

REQUEST FOR PROPOSALS



Project: Ecosystem Carbon Sources and Storage: Information to Quantify and Manage for Greenhouse Gas Emissions Reductions

Ecosystem Carbon Modeler

Commission for Environmental Cooperation

2012

I. OVERVIEW

The Secretariat of the Commission for Environmental Cooperation (CEC) is seeking a Consultant, Ecosystem Carbon Modeler to develop a methodology and protocol for assessing North American forest carbon dynamics, with an emphasis on improving monitoring, reporting, and verification (MRV) for Reducing Deforestation and Forest Degradation (REDD) in Mexico. The consultant will work with the US-component of a trilateral team of scientists from Canada, Mexico and the United States. The consultant will be expected to collaborate and work closely with the Northern Research Station (NRS) of the US Forest Service based in Newtown Square, Pennsylvania (near Philadelphia). As such, only candidates who have the established capacity to work in proximity to the NRS of the US Forest Service will be considered.

As part of the 2011-2012 work plan for the CEC's [*Ecosystem Carbon Sources and Storage: Information to Quantify and Manage for Greenhouse Gas Emissions Reductions*](#) project, it was agreed to develop a trilaterally appropriate methodology and assessment protocol to measure and monitor landscape-level carbon changes at various spatial scales. The resulting consistent and continental methodologies and datasets on landscape-level carbon sources and storage will significantly improve Mexico's ability to champion Reducing Deforestation and Forest Degradation (REDD)+ in Mexico.

To date, the agreed trilateral approach is to expand ongoing bilateral work (support from the Canadian and US Governments to develop carbon budget models and monitor forest carbon fluxes) to help build Mexico's capacity to assess and report on carbon stock changes. These initiatives are also supporting Mexico's efforts to develop a comprehensive carbon accounting system and monitoring, reporting and verification system (MRV) that will position Mexico to test a full national plan.

II. BACKGROUND

The CEC is an international organization created by Canada, Mexico and the United States under the North American Agreement on Environmental Cooperation (NAAEC). The CEC was established to address regional environmental concerns, help prevent potential trade and environmental conflicts, and to promote the effective enforcement of environmental law. The Agreement complements the environmental provisions of the North American Free Trade Agreement (NAFTA).

The Council of the CEC, its governing body, approved this project as part of the Operational Plan for 2011–2012 entitled *Ecosystem Carbon Sources and Storage: Information to Quantify and Manage for Greenhouse Gas Emissions Reductions* project with the purpose of providing and sharing the best information available on landscape-level carbon sources and storage.

For a complete description of the project including tasks and related budget, please refer to the following: <http://www.cec.org/Page.asp?PageID=122&ContentID=25032&SiteNodeID=1005>

III. RATIONALE FOR THE PROJECT

The *Ecosystem Carbon Sources and Storage: Information to Quantify and Manage for Greenhouse Gas Emissions Reductions* project was designed to develop a trilaterally agreed methodology and assessment protocol to measure and monitor land cover changes and landscape-level carbon changes at various spatial scales. The project outputs will include a trilateral methodology and assessment protocol to track land cover change and consistent and continental methodologies and datasets on landscape-level carbon sources and storage, providing a leadership tool for Mexico to champion the Reducing Deforestation and Forest Degradation (REDD)+ process in Mexico.

The agreed trilateral approach is to expand ongoing bilateral work to help build Mexico's capacity to report on carbon stock changes, including integrating the Canadian Carbon Budget Model (CBM-CFS3) into Mexico's comprehensive carbon accounting system, and the integration of NALCMS land cover data.

Mexico's preparation of a national REDD+ strategy and carbon inventory includes (*inter alia*):

1. Funding from Norway to support a multi-agency project to work in 5 states in Mexico on REDD+ initiatives.
2. Global Environment Facility (GEF)/Carbon Forest Partnership Facility funding to support on-the-ground REDD+ initiatives.
3. Support from the Canadian and US Governments to develop carbon budget models and monitor forest carbon fluxes.

These initiatives are also supporting Mexico's efforts to develop a comprehensive carbon accounting system and monitoring, reporting and verification system (MRV).

IV. TERMS OF REFERENCE

Specific duties for this work will involve modeling of forest carbon dynamics at scales ranging from individual stands of trees to the country. Both empirical and process models will be used to develop representative long-term responses of ecosystem carbon stocks to disturbances such as land-use change, wildfire, hurricanes, and drought, for different climate regions and forest types. The models will be based on data from national forest inventories and more intensive ecosystem measurements at research and monitoring sites. Quantitative estimates of ecosystem response to disturbance and regrowth will be used in conjunction with remote sensing for national-scale MRV, as input to national carbon accounting models, and as standard emission reduction estimates for project-level reporting. The consultant will work closely with carbon cycle experts, scientists, and managers from Canada, Mexico and the US.

The consultant will be expected to collaborate and work closely with scientists within the research group "Climate, Fire, and Carbon Cycle Sciences", at the Northern Research Station (NRS) of the US Forest Service based in Newtown Square, Pennsylvania (near Philadelphia). As such, only candidates who have the established capacity to work in proximity to the NRS of the US Forest Service will be considered.

For more information about the research group, visit <http://www.nrs.fs.fed.us/units/climate/>. The consultant will be a member of a trilateral research team recently formed to improve models and assessments of forest carbon dynamics of North America, with an emphasis on improving monitoring, reporting, and verification (MRV) for REDD+ in Mexico. The research team includes scientists and managers from Canada, Mexico and the US. This project is for an estimated period of 14 months. The timetable presented below is approximate, and may change. The CEC invites proposals to modify the schedule suggested, based on their evaluation of the work.

V. SCHEDULE FOR DELIVERABLES

The following table identifies completion dates for key deliverables under this contract work:

Deliverable / Task	Description	Week(s) (approx.)
Agreed approach to pilot study integrating a process model with a national carbon budget model	Select, in collaboration with CONAFOR and other team members, several pilot study areas in Mexico to be used as proof of concept of the application of an ecosystem process model to contribute to a national carbon budget model. Select one or more ecosystem process models and assess the feasibility of applying them, considering the availability of data inputs and processes included in the model.	July 15, 2012 (8 weeks)
Multi-step process for model-data fusion	Demonstrate how data from various sources can be integrated into an ecosystem process model to estimate carbon stock, carbon stock changes and GHG fluxes for Mexico including: <ul style="list-style-type: none"> a. Inventory data b. Land cover change data from the North American Land Cover Monitoring System initiative and other data sources c. Biometric data and data from flux towers 	December 31, 2012 (26 weeks)
Methodology to estimate and forecast forest dynamics	Validate the modeling results, and document the process steps including a detailed description of required input data and the steps taken to verify the model results.	February 28, 2013 (9 weeks)
Modeling Frameworks	Summarize the necessary steps to develop a prototype system for making input data and model results available on a publicly accessible platform.	April 30, 2013 (8 weeks)
Enhanced model and assessment of forest carbon dynamics tool	Summarize project results and provide input to the research team on next steps, including: <ul style="list-style-type: none"> 1. The preparation of a how-to-guide to estimate carbon stock changes at pilot study areas in Mexico. 2. Datasets to demonstrate the process. 	June 30, 2013 (9 weeks)

	<ol style="list-style-type: none"> 3. Training Mexican experts to run the ecosystem process model in Mexico. 4. Performing a gap analysis of data needs to expand the process to other sites across Mexico. 	
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VI. MANDATORY REQUIREMENTS

General requirements

The CEC is looking for a prospective consultant with the following demonstrated assets:

The consultant must have:

- Advanced college degree in ecology or closely related discipline
- Strong quantitative background working with empirical data and ecosystem models
- Experience with forest ecosystems of North America
- Ability to communicate effectively in written and spoken English
- Demonstrated ability to produce reports and publications

Desirable Knowledge, Skills, and Abilities:

- PhD degree in ecology or closely related discipline
- Ability to communicate effectively in written and spoken Spanish
- Experience working with ecosystem process models

The consultant must be proficient in English, both written and spoken. The consultant is also expected to provide complete drafts and final reports in English; all documents will have to be proofread or copy-edited before their submission to the Secretariat. Consultants are required to use the CEC writing style guide for delivery of drafts and final products. The guide is available at:

http://www.cec.org/Storage/131/15579_Engstyle_3.5.pdf

It is the intention of the Secretariat to include the **Terms of Reference** (Section IV of this document) in the contract with the successful applicant. Therefore, prospective consultants should refer to such terms for further detailed information on the project and the services to be provided. Prospective consultants are requested not to reiterate the Terms of Reference in their submissions, but their suggestions are welcomed to enhance the proposal.

Particular requirements

A. The prospective consultant should provide:

1. A brief statement of interest and intent. This statement should be based upon and serve to demonstrate the consultant’s experience and subject knowledge.
2. Proposed methodology to be undertaken in accomplishing the work outlined in the present document, including proposed travel to Mexico and Canada.
3. Suggested modifications, if any, to the terms of reference and schedule, and the reasons for such modifications.
4. *Curriculum vitae*

5. A detailed cost breakdown and other direct and indirect costs, and applicable taxes. The budget for travel will be separate from this contract.
6. A description of relevant experience.
7. List of no less than three references

Potential consultants are encouraged to submit any additional information that could assist the Secretariat in the assessment of the proposal. However, the proposal should not exceed 4 pages, excluding the applicant's CV.

B. Type of contract to be issued for the services

The Secretariat intends to use a lump-sum contract for these services. Payments will be issued per accomplishment of the milestones described herein. A sample of the standard CEC contract is available upon request. All work within the contract must be completed by 30 June 2013.

C. Selection Procedure

Proposals will be evaluated and selected in accordance with the CEC Consultant **Services Procurement Manual, Appendix B—"Proposal Evaluation Criteria and Consultant Selection Process: Guidelines and Standard Evaluation Format,"** available through the CEC web site: www.cec.org. Proposals submitted in response to this request will be evaluated by the CEC Program Manager and designated reviewers, who will form an Evaluation Committee. Each member of the Evaluation Committee shall receive a copy of the proposals and will be asked to rate each proposal using the evaluation criteria and its maximum point ratings given below. The strengths and weaknesses of each proposal, in terms of the evaluation criteria, will be noted and summarized. Prospective consultants who submit proposals determined by the Secretariat to be incomplete will be so notified in writing. Incomplete proposals will not receive further consideration.

Each complete proposal that is submitted will be evaluated by the CEC Secretariat according to the following criteria, with a point rating assigned for each:

Evaluation Criteria	Maximum Point Rating
Understanding of project requirements, adequacy of work plan	20
Suitability of and innovation in proposed approach	20
Consultant's experience in subject, qualifications and competence of Key Personnel	40
Consultant's ability to analytically approach subject, and writing ability	10
Value for money	10
<i>Total</i>	100

A minimum score of 80 will be required for the prospective consultant's proposal to be eligible for further consideration. Prospective consultants whose proposals score less than 80 will be so notified in writing, together with the reasons for the score.

D. Estimated Level of Resources Required

The consultant may prepare the cost estimate for the project, including professional fees, and expenses, in either C\$, P\$ or US\$. If a currency other than US\$ is used, the consultant should indicate the total cost of the professional services in US\$ as well as the currency of choice, for comparison purposes.

E. Financial and Other Confidential Information

For this proposal, the CEC Secretariat will not require the submission of any confidential information nor will the CEC Secretariat require information regarding insurance, financial status, or company ownership.

F. Payment

The consultant will be paid in the following manner:

1. 10% upon signature of the contract.
2. 15% upon completion of agreed approach to pilot study integrating a process model with a national carbon budget model.
3. 10% upon completion of draft multi-step process for model-data fusion
4. 25% upon completion of multi-step process for model-data fusion
5. 10% upon completion of methodology to estimate and forecast forest dynamics
6. 15% upon completion of modeling frameworks
7. 15% upon completion of enhanced model and assessment of forest carbon dynamics tool

Payment shall be made only for *bona fide* consultant fees and legitimate expenses incurred in accordance with the contract for professional services, and only upon receipt and documented acceptance by the Secretariat of statement(s) of account/invoice(s) from the consultant. Settlement of invoices that are acceptable for payment will normally be made 30 days from the date of receipt by the Commission.

G. Deadlines for Proposal Submission and Decision

The proposal, including all relevant attachments, must be received by the CEC Secretariat offices by 17:00 on 30 April, 2012. Proposals submitted after this deadline will not be considered. Proposals should be addressed to and submitted via e-mail to:

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The CEC Secretariat intends to select the consultant within five (5) working days following the date of proposal submission. Notification of selections will be made on or about 7 May, 2012.