A Regional Review of Low Emission Plans, Development Strategies and Mitigation Activities in the Forest and Land Use Sectors

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The regional review was produced by the USAID Lowering Emissions in Asia's Forests (USAID LEAF) program and the United States Forest Services (USFS) International Program in support of USAID LEAF's efforts to identify regional best practice and progress towards a sustainable and financially viable Low Emission Development Strategy for the forestry and land use sector. The review considered achievements and implementations challenges in eight USAID sustainable landscape projects across Asia. Key findings and take home messages are presented for those implementing and supporting efforts to sustainably reducing emissions from the forest and land use sector.

This review is part of a broader collaboration between USAID LEAF and the USFS International Program to provide guidance and build capacity on low emission land use planning. Published work on low emission land use planning includes:

- A guidance document for practitioners;
- A case study from Lam Dong, Vietnam;
- Academic curricula (developed under the Regional Climate Change Curricula Development program); and
- A role play on low emission land use planning.

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Executive Summary

USAID and the governments of ten Asian countries are making significant investments in activities that are reducing GHG emissions from the Agriculture, Forestry and Other Land Use (AFOLU) sector, while promoting sustainable land management, improving livelihoods, and making ecosystems more resilient to climate change.

We examined eight USAID funded projects in ten Asia countries. The objectives of this regional review are to:

(1) measure progress towards funded low emission land use strategies, plans, and activities using the USAID LEAF low emission land use planning framework;[1]
(2) identify common factors that enhance progress and factors that hinder success; and
(3) document lessons learned and recommend actions that may enhance or strengthen regional efforts.

Our review develops a regional 'state-of-play' for low emission activities and strategies to improve understanding of low emission land use planning and to develop best practices for implementing integrated low emission land use plans that will assist sub-national and national governments in reaching country-specific GHG emission reduction targets in the AFOLU sector.

Key findings of this review include:

- The primary goal of most USAID-funded projects conducting low emission activities is accomplishing specific emission reduction targets. Conducting in-depth land use planning to meet sustainable social, economic, and environmental goals and objectives is secondary.
- Working across scales is challenging. Scaling-up local activities into larger frameworks is especially challenging and project timelines are seen as inhibiting long-term commitments.
- Lacking are incentives for governments to replicate and scale-up project-based efforts, invest in domestic finance, and establish broad coalitions of diverse stakeholders to regulate land and forest use to reduce GHG emissions. The establishment of land use policy and strong tenure rights are critical success factors for projects. The political will to make progress on these factors are lacking.
- Projects are quite successful at engaging stakeholders and initiating implementation activities at local levels but there is a lack of incentive for in-depth and sustained participation. There has been some success at making data available and transparent to all users, but the capacity to conduct analysis to convert those data into information upon which policy decisions can be made is limited.
- Direct drivers of forest land use change are well described, but the underlying causes of deforestation and forest degradation are not as well understood. Project activities are therefore not focused on structural change or deep governance reforms. There is also

[1] http://www.leafasia.org/library/guidance-low-emission-land-use-planning

considerable variation in application of change measures and accounting metrics for changes. Other relevant metrics besides GHG emissions, both within and outside the forest sector such as biodiversity, water quality and quantity, agricultural economic output are generally not well quantified.

- All projects are successfully establishing a Forest Reference Level but factors outside the forestry sector that influence a Business as Usual (BAU) future scenario are not well understood. Alternative scenario planning (i.e., in addition to a BAU) is not an 'accepted' tool/approach to complete land management planning in the region.
- Financing considerations are not influencing goals, objectives and expectations of the low emission land use planning process. The sustainability and longevity of financing after the projects are in question. While financing mechanisms exist, more effort is needed to apply these financing mechanisms to on-the-ground activities. The use of the voluntary carbon market is limited with other financing mechanisms being actively pursued.

Overall, results of this review indicate that there are markers towards large-scale progress across the region. In addition, successful small-scale low emission activities in these projects can guide future mainstreaming of low emission development within a larger planning framework. While, considerable challenges exist, all projects are demonstrating success in some low emission activities.

Most or all projects show some degree of success at setting goals and objectives, engaging stakeholders, establishing GHG forest Reference Levels, and setting up Monitoring and Evaluation frameworks. The common challenges involve acquiring data, building human and institutional capacity to convert that data into information, creating national frameworks for information, and financing the long-term implementation of low emission plans. Planning elements that are not widely considered across the region include: development of multiple future scenarios, integration of local-level outcomes into higher-level targets, and adoption of adaptive management philosophies to accommodate future social, economic, and environmental changes.

The current USAID-funded projects across the region demonstrate that success is achievable at a local level, even without commitment from higher levels of government. Effectively communicating local level project successes may convince decision-makers at provincial and national levels to pay more attention low emission land use planning activities. These local level successes may serve as selling points to scale-up project activities to jurisdictional land use planning that meets social, economic, and environmental goals and objectives.

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Acronyms

AFOLU	Agriculture, Forestry and Other Land Uses
B+WISER	USAID Philippines Biodiversity and Watersheds Improved for Stronger Economy and Ecosystem Resilience
BAU	Business As Usual
CREL	USAID Climate-Resilient Ecosystems and Livelihoods; Bangladesh
Forest-PLUS	USAID Forest Partnership for Land Use Science
GG	Green Growth
GHG	Greenhouse Gas
GIS	Geographic Information System
IFACS	USAID Indonesia Forest and Climate Support
IPCC	Intergovernmental Panel on Climate Change
LEAF	USAID Lowering Emissions in Asia's Forests
LEDS	Low Emission Development Strategies
LELUP	Low Emission Land Use Planning
M&E	Monitoring and Evaluation
PES	Payment for Ecosystem Services
PNG	Papua New Guinea
REDD+	Reduced Emissions from Deforestation and forest Degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries
RL	Reference Level
SEA	Strategic Environmental Assessment
SFB	USAID Cambodia Supporting Forests and Biodiversity
SMART	Spatial Monitoring and Resource Tool
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
USFS	United States Forest Service
VCM	Voluntary Carbon Market
VFD	USAID Vietnam Forests and Delta
WWF	World Wildlife Fund

Introduction

This report examines eight USAID-funded climate change mitigation projects across Asia. All of the projects have targets for reducing or avoiding GHG emission from the forestry sector, improving livelihoods, and enhancing land and natural resource management. The report is based on a review of the projects and uses the USAID Lowering Emissions in Asia's Forests (USAID LEAF) low emission land use planning (LELUP) framework.[2] The framework provides the analytical basis for assessing progress in developing and implementing low emission land use plans for the projects. The report aims to articulate what planners, practitioners, and managers currently implementing low emission land use plans and activities see as best practices. Articulating these best practices will assist national and sub-national agencies in achieving national Greenhouse Gas (GHG) emission reduction targets in the Agriculture, Forestry, and Other Land Use (AFOLU) sector. Finally, the report will highlight common successes and challenges in implementing low emission land use plans.

The analysis of the eight USAID-funded climate change mitigation projects in the Asia region reveals several Key Findings and Take Home Messages associated with the five steps of the USAID LEAF low emission land use planning framework:

(1) Understanding the Enabling Environment
(2) Assessment of Historic and Current Conditions
(3) Analysis of Future Scenarios
(4) Negotiation and Prioritization of Implementation Activities
(5) Monitoring, Evaluation, and Adaptive Management

It should be noted that this review does not evaluate the success of any of the eight USAID-funded projects, but rather simply aims to explore what makes a successful low emission land use plan and uncover best practices in order to improve future projects.

What is Low Emission Land Use Planning?

While terminology differs across the USAID projects reviewed, all projects have targets to reduce GHG emissions, improve community livelihood outcomes, and enhance land and forest management practices (see Table 1). Much of the terminology comes from REDD+, however projects use specific actions and terminology that best matches local context or best describes project goals. For instance, VFD project in Vietnam is working towards a green growth strategy; IFACS in Indonesia uses strategic and environmental assessments; The CREL project in Bangladesh and the B+WISER project in the Philippines both focus on community-based natural resource management. The commonality in project targets ensures that all projects touch on aspects of low emission land use planning. In order to avoid any confusion, this section summarizes some of the key terms that are associated with climate mitigation actions achieved through land use planning.

[2] http://www.leafasia.org/library/guidance-low-emission-land-use-planning

Land use planning in the context of development cooperation, is an iterative process based on dialogue among all stakeholders aiming to define sustainable land uses. The term, land use planning implies the actions necessary to implement and monitor progress toward the agreed land uses. The objective is to create the preconditions required to achieve a type of land use that is environmentally sustainable, socially just, desirable, and economically sound[3].

Low Emission Development Strategies (LEDS) are national strategic analysis and planning process covering all economic sectors for promoting economic growth while reducing long-term greenhouse gas emission trajectories[4]. LEDS are strategic frameworks, based on sound analytical foundations, that articulate actions, policies, programs, and implementation plans to promote economic growth in a way that lowers a country's greenhouse gas emissions. LEDS aim to create enabling environments in which dialogues between stakeholders define sustainable land based mitigation actions, where trade-offs are quantified and least cost consequences for societal development and livelihood needs are agreed. LEDS are voluntary and non-binding. Because each country has unique national circumstances and priorities, each country develops and drives its own LEDS strategy.

Green growth (GG) is becoming an attractive opportunity for countries around the world to achieve poverty reduction, environmental protection, resource efficiency and economic growth in an integrated way[5]. GG strategies generate policies and programs that deliver these goals simultaneously. They accelerate investment in resource efficient technologies and new industries, while managing costs and risks to domestic taxpayers, businesses, communities and consumers. GG strategies tend to be most effective where they link robust and credible planning, analysis, implementation, and monitoring processes in an iterative and reinforcing cycle with active stakeholder engagement.

The commonalities among the terms described above include:

- Sustainable land-based mitigation strategies, including sustainable land use and management, are core processes and are critical in achieving climate stability and maintaining resilience;
- A jurisdictional, landscape or regional approach acknowledges cross-sectoral influences;
- Multi-stakeholder approaches and efforts to bridge sectoral gaps;
- Alignment of policies, institutions and initiatives to enhance natural resource governance, including tenure security for traditional forest and land management stewards;
- The use of sound science and research to support the decision making process; and
- Participatory processes that empower local institutions and stakeholders to drive positive change.

[3] http://www.giz.de/expertise/downloads/Fachexpertise/giz2012-en-land-use-planning-manual.pdf
[4] http://lowemissionsasia.org/what-we-do/leds
[5] http://www.ggbp.org/

Building upon these three definitions and the commonalities between them defines **Low emission land use planning (LELUP)** as a systematic and iterative process aimed at creating an enabling environment in which dialogue between stakeholders can define sustainable land based mitigation actions and where trade-offs between economic development, livelihood needs and environmental protection are agreed. A LELUP articulates concrete actions, policies, programs and implementation plans to meet these objectives while providing a foundation for achieving long term, measurable greenhouse gas emissions reductions from the forest and land use sectors as compared to a business-as-usual development pathway.

Rationale, Context, and Process for this Report

The international and donor community supports the premise that a "low-carbon development strategy (is) indispensable to sustainable development."[6] International and donor organizations are supporting national-level strategies, landscape-level plans, and cross-sectoral planning efforts that are making meaningful and sustained GHG reductions from the AFOLU sector. Many national governments are similarly outlining policies to limit GHG emissions from the AFOLU sector. Specifically, they are designing and implementing activities to reduce emissions that are compatible with maintaining productivity and meeting other environmental goals. Significant investments are being made in specific emission reduction activities that are reducing GHG emissions while promoting sustainable land management, improving livelihoods, and making ecosystems more resilient to climate change. Effective planning also helps to ensure sustainable and properly functioning ecosystems that provide a variety of ecosystem services such as clean water, air, and biodiversity.

The goal of the regional review is identifying and documenting relevant low emission land use planning efforts across the region. Specific objectives include:

(1) measuring progress towards funded low emission land use strategies, plans, and activities using the USAID LEAF low emission land use planning framework (see Figure **1**),
(2) identifying common factors that enhance progress, and obstacles to success, and to document lessons learned and recommend actions that may enhance or strengthen regional efforts

By developing a regional 'state-of-play' for low emission strategies or activities, we hope to improve regional understanding of how to develop and implement integrated low emission land use plans and further support sub-national and national governments reach their GHG emission reduction targets from the AFOLU sector.

[6] Cancun Agreement, UNFCCC/CP/2010/7/Add.1

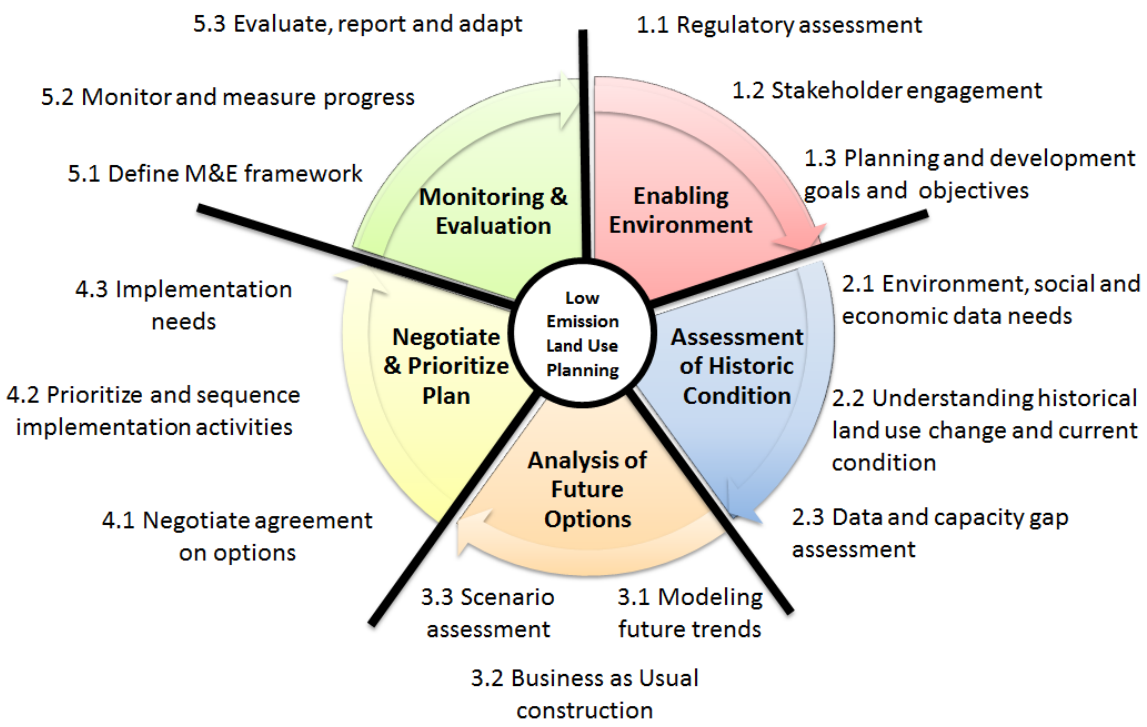


Figure 1: LEAF Low Emission Land Use Planning Framework

This review focuses on how USAID-funded low emission plans are developed and implemented in the agriculture and forestry sectors in Asia. The framework provides the analytical basis for assessing progress in developing and implementing funded low emission land use plans for eight USAID Asian projects that received sustainable landscapes funding and have a combination of targets to reduce or avoid GHG emission from the forestry sector, improve local livelihoods and enhance the management of land and natural resources. USAID sustainable landscapes funding supports countries working to slow, halt, or reverse deforestation. The funding is grounded in the United States REDD+ strategy and in USAID's climate change and development strategy, which includes support for forests and other landscapes. Both strategies emphasize the importance of readiness or capacity-building for REDD+[7].

The research for this review is based on phone interviews conducted with project staff in eight USAID sponsored projects across Asia. Interview questions (see Annex 1) are designed to assess progress of the project in the context of LEAF's LELUP guidance steps (see figure 1). In addition to helping to measure progress, interview questions were designed to elicit success stories and lessons learned.

[7] http://www.usaid.gov/sites/default/files/documents/1865/GCC_Sustainable_Landscapes_30oct13.pdf

Projects Interviewed

USAID funded programs and projects that are part of this review occur in 10 Asia countries (**Figure** 2) and include:

1. B+WISER – Philippines Biodiversity and Watersheds Improved for Stronger Economy and Ecosystem Resilience
2. CREL –Bangladesh Climate-Resilient Ecosystems and Livelihoods
3. Forest-PLUS –India Partnership For Land Use Science Program
4. Hariyo Ban- Nepal
5. IFACS - Indonesia Forest and Climate Support
6. LEAF – Lowering Emissions in Asia's Forests; 4 priority landscapes in Vietnam, Papua New Guinea, Laos, and Thailand
7. SFB – Cambodia Supporting Forests and Biodiversity
8. VFD – Vietnam Forests and Delta

These projects varied in scope, objectives, and implementation timeframe (Table 1). However, all projects share the goal of improving forest management and mitigating climate change. Many of the projects are also striving to reduce emissions from the agriculture sector. A summary of each of the projects is provided in Annex 2.

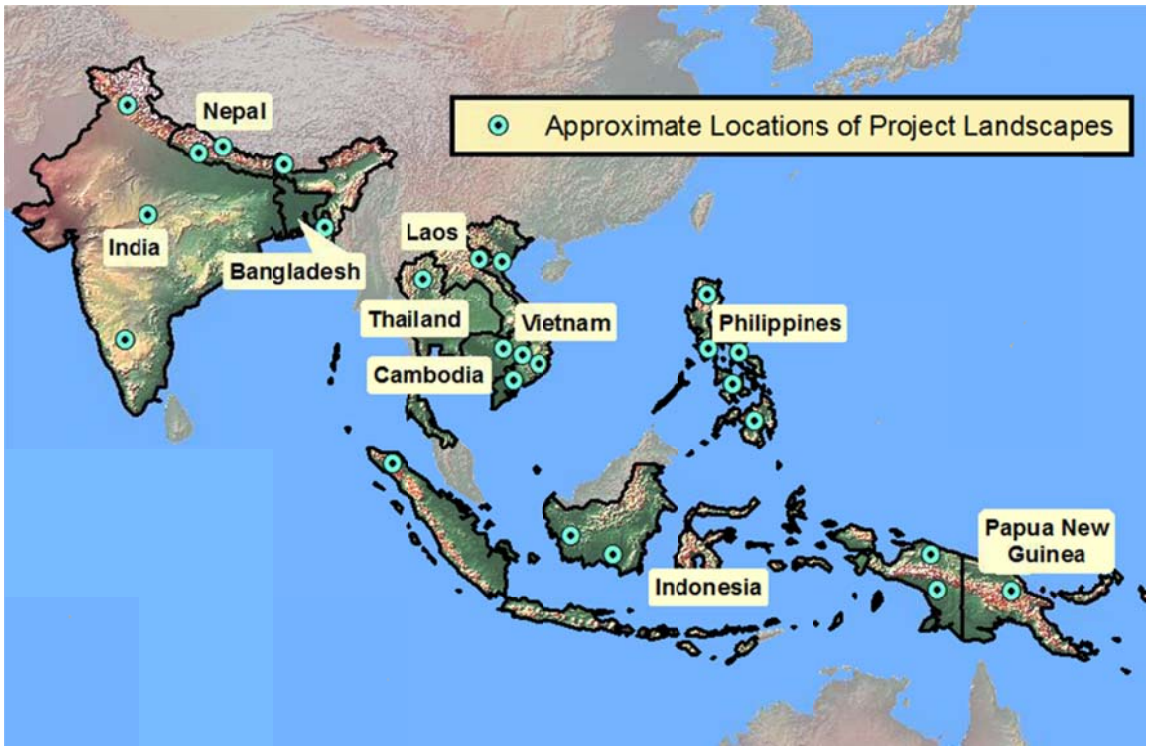


Figure 2: Countries and landscapes included in this review

Table 1: Project Targets

Country	Project	Total project area (hectares)	Emission reduction goal (tons CO2)	Area under improved management (hectares)	Livelihoods improved
Bangladesh	CREL	680,000	1,2 million	1 million	500,000 people
Cambodia	SFB	1 million	1.5 million	900,000	95,000 people
India	Forest-PLUS	4 million	2% above baseline (sequestration target)	350,000	No direct impact
Indonesia	IFACS	11 million	50% reduction in emissions compared to project baseline	3.5 million	10,000 people
Nepal	Hariyo Ban	1.3 million	1 million	500,000	180,000 people
Philippines	B-WISER	780,000	5.3 million	780,000	29,000 people
Vietnam	VFD	1.3 million	2 million	820,000	10,000 households
Laos, Malaysia, PNG, Thailand, Vietnam	USAID LEAF	4 million	8 million	1 million	1,000 households

Regional State of Play

To develop a regional overview, each project was assigned a subjective value for each of the 15 USAID LEAF planning sub-steps. This value is not meant to quantitatively evaluate or compare individual projects, but to qualitatively compile the current status of how all projects are making progress or achieving a particular step in the low emission land use planning framework. Each project was assigned a value to assess their current progress according to the following scale:

- Fully Successful
- Partially Successful
- Challenged
- Not Considered or Not Relevant

Table 2 below shows shaded 'volume' by USAID LEAF planning sub-step of all eight projects. This is depicted by stacking 'scores' for all eight projects to get a combined measure of progress towards the planning sub-step. For example, since all eight projects are "Fully Successful" on "Understanding Land Use Change", the entire matrix is shaded in dark blue. Conversely, for Data and Capacity Gap Assessment, five projects scored "Partially Successful" and three projects scored "Challenged". For Scenario Development, one project scored "Fully Successful", one project scored "Partially Successful", one project scored "Challenged", and the rest scored "Not Considered or Not Relevant". It is important to note that the first sub-step within the enabling environment ("Regulatory Assessment") includes jurisdictional policy and land tenure. Although most projects

have a stated goal to positively influence policy and the regulatory settings, national policies and land tenure systems do influence project implementation and the potential success of each of the sub-steps.

Table 2: Qualitative assessment of progress towards achieving effective low emission land use plans or activities in the eight USAID funded projects in the Asia Region.

Planning Step	Planning Sub-step	Progress Towards Achieving this Sub-Step Across Eight Projects							
		1	2	3	4	5	6	7	8
Understanding the Enabling Environment	Regulatory Assessment*	Challenged	Challenged	Challenged	Challenged	Challenged	Challenged	Challenged	Challenged
	Stakeholder Engagement	Fully Successful	Fully Successful	Fully Successful	Fully Successful	Fully Successful	Challenged	Challenged	Challenged
	Goals and Objectives	Fully Successful	Fully Successful	Fully Successful	Fully Successful	Fully Successful	Fully Successful	Fully Successful	Fully Successful
Historic and Current Land Use Change and Assessment	Data Needs	Challenged	Challenged	Challenged	Challenged	Fully Successful	Fully Successful	Fully Successful	Fully Successful
	Understanding Land Use Change	Fully Successful	Fully Successful	Fully Successful	Fully Successful	Fully Successful	Fully Successful	Fully Successful	Fully Successful
	Data and Capacity Gap Assessment	Challenged	Challenged	Challenged	Challenged	Challenged	Challenged	Fully Successful	Fully Successful
Analysis of Future Options	Modeling Future Trends	Fully Successful	Fully Successful	Challenged	Challenged	Challenged	Challenged	Fully Successful	Fully Successful
	BAU/RL	Fully Successful	Fully Successful	Fully Successful	Fully Successful	Challenged	Challenged	Challenged	Challenged
	Scenario Assessment	Fully Successful	Challenged	Challenged	Fully Successful	Fully Successful	Fully Successful	Fully Successful	Fully Successful
Negotiate and Prioritize Low Emission Activities	Negotiate Options	Challenged	Challenged	Challenged	Challenged	Fully Successful	Fully Successful	Fully Successful	Fully Successful
	Prioritization and Sequencing	Fully Successful	Fully Successful	Fully Successful	Challenged	Challenged	Challenged	Challenged	Challenged
	Implementation Needs	Fully Successful	Challenged	Challenged	Challenged	Challenged	Challenged	Challenged	Challenged
Monitoring, Evaluation and Adaptive Management	Define M&E Framework	Fully Successful	Fully Successful	Fully Successful	Fully Successful	Fully Successful	Fully Successful	Fully Successful	Fully Successful
	Monitor, Measure, & Evaluate	Challenged	Challenged	Challenged	Challenged	Challenged	Fully Successful	Fully Successful	Fully Successful
	Adaptive Management	Challenged	Fully Successful	Fully Successful	Fully Successful	Fully Successful	Fully Successful	Fully Successful	Fully Successful

Note: In addition to projects positively influencing policy, current jurisdictional frameworks and land tenure status can influence implementation activities within the project's country.

Fully Successful
Partially Successful
Challenged

Progress Toward Successful LELUP

Overall Generalizations

Specific best practices, key findings, and take home messages by the USAID LELUP framework steps are described in the following pages. In general;

- Projects are quite successful at engaging stakeholders and implementing activities initiated at local levels. However, there is no example of a fully funded, multi-disciplinary low emission land use plan implemented in the region funded by the USAID Sustainable Landscapes program. In general, most USAID-funded projects in the region are conducting low emission activities to accomplish specific targets rather than conducting holistic land use planning aimed at broad social, economic and ecological goals, including emission reductions.

- Projects in the region are working at a variety of scales. Working across scales is challenging. One project manager explained that scaling up was among the biggest challenges: "*USAID money is good for catalysing but not for institutionalizing.*" Many projects are working at the district and provincial levels without frameworks at the national level. While these district and provincial level activities build capacity, without national level policy direction, the projects struggle to gain 'traction' and scale up actions to mitigate threats at the larger landscape scale. Conversely, in some countries, planning is very top-down with little engagement of stakeholders at local levels.

- All of the project managers viewed tight project timelines as inhibiting long-term commitments and positive change. In the words of one interviewee; "*ours is a [several] year project in a rural environment with conservative cultures. There is little appetite for risk to explore outside normal boundaries.*" Many projects are working in the "*real heart of the policy work"* but those policy challenges take time to affect. Other project managers noted that USAID wants LEDS activities that are different and progressive but *"a 4-5 time year period doesn't lend itself to a LEDS process."*

- Governments lack Incentives to replicate and scale-up project-based efforts. The promise of results-based finance has not been realized. While many governments make policy statements, there is little domestic finance being directed towards establishing broad coalitions, of often conflicting stakeholders, to zone, regulate and assess land and forest to reduce GHG emissions.

The results of this review indicate that there is progress in low emission land use planning across the region including improving stakeholder engagement, building human and institutional capacity, understanding and quantifying land use change, establishing GHG Reference Levels, and developing rigorous monitoring frameworks. In addition, successful small-scale low emission activities in these projects guide the way forward towards mainstreaming low emission development within a larger planning framework. Considerable challenges still exist but all projects are showing successes in certain aspects of low emission activities.

Step 1 - Understanding the Enabling Environment

Best Practice

1. Document the jurisdictional and sectorial planning frameworks including laws, regulations, and land tenure rights that guide low emission land use plans.
2. Identify all stakeholders in the planning process including those impacted by the plan and those vulnerable groups at risk from implementation of the plan.
3. Determine the timeframe of the low emission land use plan and through a collaborative process, have stakeholders agree on the vision, goals and objectives of the plan (including both carbon and non-carbon benefits).

Key Findings

Stable land use policy and secure tenure rights are critical success factors for all projects, but significant political will is required.

All countries have complex, multi-layered land use and forest management policy and regulations. These national policies and regulations generally give authority for plan development and allow a local forest management entity to develop land use plans. Still needed is the political will at all levels of government for effective management. Without political will at all levels of government, especially with some balance of top-down leadership and local empowerment, effective and successful planning fails.

In many cases, local entities have limited capacity to influence national or provincial policy. In several countries including the Philippines, decentralization and devolution of the government over the past ten years has given the Department of Natural Resources and Environment more functions and power. Institutional bottlenecks, however, hinder scaling up of successful practices. In Indonesia has demonstrated the, political will at multiple-levels with the establishment of a National Spatial Planning Law and the development of tiered Provincial and District Spatial Plans.. The downside of this model is that districts must wait to plan until provincial plans are approved to start planning activities at the district level. In addition, the goals and objectives of local stakeholders may not match the constraints established by those higher level plans.

In countries existing jurisdictional frameworks and regulatory environments for planning, government and civil society have been included at multiple levels. India is experiencing success in fostering political will after Forest-PLUS overcame some initial scepticism. Now the State Forest Departments that are partnering with Forest-PLUS are taking over best practices established by the project and spending money to expand demonstrations to other districts and possibly over the entire state.

Engagement of stakeholders at local levels for local plans has been extremely successful.

Stakeholder engagement is a known success factor. In most cases, local stakeholders have received education on climate change and the value of improved forest management. Although the capacity of stakeholders to understand data is an issue, good stakeholder engagement is more rooted in personal relationships than it is in the publishing of data, facts, and information. For example, in Indonesia, successful stakeholder engagement has been established through existing religious forums through Muslim Leaders in Aceh Province and the Church in Papua. Another excellent model for stakeholder engagement at local levels is the forum design of the SFB project in Cambodia. Under this model, there is good dialogue between stakeholders and economic land concessionaires to improve forest management. Commune-level elected officials as well as Protected Area management committees are supportive of this process.

Incentives for in-depth and sustained stakeholder participation are lacking.

Although stakeholder engagement at a local level with specific forest management activities has been successful, the project goals and objectives are relatively short term (usually based on the projects time-line) with little time and resources dedicated to engaging a range of stakeholders in long term goals and objectives. In India, stakeholders are affected by the Forest Working Plan but the planning process is very top down and stakeholder's involvement in developing the working plans has been limited. Similarly, in Vietnam, large infrastructure projects (such as hydropower projects) are hard to fit into local land use planning processes as these decisions are top-down without local stakeholder engagement.

Private sector actors are often ignored or even intentionally excluded due to difficulties in reconciling project and commercial objectives; or forgotten due to little historical interaction. Where the private sector has been engaged however, generally it is at the end of the planning process, and not at the start. For example the USAID LEAF project has explored private sector engagement in LELUP's in Lam Dong Province, Vietnam and Madang Province, PNG. But the exploration of private sector engagement has been left toward the end of the planning cycle. This has meant the plan has generally had to be retro-actively revised to include the needs of this critical stakeholder, rather than ensuring the private sector's needs are incorporated at the very start or the planning process.

However, in-depth and sustained stakeholder engagement does appear to exist in those project areas where local forests have been designated as community managed areas. In Bangladesh and Nepal, the establishment of Community Based Organizations and Community Forest User Groups appear to have created a framework to reverse the decline of forest resources and address the livelihood needs of forest-dependent people.

Take Home Messages

- Weak governance, insecure or unknown land tenure rights, and the lack of political will are significant factors in challenging the success of projects. Although projects struggle to influence national government policy and regulations, projects do have a commitment to positively influence supportive policy, work to secure tenure rights, and foster political will of government stakeholders to create an enabling environment for low emission land use planning. It should also encourage stakeholder engagement at other levels; including those higher levels that influence plan direction, scope and scale.
- Without a clear and enabling environment, the project faces difficult challenges to develop a multi-level plan. This should not prevent practitioners from developing low emission strategies or implementing low emission activities, but expectations should be limited and successes will likely be primarily at the local level. If good examples can be realized at a local level, even without commitment from higher levels, these may act as a selling point to build up planning activities to larger scales once social, economic, and environmental benefits have been realized.
- Setting long term goals and objectives is important. Projects would benefit from dedicating significant time and time and resources to engage a wide range of stakeholders on a long-term basis to ensure that goals and objectives are being met over the life of the plan. Since low emission land use planning is an iterative process, goals and objectives should be revisited regularly throughout the process to ensure they are still relevant as ecological, societal, and economic changes occur over time.

Step 2 - Assessment of Historic and Current Conditions

Best Practice

1. Compile necessary data (relative to goals and objectives) to calculate greenhouse gas emissions and assess current condition of non-emission parameters (both environmental and socio-economic).
2. Determine drivers or causes of land use change, current resource condition, and historical emission trends.
3. Determine data gaps and also knowledge, skills, and capacity to analyze the data to inform the planning process.

Key Findings

Direct drivers of land use change tend to be well understood, but the underlying root causes are not as well defined.

Although the drivers of land use change are well articulated, the underlying causes are not as well defined. This gap leads to project activities that are focused on efforts to improve forest management and livelihood outcomes rather than on long-term structural change. This, in itself, is not a negative, but longevity of impact is questionable if the underlying root causes are not challenged, or at least recognized and with plans developed in accordance with this knowledge.

Accounting of change is varied. The development of deforestation metrics has been successful but degradation metrics are less so.

Although the drivers of land use change are well understood, there is variability across the region in how well land use change is measured. In general, this very important part of emission quantification is done well. A consistently missing piece, however, is that these assessment of historical trend do not often include factors that would normally be included in a true land use planning process such as poverty, water or biodiversity indicators. The reason for this may well be that most projects are implementing activities for which the goal may be to reduce emissions but they are not necessarily following a 'traditional' land use planning process.

There are a variety of analytical techniques being employed to help quantify landscape change. Highly sophisticated two-stage sampling techniques that combine remote sensing technologies with field measurement are being used by Forest-PLUS and CREL in India and Bangladesh with the assistance of United States Universities. Other projects and countries including LEAF in PNG, Laos, Thailand and Vietnam (where an resource intensive historical assessment of emissions was also completed) and SFB in Cambodia are using less expensive, freely available datasets such as the Hansen Forest Cover Change data[8] and emissions calculations using the USAID AFOLU Calculator[9].

While these technologies are effective at capturing dramatic change, much of the drivers of land use change are less dramatic and occur across time and space; which makes them much more difficult to quantify with remote sensing methods. For example, small-scale forest degradation activities such as charcoal production cannot be detected with satellite imagery and the only ways to quantify these effects is through inventory and survey method which can be very time consuming and expensive.

[8] http://www.sciencemag.org/content/342/6160/850.full?ijkey=qi7xw32vGj1mc&keytype=ref&siteid=sci
[9] http://www.afolucarbon.org

Other metrics, both within and outside the forest sector, are generally not quantified; e.g., biodiversity, water quality and quantity, agricultural economic output, etc. Data and information needs assessment has generally not been completed early in the project and data needs are usually considered on an ad-hoc and ongoing basis.

It appears that much of the analysis of historic conditions across the region is geared towards producing historic rates of greenhouse gas emissions. It is not always apparent that the data collected and analysed is what is needed for the current planning requirements (if any). None of the projects that we interviewed went through an information needs assessment based on regulatory requirements or expected outcomes of the planning process such as metrics for social, economic, and biodiversity values. However, the IFACS project in Indonesia did perform a Strategic Environmental Assessment as part of their planning process and it was an important tool for them to qualify existing social, economic, and environmental current condition through a multi-disciplinary stakeholder consultation process.

There has been some success at making data available and transparent to all users.

Data sharing and access to current and comprehensive data continues to be a challenge. The lack of any type of clearinghouse for environmental and social/economic data can have significant impacts in trying to construct a comprehensive view across sectors. Traditionally, data and information has been associated with power and wealth. However, as data becomes more accessible, it is being utilized with surprising enlightenment. After viewing satellite imagery, a District Head in Indonesia noted that he never imagined seeing his district from any other perspective than a boat or vehicle.

The capacity to conducts analysis to convert those data into information upon which policy decisions are made is limited.

In some situations, stakeholders have the capacity to analyse and understand data (e.g., India, Bangladesh). Oftentimes however, because of limited stakeholder capacity, the assessment's analytical results can be difficult to interpret. The easiest solution to this challenge is not to try to significantly increase capacity but to further refine the data synthesis to produce information that's relevant for those stakeholders. Sometimes the best understanding and 'buy-in' from stakeholders is based more on the 'Why' than the 'What'. A good example is the story-books and web-pages produced by the IFACS project in Indonesia[10] .

[10] http://www.ifacs.or.id/climate-change-forests-and-us/

Take Home Messages

- Incomplete assessment of the underlying causes of forest destruction limits efforts to effect structural change. Longevity of impact is questionable if the underlying root causes are not challenged, or at least recognised and with plans developed in accordance with this knowledge.
- Time, resources, capacity, government direction and data availability determine what analytical techniques to use is time. Highly sophisticated systems are taking 2-3 years to develop and are resource intensive with considerable investment in capacity building. If done well, sophisticated systems could help mainstream this practice. However, if time is limiting, global data sets are available that are providing excellent first order estimates.
- A Strategic Environmental Assessment or other multi-criteria analysis tools (i.e. Poverty and Social Impact Assessment[11]) is a useful way to facilitate a multi-disciplinary stakeholder process to evaluate current environmental, social, and economic conditions.
- Data by itself is not information; data requires synthesis, analysis, and interpretation to make it accessible to others.

Step 3 - Analysis of Future Scenarios

Best Practice

1. Determine the most appropriate method to project greenhouse gas emissions, socio-economic, and environmental parameters into the future.
2. Establish Business as Usual (BAU) baselines upon which future scenarios can be compared.
3. Develop future scenarios and establish criteria for which the benefits and risks of each scenario can be assessed.

Key Findings

The establishment of a Reference Level is a critical step toward success across the projects. But factors outside the forestry sector that influence BAU are not particularly well understood. Lack of consultation with other sectors is limiting determination of future options.

LELUP requires some quantification of baselines and a BAU scenario and most projects are actively pursuing this step of the planning cycle. The complexity of what is being accomplished is entirely based on capacity, scale, and objectives of the project. There are challenges with data acquisition and analytic approach but all projects are taking these challenges in stride. Projects are making progress with the resources available to them.

[11] http://go.worldbank.org/OSPTUYMV60

An example of a very sophisticated technical system for establishment of a Reference Level (RL) and BAU scenario is in India where they are using universities to more effectively measure where forest carbon is and a national agency is responsible for reporting carbon stocks and emission levels. University of Michigan is also mapping out spatial distribution of carbon.

The USAID LEAF project provides examples of both sophisticated and relatively basic approaches. In Lam Dong Province, Vietnam USAID LEAF supported a process to assess historical land use change from 1990-2010. The approach combined a sophisticated time series assessment to collect activity data, assessment of national forest inventory data to develop emission factors and a policy approach to eventually set an agreed forest RL, all compliant with UNFCCC and IPCC guidance. Building from a relatively low base of understanding, the process took over two years to complete the analysis and to build substantial capacity and knowledge within government agencies.

In Madang Province, PNG, global data sets were used to estimate both activity data (the University of Maryland Global Forest Cover Change data) and emission factors (global forest carbon stocks published by Saatchi et al[12]). While building knowledge and understanding was central to this task, the level of sophistication in the data collection and analysis was relatively simple and a BAU scenario and alternative scenarios were proposed over a three month period. These two examples illustrate the adaptation of process to meet stakeholder needs and capacities to collect, analyse, and interpret data and information from multiple sources.

The integration or 'nesting' of project RLs is a consideration in the longevity of project developed RLs. Some countries are having difficulty with the establishment of RLs at national and sub-national levels. In Indonesia, no national RL has been set and without top down leadership on what the RL is and where the priorities are for achieving emission reduction targets, "you can't bottom-up your way to that" from a grassroots level.

Multiple alternative scenario planning is not an 'accepted' tool/approach to complete land management planning in the region.

There has been very limited discussion on different development pathways or a true evaluation of alternatives. Most projects are quantifying how their low emission activities will reduce emissions as compared to a BAU scenario but there is very little 'visioning' or discussion about what the landscape will look like in the future by stakeholders. The USAID LEAF project in Lam Dong Province, Vietnam moved through a complex scenario modelling process, but the top-down nature of planning, limited number of stakeholders involved, the

[12] Saatchi, S *et al*, 2011 Benchmark map of forest carbon stocks in tropical regions across three continents, Proceedings of the National Academy of Sciences of the United States of America, vol. 108 no. 24.

necessity of the work to be integrated into normal planning process (i.e., Forest Protection and Development Plan) meant future options were relatively 'conservative' and may not achieve structural change necessary to alter commercial agricultural drivers of unplanned/ad-hoc landscape change and forest conversion. In Madang Province, PNG USAID LEAF held a number of stakeholder meetings to consider future development pathways and assumptions underpinning these pathways. From this, BAU and three other scenarios were modelled and presented back to stakeholders. But again, no previous experience in scenario development and limited understanding and knowledge restricted the full potential of the exercise.

Large scale, structural changes are not being considered during planning processes but there is some small scale success focused on livelihoods. This is tending to limit the possibility of examining future options; which is further restricted through traditional top-down planning processes.

Most of the projects noted success with improving livelihoods. Hariyo Ban assisted households in acquiring biogas, which both improved livelihood and contributed to decreases in carbon emissions. For Hariyo Ban, scaling up was challenging. The project cannot serve all of the communities that want support and more consultation with local communities to identify their needs and incorporate them into the plan is needed. National land use plans need more community consultation.

Tenure arrangements, land zoning conflicts, and conflicting stakeholder incentives is generally not being fully explored in future options. Where future options are considered, this complexity is often ignored.

Several of the projects noted that lack of clarity surrounding land tenure hindered progress toward low emission land use planning. In Indonesia, for example, there are conflicts related to land tenure. Tenure rights in Cambodia are generally very weak and the rights of unregistered owners in Vietnam are insecure. The implications of insecure or confused land tenure, which is part of the enabling environment and often an institutional constraint to improving LELUP, have generally not been fully considered in future development pathways.

Take Home Messages

- Setting a BAU baseline is a critical element in a LELUP. But the complexity and sophistication of the BAU baseline must be matched to available resources and capacity at the project or jurisdictional level. Burdening poorly resourced government agencies with highly complex historical analysis and future predictions can be counterproductive.
- Scenario planning is an analytical tool that can help managers of low emission land use planning projects prepare for what lies ahead. Scenario planning provides a framework for developing a shared vision for the future by analyzing various forces including economic, environmental, and land use that affect carbon emissions. Scenario planning, which can be

done at the nationwide level or at smaller scales, tests various future alternatives that meet national, regional, and community needs.

- Scenario planning has the potential to assist low emission land use projects overcome some of their biggest challenges and bring more stakeholders into the planning process.
- A defining characteristic of successful public sector scenario planning is that it actively involves the public, the business community, and government officials on a broad scale, educating them about trends and trade-offs, and incorporating their values and ideas into future plans.

Step 4 - Negotiate and Prioritize Implementation Activities

Best Practice

1. Reach agreement on one scenario that is considered to provide the most benefits for the broadest range of stakeholders.
2. Agree on a realistic, sequenced, and time bound process for moving the agreement into an operational plan.
3. Determine implementation needs (technology, capacity) and costs and explore possible funding mechanisms.

Key Findings

Higher level planning goals are now articulating emission reduction targets and negotiation of actions to realise these outcomes at lower levels has had some success but can often be hindered by a lack of human and institutional capacity and understanding. However, negotiated outcomes at the local level are not well integrated into higher level planning processes, which tend to be top-down.

In discussions of successes, project managers note that the negotiations to achieve these outcomes at the community level were somewhat successful. On the other hand, these negotiations and related successes are often hindered by a lack of skills, knowledge, and general institutional capacity. Projects could also improve low emission land use planning by integrating negotiated outcomes at the local level into higher level planning process. Scenario planning described above could aid in this integration process. Higher-level decision makes ought to be involved in scenario planning, which may also help identify or clarify financing options beyond the term of the project. Financing beyond the term of the project is a challenge facing countries implementing low emission land use plans.

Implementation activities are progressing quite successfully in all projects.

Spending less time building a broad-level planning framework may be linked to success in implementing activities by allocating more resources to on-the-ground activities. Lack of a framework to guide project implementation activities, however, makes assessing the future cumulative effect of implementation activities and their potential to achieve higher-level goals and objectives more difficult.

Financing considerations are not influencing goals, objectives and expectations of the process.

Financing is generally considered toward the end of the process raising expectations that are difficult to realize at this late stage. In the B+WISER project, for example, financing was discussed in detail during the implementation step, as the project wished to incorporate financial planning right at the beginning of the project. In the Philippines, many different kinds of plans are developed (e.g., land use plans, forest plans, watershed management plans). But until costs, funding and payment mechanisms, and expected benefits are clarified, it is difficult to evaluate success.

The sustainability and longevity of financing after the project is still in question. Government and donor expectations for funding lowering emissions efforts are high. Meeting these expectations may pose challenges. Financing mechanisms do exist but more effort is need to facilitate applying these financing mechanisms to on-the-ground activities.

The full range of options hasn't been explored in detail. Some projects are targeting the Voluntary Carbon Market (VCM). However, in many areas, attracting financing options has been difficult. This can thereby affect the enthusiasm of planners for developing finance-based implementation activities. Some incentives are needed to consider financing early on both by planners and those clients willing to provide the financing.

Some projects are not looking at carbon financing as the most viable long-term solution for low emission development and are having success with other mechanisms such as payments for ecosystem services (PES), alternative livelihood programs, eco-tourism and biogas stoves to improve forest management and reduce carbon emissions.

An example of a project that is planning to utilize external carbon-based financing is Hariyo Ban in Nepal. Hariyo Ban is working with local communities to establish alternative energy programs to reduce impacts on local forests. The World Wildlife Fund (WWF) is selling verified emission reduction units from its biogas program (verified through the Gold Standard). Hariyo Ban is planning to replicate this model. Therefore Hariyo Ban is planning to sell credits to generate revenue for the community. For example, from the first Gold Standard Biogas project, WWF is getting about USD 60/biogas plant annually and if the 7,000 biogas units are generating about USD60/year to the household, this could potentially be a large revenue stream for the community.

Conversely, India's government does not want to depend on international transfers of carbon credits. Therefore, they have downplayed this mechanism and played up co-benefits (livelihoods, biodiversity, etc.). So, although Forest-PLUS has an obligation to set up 4 VCM projects and is moving in this direction, they are also working hard on communicating co-benefits.

An interesting note is the diversity of non-carbon financing occurring within different landscapes. Some projects are not looking at carbon financing as the most viable long-term solution for low emission development. These projects are exploring other mechanisms such as PES, alternative livelihood programs, and eco-tourism to reduce carbon emissions, improve forest and land management and increase livelihood opportunities for targeted communities. An example is Bangladesh where co-management arrangements are based on revenue from the government. In addition, fifty percent of the revenue earned from Protected Area entrance fees is shared with Community Based Organizations. This will help finance community development and protect the forest through patrolling. PES have also been demonstrated to be an effective financing tool in a number of countries including the Philippines and Vietnam.

Take Home Messages

- Consider financing options early in the process of developing goals and objectives with stakeholders
- Other non-carbon based financing options are available and should be considered by stakeholders

Step 5 - Monitoring, Evaluation, and Adaptive Management

Best Practice

1. Determine requirements for implementing a Monitoring and Evaluation (M&E) plan.
2. Implement the plan by continually monitoring, measuring, and periodically documenting and evaluating progress towards performance indicators aimed at achieving the plan's goals and objectives.
3. Ensure stakeholders have access to and understand monitoring results to adequately determine whether any changes need to be made in tactical implementation of the plan or even to the plans goals and objectives.

Key Findings

All projects have sophisticated <u>project</u> M&E frameworks but these frameworks tend to override or dictate the planning direction rather than vice-versa.

USAID's M&E systems for these projects seem to drive the project or plan's M&E strategy. This can seem backwards at times when it may be most beneficial to determine metrics for success based on the goals and objectives of the stakeholders (or 'clients') of the low emission land use plan being developed.

Government systems for M&E are often inadequate or limited in measuring a range of indicators leading to a challenge for projects to integrate their project M&E frameworks into national systems.

The CREL project in Bangladesh is developing robust biophysical baseline data to quantify change into the future using satellite imagery, ground based forest inventory, and proxies. There is still a need to make these data useful for local level decisions. Conversely, the IFACS projects in Indonesia have strict indicators at the project-level but lack a larger monitoring framework to feed this information into.

In India, there is no systematic M&E plan that a State Forest Department has put in place. Forest-PLUS is putting a lot of effort into forest data systems where local front line forest workers are using smart phone applications to collect data on local forest conditions. Data is uploaded into remote server/cloud servers which are then analyzed. Outcomes are passed back to local communities. Transferring these baseline data and monitoring systems into a national M&E system will benefit the project.

For those projects utilizing REDD+ to achieve their low emission goals, GHG measuring and monitoring guidance and processes have been established through the UNFCCC and IPCC. The USAID LEAF work in Lam Dong, Vietnam is fully compliant with this guidance and integrated into emerging national systems (particularly the National Forest Inventory). But there is also a cost involved. Development of REDD+ mechanisms that are compliant with international guidance is costly, resource intensive and places new demands on national systems that are currently hard to justify without committed funding. Due to this, projects such as IFACS have moved away from rigorous and sophisticated measurement, reporting and verification systems towards simple measuring systems (i.e. the USAID Carbon Calculator) and investing the 'savings' into mitigation and community engagement actions.

There appears to be limited stakeholder involvement in setting indicators for M&E frameworks and projects would benefit from environmental, economic, and social indicators that local stakeholders can measure.

Social and economic functions are important considerations, especially when improving livelihoods is a major goal and objective of many of these projects. However, there have been very few social and economic indicators established in M&E frameworks to evaluate success and little work is being accomplished in this sphere to expand the influence of those metrics in monitoring frameworks. An exception might be in the Philippines where B+WISER is looking at modifying the Spatial Monitoring and Resource Tool (SMART[13]) to make it more locally appropriate to include other landscape indicators and link between biodiversity and other ecosystem services. Monitoring for PES projects has also been challenging. Payments have been made but it is not clear whether ecosystem services are being maintained. The VFD project in Vietnam and B+WISER in the Philippines are looking at how to develop simple methods for PES monitoring that can be explored and up-scaled.

USAID M&E project frameworks have socio-economic indicators for livelihoods and biophysical indictors for areas under improved management. However, these are not translated into local indicators that local stakeholders can measure themselves. Since it is project driven, there is no translation into government systems that will allow longevity.

Adaptive Management, like alternative scenario is a novel concept in low emission planning and has not been integrated into planning processes in the region.

An exception to the lack of adaptive management may be with the use of the Strategic Environmental Assessment – Low Emission Development Strategies (SEA-LEDS) initiated by the IFACS project in Indonesia. These documents clearly state that they should be viewed as "living documents" and the starting points for improved spatial planning and land use management at the district level. District governments, in consultation with stakeholders, can and should revise them as necessary depending on future circumstances[14].

Take Home Messages

- M&E metrics should be based on the goals and objectives of the low emission land use plan being developed; as agreed through a multi-stakeholder process. But this is often difficult within project constraints and imposed indicators.
- Social and economic indicators need to play larger roles in M&E frameworks, especially if improving livelihoods is a project goal.
- M&E metrics for forest carbon monitoring are well established and there are a variety of tools and processes available depending on time, resources, and capacity for implementation.

[13] http://smartconservationtools.org/

[14] SEA-LEDS Technical Briefing: http://www.ifacs.or.id/wp-content/uploads/2015/pdf/Lessons_Learned_Technical_Briefing_SEA-LEDS.pdf

Conclusion

This analysis highlights, across all projects, successful small-scale, low emission activities and reveals signs of success in scaling-up toward larger-scale landscape and national efforts. While considerable challenges exist, the projects demonstrate successes and key findings and take home messages do point the way towards mainstreaming low emission development within a larger planning framework.

All projects demonstrated success in setting goals and objectives, engaging stakeholders, establishing GHG RLs, and setting up M&E frameworks. The common challenges involve acquiring data, building human and institutional capacity to convert that data into information, integrating into national frameworks (where they exist), and long-term financing of project activities. Planning elements that are not widely considered across the region include: development of multiple future scenarios, integration of local-level outcomes into higher-level targets, and adoption of an adaptive management philosophy to accommodate unforeseen social, economic, or environmental changes in the future.

The current USAID-funded projects across the region show that success is possible at the local level, even without commitment from higher levels of government. As a result, these local level successes should be promoted and leveraged to further build planning activities to larger scales as social, economic, and environmental benefits are realized.

Annex 1 – Interview Questions

1) Can you briefly describe the landscape your project is working in (size, forest/agricultural composition) and what the goals for this project are?

   Follow-up:

   - Does this include lowering emissions from the agriculture or forestry sectors?
   - What is the project timeframe?
   - Does XXXX have regulations or laws that support this type of planning?

2) Please describe the processes your project has used to convene or organize stakeholders who are involved in your project and what are their current interests in the project outcomes?

   Follow-up:

   - Who owns the land and are there conflicts or disputes over ownership?
   - Are there different rights for Forest land versus Agricultural land?

3) Can you describe the drivers of land use change within your project area?

   Follow-up:

   - In understanding drivers of land use change, is this allowing the project and its stakeholders to better define and plan for more 'sustainable land use'
   - Do data exist to quantify that change?
   - Do stakeholders H/I capacity to analyze or understand that data?

4) Have GHG emissions from LUC been estimated and how is this being factored into your landscape plan(s)?

   Follow-up:

   - Has a BAU/RL been set?
   - Have low emission alternatives been developed?
   - How were those compared?
   - Did stakeholders negotiate for a preferred alternative?

5) What specific policies or mitigation actions are being implemented to reduce GHG as a result of your land use planning efforts?

6) Will AFOLU low emissions activities initiated by the project be financed beyond the term of the project and if so, how?

7) Has a Monitoring and Evaluation plan been developed?

   Follow-up:

   - What indicators does it measure and monitor?
   - Are those directly related to the plans goals and objectives?

- Who is responsible for M&E?

8) What has been the project's biggest land use planning Successes?

   Follow-up:

   - Conversely, what has been the project's biggest land use planning Challenges?

9) If you were to start your low emission land use planning again, what would you do differently?

   Follow-up:

   - What do you think are best practices in low emission land use planning?

10) Wrap-up

   - Do you know of other projects in your country or other parts of Asia that are successful and innovative? Would exploring these projects add value to a regional review of LELUP?
   - Is it also OK to email you with our notes to ensure we interpreted things correctly on this call or to clarify any points that we might have missed?

Annex 2 – An Overview of Projects Interviewed

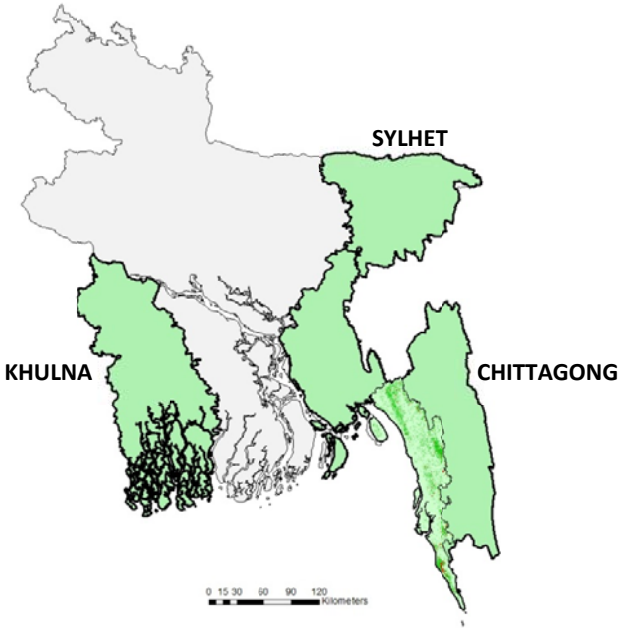
The Climate-Resilient Ecosystems and Livelihoods (CREL) program plans to address four main development issues: (1) conserve important landmarks within wetlands or forests. For instance, it will preserve the Sundarbans, the last location of the Bangladesh tiger; (2) create new opportunities for locals around the protected wetlands or forests, particularly economic opportunities; (3) national policies that deal with resources, forests, and fisheries will be addressed and potentially changed to better protect the environment; and (4) climate change's effects on the wetlands and forests will be considered in order to better protect the areas.

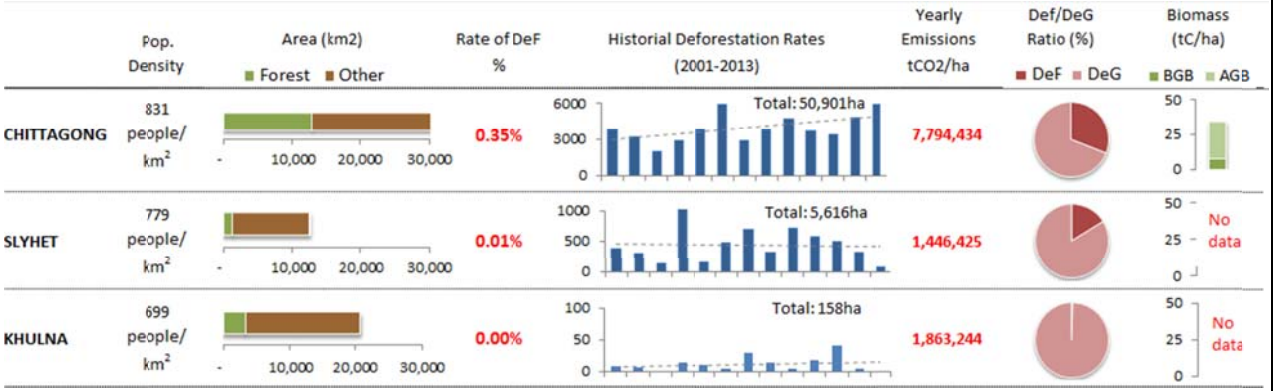
Project locations: CREL works in the northeast haors and forests (in Srimongol and Sylhet Province), the Southwest focused on the Sundarbans (based in Khulna Province), and the Southeast forests and coastal wetlands (sub-divided between bases in Chittagong Province and Cox's Bazar). In total, 22 Forest Protected Areas are targeted covering 600,000 hectares.

Drivers of forest change: Population pressure is driving extensive degradation of Bangladesh forests. Fuelwood for cooking, charcoal, brick kilns; illegal logging; grazing; and harvesting of poles are all driving degradation.

Challenges: Constant and high biophysical pressure on forests from surrounding community for immediate livelihood needs; stabilizing the degradation of the resource base; different stakeholder expectations of co-management; uncertainty in securing sustainable finance for protected areas; land and resource conflicts; time taken to enact supportive co-management (particularly where financing is uncertain).

Project Responses: Working with stakeholders on building capacity, regulatory framework and financing structures for co-management of protected areas.





Source: http://nacom.org/Ongoing-Project-01

The **Biodiversity and Watersheds Improved for Stronger Economy and Ecosystem Resilience (B+WISER)** project in the Philippines aims to contribute to improving natural and environmental resource management and reducing risks from disasters. It aims to (1) Conserve biodiversity in forest areas; (2) Reduce forest degradation in 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.

Project locations: 7 key biodiversity areas spread across 780,000 hectares. The forests are highly diverse, but generally degraded with some patches of intact, high biodiversity forests. All land is owned by the Government with use rights allocated to communities and other stakeholders.

Drivers of forest change: Small, creeping conversion of forest to agricultural and urban lands, with some small scale conversions due to mining. Underlying driver is population pressure with 30% of the population reliant on forest lands.

Challenges: Diversity and complexity of stakeholders; localized security problems; limited investment potential to scale-up and replicate; capacity of local stakeholders; uncertain political context (i.e. forthcoming elections).

Project Responses:

- Restoration of degraded forests eco-systems and forest protection through land use planning.
- Expanding and strengthening PES through new national and local incentive structures connected with land use plans.
- Capacity building on REDD+, forest conservation and land use planning.

Source: 1) http://www.usaid.gov/philippines/energy-and-environment/bwiser 2) http://www.chemonics.com/OurWork/OurProjects/Pages/Biodiversity-and-Watersheds-Improved-for-Stronger-Economy-and-Ecosystem-Resilience-.aspx

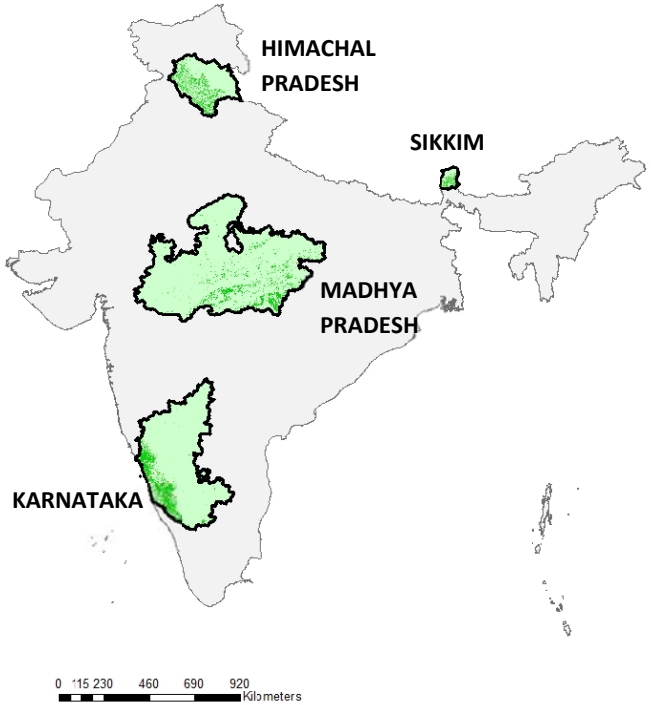
The **Partnership for Land Use Science (Forest-PLUS)** program is working to improve the management of forested landscapes in India, particularly in ways that mitigate climate change. It develops technologies, tools, and methods of forest management to meet the technical challenges of managing forests for ecosystem health, carbon stocks, biodiversity, and livelihoods. It aims to accelerate India's transition to a low carbon economy by taking REDD+ actions to scale.

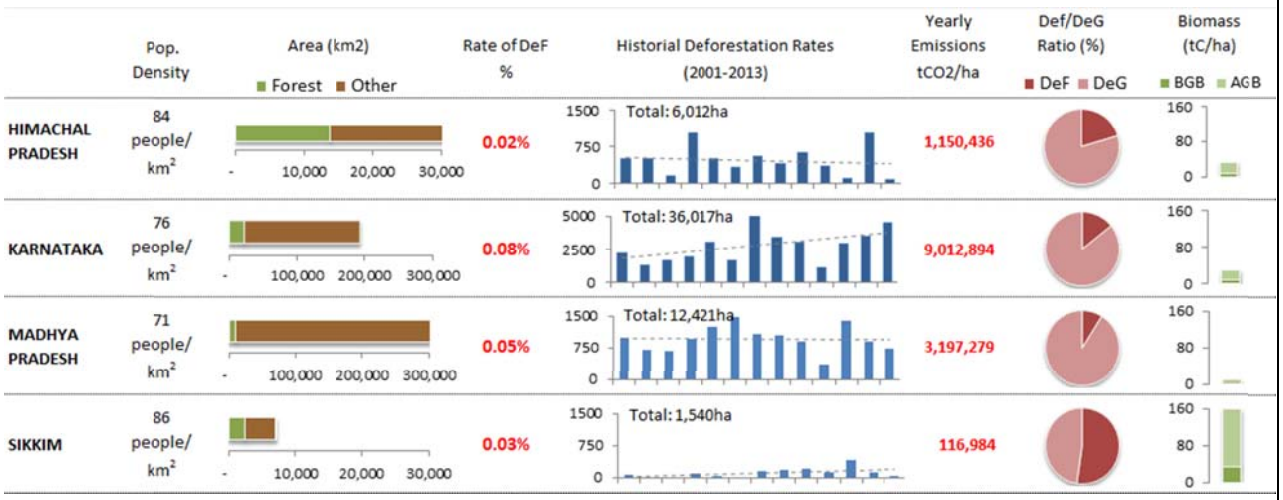
Project locations: 4 demonstration landscapes in Rampur (Himachal Pradesh, HP), Hoshangabad (Madhya Pradesh, MP), Shimoga (Karnataka) and Sikkim covering 250,000 hectares. The four landscapes represent approximately 70% of India's forest types, but each landscape is a mosaic of mixed forest, agroforestry and agricultural lands.

Drivers of forest change: Little deforestation and even increasing forest area in Karnataka and HP due to urban migration and in Sikkim due to tourism. However in all locations degradation is occurring due to NTFP and fuelwood collection.

Challenges: Skepticism and resistance to REDD+; institutionalizing project efforts in state bureaucracies to achieve sustainability; forest governance; scaling up and replicating impact across India; and initial focus on forests and not landscapes.

Project Responses: Establish 4 voluntary carbon market projects, therefore need to build capacity and technical understanding of REDD+ with a broad range of stakeholders. Emphasis on demonstrating the scalability of REDD+ tools, techniques, and methodologies within an ecosystem approach to forest management.





Source: http://www.forestplus.org/

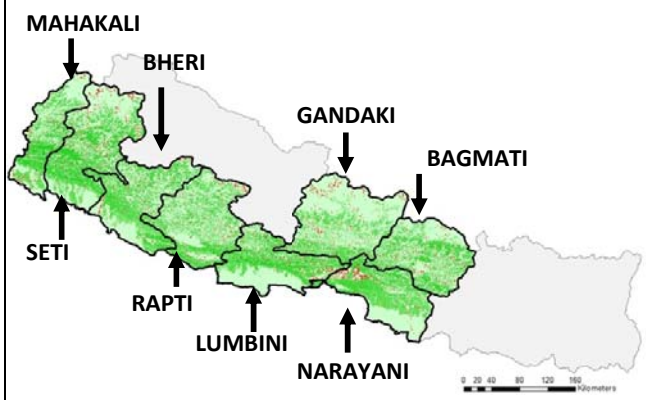
The **Hariyo-Ban** project in Nepal is designed to build resilience to climate change in communities and ecosystems by restoring and conserving Nepal's forests. It also improves the livelihoods of Nepal's most impoverished communities. It is reducing threats to the country's vast physical and biological diversity through interventions in two critical bio-diverse areas covering over a third of the country: the Terai Arc Landscape and the Chitwan-Annapurna Landscape.

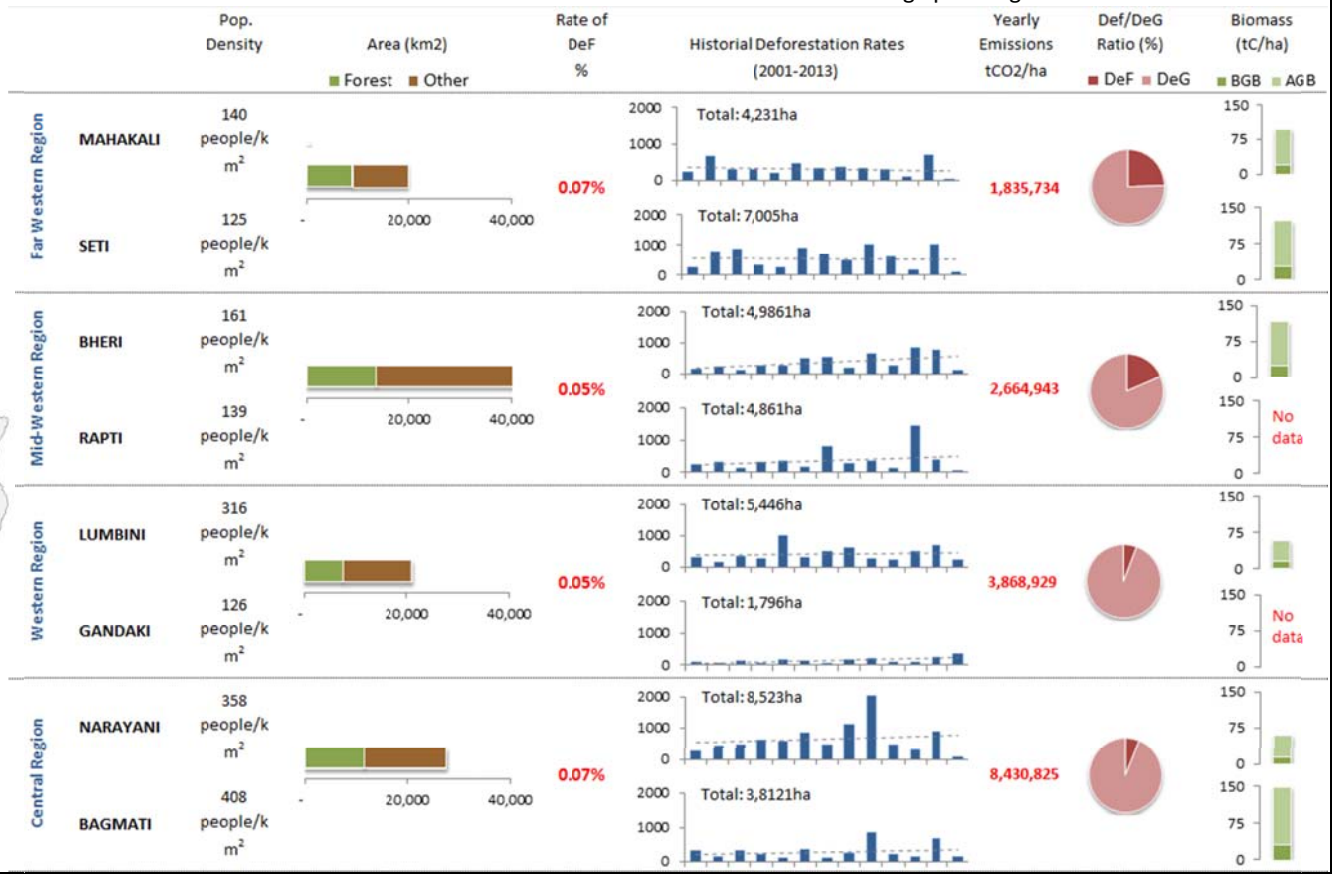
Project locations: The Chitwan-Annapurna Landscape, with an elevation range of 100-6,000m is biologically highly diversity. The Terai Arc Landscape, along the low elevation lands of Nepal, is populated with *Shorea robusta* (Sal) and other dipterocarp species. The project covers 2.4 million ha of forest land, of which 30% is farmland.

Drivers of forest change: Drivers of forest degradation include the unsustainable use and harvesting of forest products by local communities, including: Fuelwood collection; grazing of livestock; and timber harvesting for house construction. Drivers of deforestation include agricultural conversion and infrastructure development, including hydropower and roads.

Challenges: Working across very large areas with difficulty in 'touching-down' across 2.4 million hectares. Because of extreme poverty, communities are demanding support, but limited resources mean not all communities can be supported.

Project Responses: 1) Biodiversity conservation by strengthening governance in NRM. 2) Improving livelihoods of forest dependent communities and improving local stewardship in conserving natural resources. 3) Payment for ecosystem services, including REDD+ and verified emission reductions from biogas systems; and 4) Community climate change planning.





Source: 1) http://www.usaid.gov/nepal/fact-sheets/hariyo-ban-`project 2) http://www.wwfnepal.org/hariyobanprogram/

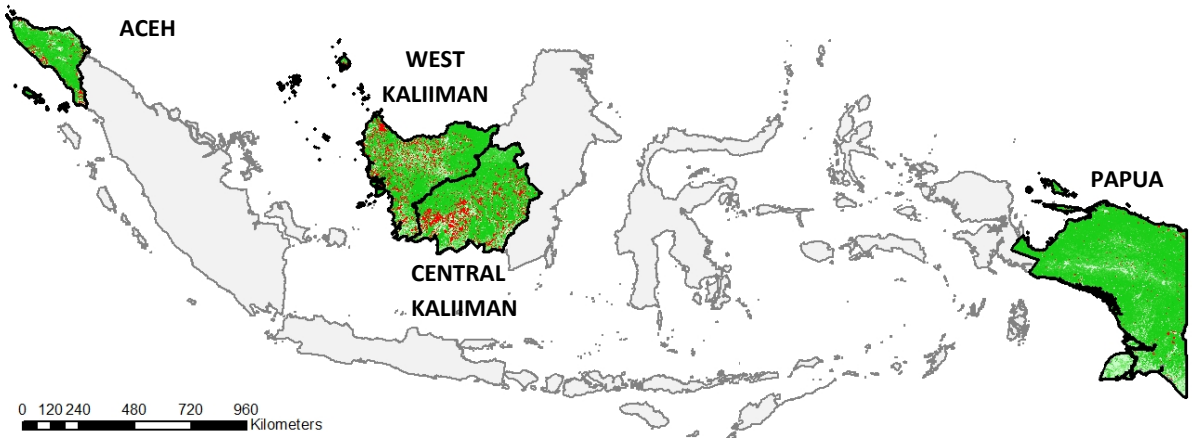
The **Indonesia Forest and Climate Support (IFACS)** program is focused on integrated climate change, sustainable forest management and low carbon emissions. Working with the Government of Indonesia (GOI) and other partners on three islands of Indonesia, the program is designed to reduce deforestation rates and greenhouse gas (GHG) emissions in target landscapes, conserve forests and wildlife resources, and maintain ecosystem services that support economic development and enhance food security. This is being accomplished via three core program areas: (1) land and forest resource governance; (2) improved management and conservation of forest resources in a changing climate; and (3) expansion of private sector, local enterprise and market linkages.

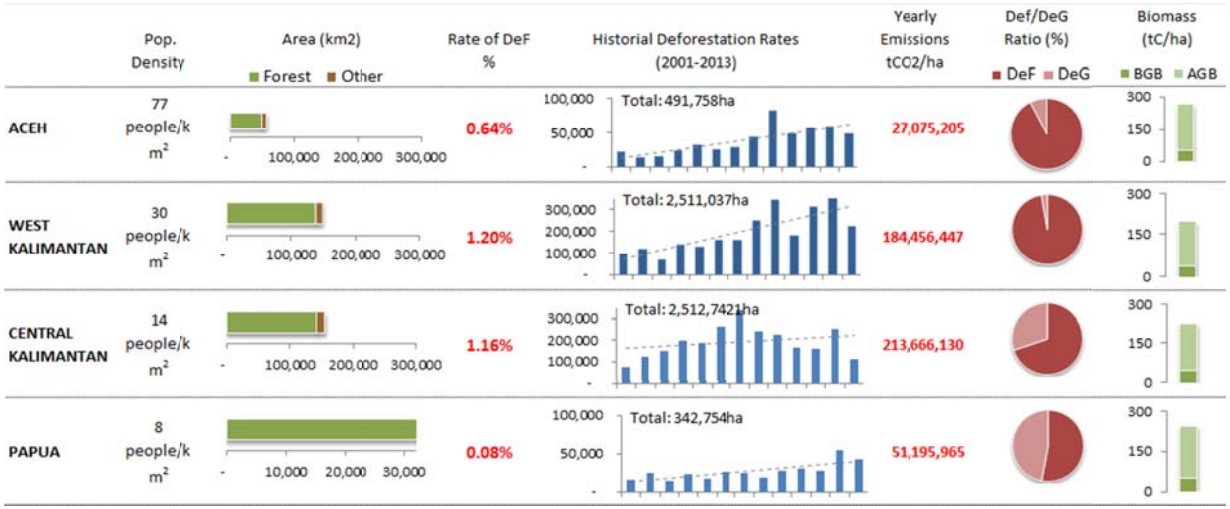
Project locations: IFACS works in 8 landscapes across contiguous landscapes in Aceh, West Kalimantan and Central Kalimantan and 4 landscapes in Papua. All are extremely diverse, from the post-conflict landscapes of Aceh to the heavily manipulated landscapes of Kalimantan to the extensive tracts of forest in Papua.

Drivers of forest change: Aceh and Papua are experiencing encroachment into National Parks, land clearing and some infrastructure development. In Kalimantan, land clearing for palm oil (some on peat land) is the major driver. Over time, a shift from large companies to smaller companies and small-holders that have little pressure on them to follow best practices.

Challenges: Working at the district level with no national framework; working in remote areas where capacity of government and civil society is low; an ambitious timeframe to complete low emission land use plans in conservative areas.

Project Responses: IFACS supports activities aimed at conserving forests, biodiversity and ecosystems; working with resource extraction companies on best practices; and devising low-emission development strategies for land that is already degraded, including developing strategic environmental assessments for district governments. Facilitating multi-stakeholder platforms is an important cross-cutting action.





Sources: http://www.ifacs.or.id/

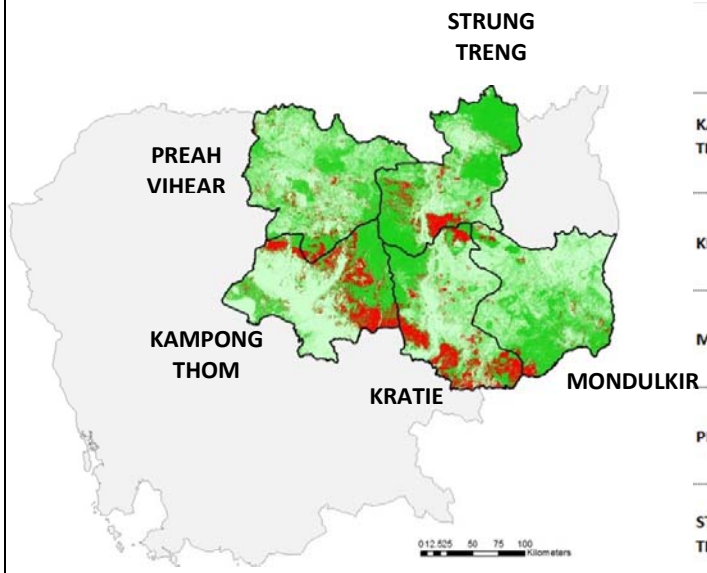
The **Supporting Forests and Biodiversity (SFB)** project in Cambodia is to improve conservation and governance of the Eastern Plains and Prey Lang landscapes to mitigate climate change and conserve biodiversity. It is accomplishing this by addressing the drivers of deforestation and biodiversity loss and improving the management of three large established conservation areas. The project is also carrying out foundational work towards securing tenure for communities and management planning for livelihoods as part of a 'no regrets' REDD+ development strategy. This project will also involve increasing the awareness and understanding of REDD+ of key stakeholders within the Prey Lang Landscape and Eastern Plains Landscape.

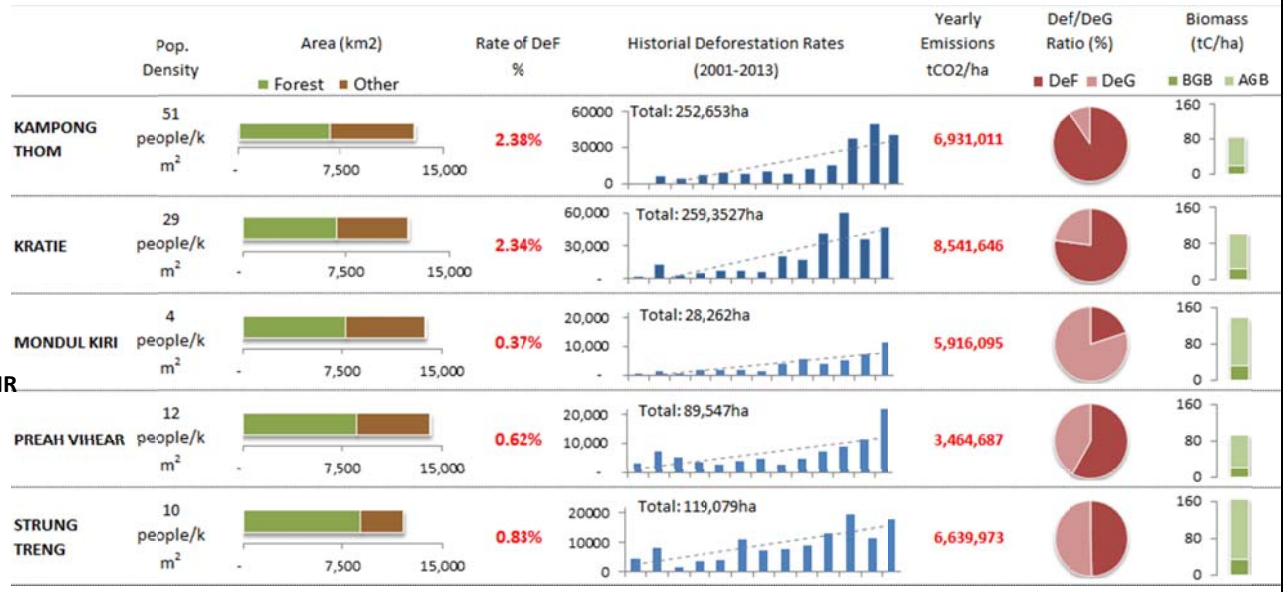
Project locations: The Eastern Plains Landscape (EPL) is made up of the Mondulkiri Protection Forest, the Phnom Prich Wildlife Sanctuary and the Seima Protection Forest. The Prey Long Landscape (PLL) is an 'unprotected' Production Forest that has been reduced in area from 700,000 hectares to 250,000-300,000 hectares over the last 5 years. Both landscapes are a mix of both forests (mainly dipterocarp forest) and agricultural lands (rice farming, small scale cassava fields and livestock).

Drivers of forest change: Large scale clearing of forests through the granting of land/agricultural concessions to international companies. Destruction is forcing impoverished local communities to now harvest remaining forests for short-term gain.

Challenges: Getting approval for Community Forests and therefore security of tenure over forest lands by local communities. The process is expensive, highly technical and time consuming. Governance of forests and natural resources is a big issue.

Project Responses: Focus on governance, dialogue and livelihoods. In PLL- promote establishment of a protected area; work with 62 communities to initiate livelihoods activities; assists all stakeholders with constructive dialogue to resolve disputes; improve conservation management skills by improving governance. In EPL- REDD+ project in the Seima Forest has been established and validated.





Sources: http://www.cambodia-redd.org/category/ngo-partners/recoftc

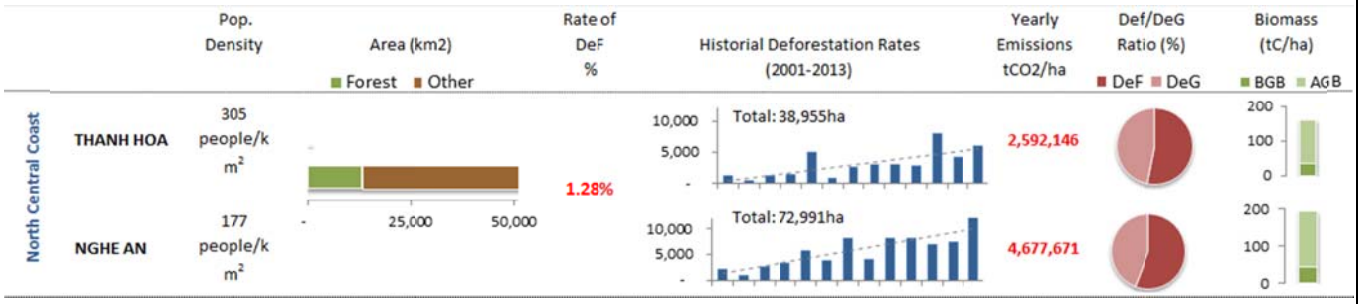
The **Vietnam Forests and Delta (VFD)** program is enhancing climate change resilience planning and action from community to national levels. The program will put into practice the national policies and strategies on response to climate change and low emissions development with a focus on reducing emissions from forestry and agriculture sectors and strengthening climate-smart livelihoods and settlements, particularly in rural areas. Addressing long-term climate change risks and gender vulnerabilities in both forest and delta landscapes are key program objectives.

Project locations: Implementation in 2 provinces, Thanh Hoa Province and Nghe An Province, an area of 1.25 million hectares of forest. There is great diversity in both these provinces, moving from the industrial coastal zone to the biologically diverse and intact highland forests (600-700m) near the Laos boarder.
(VFD also operates in the Mekong and Red River deltas – with a focus on adaptation actions)

Drivers of forest change: No large scale clearing, but road and hydropower construction and some conversion to rubber is resulting in some conversion. Illegal logging is still prevalent with some minor fuelwood collection degrading the forest. Some shifting cultivation is present, but this is likely to be carbon 'neutral'.

Challenges: 1) Bringing all components and all stakeholders together to develop a common vision for a green growth strategy (for Thanh Hoa); 2) Funding to support initiatives and government expectations of large amounts of funding through REDD+; 3) Time to achieve project approval.

Project Responses: 1) Development of a low emission development strategy for Thanh Hoa province; 2) Support SFM by State Forest Companies; 3) Support community based forest management; 4) Strengthen and expand PFES systems, including forest patrolling; 5) working on bamboo SMEs



Sources: http://www.snvworld.org/en/redd/cases/vietnam-forests-and-deltas-program

The USAID Lowering Emissions in Asia's Forests (USAID LEAF) program has been working with local partners to slow climate change by working with regional governments, forestry and climate mitigation specialists and universities to help improve forest and land management. USAID LEAF has been working in four major landscapes in Papua New Guinea, Vietnam, Laos, and Thailand to develop low emissions development strategies to strengthen the capacity of countries to achieve meaningful and sustained reductions in greenhouse gas emissions from the forestry-land use sector.

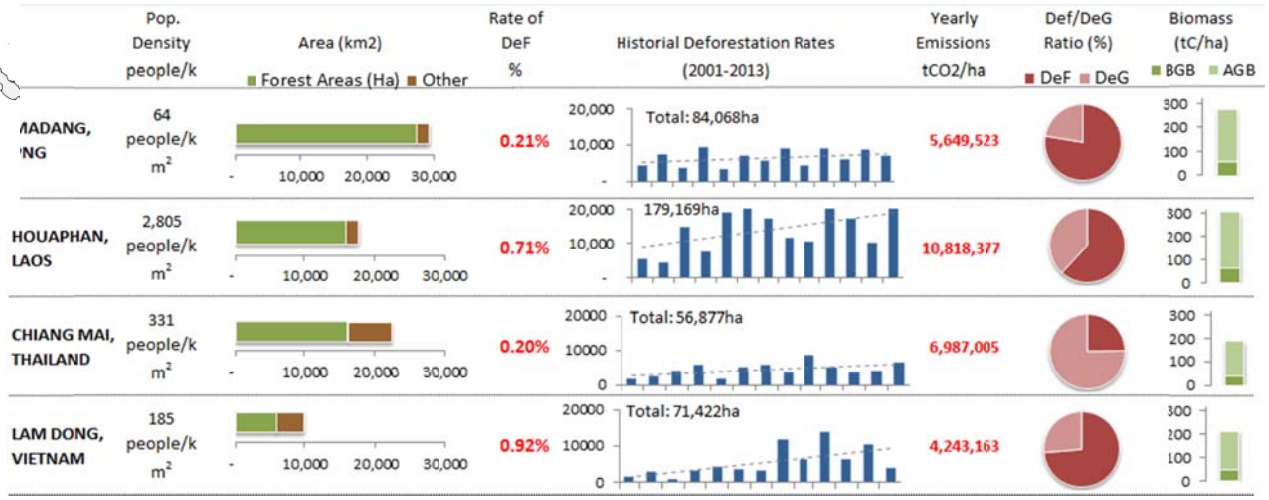
Project locations:

- Vietnam, Lam Dong Province & development of the Provincial REDD+ Action Plan.
- Laos, Houaphan Province & development of a management plan for the Nam Xam NPA and financing strategies.
- Thailand and management planning for the Maesa Kogma Man and Biosphere in Chiang Mai province and a PES scheme.
- PNG, Madang Province and development of a provincial low emissions land use plan.

Drivers of forest change: Large scale land use conversions due to commercial agricultural expansion (palm oil in Madang, coffee in Lam Dong), infrastructure development (hydropower in Lam Dong, resettlement in Madang) and subsistence agriculture (Madang and Houaphan) are significant but geographically limited. Of more significance is degradation through commercial logging (planned and unplanned), small-scale timber removals (fuel wood and village consumption) and shifting cultivation).

Challenges: Challenges are diverse across the four landscapes. However commonalities include: lack of political high level political leadership; limited capacity; poor and limited data sets: limited financial incentives to drive investment and galvanize political support; and

Project Responses: The project has focused on avoided emissions strategies through landscape level land use planning. Policy, capacity building and gender leadership efforts have complemented the landscape approach to strengthen the institutional settings for on-ground action and policy commitments.



Sources: http://www.leafasia.org/

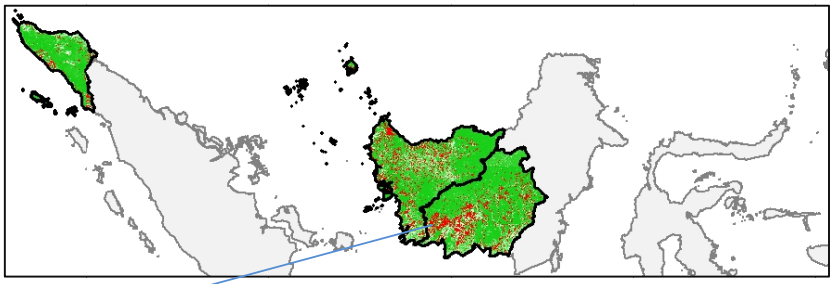
Annex Notes and Sources

The data provided is for illustrative purposes; to simply show differences between project sites within countries, and between countries. Each of the projects has been collecting data of high accuracy, but freely available data is presented to provide greater context to the challenges of low emission land use planning faced in each of the project sites.

Project locations, Drivers of Change, Challenges and Project Responses: Summaries of interviews conducted with each of the project focal points.

Mapped Geographical Scope: Data is provided on a provincial basis and not limited to project boundaries. Therefore the data may over estimate area and emissions for each of the projects where project interventions are within limited locations with a Province.

- Jurisdictional boundary source: http://www.diva-gis.org/Data



Annual Rate of Deforestation, 2000-2014 (Rate of DeF %): Based on Global Forest Watch data for forest area (2000) and forest loss (2000-2014)

- http://www.globalforestwatch.org/

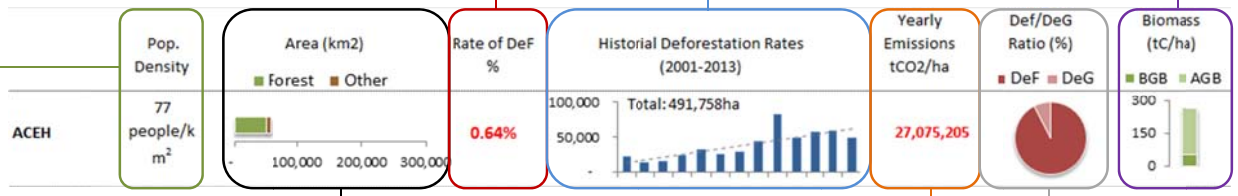
Historical Deforestation Rates (2000-2013): Manipulated from the Hansen data set by USAID LEAF.

- http://earthenginepartners.appspot.com/science-2013-global-forest/download_v1.1.html
- Data is graphically presented on a yearly basis and cumulative areas of forest loss are mapped in red (map scale limits visual representation of all forest loss). Total forest area loss (2000-2013) is also shown.
- There may be some minor discrepancies between the figures presented by the Global Forest Watch web site, due to GIS manipulation.

Biomass (tC/ha): Source is:

- Saatchi et al (in preparation). Above Ground Biomass (ABG) is estimated using 250m pan tropical forest carbon map. Below Ground Biomass (BGB) is a function of AGB (BGB = 0.489 AGB). For 2011 paper see: http://www.pnas.org/content/108/24/9899

Population density (people/km^2): Wikipedia



Area (km^2): Global Forest Watch data set.

- Forest Area (Forest) (km^2) and Non-Forest Area (other) (km^2) are graphed to illustrate provincial size and relative area of forest/non-forest land within the province http://www.globalforestwatch.org/

Yearly Emissions (tCO_2/ha): Source is:

- Goslee, K. et. al. (2015), Degradation Guidance and Decision Support Tool, USAID LEAF. Available at: http://www.leafasia.org/library/forest-degradation-guidance-and-decision-support-tool
- Methodology for calculating total yearly emissions from Deforestation and Degradation are detailed.

Ratio (%) of Emissions from Deforestation and Degradation (DeF/DeG %): Source is:

- Goslee, K. et. al. (2015), Degradation Guidance and Decision Support Tool, USAID LEAF.
- Degradation emissions are based upon estimates of timber extraction, fuelwood collection and fire emission.