

November 9, 2020

Diane Gelburd, Ph.D.
Deputy Chief for Science and Technology
USDA Natural Resources Conservation Service
1400 Independence Avenue SW
Washington, DC 20250

Re: Innovative Technologies and Practices for the Agriculture Innovation Agenda
Docket Number: USDA-2020-0008
Federal Register Publication Date: 09/10/2020
Federal Register Page Numbers: 55812-55813

Dear Dr. Gelburd:

Thank you again for the opportunity to comment on the U.S. Department of Agriculture's Agriculture Innovation Agenda. The American Society of Agronomy (ASA), Crop Science Society of America (CSSA), and Soil Science Society of America (SSSA) represent more than 8,000 scientists in academia, industry, and government, 12,500 Certified Crop Advisers (CCA), and 781 Certified Professional Soil Scientists (CPSS). We are the largest and broadest coalition of professionals dedicated to the agronomic, crop and soil science disciplines in the United States. Our member scientists work at the cutting edge of research dedicated to increasing agricultural productivity while reducing its environmental footprint, and our certifiants offer sound, trusted advice to producers for optimized and profitable farms. For that reason, we are pleased to offer these ideas for readily deployable technologies and techniques.

Soil health transition program

In July, our three Societies, collaborated with five other scientific societies and groups to recommend increasing research on cover crops, double cropping, and perennials. While more research on such agronomic systems is needed, such the benefits to soil health are already known: improvements to soil health, increased productivity, improved water quality, and reduced greenhouse gas emissions, among other things. This is a "ready to go" innovation that USDA can promote right now through customer-facing programs and interagency cooperation.

First, USDA should empower FSA, RMA, and NRCS to work together to develop tools that make it easier for producers to transition to cover- or double-cropping systems. The program should start with a cloud-based cover crop support tool that is easy to use and freely available to every USDA customer and researchers for free. It should be nationally available and locally specific. Producers without internet access could work with their FSA office to have the assessments provided for them. The technology and data exist to develop this tool, but USDA is impeded by a lack of investment in technology resources and support for the inter-agency cooperation that will make it useful.

With this tool, a producer would input GPS coordinates for the location of a field, and the system would use publicly available soil, weather, and other data to give recommendations for optimized cover cropping systems. For example, it would recommend which crops or mixtures to plant, and, based on historical trends and current precipitation, it could recommend optimum seeding rates and when to

terminate cover crops. Further, if producers offered information about their current crops, inputs, and planting and harvest times, this tool would integrate information about water, nitrogen, and livestock into its recommendations. Another essential feature of the tool will be to integrate long-term economic data for cover crop transitions to demonstrate a producer's likely return on investment. For example, if a producer invested \$25 per acre each year, the tool should describe the expected gains over five, ten, or more years.

It is not enough that USDA offers a tool that gives environmentally sound advice with the price tag attached; the program must also make cover cropping convenient and economically feasible using long-term incentives so that the farmers willing to try it will not fail financially. USDA FSA should offer loans to producers to begin cover cropping using the tool's recommendations. The loans could pay per acre for lost income for the first five years to promote implementation. After the transition period, the producer would be offered discounted crop insurance rates through RMA for the farm's now less risky, more resilient system. So as not to disadvantage producers who have already made investments in cover crops, for farmers who have already have a five-year or longer history of successful cover crop management experience, RMA should reduce insurance premiums to offset a portion of their investment.

Promotion of diversity in cropping systems

With its emphasis on farm-to-market production, USDA should promote increased domestic production of fruits, vegetables, and other agricultural products through programs that spread out the risk of non-commodity production. For example, USDA could create whole-farm crop insurance.

In addition to economic risk, diverse cropping systems, including intercropping, require specialized equipment that often represents an additional economic barrier. Where it has not already done so, USDA should provide cost-sharing mechanisms for specialized equipment and directly purchase equipment for soil and water conservation districts or NRCS to lease to producers. USDA can partner with equipment manufacturers and local vendors to publicize the equipment availability. This would make farm operations more sustainable and provide new income streams to producers while promoting soil and pollinator health.

Create a program that pays farmers to be environmental stewards

USDA NRCS should work with the Office of the Chief Economist to identify, quantify, and value performance standards for greenhouse gas and nutrient waste reduction, soil health improvement, and improved water quality and water use efficiency. Through a CRP-like program, NRCS should incentivize farmers to perform the most impactful of a menu of interventions, for example planting perennial prairies on non-profitable lands or taking productive land out of production for buffer and filter strips near streams, rivers, and ponds.

Additionally, USDA should support producers who want to pursue new conservation ideas on their farms. Consider incentivizing producers not only to perform tasks outlined specifically by NRCS but to put together their own conservation plan. Build in flexibility so that producers can modify their plan as they go, and reward results. Additionally, build in opportunities for producers who are successful to

speak to their neighbors about their successes. Help them help each other discover what is preventing other producers from employing better practices.

Promote markets for non-commodity grain crops

Producers benefit from planting a diversity of crops, which improves the land and offers economic resilience. Seeds are readily available, but planting them is not economically feasible if there are no nearby buyers for the crop. USDA should make it a priority to encourage and support markets for a diversity of grain crops.

True sustainability models

In our previous comments for the Agriculture Innovation Agenda, our societies suggested USDA support the development of true sustainability models as indispensable tools for producers to optimize their land management for increased productivity and sustainability while reducing environmental footprint and risk. We estimated that a truly predictive model incorporating all of a farm's relevant information would be feasible in 10-15 years. But there is no reason a model that incorporates most, if not all, relevant information could not be developed today. Similar to the soil health transition tool mentioned above, much of what is needed to create a sustainability model is available now. USDA can enable scientists and economists from across its agencies to create the first generation of models. These models will serve as templates for when further information is available, but they should also prove useful at the start.

All NRCS conservation planners should have professional certification and ties to local agricultural institutions

NRCS conservation planners work with producers to design conservation plans and put them in place. These staff are tasked with developing plans that promote environmental stewardship, but plans will only be effective and, importantly, adopted if they are sensitive not only to carbon and nutrient cycling but to equipment availability and economics. For this reason, NRCS should require professional certification and continuing education of all its conservation planners. Our societies offer Certified Crop Advisor, Certified Professional Agronomist, and Certified Professional Soil Scientist programs, but other programs, such as a Professional Ecologist certification, Professional Plant Pathologist certification and Certified Professional Horticulturist would also offer conservation planners the resources they need to develop effective and practical plans.

Regardless of the certification path conservation planners pursue, they should develop close ties with state departments of agriculture and local land grant universities to keep their recommendations relevant and up to date. NRCS could facilitate this by suggesting that Regional Conservation Partnership Program (RCPP) proposals include either collaborators or letters of support from the local land grant university or other relevant agricultural institution. These interactions will ensure policy consistency, trust, and collaboration among state, university, and federal partners for a higher chance of subsequent adoption of conservation practices by producers and practitioners.

The Societies look forward to working with USDA as it advances the Agriculture Innovation Agenda.

Sincerely,

A handwritten signature in black ink, consisting of a stylized 'N' followed by a 'G' and a long horizontal flourish.

Nick Goeser, CEO
American Society of Agronomy
Crop Science Society of America
Soil Science Society of America