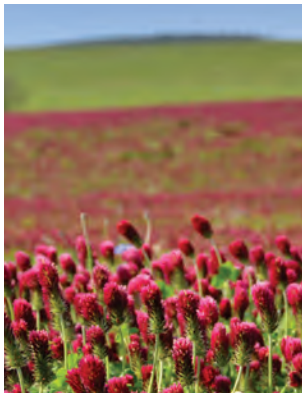
ECOSYSTEM
SERVICES MARKET
CONSORTIUM

Ecosystem Services Market Consortium

EXECUTIVE SUMMARY

Identifying the Need



The Noble Research Institute initiated, financially supported and led almost two years of activities to develop and launch the Ecosystem Services Market Consortium. Noble continues to contribute to the ESMC through its research as well as its land stewardship and producer education programs. In February 2019, Noble transferred its work and management of the project to the Consortium (housed under the Soil Health Institute) to advance this program.

The ESM program will initially measure three important soil health attributes: soil carbon and net GHG impacts; water quality; and water quantity. The impact of improvements to ecosystem services includes increased agricultural sustainability and resilience, enhanced natural resource stewardship, improved water quality and water conservation, and climate change mitigation. Through time, the program will increase its focus beyond the initial attributes to include improved biodiversity and wildlife habitat conservation and preservation, as well as contributions to global sustainable development goals.

WHY CREATE A ECOSYSTEM MARKETPLACE?

According to the Intergovernmental Panel on Climate Change, the agriculture sector accounts for roughly a quarter of global green-house gas emissions. With the support of ecosystem service markets, however, agriculture can mitigate 89 percent of its emissions by incentivizing farmers and ranchers to effectively sequester carbon into our soils. These beneficial activities also have the potential to improve water quality, control run-off, reduce water demand and gen-erate other ecosystem benefits.

About the Ecosystem Services Market Consortium

MISSION: To advance ecosystem service markets that incentivize farmers and ranchers to improve soil health systems that benefit society.

> "FROM THE ONSET OF THIS INITIATIVE, WE KNEW THAT IT WOULD TAKE AT LEAST A **NATIONAL EFFORT** TO EFFECT CHANGE."
>
> —Debbie Reed, Ecosystem Services Market Consortium Executive Director

Flexibility and innovation are required in the design and implementation of protocols that meet the needs of farmers and ranchers who are managing biological agro-ecosystems on a daily basis.

While the initial focus of the program will be on monetizing soil carbon and water quality and quantity, the program will expand over time to include additional environmental and ecosystem service attributes from working agricultural lands.

BUILDING ON THE LAND

A voluntary farmer- and rancher-based Ecosystem Services Market program can help incentivize farmers to improve soil health. The resulting increases in soil carbon enhance soil biological activity, available water holding capacity, aggregation, water infiltration, nutrient availability, biodiversity, and many other soil properties. These impacts in turn reduce soil erosion, nutrient loss in runoff, fertilizer input requirements, GHG emissions, and other negative impacts. By addressing past and current challenges of ecosystem service markets for the agricultural sector, the ESM program will enable the scaling of farmer and rancher participation to achieve these societal benefits nationwide. The Research Consortium will provide the necessary foundation of sound science needed to effectively institute an Ecosystem Services Market that will provide a market-based incentive for producers to adopt conservation practices to improve soil health.