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USAID
FROM THE AMERICAN PEOPLE

**Global Climate Change:
Carbon Reporting Initiative**

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Submitted by:

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Putting Ideas to Work

1. Background

The main objective of the proposed work was to expand the ability of USAID to report global climate change impacts for forest-based activities by developing and implementing a set of innovative tools with high scientific integrity. USAID-sponsored land use and forest land management activities worldwide have direct, significant, and positive impacts on the climate. Although the impact of these activities is real, projects have not had the ability or tools to translate this impact into reportable, quantifiable measures of avoided emissions or sequestered carbon.

Under Year 6 of the cooperative agreement, we will continue to improve the AFOLU carbon calculator (ACC) by adding in updated data sets, adding in extra calculator modules, improving the user interface, allowing for different levels of control by administrators, improving the reporting capability across all projects entered into calculator, developing a stand-alone planning tool that can estimate emission reductions or enhancement of removals of carbon over multiple years, and implementing training workshops and training videos. The tool will continue to be simple and easy to use, and will allow the GCC Team and local missions and other stakeholders around the world to increase confidence in the integrity of results.

2. Activities for Year 6

Task 1: Develop a detailed workplan for year 6

The final Year 6 workplan was submitted and discussed with Evan Notman during COP-17 in Durban, South Africa.

Sub-Task 1a. Data collection for emission factors

Work on this task has begun by evaluating data needs and developing a work plan of what literature searches are needed, where the data gaps are and how best to fill them.

Literature reviews have been conducted to identify new spatial and non-spatial datasets that can be used to improve the USAID tool. In addition, a list is being formulated on additional literature searches that need to be conducted and data gaps that need to be filled. Several spatial and literature resources were identified that are appropriate for or are potentially appropriate for use with the ACC and are described in more detail below.

Carbon Stocks (general)

A literature review was conducted to assess if additional spatial data pertaining to carbon stocks is available and appropriate for improving the USAID tool. Spatial data sets for logging concessions in Indonesia, Central Africa and Venezuela were identified from the NASA Global Change Directory. Additional spatial data for Central Africa were identified for the Congo Basin through the Integrated Forest Monitoring System (INFORMS) project at Woods Hole Research Center.

Carbon Stocks (specific)

Mangroves

A literature review was conducted to identify additional sources of information, both spatial and non-spatial pertaining specifically to improving carbon stock estimates in mangrove forests. Spatial data on the location of mangroves is currently available from UNEP and higher resolution spatial data on mangrove distribution and deforestation will become available shortly from the USGS for portions of Asia. A review of the scientific literature on the topic of allometry, biomass, and monitoring of spatial distribution of mangroves was completed and several new references were identified.

Fire Datasets

A literature review was conducted to assess if there are new spatial data sets for quantifying burned areas. The MODIS Rapid Response data for fire occurrence (2000-present; 10-day; 1-km, global) product may be appropriate for improving upon current spatial products used in the USAID tool for fire. This is currently being reviewed to assess its usefulness.

Additional Remote Sensing (RS) Components

A literature review was conducted to evaluate the potential of original RS research for improving spatial inputs for the USAID tool. Specific forest degradation techniques and mangrove mapping techniques were identified as potentially holding value for the tool however given the intensive nature of such mapping it is realistic only to apply these techniques for key areas of concern or interest.

Additional datasets

Additional spatial data sets were identified pertaining to land management practices, specifically global fertilizer and manure application rates and global irrigated areas, which may have some utility for the USAID tool. We have identified a new site that contains spatial data that could be useful for the ACC – it has a variety of data layers that are used to map agro-ecological zones (recently posted by IIASA – Global Agro-Ecological Zones). This will be investigated further and enquiries made as to how to obtain the spatial data as needed.

Tool comparison

The BioCarbon Tracker tool, which provides web users with a global carbon stock map, biocarbon risk index, and land use risk index was reviewed to evaluate if additional data sources or methodologies used would hold potential for improving the USAID tool. Scientific references for methodologies used to derive the carbon stock map and risk indices were limited. While the tool provides an attractive, user-friendly interface, it is very limited spatially—users interactively define a project area and cannot upload specific project coordinates or use spatial references such as shapefiles and are additionally limited to an area of 2.5 million hectares. This approach also severely limits reproducibility because the user cannot download the polygons they use to define their project area. The “suitability” indices used in the tool may have some utility for the USAID tool, specifically, for improving upon variables which are currently qualitative in the tool, such as the “effectiveness” index. Spatial data on logging concessions, risk of natural disaster, biodiversity, etc. could be used to develop additional metrics or indices to improve the “effectiveness” variable.

Sub-Task 1b. Updating national data sets.

This sub-task involves two components: (1) increasing the resolution of the forest carbon stock map from 1 km to 250 m; and (2) obtaining field-based data to improve the calibration and validation data for forests in Southeast Asia and parts of Latin America where data were sparse for the current 1-km product.

Progress to date includes setting up a consultancy with Sassan Saatchi to collaborate on this work and gaining access to JAXA radar data for Latin America, Africa and Asia that will improve the remote sensing component of this work.

Sub-Task 1c. Refining estimates of deforestation rates.

Our proposed subcontractor, Applied GeoSolutions, has worked with Winrock previously on assessing rates of deforestation for 2000-2005. We will work with them to update deforestation rates for the period 2005 to 2010 using the algorithms developed by Matt Hansen for the 2000-2005 product.

Task 2: Build and test tools

Subtask 2a. Modification of the forest management tool

We have previously identified the largest source of error in this tool (amount of timber extracted) and are developing a plan to improve such data – key gaps, possible consultants to assist collecting data, etc. At present the Level A data are comprised of very generic estimates for each of the three main tropical regions – these clearly need to be updated with more specific data for key forest areas. The current tool accommodates only selectively logged tropical forests, and we are also in the process of adding in the equations and data bases needed for nontropical forests found in other USAID countries.

Subtask 2b. Adding capability to add geographic specific details

The scope of work for the subcontractor to be hired to assist with Year 6-8 work includes the requirement to add geographic specific details. The scope of work is now being refined and circulated and will be in place by the beginning of February.

Subtask 2c. Add an effectiveness calculation component

An improved method for determination of the management effectiveness of projects has been drafted for the Forest Protection (Annex 1), Forest Restoration/Plantation, and Agroforestry (Annex 2). According to the calculator's design, these are the only tools that require management effectiveness ratings.

The effectiveness tool was designed using a decision tree concept, where the response to each of the three to five questions impacts the final project effectiveness. The questions only ask for intuitive simple answers such as yes, majority, half, minority or no. The final effectiveness is calculated by multiplying a weighted value resulting from each of the answers to the questions.

Before finalizing the effectiveness tool, we recommend a meeting with Evan Notman to discuss potential implications of the new effectiveness approach and whether project leakage should be included or excluded from consideration on how effective the project is in implementing its goals.

Subtask 2d. Policy and capacity building impacts

No progress to report.

Subtask 2e. Develop a new bioenergy and land use tool.

Discussions have begun pertaining to developing methodologies to evaluate the potential impact on the forests used for collecting fuelwood or biogas. That is, can we develop an improved method to take care of possible natural enhancement of C stocks in forests used for fuelwood/charcoal collection? There are benefits from reduced use of fuel but also carbon benefits from reducing pressure on forest so that they can recover and not continue to degrade. A task was outlined to identify the most suitable USAID countries to conduct this study. Meetings have been scheduled for discussing the clean energy aspect of this task with experts in Winrock's Clean Energy Group.

Task 3. Train USAID GCC Team and mission staff (extension of Task 9 of Year 5)

Guidance documents will be revised and additional training sessions are being planned. In late 2010, 14 people were trained at a LEAF training session in Bangkok. In January 2011, the ACC was presented to 16 people at a training workshop on greenhouse gas emissions sponsored by the Climate Change Agriculture and Food Security Program (CCAFS) under the Consultative Group on International Agricultural Research (CGIAR) in Nairobi, Kenya. It showed the participants how to use it

for estimating carbon sequestration through agroforestry, forestation, and lengthening fallow period in shifting cultivation.

Task 4. Complete outstanding Tasks from Year 5.

The following tasks from year 5 are outstanding:

Task 4: Develop project planning tool

- A workshop re-engaging key stakeholders for soliciting feedback on the planning has not yet occurred. Because the web design of the ACC will be updated to improve navigability, we will wait to hold a workshop until the new capabilities are included and include discussions on the proposed planning tool.
- Incorporation of planning tool indicators of threat of land use change and potential for alternative land uses that relate to other sector (crop suitability, slope intensity, population density, etc) will be taken into consideration during the restructuring of the planning tool during year 6.

Task 6: Add uncertainty values to summary page

- Based on discussions with Patrick Smith on February 17, 2011, the workplan has been modified to alter this task. Rather than developing quantitative uncertainty values in the tool, we discussed producing a guidance document that provides guidance on uncertainty issues in general and summarizes the main sources of error in the calculators. This task is no longer included in the workplan for year 6.

Task 9: Develop guidance documents on data collection and processing for level B data and conduct training seminars

- The development of web-based training clips to guide users through the calculator functions has not been developed. That is because we want the videos to depict the most updated version of the calculator and therefore will wait until calculator is close to its final version.

Task 10: Work with the National Inventory ALU tool developers to harmonize approaches

- No consultations with EPA on the potential of nesting project- and sub-national data to the calculator have been made; this task should be discussed further with USAID and EPA.
- No assessment of integrating the ACC database into ALU tool has been done because the calculator is still under development and is a dynamic ever evolving tool. As such the database undergoes changes frequently. Once the database is finalized this task should be discussed further with USAID and EPA.

Task 5: Management and implementation

Subtask 5a: Develop a detailed workplan for each year

The workplan for Year 6 has been finalized.

Subtask 5b. Host website.

The current version of the AFOLU Carbon Calculator is being hosted by DRG on a quarterly basis. We are in the process of selecting a web developer for Years 6-8 and the website will be hosted by the firm that is selected.

Subtask 5c. Production of progress reports.

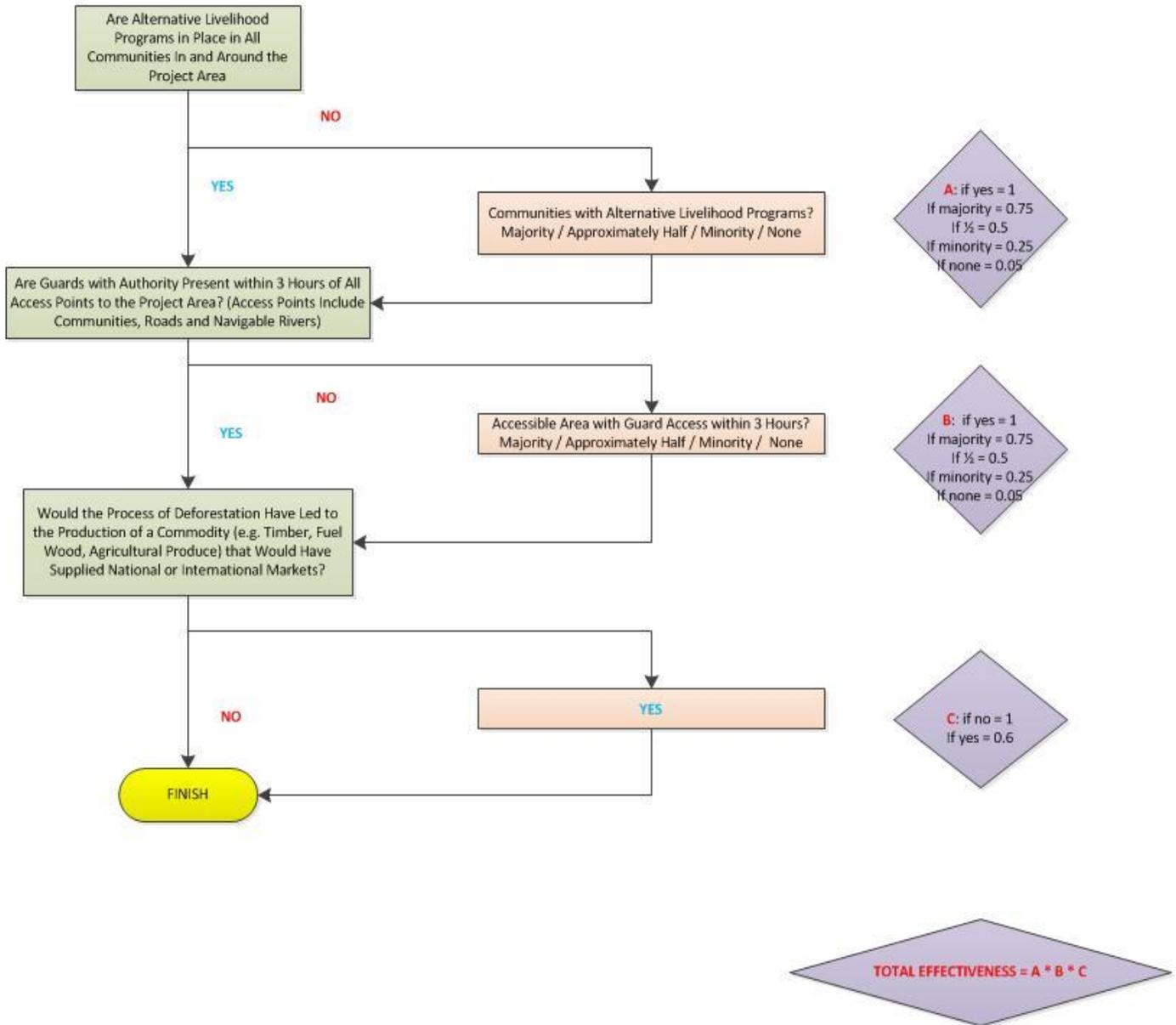
This document represents the first of four progress reports to be delivered to USAID during Year 6.

For more information or comments:

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Annex 1: Draft project management effectiveness rating for Forest Protection tool.

Avoided Deforestation EFFECTIVENESS



Annex 2: Draft project management effectiveness rating for Forest Restoration/Plantation and Agroforestry tools.

AFFORESTATION AND AGROFORESTRY EFFECTIVENESS

