renewable energy at state and national levels. The program works with policy makers, regulators, state agencies, private companies, investors, clean energy associations, and other stakeholders to create an enabling environment to increase the uptake of EE and RE technologies in India. This \$19.46 million program is implemented in partnership with the Ministry of Power (MOP) and the Ministry of New and Renewable Energy (MNRE).
India	Partnership for Land Use Science (Forest-PLUS)	Tetra Tech	\$9,000,000	\$0	1-Jul-2012	The five-year, \$16.8 million Forest-PLUS technical assistance contract will enhance capacity for REDD+ (Reducing Emissions from Deforestation and forest Degradation) in India. USAID will work in close collaboration with the GOI's Ministry of Environment, Forests and Climate Change, state forest departments, and local communities to adopt innovations and best practices, and build the capacity of local stakeholders to better manage

						India's forest resources. Forest-PLUS will: (1) develop and deploy scientific tools and methods for improved ecosystem management in both degraded and intact forests, forest carbon inventory, and monitoring; (2) design modalities to provide better incentives to forest-dependent communities for forest management and conservation; and (3) enhance human and institutional capacity. Targeted landscapes under the program will have the potential to reduce emissions and increase carbon sequestration. This would also generate co-benefits such as biodiversity conservation, enhance livelihoods, and help ecosystems and communities adapt to climate change.
India	Supporting U.S.-India Joint Working Group on Sustainable Growth	US DOE	\$750,000	\$0	1-May-2013	The Sustainable Growth Working Group (SGWG) is a new working group under the U.S.-India Energy Dialogue. Its primary objective is to advance Indian capacity to develop long-term plans and strategies for low carbon inclusive growth. This objective aligns closely with the newly announced National Institute for Transforming India (NITI Aayog), which replaces the Planning Commission. NITI Aayog's mission is to "serve as a 'Think Tank' of the government as "a directional and policy dynamo" and would provide the governments at the Centre and in states with strategic and technical advice on key policy matters." The focus is on three areas: energy data management, energy/environmental modeling, and geospatial analysis. Collaboration will occur through workshops and technical exchanges, and through joint analyses by Indian and U.S. analytic teams.
Jamaica	USFS PAPA	USFS	Not Available	Not Available	1-Apr-2013	USFS provided a full time LEDS consultant to USAID Jamaica to help develop 5 sectoral plans to mainstream climate change and lowered emissions into sector activities. The focus going forward will be on the forestry sector.
Jamaica	Caribbean Clean Energy Program (CARCEP)	Not Available	Not Available	Not Available	1-Oct-2015	The overall goal of USAID's CARCEP is to accelerate clean energy development in the region, with special focus on Jamaica and the Eastern Caribbean. These project components contribute to the host government established targets for enhancing energy security and reducing prices, while concurrently supporting national efforts to curb greenhouse gas (GHG) emissions. High-level objectives and indicators include tons of carbon dioxide (CO2) from GHG Emissions reduced, leverage of public and private sector investment, number of institutions with improved capacity to address climate change issues, and laws, policies, strategies, plans or regulations addressing climate change mitigation proposed, adopted, or implemented as a result of USG assistance. The activity will have an estimated total investment of \$15 million, and is anticipated to start Fall 2015.

Kazakhstan	Kazakhstan Climate Change Mitigation	Tetra Tech	\$5,541,089	\$0	1-Sep-2013	The purpose of USAID's Kazakhstan Climate Change Mitigation Program (KCCMP) is to help Kazakhstan achieve long term and sustained reduction in the greenhouse gas (GHG) emissions intensity by supporting the government and business community of Kazakhstan in the implementation of climate change mitigation policies and measures at the project, corporate, and national levels. The program addresses three main objectives:(1) Improve Government capacity to administer and enforce GHG mitigation policies and measures;(2) Enhance the business community's capacity to comply with and implement GHG reduction policies and measures; and (3) Improve capacity of climate mitigation and energy professionals to conceive and implement GHG abatement and energy efficiency measures.
Kenya	Financial Inclusion for Rural Microenterprise (FIRM)	DAI	\$590,098	\$0	1-Jan-2011	FIRM is a five-year, approximately \$22.5 million, USAID-funded activity designed to facilitate the expansion and innovation of financial services in five key areas central to the safe and sound development of Kenya's economic growth and prosperity. They include: agriculture, renewable/clean energy, ICT, gender/youth, policy reform and County Investment support. In addition, FIRM exploits new opportunities and situations that arise and demonstrates the potential to advance the frontier of financial services for the benefit of marginalized and excluded populations across Kenya. FIRM promotes increased financial intermediation in Kenya, a flagship project under the President's Feed the Future (FtF) program.
Kenya	USDA: EC-LEDS Enhancing Capacity for Low Emissions Development Strategies (EC-LEDS) in the Agricultural Sector	USDA	Not Available	Not Available	1-Aug-2011	The U.S. Department of Agriculture's Foreign Agricultural Service (USDA/FAS) is building the capacity of EC-LEDS partner countries to develop low-emission development strategies for their agricultural sectors. In Kenya, the USDA/FAS is working with both Food and Agriculture Organization (FAO) and the World Agroforestry Center (ICRAF) to build a set of capacities within the Climate Change Unit (CCU) of the Kenyan Ministry of Agriculture, Livestock, and Fisheries (MoALF), and the county-level authorities responsible for agricultural extension so they can advance low GHG emission development from agriculture.
Kenya	EC-LEDS Program for Kenya	UNDP	\$5,105,279	\$0	1-Sep-2014	This program will support the GOK to implement Kenya's national climate change action plan and provide support for Kenya's future United Nations Framework Convention on Climate Change negotiations. Detailed activities include: strengthening the national climate change coordination; enhancing access to clean energy and efficient energy systems; development of a national sustainable GHG inventory system; facilitating improved national and county decision making on climate change

						interventions; supporting capacity building of climate knowledge management system; and contributing towards minimizing the impacts of extreme climate events for improved resilience.
Kenya	Clean Energy-Power Africa Program	Not Available	\$6,510,878	\$0	1-Oct-2014	To provide technical assistance, capacity building and project transaction support services under the Power Africa Initiative.
Peru	PTPA Forest Governance and Environmental Implementation	Not Available	\$0	\$12,580,432	1-Jul-2011	Provide assistance to ensure that trade and environmental policies are mutually supportive, to promote the optimal use of resources in accordance with the objective of sustainable development, and to strive to strengthen the links between the Parties' trade and environmental policies and practices, which may take place through environmental cooperation and collaboration. The main purpose is to measurably improve forest governance and environmental management, conserve sustainable tropical forest landscapes, and increase forest-based livelihoods in Peru.
Peru	Amazon Forest Sector Initiative (AFSI)	Not Available	\$0	\$4,600,000	1-Sep-2011	The Program consists of Bilateral and Regional assistance in providing technical expertise in forest governance, forest management, information management, protected areas management, and forest policy to support USAID/Peru with the Forestry Governance Annex of the US Peru PTPA. The main objective is to contribute to sustainable forest management by building capacity, promoting tools and methodologies, and strengthening private and public sector actors in priority areas.
Peru	Technical Assistance Program - TAP USAID/MINAM	Not Available	\$0	\$3,281,433	Not Available	USAID supports MINAM with the implementation of the following five projects: 1. Strengthening MINAM's capacities as Scientific Authority for CITES –TAP CITES; 2. Strengthening capacities in Economic Valuation of Biodiversity and Ecosystem Services –TAP VALUATION; 3. Strengthening of environmental management under the SEIA framework to contribute to the conservation of biodiversity –TAP SEIA; 4. Strengthening capacities for forest management and conservation –TAP FOREST; 5. Strengthening capacities to include the Adaptation to Climate Change focus into Public Investment Projects (PIPs).
South Africa	South Africa's Low-Emission Development (SA-LED) Program	Not Available	\$5,430,002	Not Available	1-Jun-2015	USAID is partnering with the GoSA to provide support to its green growth agenda. The Department of Environmental Affairs (DEA) and USAID co-designed the South Africa Low Emissions Development (SA-LED) Project with a focus on strengthening public sector-related development planning and project development capabilities for low-emissions development. In addition to providing technical assistance and capacity building, activities will facilitate private sector participation in potential low-emissions bankable projects through identifying project opportunities, bringing relevant actors together and facilitating feasibility studies and innovative

						financing models. Once fully implemented, SA-LED is expected to result in at least ten low-emission projects successfully transitioned from the conceptual stage to implementation, significant long-term reductions in GHG emissions relative to the business-as-usual trajectory, and substantial investments leveraged from private and public sources.
Ukraine	Public-Private Partnership Development Project (P3DP)	Not Available	\$4,381,516	\$0	1-Sep-2010	FY15 activities will be aimed at reduction of GHG emissions by improving legislation on solid waste management, introducing a clear landfill tariff calculation methodology, and passing laws that stimulate energy generation from such alternative sources as biogas and solid waste under fair and transparent green tariffs. This GCC related policy agenda will be largely informed by lessons learned from implementation of pilot PPPs aimed at capturing harmful landfill gas to generate electricity and converting natural gas to renewable biofuels for heating systems. USAID will support finalization of PPP agreements and implementation of the projects.
Ukraine	Municipal Energy Reform Project	Not Available	\$5,187,662	\$0	1-Sep-2013	The primary purpose of the Municipal Energy Reform Project (MERP) is to enhance Ukraine's energy security. EC-LEDS activities in Ukraine are focused on enhancement of GoU climate change mitigation capacities with the goal to support low emission policies at national and sub-national levels, improve National GHG Inventory System, establish effective inter-agency LEDS coordination and promote clean low emission technologies. National Low Emission policies support will include continuation of MRV legislation support and UNFCCC recognized TIMES/MARKAL modeling in Ukraine with TIMES-Ukraine analytical tool enhancement and promotion at the core of activities. Ministry of Economic Development and Trade, Ministry of Ecology and Natural Resources and State Environmental Investment Agency are the core national level partners within the GoU. Regional level support was performed through Covenant of Mayors voluntary EU cities mechanisms and its tools, such as Sustainable Energy Action Plans.
Zambia	U.S. Forest Service Interagency Agreement 2007	USFS	\$0	\$649,386	1-Jan-2010	This activity is an interagency agreement to provide ongoing technical assistance to the Mission, its implementing partners, and the Government of Zambia. The USFS has supported assessments that identify priority issues that need to be addressed in the forestry, biodiversity, climate change, and NRM sectors in Zambia.
Zambia	Nyimba Forest Project (NFP)	Not Available	\$0	\$40,000	1-Aug-2012	USAID/Zambia invested \$3.1 million into the Center for International Forestry Research (CIFOR) to provide support to the Zambian Government towards the development of Zambia's REDD+ national strategy. Zambia is one of the developing countries in the world that is piloting the UN-REDD Programme, which aims to prepare countries for

						<p>future REDD+ implementation. However, forest inventories and involvement of communities in this process at district and village level is weak. This project is aimed to address that gap by empowering the local communities with the capacity to inventory their forest resources and monitor the impact of utilization and decision making on forest management, and building local institutional capacity at both district and village level to conduct forest inventories and monitoring for sustainable utilization and management of forests. NFP will generate data and conduct analyses that will inform the formulation of Zambia's National REDD+ strategy, and better align the strategy with local and national needs as well as international standards. The project also provides capacity to district-based institutions, including the District Council, Forest Department, Zambia Wildlife Authority, Community Youth Concern and the District Women Association.</p>
Zambia	Community-based Forest-management Program (CFP)	Not Available	\$0	\$5,400,000	1-Feb-2014	<p>CFP is the flagship project for USAID/Zambia's GCC program and designed to exemplify the Government of Zambia's REDD+ strategy by establishing the largest REDD+ program in Zambia, primarily in the Eastern Province and potentially bordering regions. The major three objectives of CFP are: i) To reduce emissions from deforestation through community and performance based participatory natural resource management; ii) To reduce poverty through the development and scaling up of sustainable community based livelihoods and forest based enterprises; and iii) To build local and national capacity of government and non-government stakeholders to implement REDD+ interventions. CFP is closely collaborating with the Forest Department, Zambia Wildlife Authority, traditional authorities and the local communities. Moreover, CFP funds are to enable a development organization or a private entity together to jumpstart a REDD+ program in Zambia by supplying \$14 million over five years with the expectation that the recipient and partners will continue operations for decades.</p>

Annex G: KII Instrument

The following questionnaire will be used for all field based and technical interviews. For countries with a complex mix of clean energy and sustainable landscapes funding a matrix may be completed for each sector.

EC-LEDS Process Questionnaire and Matrix

Ask about each of the following steps in the LEDS process. For each step, please identify relevant EC-LEDS interventions and any related country actions. Trace forward from intervention to action and/or backwards from action to intervention. Ask about other interventions that may have contributed to the impetus for the country action to identify the extent to which EC-LEDS made the decisive contribution. Rate the degree to which the LEDS step has been completed and describe the contribution made by the EC-LEDS program to progress on each step.

LEDS Steps	EC-LEDS Interventions	Country Action/Uptake	EC-LEDS Contribution	R ¹⁰⁸
1. Creation of institutional and management arrangements				
2. Development of GHG inventories				
3. Prioritization of mitigation efforts, including BAU projections and INDC submission				
4. Development of specific action plans (national, sub-national, sectoral)				
5. Implementation of action plans, incl. demos				
6. Supporting policies and regulations				
7. Finance for implementation /benefit sharing				
8. Monitoring, reporting, verification				

9. What is the current or expected future impact of EC-LEDS on GHG emissions in this country?
10. How effective was the whole-of-government approach for advancing the LEDS process in this country on the USG side, as well as the partner government side?
11. What are the key lessons learned from EC-LEDS programming in this country?
12. What should be future areas of focus of EC-LEDS programming in the next five years?
13. What do you think is the most significant change created by the program overall?

Supplemental Questions on UNFCCC contributions:

14. To what extent has the assistance provided by EC-LEDS increased your ability to engage in the UNFCCC process?
15. What are the factors that affect your willingness to engage in the UNFCCC process?
16. How much does capacity building from EC-LEDS affect your willingness to participate in UNFCCC processes?

¹⁰⁸ Rating of LEDS sub-component completion:
 1 = 0-10% of actions completed/started (initial actions undertaken)
 2 = 11-50% of process underway – modest progress
 3 = 51-89% of process underway – significant progress
 4 = 90-100% - process largely complete

Annex H: List of Key Informants

Name	Organization
US-BASED	
Kathryn Stratos	USAID/GCC
Kate Faulhaber	USAID/GCC
Collin Green	USAID/GCC
Evan Notman	USAID/GCC
Jen Leisch	USAID/GCC
Matt Ogonowski	USAID/GCC
Allen Eisendrath,	USAID/GCC (Office Director, E3/GCC)
Elizabeth (Liza) Cushion	USAID/LAC Bureau, Climate Change Advisor
Trigg Talley	US Department of State
Amanda Wheat	USAID
Liza Cushion	LAC Bureau - Mitigation POC
Todd Johnson	USAID/Asia Bureau
Muasami Desai	US EPA
Dan Bilello	US DOE / NREL
Alex Moad	USFS
Ashley Allen	US Department of State
Juliann Aukema	USAID/GCC/SL
Jayne Somers	Asia Bureau - CE
Jessica Rosen	LAC Bureau
Bill Breed	Technical Team Director
Ana Villegas	LAC Bureau
Edith McClintock	USAID
Sadie Cox	Colombia POC
Ricardo Bracho	Mexico POC
Kathleen Nawaz	India POC
Mark Jacobsen	Bangladesh POC
Carrie Thompson	USAID/GCC
Lucy Gibbon	Africa Bureau - Mitigation POC
Steve Burns	E&E Bureau - Mitigation POC
Jamila Amodeo	E&E Bureau - Mitigation POC
Noel Gurwick	GCC/SL
Juliann Aukema	GCC/SL
Jayne Sommers	Asia Bureau - CE
Jessica Rosen	LAC Bureau
Alex Apotsos	AFR Bureau
Laura Cornwell	Asia Bureau
Kristin Shouba	Foreign service - temporarily located with GCC
Jeff Haeni	Energy and Infrastructure (E&I Office)
Malawi	
David Chalmers	USAID
Madalitso Kaferawanthu	USAID
Ramzy Kanaan	PERFORM/COP
Blessings Mwale	PERFORM/DCOP
Alinafe Chibwana	PERFORM/REDD+ Technical Advisor
Peter Mkandawire	PERFORM/LED Manager
Peter Chilumanga	GOM/Department of Mines – Deputy Director
Ben Yassin	GOM/Environmental Affairs Department/ - GHG Inventory Team Chairperson
Dr Clement Chilima	GOM/Forestry Department - Director

Name	Organization
Holly Wagner Monster	US Department of State
William Mgoola	GOM/Department of National Parks and Wildlife – Assistant Director of Research and Development
Joseph Kalowekamo	GOM/Department of Energy – GHG Inventory POC
Colombia	
Danielle Spinard	USAID
Carolina Figueroa	USAID
Todd Hamner	USAID
Sandra Garavito Rojas	Low Carbon Resilient Development Project
Alexander Martinez Montero	National Planning Department Subdirector de Desarrollo Ambiental Sostenible
Michelle Cassal	BioREDD, Chemonics
Natalia Arango	Fondo Accion
Diana Marcela Vargas	MADS, ENREDD+, IDEAM
Laura Carolina	National Parks Authority (PNCC)
Danielle Spinard	USAID
Carolina Figueroa	USAID
Todd Hamner	USAID
Sandra Garavito Rojas	Low Carbon Resilient Development Project
Silvia Calderon	National Planning Department
Juan Andres Lopez Silva	BioREDD, Chemonics
Luke Durkin	Department of State, Environmental Officer
Natalia Arango	Fondo Accion
Elizabeth Valenzuela	Fondo Accion
Jose Luis Gomez	Fondo Accion
Enrique Diaz Gonzalez	Fondo Accion
Mauricio Salazar Giraldo	Fondo Accion
Rodrigo Suarez	Ministry of Environment and Sustainable Development
Maria Mercedes Abondano	FNDETER
Giussepe de Andreis	Ministry of Transportation
Juan Camilo Florentino	Ministry of Transportation
Jose Eddy Torres	CCEP
Juan Quiroga	CCEP
Maria Ochoa	CCEP
Sandra Garavito Rojas	LCRD
Andrea Maldonado	LCRD
Alonso Cardenas	Ministry of Housing, Cities and Territories
Javier Moreno	Ministry of Housing, Cities and Territories
Omar Franco	IDEAM
Edersson Cabrea	IDEAM
Gustavo Galindo	IDEAM
Diana Valencia	IDEAM
Gustavo Galindo	IDEAM
Clara Lamo	IDEAM
Ederrson Montenegro	IDEAM
Alexander Montero	IDEAM
Saralux Valbuena	IDEAM
Carlos Garcia Desmond	UPME
Alex Canas	Ministry of Mines and Energy
Hernando Garcia	Ministry of Mines and Energy
Raul Lancheros	Ministry of Mines and Energy
Daniel Medina	Ministry of Mines and Energy

Name	Organization
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John Hansen	USAID/Mission
Heather D'Agnes	USAID/Mission
Retno Setianingsih	Ministry of Agriculture
Jeff Luzar	USAID/Mission
Nassat	
Erik Steed	
Jai Nair	Chancery
Gordon Church	Chancery
Reed Merril	LESTARI
Nev Kemp	LESTARI
Asep Suwarna	ICED II
Syamsidar Thamarin	Bappenas
Pak Basah	Ministry of Forestry at Bappenas?
Nur Pamudji	UP3KN, MEMR
Anu Ramachandra	SLP
Pak Iman	SLP
Edi Setijawan	OJK
Philippines	
Leonila "Lily" Gutierrez	Energy Policy Specialist, USAID/Philippines/Environment Office
Jeremy Gustafson	USAID or DOS?
Dani Newcomb	Division Chief, USAID/Philippines/Environment Office
Ryan Shelby	Senior Energy Engineering Advisor, USAID/Philippines/Office of Energy and Infrastructure
Susan Brems	Mission Director, USAID/Philippines, Pacific Islands, and Mongolia
Clay W. Epperson	Acting Mission Director, USAID/Philippines/Office of the Director
Richard Blackwell	Environment, S&T, Health and Energy Officer, US Embassy/Economic Section
Maria "Bimbi" N. Villa	Environment, S&T, Health and Energy Specialist, US Embassy/Economic Section
Lisa S. Go	Chief Investment Specialist, DOE/Department of Energy/Investment Promotion Office, B-LEADERS
Efrain Laureano	B+WISER, COP (Chemonics)
Leandro V. Buendia	Project Coordinator, Regional Asia Program
Divina "Bang" Chingcuanco	B-LEADERS, COP
Josephine Mangila	LEAD Program/ Country Coordinator
Sandee Recabar	Climate Change Commission
Jose "Shaleh" Antonio	Senior Advisor, GIZ
Ferdinand Larona	Senior Advisor, Renewable Energy, GIZ
Michael Vemuri	Chief Advisor, Renewable Energy, GIZ
Joy Goco	Former, Climate Change Commission
Mexico	
Don McCubbin	USAID
Salvador Sánchez Colon	USAID
Santiago Creuheras	SENER
Ulla Blatt	Danish Energy Agency
Dr. Eduardo A Batllori Sampedro	Seduma
Oscar Vazquez	CDMX
Margaret Enis Spears	USAID
Ana Arrocha	MLED
Rane Cortez	MREDD

Name	Organization
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Victor Escalona	SEMARNAT
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Oliver Flores	SENER
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Dr. Claudia Octaviano	INECC
Miguel Gerardo Breceda Lapeyre	INECC
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Juan Manuel Diosdado	CESPEDES
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Rafael Flores	USFS
Andres III Sierra Gomea	Yucatan State
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Jeff Cernyar	CONAFOR
Enrique Serrano Galvés	CONAFOR
Francisco Quiroz	CONAFOR
Consuelo Figueroa Navarro	CONAFOR
Arturo García Tenorio	CONAFOR
Eder Larios Guzmán	CONAFOR
Raúl Hernández Franco	CONAFOR
Jorge Morfin	CONAFOR

Name	Organization
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José Manuel Canto	The Nature Conservancy MREDD+ Alliance
Carlos Alcerreca Aguirre	The Nature Conservancy MREDD+ Alliance
Juan Besabe	The Nature Conservancy MREDD+ Alliance
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Andres III Sierra Gómez	SEDUMA
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Vietnam	
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Đặng Quang Thuyen	Training and International Cooperation Department, Forest Inventory and Planning Institute (FIPI), MARD
Michael Ellis	USAID Vietnam Low Emission Energy Program (V-LEEP) / COP
Khuong Tran Chinh	USAID/Vietnam – Sustainable Landscapes
Tuong Do Duc	USAID/Vietnam – Clean Energy
Tạ Thị Thanh Hương	UNDP – Climate Change Policy Officer
Dr. Lai	UNDP – Policy Advisory Team
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Brian Bean	VFD/ Chief of Party
Mr. Nguyen Cong Thinh	GoV/Ministry of Construction/ Department of Science, Technology, and Environment, Deputy Director General
Dr. Hung	GoV/Ministry of Agriculture and Rural Developoment, Deputy Director
Dr. Pham Ngoc Mau	GoV/Ministry of Argiculture and Rural Development, Director of Bilateral Cooperation Division
Mr. Cuong	USAID/Silvacarbon, Program Coordinator
Nguyen Thi Dieu Trinh	GoV/Ministry of Planning and Investment/ Department of Science, Education, Natural Resources, and Environment, Senior Official

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