

ECOSYSTEM SERVICES MARKET RESEARCH CONSORNIUM (ESMRC) REQUEST FOR PROPOSALS

Ecosystem Services Market Consortium LLC (ESMC) is working with partners and collaborators across the agricultural supply chain to invest in critical research to build a technologically advanced ecosystem services market to reward and incentivize beneficial impacts of sustainable agricultural practices and systems. The member-driven research consortium – known as the ESMRC - will support development of a cost-effective and scalable approach to farmer and rancher engagement in ecosystem service markets, an approach needed to scale the beneficial impacts of sustainable practice adoption on working agricultural lands. The ESMRC will also meet corporate and societal needs by quantifying, monitoring and verifying the environmental benefits achieved on an annual and ongoing basis. To achieve these goals, four ESMRC Working Groups have been established and tasked with developing and implementing specific research and development initiatives. The Working Groups, co-led by ESMC members and informed by Science Advisors chosen from a slate of national experts, will focus on the research, development, demonstration and deployment of cost-effective, scalable technologies and approaches to launch the market.

BACKGROUND INFORMATION:

The current ESMC Protocol requires traditional soil testing for soil organic carbon, bulk density, and pH to quantify changes in soil carbon stocks resulting from adoption of sustainable practices to generate Scope 3 assets and Scope 1 credits. In the context of ESMC's Protocol, Scope 1 credits and Scope 3 assets represent varying levels of producer data inputs, monitoring, and verification requirements to best approximate the buyer demand for environmental assets. Scope 1 credits refers to those assets that are a result of conservation practice implementation for use in GHG and water quality markets. Scope 3 refers to GHG, water quality, and water efficiency assets that can be used in supply chain reporting. Existing soil carbon protocols require large investment of time and money and are not currently being used. Cutting the costs of soil sampling and greenhouse gas monitoring would allow for ecosystem service market project beneficiaries to increase their net revenue and provide greater incentive for adoption of sustainable practices.

ESMRC Working Group 1 was established to support development of accurate, cost-effective and scalable quantification of agricultural management system impacts on soil C and net GHG (carbon, methane and nitrous oxide). This includes supporting the development of innovative and advanced analytical tools and technologies, models, and sampling design approaches to cost-effectively quantify, assess, monitor, and verify systems based GHG impacts of the operations of farmers and ranchers while providing robust and transparent documentation of outcomes. This includes the utilization, testing and refinement of direct, modeled, and remote quantification tools and technologies with a goal to reduce burden on program participants,

including agricultural sector participants, program operators, and verifiers. These quantification approaches and tools will be used and refined for use in market-based protocols, including through field testing in pilot projects.

PROJECT TITLE: WG1 PROJECT 1 - Advanced Quantification Technology Assessment

PROJECT SUMMARY:

This RFP seeks to engage one or multiple partners to identify, assess, test, and map the development of advanced tools and technologies that can more efficiently and cost effectively measure and quantify soil C changes and net GHG reductions to help ESMC generate carbon and GHG assets.

PROJECT GOALS:

1. Identification of one or more direct measurement, remotely sensed, or modeling approaches that can quantify soil C changes and provide improved input data for DNDC modeling of net GHG reductions to help ESMC more efficiently and cost effectively generate carbon and GHG assets.
2. Evidence of the accuracy, usability, and cost effectiveness of the identified tools in the context of ESMC's Protocol, through in-field testing as part of ESMC's pilots. All assessments should include cost-benefit analysis that specifically quantifies the tradeoffs between the accuracy gained through more intensive sampling or more sophisticated modeling and the associated increase in costs.
3. Evidence of the potential for commercial scale implementation or alternatively, a roadmap for combining the most promising tools and technologies in novel ways to achieve an acceptable degree of rigor, accuracy and costs for ESMC's use.
4. Finalize a randomized, risk-based verification sampling system that incorporates the identified technologies and tools (this has already been awarded as a separate contract).

SCOPE OF WORK:

The following phases of this project are seen as necessary to achieve the overall project goals. A single proposal to this RFP can address one or more of Phases 1, 2 and 3. Applicants can also develop collaborative proposals with other groups to bring together the needed expertise to develop a multi-phase proposal. Phase 4 is already underway as a separate contract. Phase 5 will be collaborative and led by ESMRC. In all cases, it will be expected that Phase leads will work closely with the ESMRC Project Manager, ESMRC Research Director, ESMRC Working Group Project Advisory Committee and other key project partners during project implementation, including monthly project meetings. Project design and results should be focused on developing recommendations for practical application in the context of ESMC's ecosystem services market program.

- Phase 1a: Using ESMRC Working Group #1's initial documentation and evaluation of some existing tools as a starting point, review, modify, expand or condense the proposed list of direct measurement tools, remotely sensed, or modeling approaches to be evaluated.
- Phase 1b: Conduct an initial desk-audit evaluation of the tools or approaches identified in Phase 1a to answer key science, accuracy, feasibility, and general scalability questions, including an evaluation of current costs and uncertainties.
- Phase 2: Implement in-field testing to further evaluate the most promising emerging tools identified in Phase 1 for measuring, quantifying and modeling soil C, soil bulk density, and GHG assets to determine their scientific validity and usability, based on an ESMC approved experimental design framework on sites that are part of ESMC's Protocol pilots in the Midwest. See additional details and requirements noted in ESMRC Working Group Pilot Project In-field Research Module below.
- Phase 3: Further evaluate the potential of the most promising tools for commercialization at scale and the expected cost in the context of the ESMC Protocol requirements; develop a tool development roadmap for meeting ESMC's needs (this could be a separate contract but will require close coordination with other project leads)
- Phase 4: To support pilot-testing of these tools, a verification sampling approach will be developed that allows for the incorporation of these technologies (this has already been awarded as a separate contract)
- Phase 5: Results and recommendation from across project components (Phases 1-4) will be shared by all Phase leads and integrated into a final report that includes the verification approach. The Integrated Report development will be facilitated by ESMRC's Research Director and the Project Advisory Team and will include recommendations to ESMC for Protocol modifications, data collection and MRV platform processes, and verification approaches.

ESMRC Working Group Pilot Project In-field Research Module

In-field testing projects will be closely coordinated by an ESMRC Project Advisory Committee made up of an ESMRC Project Manager, ESMRC Research Director, Working Group Science Advisors and Working Group Members who will provide guidance, oversight, and coordination with the project leads of overlapping research projects at the site and of other relevant Working Group projects.

In field testing projects must be done on sites enrolled as ESMC Pilot Projects and in collaboration with ESMC Member lead. Proposals should include acres, cropping system, location, timing, project partners as well as the proposed research and any connection to overlapping research projects in progress.

ESMRC Project Advisory Team – Caroline Wade, ESMRC Project Manager; ESMRC Research Director (to be identified); Working Group Members: Steve Rosenzweig, Bill Salas; Working Group Science Advisors: Steve Wood, Steve Del Grosso, Cathy Stewart, Hannah Birge, Ron Turco.

Research Module Format

Project Title:

ESMC Pilot Project and Site Description: (Member lead, acres, cropping system, location, timing, project partners)

ESMC Pilot Project proposed research components:

- Coordination with Project Advisory Team
- Coordination with other ESMRC projects and pilot research (list titles and leads)
- Other ongoing or planned research at sites (list titles and leads)
- Proposed research for immediate work and future plans and cost estimates for replication on additional ESMC pilot project sites

ESMC Pilot Project Timeline:

Proposals should include a timeline for immediate work and future plans for replication on additional ESMC pilot project sites as projects are identified and launched. ESMC pilot regions for 2020 include Southern Great Plains, Northern and Western Great Plains, Midwest, Great Lakes and California. Any geographic limitations should be noted.

PROJECT DELIVERABLES: (including necessary documentation)

Reports:

- (1) Assessment Report covering at least 10 advanced ESM quantification technologies
- (2) Documentation of field testing in 1 region of 1-2 technologies, tools or approaches; report on results and lessons learned; participation in collaborative research session to develop recommendations for improvements to ESMC procedures and Protocol.
- (3) Creation of a technology development roadmap to identify needs and steps for bringing 1 or more of the tools to market at a national scale
- (4) Development and documentation of a science-based verification sampling approach
- (5) Integrated Report of findings and recommendations from all Phases and integration of technologies into verification sampling approach
- (6) Presentation to ESMC Members at in-person meeting in May 2021, dates and location TBD

PROJECT TIMELINE:

April 2020 – August 2021

Phase 1 – approximately 4 months

Phase 2 – separate contract already initiated

Phase 3 – finish up field testing in Spring 2021

Phase 4 – approximately 6 months

Phase 5 – August 2021

PROPOSAL FORMAT:

- Executive summary
- Vendor/Researcher Background information
 - Number of projects and time in business/field of study
 - Experience in similar or related business/research
 - Project management strategy/techniques
- Proposed services or deliverables, including identification of Phases to be covered and In-Field Research Module if applicable
- Plans for collaboration and coordination with key ESMRC and ESMC Member contacts
- Timeline and budget
- Project Team
- Portfolio of similar or related work/research projects
- Contact information for two references
- Risks and mitigation strategies to executing services, deliverables, timeline, and on budget

Funding notes for contractors: Identification of in-kind or cash match funding (non-federal) is encouraged but not required. Institutional overhead is limited to 10% by FFAR. The unrecovered overhead CANNOT be used as match.

SELECTION CRITERIA:

Proposals will be reviewed for technical and scientific soundness by the Working Group Science Advisory Committee led by ESMRC's Research Director and reviewed by ESMRC Working Group 1 for completeness of application, feasibility of approach and timeline, budget requirements, and commitment to collaboration. The reviewers may request additional information as part of the review process.

SELECTION TIMELINE:

Proposals must be submitted as a PDF document via email to Caroline Wade, ESMRC Project Manager, at cwade@ecosystems-services-market.org by April 7th, 8pm Eastern. Final decisions will be made by April 17th and all vendors will be notified by April 21st.

If you have questions regarding this RFP please contact Caroline Wade directly at cwade@ecosystems-services-market.org or 309-231-7440.