



USAID | **ASIA**
FROM THE AMERICAN PEOPLE

USAID LEAD Program Support for National Inventory Systems and Carbon Stock Assessment of Mangroves

Presented by:

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ICF International (USAID Contractor)

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LEAD Program Overview

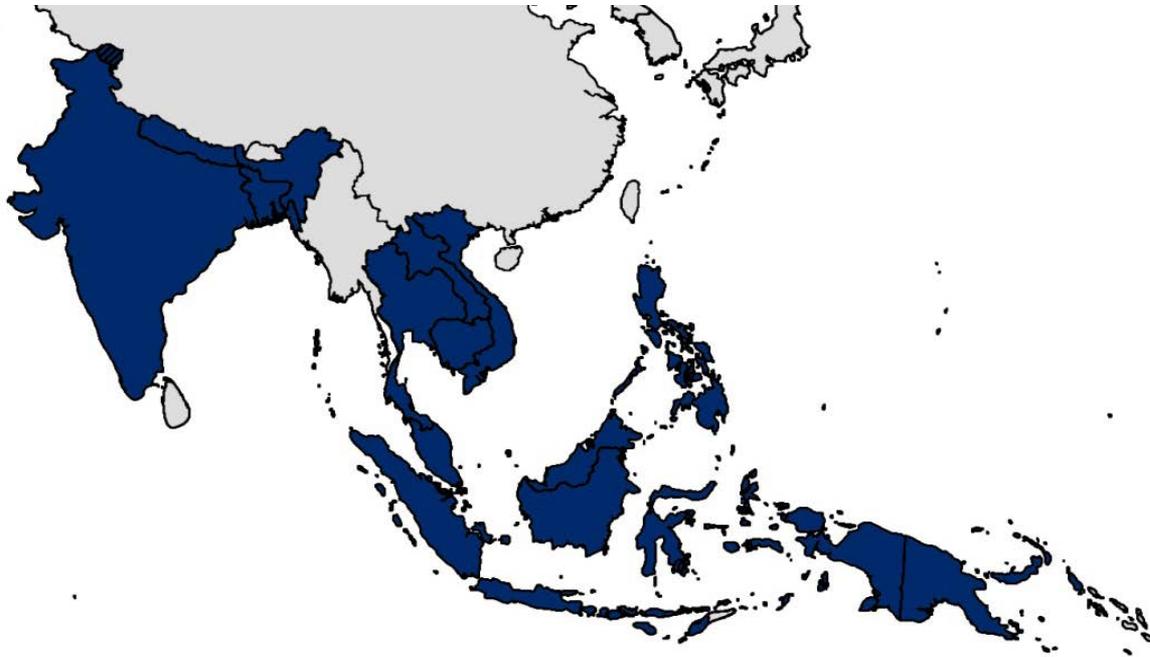
- **Objective:** The USAID LEAD program builds capacity within developing Asian countries to achieve sustainable, climate-resilient economic growth.

The program supports planning and implementation of low emission development strategies (LEDS) through:

- improved analytical and modeling capabilities;
- greenhouse gas (GHG) inventories;
- carbon market readiness; and
- regional cooperation.

LEAD Program countries

- Bangladesh, Cambodia, India, Indonesia, Laos, Malaysia, Nepal, Papua New Guinea, Philippines, Thailand, Vietnam



Program Period

Oct. 1, 2011 – Sep. 30, 2016

LEAD Regional Approach

- Facilitate **regional cooperation**
- **Share and replicate** innovations and best practices
- Strengthen **regional platforms**, institutions, and networks
- Enable more **harmonized regional standards** and approaches in GHG accounting and LEDS
- Coordinate with **donors** and others working at a regional level



Regional Support for National GHG Inventory Capacity Building and Development

Regional Support for National GHG Inventories

Objective: Build capacity for national GHG inventories and accounting through targeted training, technical assistance, and tools

Key Activities to build capacity:

- On-the ground technical assistance to support development of sustainable national inventory systems
- Technical assistance for improving inventory methods, activity data (AD) collection, and documentation
- Training on accounting protocols and tools through the Asian Greenhouse Gas Management Center (AGMC)

Strategy for GHG Inventory Support

- For each country we develop a customized activity plan based on capacity building needs. Activities include both in-country support and inclusion at regional training events.
- Core team of experts in Bangkok supplemented with an in-country activity coordinator and international experts, who are both in-house and from specialized subcontractors.
- Collaborate with other capacity building programs - i.e. SEA GHG project

Capacity Building on National GHG Inventory Systems

Why National Inventory Systems (NIS)?

- As many countries move away from project-based inventory development (consultants), there is a need for assistance in *institutionalizing* the inventory within the government ministries.
- LEAD provides guidance on *how* to do this by providing: tools, expertise, and opportunities to learn from South and SE Asian neighbors.
- LEAD's approach builds the capacity from *within* the leading inventory ministry and is collaborative, not prescriptive. Each country's NIS is unique and should reflect the country's national circumstances.

Technical Assistance on National Inventory Systems

■ Technical Working Sessions

- Small, focused work sessions with national inventory teams to apply and review inventory tools and protocols, such as NIS institutional templates (e.g. workshops for forestry and energy sectors on establishing Institutional arrangements in the Philippines in June 2014)

■ Training Workshops

- LEAD conducted two-part regional training in March and July 2014 focusing on developing a sustainable NIS
- Six NIS components were covered: Institutional Arrangements, Archiving, Methods and Data documentation, QA/QC, Key Category Analysis, National Inventory Improvement Plans
- Participants trained on using and applying the USEPA templates on NIS components to their respective countries

Regional Training on NIS Components

Session 1 Training: March 31st-April 3rd 2014

- LEAD covered NIS components- Institutional Arrangements (IA), Key Category Analysis (KCA), Methods and Data Documentation (MDD) and QA/QC
- Key learning outcomes:
 - Participants learned the importance of establishing IA and prepared action plans that targeted priority IA activities
 - Participants populated the MDD Template for a select number of Key Categories in their country and prepared action plans that targeted priority KCA activities
 - Developed a plan to implement priority improvements in QC checks for key categories
- M&E- participants were asked to report on the progress made on their country action plans and present their existing archiving systems for Session 2

Regional Training on NIS Components

Session 2 Training- July 21st- 23rd 2014

- LEAD covered NIS components: Archiving and National Inventory Improvement Plan
- Key learning outcomes:
 - Participants were introduced to USEPA template for archiving, best practices for archiving, and assessed their existing archiving procedures in detail
 - Participants identified priority improvements to their NIS systems and drafted national inventory improvement plans
- Participants from 7 countries (Bangladesh, Cambodia, Nepal, Vietnam, Philippines and Thailand) participated in sessions 1 and 2 of the NIS training



Regional Support for Carbon Stock Assessment of Forested Wetlands

Tropical Wetlands Ecosystem Services

1. SUPPORTING



3. PROVISIONING



5. CULTURAL



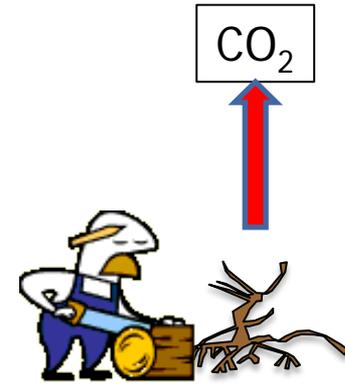
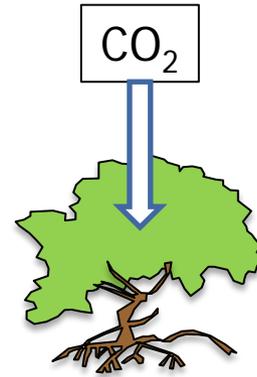
2. BIOLOGICAL



4. REGULATING



Tropical Forested Wetlands and Global Carbon Cycle



CARBON STOCKS = C removals - C emissions



Regional Support for Carbon Stock Assessment of Mangrove Forests

Objective: Build capacity for carbon stock assessment of mangrove forests through targeted training, technical assistance, and tools

Key Activities to Build Capacity:

- Regional training based on the *Protocols for the measurement, monitoring and reporting of structure, biomass and carbon stock in mangrove forest* for policy makers and practitioners (2013)
- In-country training and technical assistance for Cambodia (2014)
- Develop *Annotated Field Protocol for Measuring Carbon Stocks in Mangrove Forests* (2014)

Annotated Field Protocol

Key contents:

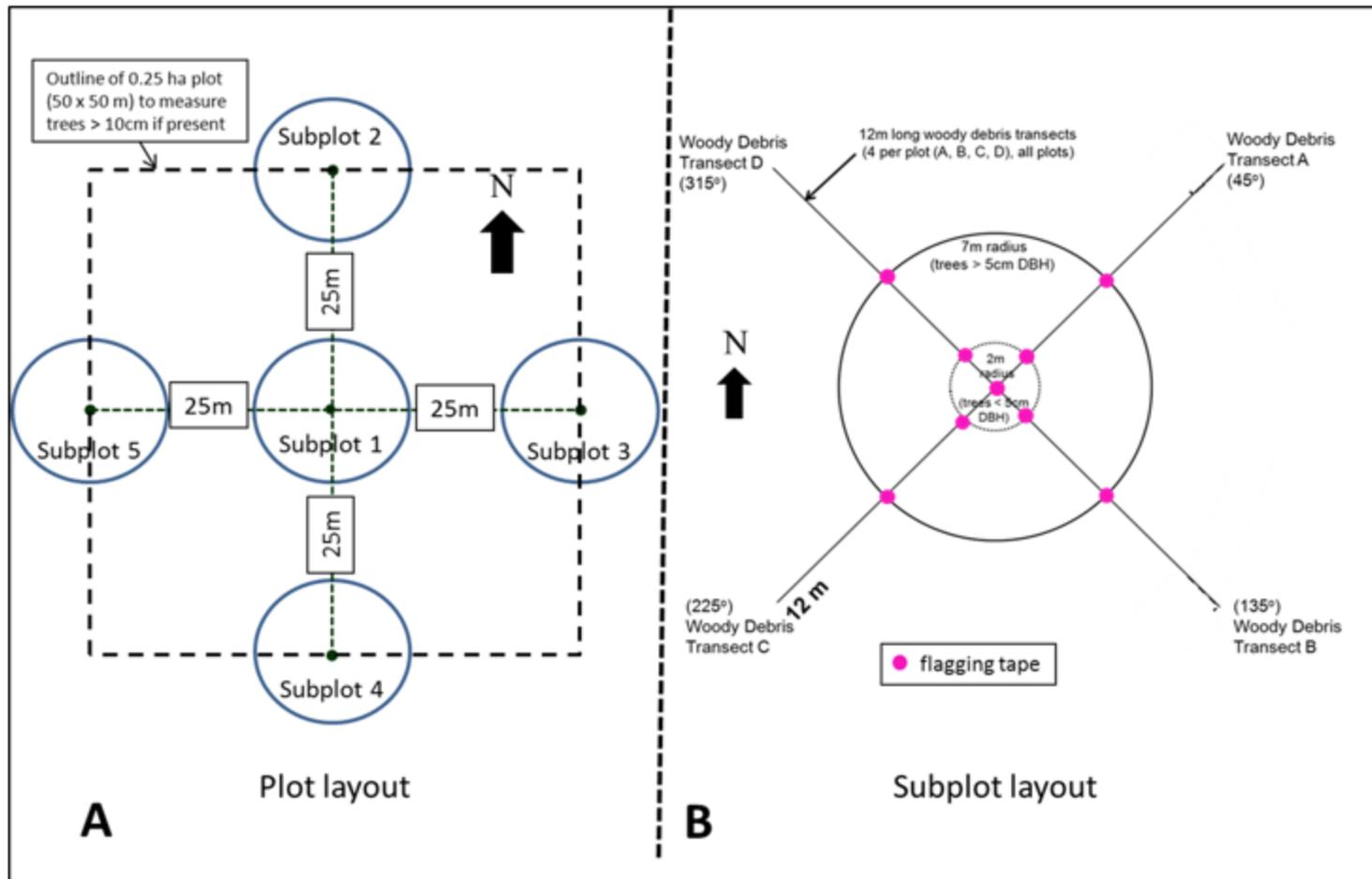
- Pre-field procedure
- Field procedure
- Carbon calculations

Presentation techniques: E-book with

- Illustrations
- Video footage
- Downloadable documents, i.e. data sheets

Examples of Annotated Field Protocol

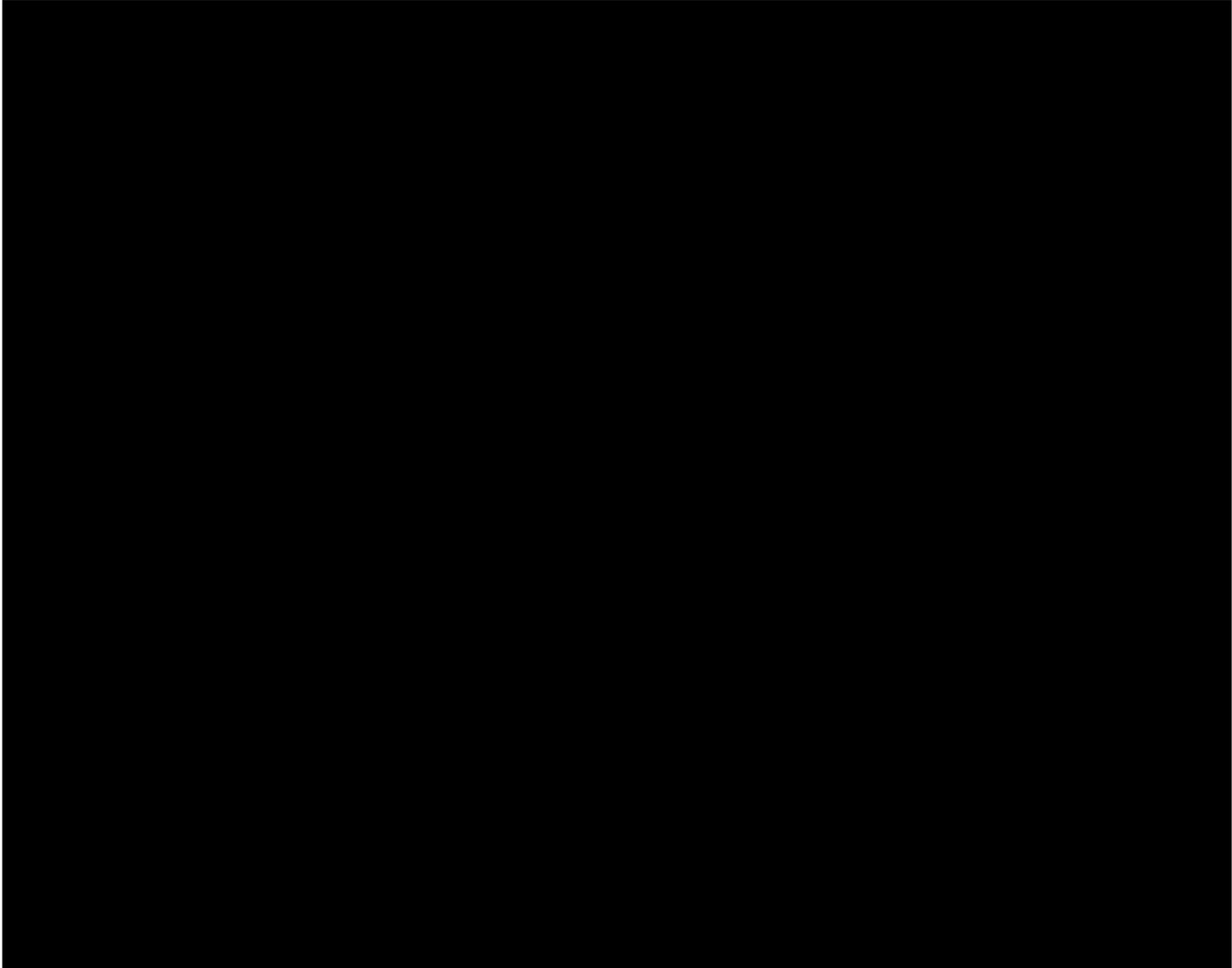
Plot and Subplots Layout



Plot Layout



Subplot Layout



Examples of Annotated Field Protocol

Sediment/peat. The belowground carbon pools is first sampled by measuring the total sediment/peat depth to underlying bedrock or coral sands by inserting a bamboo pole into the sediment/peat until it stops. The length of bamboo is then measured. If the sediment/peat is deeper than the length of the bamboo pole, the total length of the pole is used as an underestimate of the sediment depth. Repeat this three times in different locations within the subplot and record each value.

One sediment core is taken using an open faced peat corer/auger (Fig. 8) to obtain a minimally disturbed sediment sample. The core is taken from within each subplot in an area that has not been stepped on or disturbed by the sampling crew. Remove any woody debris/leaf litter from the surface. Then steadily insert the auger vertically into the sediment until the top of the sampler is level with the sediment surface. If the auger will not penetrate to full depth, do not force it, as it may be obstructed by a large root; instead try another location. Once at depth, twist the auger in a **clockwise** direction a few times to cut through any remaining fine roots (if you twist counter clockwise, you will remove the handle and the auger will be stuck in the sediment). Gently pull the auger out of the sediment while continuing to twist it, to assist in retrieving a complete sediment sample. If an undisturbed sample has not been obtained, clean the auger and try another location. When this occurs, it is important to remember that this is a very common and frustrating part of sampling saturated organic sediments!

Sediment/peat



So [we select this area].

Thank you



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