Healthy Soils Policy Survey Results

Survey Conducted July, 2019

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To help prepare for potential opportunities to advance healthy soils policy at the federal level in 2021, and at the state level on an ongoing basis, Breakthrough Strategies & Solutions solicited input on policy solutions from a few dozen experts in the areas of agricultural policy and healthy soils. Our focus for this assessment was somewhat narrow – healthy soils and soil carbon sequestration, rather than a full ecological and socioeconomic assessment of soils, farming, and rural development policies. Ultimately, these soil carbon policies and concepts need to be placed in a broader policy agenda promoting food security, water protection, pollinator support, nutrition and human health, rural development, access to land for disadvantaged communities and farmers, and climate mitigation and resilience. Below is a summary of the responses and suggestions we received. This document includes a brief summary of topline findings, followed by more detailed tables of all ratings and respondents' verbatim comments.

We would like to thank the following individuals for taking the time to provide their valuable input to our survey (with apologies to anyone we inadvertently omitted. Individuals are not necessarily representing the views of the organizations with which they are associated.)

Jeff Creque, Jimmy Daukas, Marcia DeLonge (with feedback from UCS colleagues), Neva Goodwin, Fred Iutzi, Rory Jacobson, Steven Keleti, Jack Kittredge, Peter Lehner, David LeZaks, Ben Lilliston, Aria McLauchlan, Ann Mills, Mark Muller, Anthony Myint, Max Neumeyer, Keith Paustian, Niel Ritchie, Mark Shepard, Carl Sigel, and Anya Starovoytov. We also thank those respondents, including some federal employees, who preferred to remain anonymous. A total of 29 individuals provided feedback.

We are also grateful to Ferd Hoefner, Senior Strategic Advisor at the National Sustainable Agriculture Coalition, for his substantial input on the survey design.

Topline Results:

We've highlighted some of the survey's key findings here, while more detailed and verbatim responses follow.

Top-Rated Policies for Farm Bill:

Our first question asked respondents to rate a number (19) of possible soil health policies for inclusion in the next Farm Bill. Of note, the three most highly rated options involved modifications to crop insurance. Modifications to commodity subsidies were also highly ranked. More specifically, the two options most highly rated were:

> ***-Reduce or otherwise reformulate commodity & crop insurance subsidies that currently favor harmful practices that degrade soil health*** (70% of respondents rated as 'highly important')
>
> ***-Offer improved crop insurance coverage for farmers consistently utilizing risk-reducing soil health practices, including cover crops, resource-conserving crop rotation & conservation tillage.*** (64% of respondents rated as 'highly important')

Several other possible Farm Bill policy modifications were also highly ranked, suggesting there are a number of possible and important ways to advance healthy soils in the next bill. Please see Question 1. below for all responses and verbatim suggestions.

Other Potential Federal Policies:

We then asked respondents to rate a number of other possible policy options that were not necessarily tied to the Farm Bill. (A few respondents noted that some options presented in this question actually could be part of the Farm Bill.) Of the options we presented, the most highly rated was:

> -***Ensuring regenerative agriculture and soil health priorities are incorporated in major climate proposals like the Green New Deal*** (64% rated highly important)

Also highly rated were investing additional resources in the 3,000 conservation districts, as well as county extension services, to provide training on healthy soils; supporting agroforestry systems that keep livestock and manure on farms to rebuild soil organic matter; and supporting research and farmer trials of perennial, legume, pulse and oil crops. The lowest rated option was mandating farmer training on healthy soils through conservation districts. Respondents indicated support for such training, but do not believe it should be mandated. One respondent cautioned against focusing too exclusively on soil carbon as the sole measure of soil health.

See Question 2 below for all results.

Top Priority for next President and Congress:

We asked respondents what their number one priority for the next President and Congress to accelerate the field of soil carbon sequestration would be. Themes that emerged to this open-ended question included tying soil health to crop insurance, focusing on/ advancing perennial crops, fully funding or increasing funding for NRCS and related SCS programs, setting national soil goals and joining other nations in efforts such as the 4 per 1000 program.

All verbatim responses are included in the main body, under Question 3.

State-Level Policies for Possible Replication:

California's Healthy Soils program stood out as most mentioned by respondents as a state-level policy that could be replicated in other states or at the federal level. Next, more than one respondent mentioned programs in Minnesota (Green Lands, Blue Waters and the Forever Green Initiative). Other state policies suggested were the Iowa and Illinois pilot tests of $5/acre rebate on crop insurance for use of cover crops, and programs in Massachusetts and New Mexico. Respondents also suggested programs to help farmers afford new low-till/ no-till equipment, boosting compost production, and using working land easements to transition marginal land to perennials, among other concepts. Finally, it was noted that Earthjustice will soon be releasing a model state policy.

See all verbatim responses under Question 4 in the attached.

Bold and Audacious Ideas for Rapidly Scaling Soil Carbon Sequestration.

We invited respondents to dream big on ideas that could help rapidly advance soil carbon sequestration. Themes that emerged included putting a price on carbon, crop insurance reform, factoring in soil health to farm credit lending, funding to assist farmers with the transition to new practices, and fees on negative externalities.

There are also additional creative ideas mentioned by single respondents worth noting, including a much longer term Farm Bill structure (based on a Land Institute proposal), and a detailed suggestion regarding incentivizing establishment of USDA Code 300 on all highly erodible lands and then introducing agroforestry with regionally specific prairie seed mixes among the tree rows. One respondent cautioned that this type of survey is too simplistic to capture complex ecological concepts.

All verbatim responses are again included below, under Question 5.

Detailed Survey Results

1. Listed below are several soil health policies that could be promoted for inclusion in the next Farm Bill. (Thanks to National Sustainable Agriculture Coalition and Union of Concerned Scientists for many of these ideas.) How would you rank each of them in terms of their importance? (1=Not at all Impt; 5=Highly Impt)

The two options most highly rated by our respondents (based on highest weighted average) were as follows:

> ***-Reduce or otherwise reformulate commodity & crop insurance subsidies that currently favor harmful practices that degrade soil health*** (70% of respondents rated as 'highly important')
>
> ***-Offer improved crop insurance coverage for farmers consistently utilizing risk-reducing soil health practices, including cover crops, resource-conserving crop rotation & conservation tillage.*** (64% of respondents rated as 'highly important')

Many of the other possible Farm Bill policies options were also rated quite highly by many respondents, suggesting there are many possible and important ways to modify Farm Bill policy to advance soil carbon sequestration. **Of note, three of the most highly rated options involve modifications related to crop insurance;** similarly, items involving modifications to commodity subsidies were highly ranked.

The next tier of policies most highly rated on average included:

> ***-Condition the receipt of commodity & crop insurance subsidies on the adoption & implementation of a soil health plan.*** (50% rated as 'highly important')
>
> ***-Add soil health planning & climate mitigation measures as activities within the Conservation Stewardship Program for which farmers and ranchers may receive payment.*** (59% 'highly important')
>
> ***-Scale up the Conservation Innovation Grant soil health demonstration projects into a nationwide program.*** (55% 'highly important')

Finally, some respondents commented that some of the options presented in the subsequent survey question could also be addressed in the Farm Bill. Therefore, some items in Question 2 should be considered for those working on Farm Bill policy as well.

Listed below are several soil health policies that could be promoted for inclusion in the next Farm Bill. How would you rank each of them in terms of their importance?

(ranked by average)	1 Not at all Important	2	3	4	5 Highly Important	Total	Weighted Average
r. Reduce or otherwise reformulate commodity & crop insurance subsidies that currently favor harmful practices that degrade soil health.	0.00% 0	7.41% 2	7.41% 2	14.81% 4	70.37% 19	27	4.48
q. Offer improved crop insurance coverage for farmers consistently utilizing risk-reducing soil health practices, including cover crops, resource-conserving crop rotation & conservation tillage.	3.57% 1	0.00% 0	7.14% 2	25.00% 7	64.29% 18	28	4.46
p. Condition the receipt of commodity & crop insurance subsidies on the adoption & implementation of a soil health plan.	3.57% 1	0.00% 0	7.14% 2	39.29% 11	50.00% 14	28	4.32
h. Add soil health planning & climate mitigation measures as activities within the Conservation Stewardship Program for which farmers and ranchers may receive payment.	0.00% 0	6.90% 2	13.79% 4	20.69% 6	58.62% 17	29	4.31
e. Scale up the Conservation Innovation Grant soil health demonstration projects into a nationwide program.	0.00% 0	3.45% 1	17.24% 5	24.14% 7	55.17% 16	29	4.31

o. Increase farm bill funding for the Organic Agriculture Research & Extension Initiative & the Specialty Crop Research Initiative, with substantial funding dedicated to soil health.	3.85% 1	0.00% 0	11.54% 3	42.31% 11	42.31% 11	26	4.19
n. Fully fund the USDA Agricultural Food & Research Initiative (AFRI), Sustainable Agriculture Research & Education, and Integrated Pest Management.	0.00% 0	10.71% 3	14.29% 4	25.00% 7	50.00% 14	28	4.14
k. Within EQIP: Provide greater incentives for cover crops, buffer strips and pollinator habitats.	0.00% 0	7.14% 2	14.29% 4	39.29% 11	39.29% 11	28	4.11
d. Set aside substantial amounts of funding under the Agriculture & Food Research Initiative, Organic Agriculture Research & Extension Initiative, and the Specialty Crop Research Initiative.	0.00% 0	7.14% 2	25.00% 7	21.43% 6	46.43% 13	28	4.07
b. Modify federal crop insurance program so that weather events delaying the termination of a cover crop do not render subsequent cash crops ineligible for insurance.	3.70% 1	7.41% 2	7.41% 2	40.74% 11	40.74% 11	27	4.07
a. Require the USDA's Risk Management Agency to accept all conservation practices and enhancements as "good farming practices" under the federal crop insurance program.	4.00% 1	8.00% 2	16.00% 4	32.00% 8	40.00% 10	25	3.96

s. Use federal procurement to drive demand for food produced with regenerative soil practices. Include augmenting SNAP benefits with local produce using regenerative soil practices.	0.00% 0	7.41% 2	29.63% 8	25.93% 7	37.04% 10	27	3.93
l. Within EQIP: Add soil testing as an eligible activity.	0.00% 0	15.38% 4	19.23% 5	23.08% 6	42.31% 11	26	3.92
j. Within EQIP: Expand funding opportunities for pasture-based livestock systems	0.00% 0	11.54% 3	23.08% 6	42.31% 11	23.08% 6	26	3.77
c. Require the USDA to increase the minimum contract payment & average per-acre payment under all federal working lands conservation programs for cover crops, resource-conserving crop rotations, and managed rotational grazing.	7.69% 2	7.69% 2	26.92% 7	15.38% 4	42.31% 11	26	3.77
g. Make soil health & greenhouse gas reduction the primary focus of the Conservation Stewardship Program.	3.70% 1	18.52% 5	18.52% 5	18.52% 5	40.74% 11	27	3.74
f. Create a Soil Health & Income Protection Pilot Program within the Conservation Reserve Program.	8.70% 2	13.04% 3	17.39% 4	34.78% 8	26.09% 6	23	3.57
i. Expand EQIP participation & eliminate unnecessary payment caps for organic producers, while reducing maximum payments for all producers.	0.00% 0	28.57% 8	14.29% 4	32.14% 9	25.00% 7	28	3.54

m. Direct the USDA to improve promotion of the WFRP program to farmers and insurance agents to expand participation.	8.70% 2	17.39% 4	30.43% 7	30.43% 7	13.04% 3	23	3.22

Other suggestions:

-I assume "p" is about conservation compliance. I would love to strengthen conservation compliance, and I think soil health plans are just one of several ways that Conservation Compliance should be strengthened, which is why I gave it a middle rating.

-Establish an Outcomes-Verified Soil Health program within NRCS to connect farmers & ranchers to market-based, economic incentives; Recognize soil health as an essential tool in risk mitigation and direct the USDA to conduct an inter-agency effort between NRCS and RMA that establishes a predictive model of risk around soil health; Pass the PRIME act to allow grass-fed meat producers to slaughter and sell their meat on-farm or locally, meeting customer demand and improving regional economies (rather than shipping livestock thousands of miles away at great cost to the farmer)

-Support 4R implementation and partner with farmers instead of attempting to regulate them (carrot v stick approach); think creatively about partnering with supply chain; encourage USDA to utilize technical service providers to augment drafting and implementation of soil health management plans.

-Eliminate all crop subsidies and move those funds to conservation programs that focus on on-farm carbon sequestration.

-Supplementation of cropland and pastures with compost should be included as a regenerative agricultural practice. Funding for measurement of soil carbon should be earmarked.

-Fully fund USDA agroforestry center.

-We need to make CSP eligible to every farmer that qualifies. Too many farmers are turned away. - Main problem in ag is over-production of soil damaging systems. Would push for greatly expanded CRP - we previously had it up to 40 million acres. - We'll be pushing for a supply management system, which limits over-production, but also needs to incorporate soil health practices.

- Fund tools to quantify GHG, carbon and soil health to make them more consistent and accepted across the country.

- More investments in rangeland soil carbon mgt

- Better local control and flexibility in use of funds by soil and water conservation districts, so as to lower cost-of-entry for small farms and ranches, and to better fill gaps in local needs (e.g., access to no-till and low-till equipment, composting, biochar, etc.)

-Create a new "Carbon Sequestration Corps" in which youths and adult jobseekers could be employed in wetlands restoration, tree-planting, urban greening, and more. Create a "Small Farms Administration," which would be an appropriately modern version of the SBA. The SFA would be an umbrella agency under which to develop and deploy the innovations and supports that American farmers need to transition to regenerative agriculture. This could build on the Healthy Soils bills that have passed or are pending in a number of states. revise grazing practices on government land.

-Provide designated funding for perennial grain crop research, including one or more dedicated grant programs within NIFA, and including research within ARS

2. Below are other policies not necessarily tied to the Farm Bill that could be promoted at the federal level. Please rate how important you believe each one to be. (1=Not at all Important; 5=Highly Important)

Of note, some respondents noted that some of these options would also be included in the Farm Bill, so some of the below options should be considered in that context as well.

The most highly ranked option outside of the Farm Bill was:

-***ensuring regenerative agriculture and soil health priorities are incorporated in major climate proposals like the Green New Deal*** (64% rated as 'highly important')

Other suggestions that were ranked as highly important by more than half of respondents included:

Invest additional resources in the 3000 conservation districts, as well as county extensions services, to provide information & training on healthy soils. (52% rated 'highly important')

Support agroforestry systems that keep livestock & manure on farms and rebuild soil organic matter. (52% rated 'highly important')

Support research & farmer trials of perennial cereal, legume, pulse and oil crops. (54% rated 'highly important')

The lowest rank option was the suggestion that farmer training on healthy soils and SCS be mandated through conservation districts. Comments suggest that respondents are supportive of such training, but do not believe it should be mandated. Other suggestions are provided verbatim following the table. Of note, one respondent cautioned against focusing too exclusively on soil carbon (not ignoring other important minerals, overall soil health.)

Below are other policies not necessarily tied to the Farm Bill that could be promoted at the federal level. Please rate how important you believe each one to be. (1=Not at all Important; 5=Highly Important)

	1 Not at All Important	2	3	4	5 Highly Important	Total	Weighted Average
a. Ensure regenerative agriculture & soil health priorities are incorporated in major climate proposals like the Green New Deal.	0.00% 0	3.57% 1	3.57% 1	28.57% 8	64.29% 18	28	4.54
b. Invest additional resources in the 3000 conservation districts, as well as county extensions services, to provide information & training on healthy soils.	0.00% 0	0.00% 0	14.81% 4	33.33% 9	51.85% 14	27	4.37
g. Support agroforestry systems that keep livestock & manure on farms and rebuild soil organic matter.	0.00% 0	6.90% 2	10.34% 3	24.14% 7	58.62% 17	29	4.34
h. Support research & farmer trials of perennial cereal, legume, pulse and oil crops.	0.00% 0	7.14% 2	17.86% 5	21.43% 6	53.57% 15	28	4.21
k. Change food and farm waste management regulations to incentivize compost production. Create distribution networks to deliver compost to nearby farms, ranches & vineyards.	0.00% 0	7.41% 2	14.81% 4	37.04% 10	40.74% 11	27	4.11
f. Develop a partnership with tribal programs focused on healthy grasslands, SCS, and economic development for Native American farmers and ranchers.	0.00% 0	14.81% 4	11.11% 3	44.44% 12	29.63% 8	27	3.89

d. Create a Civilian Conservation Corps providing summer jobs to young Americans who work to build soil carbon through support of farmers, ecosystem restoration & tree planting.	0.00% 0	3.57% 1	39.29% 11	32.14% 9	25.00% 7	28	3.79
j. Prioritize research into the connections between healthy soils & human health.	0.00% 0	14.81% 4	37.04% 10	18.52% 5	29.63% 8	27	3.63
e. Establish a demonstration farm, ranch or vineyard in each state to research & demonstrate SCS potential in differing contexts.	0.00% 0	25.93% 7	37.04% 10	18.52% 5	18.52% 5	27	3.30
i. Provide matching grants for up to 100 cities to establish Climate Victory Gardens & Community Farms to grow local food, educate children and promote regenerative practices among urban farmers & gardeners.	0.00% 0	29.63% 8	29.63% 8	22.22% 6	18.52% 5	27	3.30
c. Mandate farmer training through conservation districts on healthy soils & SCS.	18.52% 5	22.22% 6	18.52% 5	33.33% 9	7.41% 2	27	2.89

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Other:

-Better leverage the LTARs and/or Climate Hubs for long-term research

-Begin to utilize cation exchange capacity soil tests (such as done by Midwest Bio-Ag, Agri-Dynamics and others, in order to amass more complete data on the overall health of soils in the USA. Carbon is not the only indicator of soil health! As a matter of fact, EXCESS Carbon is a NEGATIVE in many cases (i.e. peat soils, muck soils, etc) Ca and Mn are hugely important in the overall functioning of the total ecosystem and S is critical for protein synthesis... Soil is NOT all about carbon... Carbon is the energy. The other minerals are critical as well for human health, animal health and the use of a particular piece of land as a carbon sequestration site. Focusing strictly on C sequestration in soils is a reductionist approach and vastly over simplifies too many interrelated issues.

-What about something on carbon taxes or other policies that would incentivize c sequestration?

-Introduce tax breaks for capital investments into regional foodshed infrastructure development, such as mills, seed cleaners and organic slaughterhouses Financial incentives: Give farmers access to capital (loans and payments) for innovative soil health practices. Diversity of operations: Support policies that also address the needs of small to mid-sized operations in a variety of production systems.

-I would not rank favorably any recommendation that uses the word "mandate". Otherwise, C above is a good idea and that sort of community-driven education should be encouraged. But if the NGO community needs to learn anything from the ag community, it is that we should not try to mandate.

-Federal plant nurseries in every region to supply farmers and ranchers with appropriate agroforestry and native species. Civilian Conservation Corps concept should expand to a 2 year full-time civil service opportunity, not just a summer job. Radically increase field staff for NRCS to restore conservation planning and technical assistance as a core mission of the agency.

-Provide incentives for farms that increase soil carbon by application of compost

- Require USDA to quantify and report on the GHG reductions estimated by their policies and programs
When incentivizing composting it's critical to have quality control that keeps industrial wastes out of the compost. There are strong financial incentives to waste management companies to get this wrong.

3. What would be your #1 priority for the next President and Congress to enact to accelerate the field of soil carbon sequestration?

Respondents' verbatim responses are listed below, roughly clustered by concepts. **Themes that emerged included tying soil health to crop insurance; focusing on/ advancing perennial crops; fully funding or increasing funding for NRCS and related SCS programs; setting national goals / joining other nations in efforts such as the 4 per 1000 program.**

-Commodity payment and crop insurance reform to link to HS practices.

-Hinge Insurance on SOM%

-Cover crop insurance rules reform payments for ecosystem services

-Tie healthy soil practices to crop insurance.

-Making soil health the focus of all government ag programs, especially crop insurance.

-In order to determine the potential for SOIL C sequestration, nationwide baseline data needs to be gathered. Soil tests (especially CEC tests) will identify the soils/sites/regions with the greatest potential for C sequestration then those regions/soils can be targeted to maximize C sequestration. Once again, though... Soil C sequestration is only ONE PART of site Carbon sequestration. Non-humus soil BIOLOGY is another potential sink as is the terrestrial plant community. Optimum site carbon levels can only be achieved through the reestablishment of perennial ecosystems that are adapted to each soil, climate, region... For example, a mature redwood/sugar pine forest in California or a mature white pine forest in Michigan would be the ecotype that sequesters the most carbon for that site... Soil is only a PART of that system... FOOD can be produced in natural plant community mimics in any ecoregion, by planting a targeted "climax" (maximum Carbon sequestering plant community type) then managing that site using Agroforestry techniques. Perennialism (or at least LONG, complex crop rotation) is almost a required step #1.

-Provide incentives for cover crops and perennials

-Increased focus on perennial grain crop research and development - converting annual cropland to perennial cover is the single most effective way to increase SCS, and developing perennial grain crops would open up this option on a vast number of acres that now and in the future will be devoted to grain crops.

-Fully fund RCDs and NRCS to enable region-wide scaling of carbon-focused on-farm technical assistance and implementation capacity.

-Scale the on-Farm innovation program to at least $400 million per year.

-Funding program for incentive payments to farmers that are willing to adopt soil carbon sequestration management practices on their land for at least 5 yrs.

-Appropriate funds for a massive federal R&D program on soil carbon per the national academies recommendations

-Join with other nations in 4 per thousand program. Set reasonable national goals and enforce them.

-As part of the Green New Deal package, launch a five-year initiative to restore American soils, sequester carbon, and bring jobs to rural America

-Set a specific goal for GHG reduction and carbon sequestration for the US from agricultural land, forests and wetlands.
-Establish national soil monitoring network linked to existing Natural Resource Inventory systems of USDA/NRCS

-Long-term soil health/SCS RD&D projects in all districts

-Establish a voluntary, outcomes-verified soil health program, recognizing producers who are rebuilding healthy soils. This provides esential infrastructure and a clear way for farmers to access carbon markets, and for companies to incorporate soil health into their supply chains.

-Provide financial incentives to farmers/ranchers who apply compost to accelerate SCS.

-Link up COMET-Planner with EQUIP $

-Would make soil health practices under CSP eligible to any farmer that qualifies.

-Eliminate subsidies to fossil fuel industry, including sunsetting subsidy for carbon oxides used for fossil fuel extraction under Title 26 Section 45Q, and apply those subsidies to soil heath programs

-Ensure that such legislation is designed for ecological quality and social wellbeing RATHER than to enrich powerful players in the economy.

-Carbon tax, or similarly structured mechanism.

-I want a strong climate change policy, and recognition that agriculture and forestry are crucial components of climate mitigation and adaptation. I'm tired of agriculture being an afterthought in the climate sector.

4. Are there are state-level policies you believe should be replicated in other states or at the federal level? If so, which policies?

Respondents' verbatim responses are listed below, roughly clustered by theme. Of note, California's Healthy Soils program was most mentioned by respondents. Programs in Minnesota (Green Lands, Blue Waters and the Forever Green Initiative) were mentioned more than once. Other state policies mentioned included the Iowa and Illinois pilot tests of $5/acre rebate on crop insurance for use of cover crops; and programs in MA and NM. Also mentioned were offering programs to help farmers afford new low-till/ no-till equipment, boosting compost production, and using working land easements to transition marginal land to perennials, among other concepts. Finally, it was noted that Earthjustice will soon be releasing a model state policy.

-CA Healthy Soils Program

-California Dept of Food & Ag Healthy Soils Program is a good start with an incentive AND demonstration portion of the grant program. Needs more technical support for ranchers + longer funding time frames (3 years is not sufficient to observe changes in soil health).

-Requiring soil health testing for receipt of subsidies, but not tying payments to soil health outcomes (CA)

-CA Healthy Soils Program Forthcoming Restore CA restaurant program

- CA policy of deciding on some methodologies, even as they work to improve them, to track and report on GHG and soil carbon impacts of their state policies and programs, e.g., using COMET, models, VMT, and other measures

-California healthy soils initiative is a great policy to iterate on

-CA is doing a great job in enrolling farmers in healthy soil programs and providing the necessary funding to monitoring and learn from outcomes.

-California's soil health strategy broadly + using income from cap and trade program to fund ag soil health practices. Shows farmers they can be a direct beneficiary of a carbon tax or other mechanism that puts a price on carbon.

-California Healthy Soils initiative is a good start though it still has a way to go. It is a beginning.

-CA is leading the pack, but with activities like Indigo's Terraton have the possibility of surpassing (in impact) those public programs. This assumes that enough buyers line up to purchase the credits generated from these mechanisms.

-CA's Health Soils Program is great. MN's Green Lands, Blue Waters program is focused on new crops that enhance soil health - and finding markets for farmers for those new crops

-The Forever Green Initiative at the University of Minnesota is a highly successful program to accelerate development and commercialization of perennial crops and multiple cropping systems using annuals (so-called "cash cover crops".) This program should be replicated in other states, and has a highly developed federal funding model (already attained) and state funding model (currently under consideration in the legislature) to emulate also. www.forevergreen.umn.edu

-The MA bill has good ideas such as the fund and the inclusion of HS ideas throughout; the NM soil health champion idea is good; we will soon have a model state bill with the best of all states and ideas.

-Iowa and soon to be Illinois pilot test of $5/acre rebate on crop insurance premiums if adopting cover crops

-Market-driven would be bi-partisan; regardless of the policy it must have farmer incentive first. If they cannot afford to do it in the short term, they will not adopt it broadly. Make it easy for them to do and make it easy for the NGO, ag, corporate communities to support.

-Core funding for RCDs.

-Provide incentives to reduce food waste nationwide by increasing compost production

-State subsidies/programs to obtain no-till and low-till equipment, replicated by other states and at federal level; crop insurance reductions for combination of practices (e.g., cover crops AND no-till/low-till AND efficient use of fertilizers/pesticides) following healthy soils principles.

-Use working lands easements to support the transition of marginal lands from row crops to perennials.

-Set up soil health programs in ag departments to study and further SCS

-Not familiar enough with the array of state policies.

5. Do you have any bold and audacious policy ideas for taking SCS to scale rapidly? (e.g., mandates, tax incentives, regulatory and market based mechanisms, research grants, revolving loan funds, etc.) Dream big.

Respondents' verbatim comments are again listed below, roughly clustered by concepts, where possible. Some themes that emerged included putting a price on carbon, crop insurance reform; factoring in soil health to farm credit lending; funding to assist farmers with the transition to new practices; and fees on negative externalities.

There are also additional creative ideas mentioned by single respondents worth noting below, including a much longer term Farm Bill structure, and incentivizing establishment of USDA code 300 on all highly erodible lands and then introducing agroforestry with regionally

specific prairie seed mixes among the tree rows; more below. One respondent cautioned that this type of survey is too simplistic to capture complex ecological concepts.

-A carbon tax.

-put a minimum $100/tonne price on terrestrial carbon and support RCDs in developing revolving carbon funds in conjunction with farmer-owned carbon cooperatives to expand carbon farming throughout their districts.

-Cap and trade or carbon tax with agriculture uncapped or untaxed but able to provide offsets up to 10% of compliance reduction

- put a price on carbon

-We are working to pave the way for crop insurance reform, by generating concrete data that not only establishes the link between soil health and reduced risk for farmers but creates a predictive model of risk, leading to crop insurance reform that encourages, rather than penalizes, resilience and good soil health.

-Requiring soil health plans for receipt of crop insurance

-linking crop insurance to HS practices (risk minimization practices)

- A crop insurance program that appropriately incentives soil health practices that reduce risk, and penalizes practices that emit more carbon.

-Banks, also in the business of assessing risk, should also be looking not just at a farmer's credit history but also at their soil health as a way to determine risk and give out loans with preferential interest rates.

-Build soil borne risk in farm credit lending. The notion of carbon credits could be leapfrogged if risk (which is a function of soil health) were appropriately accounted for in financing mechanisms.

-I think tax incentives/write-offs, better insurance rates/payments, or other ways to "reward" farmers for doing the better thing are a much better approach than mandates or regulation. Most people are interested in implementing these practices but are either scared of change (i.e. profit loss from changed management) or can't afford to implement so cost incentives can go a long way to broader adoption.

-Model state bill and aggressive state by state advocacy; changing the commodity payments to payments for soil carbon services;

-Payments for ecosystem services.

-Fees on negative externalities (e.g., fertilizers, pesticides, herbicides, etc.) to fund ecosystem service programs (e.g. soil health, SCS, agrochemical efficiency, etc.)

-Mill fee on pesticides and fertilizer

-finding ways to compensate farmers for the transitional costs -- something along the lines of payments for ecosystem services, as in the NYC water system.

-A really big non-bureaucratic revolving loan fund available to farmers large and especially small & mid-sized comprised of public, private and philanthropic dollars that significantly reduces the cost/risk to the farmer for transitioning to a suite of proven soil health practices that yield measurable uplift on carbon and water. This is a less audacious approach...(I leave it to bolder thinkers for that!) but could engender broad p support in shorter term. Audacity is good. Getting other stuff across the finish line sooner is good too. Thank you for doing this survey!

-Federal funding to accelerate the transition to healthy soil on all farms and ranching, through risk mitigation.

-Expand Q45 tax credit to apply to soil carbon that meets USDA standards for verified net CO2 removal (relative to baseline, including non CO2 GHGs), with appropriate provisions to deal with leakage and permanence issues.

-For soil carbon—a performance-based block grant program to states (or even localities) that provides federal payments for demonstrated increases in soil carbon (and biomass carbon). $50 billion per year. States can use the funds for the carbon sequestration programs or achieve sequestration thru policy and use the funds for schools, infrastructure, whatever.

-Provide grants that document SCS via compost application in different regions of the country.

-We are working to establish an Outcomes-Verified Soil Health Program (and the necessary infrastructure and partnerships to collect consistent, reliable and interoperable data, including establishing a clear soil health sampling methodology and lab calibration protocol).

- academic/industry/policy maker coalescence around a set of tools to measure changes in ag land GHG/soil carbon that can be used to pay farmers, ranchers, and landowners for increased adoption

-The Land Institute, a Salina, KS-based agricultural nonprofit, has proposed a 50 Year Farm Bill that would use a sequence of 10 five-year farm bills to dramatically increase and better coordinate R&D activities necessary to develop and deploy a suite of SCS-enhancing practices, especially including perennial crops. The original document is online at https://landinstitute.org/media-coverage/50-year-farm-bill/. A greatly updated version, with a more substantial and explicit focus on SCS, is being written right now for release later this year.

-Yes... Too many to list here. This entire survey process is far too simplistic to convey complex agricultural and ecological concepts... A SIMPLE one, though, would be to make one tiny change throughout all Ag lands, and that would be to immediately incentivize the establishment of USDA code 300 on all HEL lands, THEN to initiate ecosystem mimicked woody cropping (agroforestry) systems on contour with regionally adapted prairie seed mixes established within the tree rows. The tree & prairie strips on contour capture runoff (helping to eliminate flash-flood events), provide pollinator habitat, beneficial insect habitat, introduce deep rooted prairie plants and SERIOUSLY deep-rooted woody plants into the system. Wind erosion is mitigated by the tree & prairie rows, soil biology is re-enlivened, and massive amounts of carbon is sequestered... THEN, do some minor little SCS techniques in the crop alleys. Focusing only on the minor gains accomplished by "regenerative" soil management techniques is thinking too small.

-See #4. Dakota County in MN is piloting a new type of easement to help farmers transition land that is not eligible for conservation easements, away from intensive corn and soy production to perennials and other types of annual vegetable crops.

-We need to greatly expand the regen pasture-based livestock market, so would address false labeling of imports, build local meat processing infrastructure, greatly expand procurement policies supporting these systems.

-All restaurants in the US add a 1% charge generating $8B per year in support of healthy soils and soil carbon sequestration

-Genetically engineered carbon sequestering plants

-Getting the word out to the broad public about the additional benefits associated with SCS,

-I think the best work we can do to solve the SCS problem would be to evaluate the role healthy soils play in nutrition, set goals for food subsidy programs to support healthy nutrition for humans.