OrCAN
Oregon Climate & Agriculture Network

Recommended Practices, Policies and Programs to Sequester Carbon and Reduce Emissions on Oregon's Agricultural Lands

Agriculture plays an important role in the solution to climate change. According to the International Panel on Climate Change, we cannot reach our goals to cool the planet without investing in carbon sequestration strategies[1]. Agriculture provides one of the most ready, cost effective pathways for carbon sequestration. Agricultural practices that mitigate climate change provide co-benefits including: improved soil health to sustain agriculture and enhance the profitability of farmers and ranchers, water conservation, and improved wildlife habitat.

Farmers and ranchers are on the front lines of both the impacts of climate change and being part of the solution. Oregon Climate and Agriculture Network (OrCAN) has engaged with a wide range of producers to better understand the barriers and opportunities to implementing practices that mitigate climate change. We heard loud and clear from producers that they are interested in better technical assistance and education opportunities. Technical assistance in many areas to date has not provided a holistic, soil health-driven approach to farm planning. Producers want to know more about how to produce healthy soil, not just crops. As one producer put it, "On soil health I want to know where am I right now? Where can I go? What's going to help me get there?" There's interest in having producer-driven research lead the way to better understand how practices can work on the ground in each region for more specific crop types. Financial incentives are important, but they must be provided in a streamlined, simplified way. These programs will require a source of sustainable funding.

From our work with Black, Indigenous and other Farmers of Color, we know that we have to create an equity lens for all the decisions we make big and small. We have weaved in their specific recommendations throughout this document. As the OGWC moves forward on developing policies and programs we hope they can use the following questions at every step of the way: Who are we centering in this decision? Who are we leaving out? How are people that might be affected included in our decision making? How does this advance racial, gender, cultural, class, and/or geographic equity? [2]

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[1] "In the recent IPCC Special Report SR15, agriculture and food was again identified as both a significant contributor to and potential mitigation strategy for climate change. The report highlighted that it is vital that we develop removal solutions, in addition to reduction strategies, because all 1.5° C emissions pathways rely upon carbon removal to some extent. Regenerative agriculture production methods is one of the best known removal solutions we have currently." (Source: Barriers For Farmers & Ranchers To Adopt Regenerative Ag Practices In The US: Identifying Key Levers and Opportunities-A Roadmap For Funders and Stakeholders by Jennifer O'Connor, Guidelight Strategies. August 2020)

[2] Developed by the Oregon Community Food Systems Network's Diversity, Equity and Inclusion Committee

We recommend that the Oregon Global Warming Commission propose a goal to: Increase adoption of agricultural practices that have the potential sequester carbon in the soil and reduce GHG emissions.

Below we have done our best to answer the question: "What practices, policies and programs should Oregon pursue to achieve a natural and working lands emissions and sequestration goal?" and we have provided issues to consider for some of them.

Agricultural practices that have the potential to sequester carbon in the soil and/or reduce emissions on farms and ranches:

- no till and reduced tillage
- cover cropping
- strip cropping
- compost application (or other organic amendments like biochar)
- mulching
- rotational grazing
- conservation crop rotation
- hedgerow and riparian plantings
- silvopasture and agroforestry
- climate-friendly nutrient management
- composting of manure and other organic "wastes"
- sustainable and organic production systems

Additional strategies to reduce fossil fuel usage or generate renewable energy:

- on-farm renewable energy use, both infrastructure and technology upgrades
- modernizing irrigation systems to conserve and produce energy

Recommendation #1

Support expansion of education and technical support to beginning farmers and those who are newly transitioning to implementing practices with the potential to sequester carbon in the soil and reduce greenhouse gas emissions, listed above in the Practices section. Expand support provided by experienced producers, Soil and Water Conservation Districts, OSU Extension, non-profits, and/or ODA in these areas:

- Support on-farm demonstrations, mentoring, communities of practice and educational/informational resources and outreach.
- Free/reduced-cost soil health testing (including soil biology) to help producers understand the state of their soils, the potential for improving soil health on their land, assist researchers in linking management practices to outcomes, and potentially provide baseline data for carbon markets.
- Increased capacity for soil health technicians to support Oregon's farmers and ranchers including: BIPOC producers, those in all parts of the state, and range and pasture soils.

Issues to consider:

Farmers learn best from the successful examples from other farmers through farm visits, demonstrations, consultations and mentorship from experienced farmers, and case studies of working farms.

While most of the producers we spoke with indicated that mentorship was more valuable than technical assistance, they also provided feedback on how technical assistance could be best delivered. Some producers would like to see more remote learning opportunities like e-campus modules, made accessible to producers through state funded research universities. Several of OrCAN's producers expressed interest in increased need for support from SWCDs, OSU Extension, and/or NRCS, but other producers, specifically BIPOC producers recognized that these entities don't support everyone, can be exclusive, and not culturally-relevant or appropriate. Providing a variety of technical assistance options will be best to meet farmers where they are at and will be more likely to provide what they need. We recommend focusing on providing funding to farmer mentors, tribal liaisons, and training the trainers (for example OSU Extension and SWCD staff).

Mentorship and technical support must be specific and consistent over time. We recommend providing support for two to four years during adoption of new practices.

Case studies are an example of educational resources which can provide roadmaps for transition challenges.

Farmers value knowledge about their soils and want both training in field indicators for soil health as well as more access to soil testing. Farmers consider soil testing to be a significant expense and want support paying for soil testing. Policymakers and funders should invest in upgrading regional soil testing lab infrastructure to make sure that Extension labs are able to provide affordable soil health assessment long-term. Farmers also want training to help them learn soil health field assessment.

Recommendation #2

Build on ODA's planned Soil Health Baseline Assessment and other existing tools to guide policy and program priorities:

- Expand the planned Soil Health Baseline Assessment to include microbial health
- Use Moore, et al's report "Potential for Conservation Practices to Reduce Greenhouse Gas Emissions and Sequester Carbon on Croplands and Grazing Lands in Oregon" as a reference guide for generating priorities and identifying research needs;
- Use existing tools including American Farmland Trust's CaRPE tool and Ecotrust's mapping tool to estimate the potential for soil carbon sequestration on agricultural lands;
- Ground truth CaRPE modeling exercises by region, with on the ground interviews with NRCS, SWCDs, and producers to better understand past successes and challenges in adoption of practices; and
- Work in collaboration with NRCS to calibrate the COMET model for Oregon.

Issues to consider:

- Prioritize regions with poor soil quality, and low precipitation, for example east of the Cascades.
- It's important to include and consider range and pasture lands in addition to crop land.
- Use the information provided in these assessments and inventories. We don't want these reports to sit on a shelf. These resources can drive policy and investments in the future.
- Use existing tools or resources developed by NRCS. Collaborate with NRCS to develop additional tools and resources.

Recommendation #3

Provide funding to support the adoption of other practices that reduce emissions or otherwise mitigate climate change, listed above in the Practices section.

Recommendation #4

Create a sustained source of funding for research on climate change and climate mitigation strategies on Oregon's agricultural lands.

Issues to consider:

On-farm demonstrations and trials, as well as trials and research at experiment stations are both needed. There has been a lot of research done on productivity. There's a need for more research on maximizing soil carbon.

Research needs to be leading the way, to make sure we're investing our limited resources effectively.

Recommendation #5

Encourage the legislature to adopt Healthy Soils legislation to create a Soil Health Grant Program including:

- Incentives, such as grants, for implementation of soil health practices that promote carbon sequestration, listed above in the Practices section;
- Support for on-farm demonstrations, mentoring, communities of practice and educational/informational resources and outreach as described in recommendation #1.

Issues to consider:

Incorporate lessons learned from California's Healthy Soils Grant Program. OrCAN can provide these lessons learned.

A focus on soil health and additional co-benefits, rather than carbon sequestration, will make this program more relevant to farmers and ranchers and more politically viable. We may want to have a suite of different motivators/ incentives that could speak to different decision-makers. Other options for financial incentives explored in other states include property tax exemptions or rebates, and reduced crop insurance rates.

Farmers want and need more support to access existing financial assistance. Technical assistance for completing grant applications with very few requirements of the producer, except for adoption of the practices, will be important. Policymakers and funders should evaluate the administrative task load for existing and proposed financial assistance programs and consider minimum base payments that level the playing field and encourage participation from small-acreage producers. Direct-to-producer grants and micro-grants are a useful tool to help farmers of all scales access equipment and cover transition-related cost increases.

Adopting a new healthy soils practice involves uncertainty, risk and a learning curve. Farmers need financial assistance for a minimum of two years and up to four years during adoption of new practices. But at the same time incentive programs must be designed to compensate innovators, pioneers and long-term practitioners and not be based solely on proof of "additionality".

Soil sample requirements are problematic and are a barrier. Incentive programs should rely on modeling to provide the carbon sequestration potential of a practice. Incentives need to be available to producers who lease their land in addition those who own their land.

Consider how payments should be made for example: per ton of carbon sequestered, by practice or by acre. Acreage-based payment structures leave out smaller-scale farmers. The inclusion of rangeland will be important.

Ensure we are not leaving federal dollars on the table and are leveraging existing funding rather than creating new grant programs, where resources already exist. We recommend funding for a state soil health program be administered by OWEB and distributed through SWCDs, because of their existing role as funders and resource providers.

Recommendation #6

Fund the Oregon Agriculture Heritage Program to protect agricultural lands. Studies have shown that an acre of farmland provides "58-70 times fewer greenhouse gas emissions than an acre of urban land." [3]

Recommendation #7

Facilitate multi-stakeholder collaboration both public and private, to advance the recommendations above. Ensure the inclusion of BIPOC farmers in decision-making in program development and implementation, including access to any funding.

Issues to consider:

Producers, especially BIPOC producers, as well as farmworkers, are important stakeholders and need to be heard and included in this stakeholder engagement process. Engaging diverse stakeholders in this process will strengthen these programs and ensure they work for all of Oregon's farmers and ranchers.

Some of the "issues to consider", included above, were provided by the National Organic Farming Association in their Report: Farmers Share Experiences and Challenges Adopting Healthy Soils Practices.

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[3] Source: Greener Fields: California Communities Combating Climate Change. American Farmland Trust.