

Ecosystem Services Market Consortium Overview

The Challenge

With the global population expected to reach 9 billion by 2050, agricultural productivity will have to improve by 70% compared to 2007 to ensure global food security. Agriculture's climate and water impacts, however, have placed farmers and ranchers under increased scrutiny and pressure to preserve natural resources and reduce greenhouse gas emissions. Atmospheric concentrations of carbon can and must be reduced through biological and terrestrial sequestration to prevent catastrophic warming. Food, beverage, and agriculture companies seek to reduce the climate and water risk embedded in their supply chains in order to address climate change and natural resource pressures. Combined, these factors demand the sustainable intensification of agriculture on a scale and a pace that is unprecedented. The Ecosystem Services Market Consortium (ESMC) offers the tools, the platform and the partners to catalyze this transition in the US, and ultimately, globally.

The Solution

Agriculture and forestry are the only sectors capable of cost-effectively removing GHGs from the atmosphere at scale, and can do so while providing significant ancillary impacts. Researchers estimate that agriculture's mitigation potential, excluding fossil fuel offsets from biomass, by 2030 is approximately 5,500–6,000 Mt CO₂e per year, with 89% of those reductions from soil emissions. The Ecosystem Services Market Consortium (ESMC) was conceived of and designed to enable farmers and ranchers to realize this potential.

ESMC will change food and feed production from within by providing the tools and platform required to measure and incentivize change. Our national, voluntary, farmer-oriented ecosystem service payment program will reward farmers and ranchers for improvements in GHGs, water quality, and water quantity associated with agricultural management practices. ESMC's theory of change is that an economically viable ecosystem service market can deliver the estimated \$13.9 billion of private sector demand for these services by providing farmers and ranchers the tools required to monetize their stewardship actions. The ESMC presents a triple-win: farmers will access technical assistance and additional revenue streams while enhancing the resilience of their operations; corporate credit buyers will meet their sustainability goals; and the public will benefit from cleaner air and water and climate change mitigation.

The ESMC

The ESMC was launched to bring together corporate and NGO stakeholders, sustainable agricultural experts, soil scientists, producers, buyers, and sellers to collectively undertake the critical research and science necessary for a viable, scalable, and cost-effective ecosystem service marketplace. These stakeholders are unified in their belief that soil health is the nexus through which they can most effectively address climate change, water quality degradation, and water scarcity. Similarly, the group recognizes farmers' and ranchers' preeminent role in managing the nation's land and has designed the program to facilitate their participation.

Farmers and ranchers can become more profitable and sustainable; companies can meet their annual GHG and environmental footprint commitments from agricultural supply chains, including meeting Sustainable Development Goals 2030; conservation groups can meet their climate change, conservation,

biodiversity and natural resource preservation goals; and consumers and society reap the benefits of transparent food production, climate change mitigation, increased food security and agricultural resilience, and improved water quality and water use. The voluntary, private program will scale impacts by making it attractive for farmers and ranchers to participate.

The Plan

ESMC began strategic development in 2017, developed market protocols and assessed market supply and demand issues in 2018, and began pilot-testing the program on 50,000 acres of range and cropland system in the Southern Great Plains. ESMC's science- and standards-based quantification protocols and advanced analytics measure and report multiple certified ecosystem impacts simultaneously: soil organic carbon, net greenhouse gas (GHG) emissions, water quality, and water use efficiency. ESMC is on track to launch a fully-functioning national market by 2022. The February 2019 launch of ESMC's current collaborative build-out phase allows for increased engagement with corporations and NGOs in order to collectively scale the foundational program framework. We estimate that a collective investment of \$25 to 30 million is needed to launch this effort nationally by 2022. With generous support of the Foundation for Food and Agriculture, USDA NRCS and a number of foundations, we are halfway to that ambitious goal.

Join Us

ESMC will change the way in which agricultural working lands are farmed and managed, and create an ability to track, monitor and report on ecosystem service outcomes annually and over time in a way currently not available anywhere. It will also create a harmonized platform into which all existing proprietary precision agriculture and management data collection systems can link. When fully brought to scale, it will strengthen and protect our food supply; mitigate the impacts of farming on the environment; increase the resiliency of working lands; increase economic opportunity for our farmers; and preserve our land, water, and air for generations to come. It's hard to imagine another investment that returns so much global societal benefit. We invite you to be our partner and support our mission. Your commitment combined with ESMC's expertise and vision will make the Ecosystem Services Market Program a reality. We invite your partnership. Join us and our existing supporters and members:

Funders: Foundation for Food and Agricultural Research; McKnight Foundation; United Soybean Board; USDA Natural Resources Conservation Service; and Walton Family Foundation.

Founding Circle members: ADM; Bunge; Cargill; Corteva Agriscience; Danone North America; General Mills; Land O'Lakes; McDonald's USA; National Fish and Wildlife Foundation; Nestle; Noble Research Institute, LLC; Nutrien; The Nature Conservancy; and the Soil Health Institute.

Legacy Partner members: American Farmland Trust; Anuvia Plant Nutrients; American Soybean Association; Bayer; Farm Foundation; Conservation Technology Information Center; Impact Ag Partners; Mars, Inc.; National Association of Conservation Districts; National Corn Growers Association; National Farmers Union; NativeEnergy; Newtrient, LLC; Pivot Bio; Sand County Foundation; Soil Health Partnership; Tatanka Resources; The Fertilizer Institute; the Tri-Societies; Tyson Foods; and World Wildlife Fund.

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