

MEMORANDUM OF AGREEMENT (MOA) BETWEEN THE US ENDOWMENT FOR FORESTRY AND COMMUNITIES, PARTNERS, AND THE U.S. FOREST SERVICE, RESEARCH AND DEVELOPMENT

This MEMORANDUM OF AGREEMENT (MOA) is hereby made and entered into by and between Research and Development of the U.S. Forest Service (the “Forest Service”) and partners (the “Collaborative”) comprising the U.S. Endowment for Forestry and Communities (the “Endowment”), the American Forest Foundation (AFF), the National Alliance of Forest Owners (NAFO), the American Wood Council (AWC), the Hardwood Federation, the Decorative Hardwoods Association (DHA), and the National Wooden Pallet and Container Association (NWPCA) to establish a cooperative relationship to support development and delivery of a publicly accessible platform for accessing and estimating forest and harvested wood carbon using USDA Forest Entity-Level Guidance and other applicable measurement, monitoring, reporting and verification (MMRV) methodologies for the United States forest sector.

PURPOSE

The purpose of this MOA is to codify the cooperation between the parties to collaborate in and to support the creation of a USDA-sponsored digital platform with multiple user-friendly tools providing transparent, high-integrity forest and wood product carbon data throughout the value chain. This MOA will provide overarching guidance to the associated Cooperative Research and Development Agreement (CRADA) number 24-RD-11111107-007.

STATEMENT OF MUTUAL BENEFIT AND INTERESTS

WHEREAS, climate change is a threat to the natural environment and economy of the United States, and concerted action is needed to mitigate its impacts, including achieving significant greenhouse gas (GHG) emissions reductions and carbon removals through technology, innovation, and natural resource management;

WHEREAS, enhancing MMRV of GHG emissions and removals across all sectors is necessary to understand the impacts of mitigation efforts and meet U.S. climate mitigation objectives and demand is growing for credible carbon data to account for the benefits of the forest economy as a natural climate solution;

WHEREAS, the Forest Service has articulated a mission to establish science-based methods to quantify, measure, and advance the conservation of forest carbon as part of an integrated U.S. GHG monitoring & information system that improves confidence in the benefits of mitigation activities, increases resiliency of forest carbon under global change paradigms, reduces uncertainty, and maintains trust in emissions/removals data;

WHEREAS, the Forest Service aims to serve as the primary source of information on carbon and carbon flows across U.S. forest ecosystems and harvested wood products and on life cycle assessments related to harvested wood products through their end of use;

WHEREAS, forest ecosystem and wood product data exist in disparate sources, both public and private, and need connections and improvements to produce consistent data and standardized approaches for quantifying forest-sector GHG flux and associated dynamics at the entity, regional, and national scales to meet MMRV needs for a variety of end-users;

WHEREAS, USDA has developed documents, including *Quantifying Greenhouse Gas Fluxes in Agriculture and Forestry: Methods for Entity-Scale Inventory and the Federal Strategy To Advance Greenhouse Gas*

Emissions Measurement and Monitoring for the Agriculture and Forest Sectors (the “USDA Entity-Level Guidance”), to provide a credible, science-based approach to measuring, monitoring, and reporting forest and wood products carbon data;

WHEREAS, Forest Service leadership is needed to provide consistent carbon data approaches and calculation methodologies across forest ecosystems and wood product manufacturing, while providing stakeholders, such as landowners, manufacturers, investors, and users of wood, access to the data needed to build integrity and confidence in the marketplace and GHG accounting and reporting;

WHEREAS, forest sector partners are committed to bring expertise, industry data, and resources to a partnership with the U.S. Forest Service to deliver comprehensive, transparent, and standardized data to achieve these objectives;

WHEREAS, the Endowment works collaboratively with partners in the public and private sectors to advance systemic, transformative, and sustainable change for the health and vitality of the nation’s working forests and forest-reliant communities;

WHEREAS, AFF has helped family forest owners care for their land for more than three-quarters of a century, employing a number of strategies, programs, and tools, including, since 2020, incentive payments that help landowners overcome the barriers to forest stewardship and engage in conservation and climate mitigation activities;

WHEREAS, NAFO is committed to advancing federal policies that ensure private working forests provide clean air, clean water, wildlife habitat, and jobs through sustainable practices and strong markets;

WHEREAS, AWC, as the nationally recognized technical authority for codes, standards, and policy for the U.S. wood building sector, collects third-party verifiable environmental impacts and life cycle data supporting the sustainable manufacture and specification of American wood products; and

WHEREAS, the Hardwood Federation, as the united voice for the U.S. hardwood industry sector, advocates for federal policies that recognize the climate benefits of U.S. manufactured consumer and industrial hardwood products that store carbon throughout their life cycle from stand to product;

WHEREAS, DHA, representing the producers of hardwood plywood, hardwood veneer, and engineered wood floors in North America, is committed to federal research and policies that recognize the dramatic carbon storage potential of wood products.

WHEREAS, NWPCA is the international voice of the wooden pallet and container industry, which serves as the backbone of the U.S. global supply chain, and actively supports the industry by developing the sector’s only environmental product declaration;

NOW, THEREFORE, in consideration of the above premises and in the interest of mutual advantage in attainment of common objectives, the parties hereto desire to cooperate and mutually agree as follows:

ROLES AND RESPONSIBILITIES

The Forest Service SHALL:

- A. Provide staffing resources to coordinate and provide expertise with data management, tool development, platform management, and communication with stakeholders and end-users.

- B. Provide access to relevant data, information, and analysis from U.S. Department of Agriculture programs, including:
 - 1. The Forest Inventory and Analysis (FIA) Program;
 - 2. The Timber Products Output Survey;
 - 3. Soil carbon estimations, as they are made available;
 - 4. USDA Entity-Level Guidance;
 - 5. Forest Products Laboratory programs;
 - 6. The Federal Life Cycle Assessment Commons; and
 - 7. Other relevant programmatic data and information sources, as they are published and made available.
- C. Provide technical assistance in platform shaping and in reviewing the methodologies applied in the platform tools.
- D. Verify that platform content complies with the best available science and verify that data delivery complies with USDA Entity-Level Guidance and follows Forest Service policy for science review and quality assurance.
- E. Provide funding resources to support platform development and long-term maintenance of the platform as available.

The Endowment SHALL:

- A. Develop, in cooperation with the Forest Service and the Collaborative, an on-line digital platform offering tools to assist in forest and wood product-related carbon calculations using established USDA methodologies and datasets.
 - The platform shall provide the following functions:
 - 1. Provide high-quality carbon data on forests and wood, enabling consistent holistic reporting at three starting points: the landowner, manufacturer, and end-user.
 - 2. Combine FIA data and other non-proprietary sources of forest-sector inventory data with tools, technologies, and approaches to enable forest owners to determine the forest carbon stock impacts of forest management regimes for various forest types or species compositions and to provide forest owners and other end users access to forest carbon data for regional and more localized geographies across the country.
 - 3. Use published manufacturing environmental product declarations (EPDs) and life cycle assessments (LCAs) to report the embodied carbon in forest and wood products.
 - 4. Use USDA Entity-Level Guidance to calculate the embedded (stored) carbon in manufactured products and estimate the carbon displacement of wood products using substitution factors found in published literature.
- B. Develop two tools with a previously awarded Wood Innovation Grant:
 - 1. An Embodied Carbon Tool that will combine emissions data associated with materials or construction processes of manufactured wood products available in published EPDs with wood product flows provided by the USDA Entity-Level Guidance for GHG emissions to make it possible to access embodied carbon values using a variety of starting points (a harvested log, a manufactured product, or as part of a broader project, such as a whole building). The data would reflect geographical parameters and a broad range of forests and product types.
 - 2. A Displacement Factor Tool that will use published displacement factor values found in the USDA Entity-Level Guidance to calculate the substitution benefits of wood products compared to fossil-intensive, mineral-based systems. The tool would make it possible for a user to compare the carbon impact of a log, wood product, or the end-use to alternatives.

- C. Develop or adapt, in cooperation with the Forest Service and members of the Collaborative, four additional tools for integration into the platform:
 - 1. A Level 3 (customized) Forest Carbon Inventory Tool for landowners to convert species and stand-level data to carbon stocks, including above- and below- ground pools, and to standardize reliable forest carbon reporting.
 - 2. A Level 1 (default) Landowner Carbon Inventory Tool to provide landowners customizable look-up tables for smaller area estimations, using FIA data.
 - 3. A Land Carbon Regional Accounting Factor Tool to enable landowners, manufacturers, architects, engineers, and other end users to use FIA data to measure carbon-stock change across a region or wood basket along with the amount of harvest in the same region.
 - 4. A Harvested Wood Products (HWP) Carbon Tool to enable landowners, manufacturers, and other end users to quantify carbon storage in wood products over a 100-year timeframe, using the query tables in the USDA Entity-Level Guidance in an accessible format.
- D. Oversee contractors to design and build a platform, with appropriate internet security protocol, that integrates the MMRV tools and other forest carbon information to ensure understanding and usability for stakeholder audiences and to refine the platform as our understanding evolves and new tools emerge.
- E. Utilize USDA Entity-Level Guidance in the development of the aforementioned platform and tools.
- F. Contribute a 50% match to investments made by USDA that are specified and agreed to in writing subsequent to this MOA to leverage USDA investments.

AFF SHALL:

- A. Provide knowledge of the unique needs of family forest landowners to the process of platform tool development.
- B. In coordination and with the support of its subgrantee, the National Council for Air and Stream Improvement, Inc., provide technical assistance to convert a Land Carbon Regional Accounting Factor Tool, developed for the purposes of the previously awarded Climate Smart Commodities grant, into a public-facing tool for the platform.

NAFO SHALL:

- A. Provide technical assistance to develop the Level 3 (customized) Forest Carbon Inventory Tool and support tool integration into the platform.
- B. Coordinate landowner pilot testers for platform tools.

AWC SHALL:

- A. Provide third party-verified environmental product declarations (EPDs) that will be available on the platform.
- B. Provide technical assistance in the development of the Embodied Carbon and Displacement Factor tools.
- C. Coordinate manufacturer pilot testers for platform tools.

The Hardwood Federation SHALL:

- A. Provide knowledge of the unique needs of the hardwood industry, including mills and manufacturers, to the process of platform tool development.
- B. Provide technical assistance to support the development of platform needs.
- C. Coordinate hardwood industry pilot testers for platform tools.

DHA SHALL:

- A. Work with partners to provide third party-verified environmental product declarations (EPDs) that will be widely available.
- B. Coordinate decorative hardwood industry pilot testers for platform tools.
- C. Provide data on uses of decorative hardwood products.
- D. Provide technical support to members of the decorative hardwoods industry.

NWPCA SHALL:

- A. Provide knowledge of the needs of the pallet and container manufacturing industry and its customers to the process of platform tool development.
- B. Provide data from its life cycle assessment and environmental product declaration, which is the first for its sector, and provide updates when that data is updated.
- C. Coordinate pallet & container manufacturers for pilot testers of the platform tool.

STATEMENT OF MUTUAL UNDERSTANDING

Given changing federal priorities and funding conduits, this memorandum of agreement establishes a formal agreement between the Forest Service and the Collaborative. It is understood that the Forest Service retains ultimate oversight, responsibility, and vested final decisions related to this agreement, as required by current federal regulations, and can cancel this agreement at any time.

The Forest Service and the Collaborative shall mutually use reasonable efforts to:

- 1. Establish management and technical points of contacts (POCs) for all parties, assigning roles and responsibilities for governance. Alternate POCs are to be designated in the event that the primary POCs are unavailable to serve.
- 2. Develop and pilot new applications on the MMRV platform.
- 3. Provide opportunities for collaboration through working group assignments of personnel between the Forest Service and the Collaborative.
- 4. Formalize an approach for the long-term operation and management of the platform.
- 5. Identify ways to engage the broader stakeholder community to further improve the MMRV platform over time.

MISCELLANEOUS PROVISIONS

- A. Any Party may unilaterally terminate this MOA upon providing ninety (90) days written notice to the other Party.
- B. This MOA creates no right, benefit, or trust responsibility, substantive, or procedural, enforceable at law or equity.
- C. The parties shall manage their respective resources and activities in a separate, coordinated and mutually beneficial manner to meet the purpose(s) of this MOA.
- D. Nothing in this MOA authorizes any of the parties to obligate or transfer anything of value. Specific, prospective projects or activities that involve the transfer of funds, services, property, and/or anything of value to a party requires the execution of separate agreements and are

contingent upon numerous factors, including, as applicable, but not limited to: agency availability of appropriated funds and other resources; cooperator availability of funds and other resources; agency and cooperator administrative and legal requirements (including agency authorization by statute); etc. This MOA neither provides, nor meets these criteria. If the parties elect to enter into an obligation agreement that involves the transfer of funds, services, property, and/or anything of value to a party, then the applicable criteria must be met.

- E. Each party to this agreement operates under its own laws, regulations, and/or policies, and any Forest Service obligation is subject to the availability of appropriated funds and other resources.
- F. The negotiation, execution, and administration of these prospective agreements must comply with all applicable law.
- G. Nothing in this MOA is intended to alter, limit, or expand either party's statutory and regulatory authority or diminishes any party's responsibilities under any statute or other legal authority.
- H. Any communications affecting the operations covered by this agreement given by the Parties is sufficient only if in writing and delivered in person, mailed, or transmitted electronically by e-mail or fax, as listed in the CRADA and Point of Contact below.
- I. It is understood and agreed that neither party to this Agreement is responsible for any damages or injuries arising out of the conduct of activities governed by this Agreement, except to the extent that such damages and/or injuries were caused by the negligent or wrongful acts or omissions of its employees, agents, or officers. Forest Service liability is limited by the Federal Tort Claims Act, 28 USC 2671, et. seq.
- J. All parties shall acknowledge the other's support in any publications, audiovisuals, and electronic media developed as a result of this MOA. Use of USDA Forest Service affiliations must be approved in writing by the USDA Forest Service Office of Communications.
- K. Pursuant to 41 U.S.C. 22, no U.S. member of, or U.S. delegate to, Congress shall be admitted to any share or part of this agreement, or benefits that may arise therefrom, either directly or indirectly.
- L. All parties to this agreement shall immediately inform the USDA Forest Service if it or any of its principals are presently excluded, debarred, or suspended from entering into covered transactions with the federal government according to the terms of 2 CFR Part 180. Additionally, should any party to this agreement or any of its principals receive a transmittal letter or other official Federal notice of debarment or suspension, then they shall notify the USDA Forest Service without undue delay. This applies whether the exclusion, debarment, or suspension is voluntary or involuntary.
- M. No party shall be liable for any unforeseeable event beyond its reasonable control not caused by the fault or negligence of such party:
 - a. Which causes the party to be unable to perform its obligations under this Agreement; and
 - b. Which it has been unable to overcome by the exercise of due diligence.
 - c. This includes, but is not limited to, flood, drought, earthquake, storm, fire, pestilence, lightning and other natural catastrophes, epidemic, war, riot, civil disturbance, or disobedience, strikes, labor dispute, failure, or sabotage of either party's facilities or any order or injunction made by a court or public agency.
 - d. In the event of the occurrence of such force majeure event, the party unable to perform shall promptly notify the other party. It must also:
 - e. Use its best efforts to resume performance as quickly as possible.
 - f. Suspend performance only for such period as is necessary as a result of the force majeure event.
- N. In accordance with Executive Order (EO) 13513, "Federal Leadership on Reducing Text Messaging While Driving," all text messaging by Federal employees is banned: a) while driving a

government owned vehicle (GOV) or driving a privately owned vehicle (POV) while on official Government business; or b) using any electronic equipment supplied by the Government when driving any vehicle at any time. All cooperators, their employees, volunteers, and contractors are encouraged to adopt and enforce policies that ban text messaging when driving company owned, leased, or rented vehicles, POVs or GOVs when driving while on official Government business or when performing any work for or on behalf of the Government.

POINTS OF CONTACT

Individuals listed below are authorized to act in their respective areas on matters related to this agreement.

Michael Georgen
U.S. Endowment for Forestry and Communities
Vice President Innovation, and Director,
P3Nano
michael@usendowment.org

Keith Christman
Decorative Hardwoods Association
President
KChristman@decorativehardwoods.org

Nathan Truitt
American Forest Foundation
Executive Vice President of Climate Funding
ntruitt@forestfoundation.org

Jason Ortega
The National Wooden Pallet & Container
Association
Vice President, Public Affairs
jortega@palletcentral.com

Bryan Petit
National Alliance of Forest Owners
Vice President for Policy and Regulatory Affairs
bpetit@nafoalliance.org

Christopher W. Woodall
USDA Forest Service, WO R&D
Carbon Quantification Research National
Program Lead
Christopher.w.woodall@usda.gov

Rachael Jamison
American Wood Council
Vice President, Markets & Sustainability
rjamison@awc.org

William A. (Andy) Martin
USDA Forest Service, Forest Products
Laboratory
Assistant Director, Wood Products Research
william.martin2@usda.gov

Dana Cole
The Hardwood Federation
Executive Director
dana.cole@hardwoodfederation.com

DURABILITY

This agreement will become null and void on midnight December 31, 2033.

SIGNATURES

Pete Madden, President and CEO
U.S. Endowment for Forestry and Communities

Rita Hite, President and CEO
American Forest Foundation

Dave Tenny, President and CEO
National Alliance of Forest Owners

Jackson Morrill, President and CEO
American Wood Council

Dana Cole, Executive Director
The Hardwood Federation

Keith Christman, President
Decorative Hardwoods Association

Brent J. McClendon, President and CEO
The National Wooden Pallet & Container Association

Randy Moore, Chief
U.S. Forest Service