Letter to New York State Legislative Leaders on Organic Agriculture and Climate Change,  
Monday, May 20, 2019

With so many pieces of legislation touching on climate change before the legislature, the Northeast Organic Farming Association – New York would like to take this opportunity to provide our comments on the importance of organic agriculture to mitigating climate change.

Founded in 1983, NOFA-NY is the premier organic and sustainable agriculture organization in New York State. NOFA-NY is the largest USDA-accredited organic certifier in New York certifying over 1,000 organic operations in the state. It also provides education and assistance to local organic and sustainable farmers; connects consumers with organic and sustainable farmers; advocates policies that support a sustainable food and farm system at both the state and federal levels; and through the NOFA Interstate Council works with sister organizations in New Jersey, Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire and Maine.

There are a number of bills addressing climate change issues in New York in the 2019 Legislative Session. NOFA-NY would like the framers of legislation relating to climate change to consider it additionally as an opportunity to support land use practices, specifically in agriculture, that provide energy efficiency, improve water quality and flood control, and the sequestration of large amounts of carbon.

Worldwide, organic, regenerative agriculture has been documented to mitigate climate change, as well as to provide land and farmers with the ability to adapt to climate change.

**ORGANIC AGRICULTURE MITIGATES CLIMATE CHANGE BY:**

1. Reducing greenhouse gases, especially nitrous oxide, since organic farmers use no chemical nitrogen fertilizers, and nutrient losses are minimized.
2. Storing large amounts of carbon in soil and plant biomass by building organic matter, encouraging agro-forestry and forbidding the clearance of primary ecosystems.

3. Minimizing energy consumption by 30-70% per unit of land by eliminating the energy required to manufacture synthetic fertilizers, and by using internal farm inputs, thus reducing fuel used for transportation.

ORGANIC AGRICULTURE HELPS TO ADAPT TO CLIMATE CHANGE:

1. Through building the health of the soil by using practices that increase soil organic matter such as cover cropping, maintaining soil cover as much of the year as possible, recycling nutrients, and reducing tillage. Organic soils are more resilient to floods, droughts, erosion and other land degradation processes.

2. By preserving seed and crop diversity. Crops are more able to resist pests and disease without the use of fossil-fuel-based pesticides. Building diversity also helps farmers improve cropping systems to adapt to climatic change.

3. By minimizing risk as a result of stable yields, and lower production costs.

A 2014 Rodale Institute study\(^1\) noted that "We could sequester more than 100% of current annual CO2 emissions with a switch to widely available and inexpensive organic management practices."

A major 2015 NOFA Massachusetts report\(^2\) found that “Greenhouse gases have long half-lives and will remain active, unless removed. “To avoid that we need to return much of the carbon that we have taken from the soil.” The simplest and most effective method is to use the biological process of photosynthesis by which plants use sunlight to break apart carbon dioxide and water, recombining them to form carbohydrates and oxygen. Some of those carbohydrates are exuded by plant roots into the soil and drive an underground ecology that both strengthens plants and sequesters some of that carbon.

Organics International/ IFOAM encourages 3 Principles of Soil Carbon Sequestration to be instituted by *all* farmers throughout the world:

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\(^1\) [https://rodaleinstitute.org/reversing-climate-change-achievable-by-farming-organically](https://rodaleinstitute.org/reversing-climate-change-achievable-by-farming-organically). This claim is based on all agricultural lands converting to organic practices.

\(^2\) [https://thenaturalfarmer.org/issue/winter-2016-17-carbon-farming/](https://thenaturalfarmer.org/issue/winter-2016-17-carbon-farming/)
1. Minimize soil ecosystem disturbance by reducing or eliminating chemical inputs and tillage

2. Promote biodiversity above ground and below ground wherever possible through inoculation, cover crop diversity, crop rotation, and the integration of perennials, annuals, and livestock on carefully managed pastures.

3. Keep living roots in the soil for as much of the year as possible.

WHAT WE ASK TO INCLUDE IN CLIMATE CHANGE LEGISLATION:

The Off Fossil Fuels Act calls for promoting “regenerative agriculture to help return carbon to the soil,” and the CCPA refers generally to ‘sustainable practices. NOFA-NY would like to see whatever legislation is passed include agriculture and organic, regenerative land use practices which build soil that sequesters carbon, reduces fossil fuel inputs, and generally values the contributions of agriculture to climate change mitigation. A soil health program should be a major component of or companion parallel program to any serious effort to address climate change. Healthy soils are high in organic matter (58% carbon).

The legislation must support agricultural practices that are part of the solution: that is, organic regenerative practices that actually sequester large amounts of carbon – rather than incentivizing the continuation of some of the more polluting agricultural systems that transform methane into a supposed ‘renewable’ energy source.

As we move towards 100% renewable energy and the siting of solar installations, New York must make sure that our best agricultural lands are incentivized to remain in agriculture and food production, while still preserving the right for our farmers to supplement their income with solar and wind installations on their lower quality land, rooftops, and along road margins. There are so many places to put solar installations that are closer to where it is used - on brown fields, roof tops, and highway margins. Energy companies want to use farmers' fields because installation of solar arrays is cheaper, but it is also farther away from where the energy will be used and there is a loss through transmission.

It is essential to sequester more carbon through organic regenerative practices on agricultural land and publically owned lands such as schools and parklands.

NOFA-NY does not endorse carbon trading programs that continue the practice of
allowing air polluting industry, often in low income neighborhoods. The climate deal should not incorporate carbon offsets as a strategy to eliminate greenhouse gas emissions other than by putting carbon back into the soil through regenerative and sustainable agriculture practices like cover cropping, nutrient recycling, managed pastures, reduced tillage and the elimination of synthetic fertilizers derived from natural gas.

NYS has vast land areas that were once forested that could again grow trees - up to 10 to 15% of the land area of the state. There are also forests, especially in the Southern Tier, that have grown up on abandoned farmland, that are unhealthy but with some attention could make significant contributions to sequestering carbon. This state needs a comprehensive plan for land use to increase soil health and carbon farming of all kinds.

NOFA-NY supports moving to 100% clean renewable energy for all sources including transportation and buildings as fast as possible, with a target date of 2030.

NOFA-NY worked hard to help ban fracking in NYS and we need to finish that job by halting all new fossil fuel projects, pipelines and infrastructure.

Legislation for climate action should include enforceable detailed climate plans at the state and local levels, with two-year benchmarks and annual review and updates. And citizens should have the right to sue to enforce the climate plans.

Finally, organic farmers support community control of energy sources, rather than leaving solar and wind development solely to big corporations.

NOFA-NY and our members around the state are committed to harnessing the power of photosynthesis on our farms, gardens and homesteads to build healthy soils and mitigate climate change.

Andrianna Natsoulas,
Executive Director
EXTRA:

THE OTHER GREENHOUSE GAS: NITROGEN

The impact of 1 kilo of nitrous oxide on warming the atmosphere is about $300_{\text{times greater}}$ than the impact of 1 kilo of carbon dioxide. Nitrous oxide emissions from managed soils account for almost $40\%$ of agricultural emissions in the EU. From a report of the US Energy Information Administration in 2011, ³ “The largest source of nitrous oxide emissions in the US is agriculture (73 percent), and the majority of agricultural emissions result from nitrogen fertilization of agricultural soils (87 percent of the agriculture total)…”

There is a direct correlation between nitrous oxide emissions and the amount of nitrogen fertilizer applied to agricultural land. Because organic farming does not allow the use of synthetic nitrogen fertilizers, focusing instead on establishing closed nutrient cycles, minimizing losses via runoff, volatilization, and emissions, nitrogen levels on organic farms tend to be lower per hectare than on conventional farms.⁴

³ https://www.eia.gov/environment/emissions/ghg_report/ghg_nitrous.php