

Healthy Soils and Compost Policy Guide

Synergies and Opportunities

October 2023

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Compost is:

A dark, crumbly, earthy-smelling and humus-rich material produced by the controlled aerobic decomposition of yard trimmings, food scraps, and other organic materials. Compost is a soil amendment but not soil.

Composting that undergoes mesophilic and thermophilic temperature ranges followed by a curing period results in a mature compost product that lessens the viability of pathogens and weed seeds and contains stable carbon that is beneficial to plant growth.

Compost is not:

- ✘ **Digestate:** An unfinished by-product of anaerobic digestion (which occurs in the absence of oxygen). The digestate may be composted, but is not, on its own, in a stable form to apply to soils.
- ✘ **Dehydrated food waste:** A product of mechanical devices, often marketed as at-home “composters,” that grind up and remove the moisture from food waste. The product does not go through vector attraction reduction processes and should not be applied directly to soil.
- ✘ **Biosolids or sewage sludge:** Products of the wastewater treatment process which may be composted or applied as soil amendments.
- ✘ **Mulch:** A layer of material applied to the surface of soil. Compost may be used as mulch.

Waste diversion is only part of the equation...

Organic matter and nutrients are consistently removed from the soil via organic materials like food. Returning organic materials to the land in the form of compost ensures that soil health is maintained in order to grow nutritious food.

The returning of organic materials to the earth to build soil health is an ancient practice and a critical element of Indigenous Traditional Ecological Knowledge. See the resources section for more information.

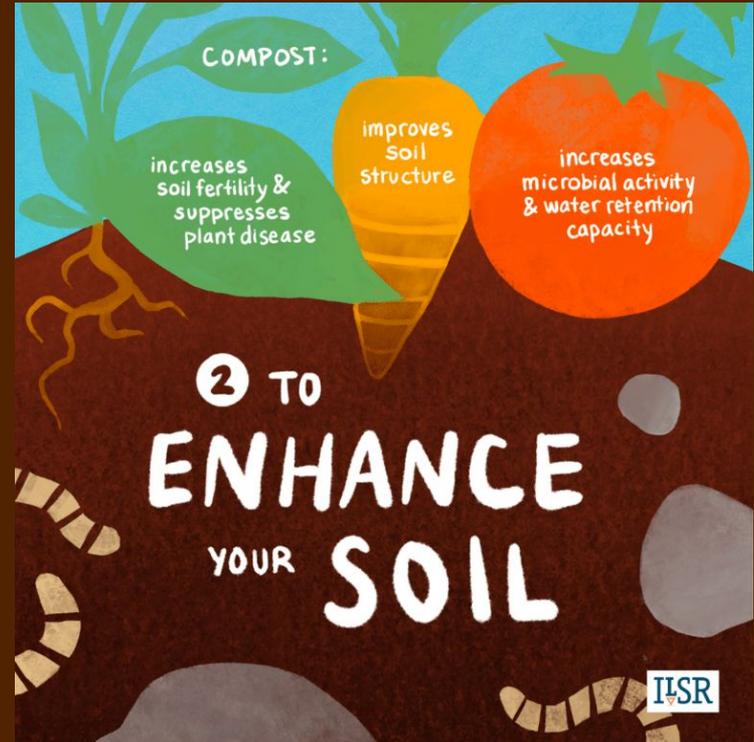


Composting keeps food scraps out of incinerators and landfills, reducing associated pollutants that disproportionately affect black and brown communities, while creating a high-quality soil amendment that can replace carbon-intensive synthetic fertilizers and bring myriad other soil health and climate resiliency benefits.

Compost Builds Healthy Soils

Compost application has been shown to build soil organic matter, resulting in:

- Better water holding capacity and water infiltration
- Better nutrient cycling
- Resilience to drought and extreme weather
- Better crop yields
- Less need for chemical inputs (fertilizers and pesticides)
- Supported biodiversity
- And more...



Compost increases:



Nutrients in soil

- Grows healthier, more nutritious plants & food
- Reduces use of synthetic nitrogen & fossil-fuel-intensive fertilizers

Synthetic nitrogen accounts for **80%** of human-related nitrous oxide emissions



Water holding capacity

Increases soil resiliency to extreme heat & flooding



Soil aggregation

Prevents erosion & runoff, thus protecting & restoring waterways

ilsr.org/compost-climate

With present-day US soil erosion rates rivaling those experienced during the **Dust Bowl**, compost will be a key tool in rebuilding and protecting soils.



Composting happens at many levels

While centralized composting may be a necessary part of the composting landscape, it should not be the default option. Local and decentralized composting options provide community and environmental benefits that larger-scale options do not. Statewide policy is important to enable this local-level composting.

Learn more about community-scale composting:

ilsr.org/composting/what-is-community-composting/

Policy Synergies:

- Compost application has been proven to build soil health.
- Legislation on building soil health usually receives bipartisan support.
- Current topics of high interest like PFAS and nutrient management have implications for both soil health and composting and need to be addressed holistically in policy.

Current Policy Status:

- State and local soil health policies have gained momentum over the past number of years. However, compost is not often identified within these policies despite proven connections.
- Some compost use policies cite soil health as a benefit of compost application. However, policies to prevent compost contamination (and thus soil contamination) are often weak or nonexistent.
- When policies don't make clear the connections between compost and healthy soils, they may not be captured in resulting regulations, programs, and funding.

Current Healthy Soils Policies Featuring Compost

California's Healthy Soils Program funds on-farm soil health practices, the most popular of which is compost application. This program also supports technical assistance, data collection, and demonstration sites.

Hawai'i's Greenhouse Gas Sequestration Task Force goals include identifying ways to increase compost generation and compost use to build Hawai'i's soil health.

New York's Soil Health and Climate Resiliency Act establishes the Soil Health Program and Climate Resiliency Farming Initiative. Compost application is highlighted in accompanying resources.

Oklahoma's Healthy Soils Program tasks the Oklahoma Conservation Commission to identify ways to increase compost generation and compost use to build soil health.

The program prioritizes in-state sourcing for program resources (e.g. compost).

Massachusetts' Healthy Soils Program supports robust programmatic composting efforts despite "composting" not being explicitly included the policy language.

Compost meets all of the benefits listed in Massachusetts' definition of "Healthy Soils Practices".

Policy Opportunities - Healthy Soils and Composting

- Expand soil health policy advocacy coalitions to include composting and food waste reduction stakeholders and vice versa.
- Allocate funding to composting and compost use in the context of soil health, water and nutrient management, watershed protection, and carbon sequestration, with dedicated priority funding to underserved communities.
- Adopt policies that ensure high-quality compost production and encourage its application to soil to build soil organic matter while addressing issues that can cause soil contamination.
- Raise public and policymaker awareness on the inherent connections between compost and healthy soils. Adding context and drawing clear connections within policy on the role compost plays in soil health often works well in a ‘whereas’ or ‘findings’ section, legislative preamble, and in accompanying materials.
- Incorporate compost into Natural Resources Conservation Service (NRCS) [Soil Health Principles](#) more explicitly and promote Conservation Practice Standard [Soil Carbon Amendment Code 336](#).

Policy Themes

Healthy Soils & Composting

1. **Contamination** *(What are the considerations?)*
2. **Application** *(How is compost used?)*
3. **Access & Awareness** *(What are the gaps?)*



Policy Theme: Contamination

→ *What are the considerations?*

Compost may become contaminated via contaminated feedstock. Although compost infuses soil with rich organic matter and supports soil biodiversity, compost products may become contaminated by physical or chemical contaminants (e.g. plastics and microplastics, PFAS, heavy metals) which may end up in soil and potentially impact water quality, plants and organisms.

For example, some compost operations choose to not accept food scraps in order to avoid contaminants related to food packaging. Policy mitigating contamination may enable those operations to benefit from the enriching benefits of adding food scraps to compost.

Policies addressing contamination in feedstocks can ensure that soils receive all the benefits of compost while mitigating the risks of harmful contaminants.

Contamination

What are the considerations?

1. **Source-Separation of Organics** from non-compostable materials should be explicit in policy to avoid contaminants.
2. **Compost Quality Standards and Testing Parameters** limit contamination and encourage production of high-quality compost.
3. **Support Distributed Composting Infrastructure** with funding, permit exemptions, and inclusive zoning codes. In particular, on-farm and community composting keep the process local, encouraging community stewardship and mitigation of contaminants.

Sample Policies

1. Vermont draft policy defines and mandates source-separation of food residuals.
2. Washington State's permit and exemption requirements include contamination standards.
3. San Diego's zoning code encourages community composting.

Montgomery County, MD's Strategic Plan to Advance Composting requires consideration of distributed composting to achieve goals.

Contamination

What are the considerations?

Avoid:

1. Policies that might encourage microplastics contamination of compost. For example, policies pushing for maximum food scrap diversion without stipulations for or enforcement of source-separation of organic materials from materials like food packaging.
2. Policies that privilege investment and support for large industrial sites with depackagers over support for more localized compost producers that prioritize high-quality compost production.

Amendable Policies

1. Vermont's Mandatory Food Waste Diversion policy lacks source-separation guidelines and enforcement, encouraging acceptance of commingled materials for composting and use of depackagers, which increase probability of microplastics. A new draft policy attempts to address this.
2. Maryland's Organics Recycling policy could be amended to encourage use and development of distributed composting infrastructure.

Contamination

What are the considerations?

1. **PFAS Policies Should Focus Upstream** (e.g. manufacturer responsibility, ban PFAS in foodware, compostable packaging labeling) and encourage greater research on sources of PFAS in compost and soil.
2. **Set Clear Compostable Packaging Labeling Standards** while prioritizing policy that moves away from single-use food serviceware toward durables.

Sample Policies

1. [NEWMOA's draft model legislation](#) addresses PFAS prevention and producer responsibility

[Colorado ban on PFAS in food packaging](#)
2. Composting Consortium's [policy brief on compostable packaging labeling](#)

Minnesota [Compostable Product Labeling Bill](#)

Washington, DC's [Ditch the Disposables Program](#)

Contamination

What are the considerations?

Avoid:

1. PFAS-related policies that restrict compost production or compost application without sound research behind any claims made.

*Note: there are currently only examples of policies restricting land-application of biosolids (not compost) though future policy may have the potential to affect compost in a similar manner.

Amendable Policies

1. Maine's ban on land-application of biosolids (not compost) should be revisited with sound research to back up the ban and support farmers.

Pima County, Arizona enacted, then repealed a ban on land-application of biosolids (not compost) due to lack of credible evidence of human exposure to PFAS via land-application of biosolids.

For more information on PFAS consult the following resources:

- Safer States [PFAS state and national policy advocacy work](#)
- Maine Organic Farmer and Gardeners [PFAS advocacy work](#)
- [US Composting Council statement on PFAS in compost](#)
- University of Arizona [current study](#) on PFAS mobility in soil
- [Case Study: PFAS in Biosolids, Southern Arizona](#) (October 2020)
- [Managing PFAS Chemicals in Composting and Anaerobic Digestion](#) (Biocycle, January 2020)

Policy Theme: Application

→ *How is compost used?*

Applying compost to soil provides myriad benefits to soil health, including:

- Reduced soil erosion
- Stronger soil nutrient composition
- Improved water infiltration and retention
- Carbon sequestration
- Reduced need for chemical inputs (fertilizers and pesticides)
- Ability to grow healthier food

Policies can create markets for compost, encourage application of compost to disturbed soils, and support farmers in maintaining and restoring agricultural soils.

Application

How is compost used?

1. **Compost-Amended Soil Requirements** restore health of disturbed or depleted soils and create markets for compost.
2. **Compost Procurement** policies encourage compost use to rebuild soil resiliency and increase demand for high-quality compost. Locally-produced compost should be prioritized.
3. **Nutrient Management** policies that incorporate compost application protect water quality, prevent nutrient loss through erosion, and reduce reliance on synthetic fertilizers.

Sample Policies

1. [Denver, Colorado Compost-Amended Soil Requirement](#)
[Washington State Compost Use Requirement](#)
2. [Model Compost Procurement Policy](#) by NRDC and ELI
[King County, WA Compost Procurement Policy](#)
3. [Washington's Stormwater Management Manual](#) calls for compost-amended soil

4. On-Farm Composting and Compost Use

policies should prioritize support for farmers via:

- a. **Dedicated Funding** - for training, infrastructure, testing, labor and wages, and more
- b. **Permit Exemptions**
- c. **Supportive Zoning**
- d. **Technical Assistance** - including farmer-to-farmer programs

Sample Policies

- a. [Hawaii on-farm compost use reimbursement program](#)
- b. [Maryland On-Farm Composting Permit Exemptions](#)
- c. [Montgomery County, MD zoning for on-farm composting](#)
[Hawaii composting in agricultural zones](#)
- d. [California Healthy Soils Program](#) Demonstration
Projects encourage farmer to farmer technical assistance

Avoid:

1. Compost procurement policies that lack stipulations for compost quality and contamination.
2. Financial incentives that privilege large-scale industrial sites and exclude smaller-sized and on-farm compost producers.

Amendable Policies

1. California's SB 1383 compost procurement section should explicitly prioritize purchase of locally-produced, high-quality compost.
2. Washington's on-farm compost use reimbursement program only reimburses compost purchased from one of the current 26 facilities in the state with a solid waste permit, and does not support farmers with on-farm compost production.

Application

How is compost used?

Federal policies supporting compost help address needs and public interest across the country:

A [2023 study](#) shows that 82% of voters support federal funding for farmers to implement soil health practices, while [polls](#) show that public concern around wasted food has grown. Compost bridges these priorities.

The [NRCS Soil Carbon Amendment Code 336](#) should be implemented at the state level to make compost application eligible for reimbursement through NRCS conservation programs. This may require outreach to [local offices](#).

Sample Policies

1. [The COMPOST Act](#) (within the 2023 Farm Bill) would allocate \$50 million annually over 10 years to local-scale composting operations including on-farm composters.
2. The National Resources Conservation Service (NRCS) adopted [Conservation Standard Practice Soil Carbon Amendment Code 336](#), designating compost application as a conservation practice that builds soil health and sequesters carbon.

Policy Theme: Access & Awareness

→ *What are the gaps?*

Within efforts to expand composting and build soil health, equitable access to funding, land, staffing, and other resources play a key role. Policies should make priority funding, land, and resources available and accessible to underserved communities in order to account for structural inequities.

Expanding awareness on connections between composting and soil health can be done via many avenues, one of which is policy. Elected officials are more likely to learn about issue areas when a policy proposal is under consideration.

Widespread awareness of the synergies between composting and healthy soils will help to guide advocacy and make progress on State and nation-wide efforts to build soil health and grow the composting sector.

Policies can make progress in an equitable manner and establish concrete ways to raise public and policymaker awareness on the role of compost in soil health and vice versa.

Access & Awareness

What are the gaps?

1. **Priority Funding and Support** should be allocated and made accessible to underserved communities and local solutions that can best meet their needs.
2. **Reliable Land Access** is a major hurdle for composters and farmers, particularly small, beginning, BIPOC, or low-income composters and farmers, thus should be a policy priority.
3. **Healthy Soils and Compost Awareness Weeks** are opportunities to expand public awareness and buy-in on the connections between the two topics.
4. **Study Bills** on the connection between compost and soil health allow stakeholders to educate policymakers, though they are not the quickest way to make progress.

Sample Policies

1. The proposed federal [COMPOST Act](#) designates priority funding to underserved communities as well as small and diverse businesses.
2. A [New York City Council Mandate](#) requires a searchable database of public land suitable for community use.
3. [New York State established a Compost Awareness Week](#) in alignment with International Compost Awareness Week.
4. [Colorado Organics Diversion Study bill](#) will produce information on how compost builds soil health.

Other Considerations

→ *Related issues that are beyond the scope of this resource:*

- Regional approaches for avoiding the spread of invasive animal or plant species (e.g. jumping worms, Canada thistle)
- Amendments resulting from decomposition processes other than composting (e.g. vermicompost, bokashi)
- Materials that may be used to amend soil or compost (e.g. stone dust, biochar)
- The importance of farmworker pay equity and parity pricing for soil health practice adoption
- Additional accessibility considerations for effective policy implementation (e.g. language or technological barriers)
- Economic and carbon footprint implications of replacing chemical fertilizers with organic amendments

Organizations For More Background Information:

[National Sustainable Agriculture Coalition](#) - advocacy for sustainable food systems

[Regenerate America](#) - advocacy coalition for regenerative agriculture, stewarded by [Kiss The Ground](#)

[American Farmland Trust](#) - coalition to protect farmland, promote sound farming practices, and keep farmers on the land

[USDA Natural Resources Conservation Service \(NRCS\)](#) - federal research, technical assistance, and grantmaking

[Farmers Footprint](#) - outreach and education on regenerative agriculture

[LandCore](#) - soil health education and advocacy

[Earthjustice](#) - public interest environmental law

[Rodale Institute](#) - research on regenerative agriculture

[Agricultural Justice Project](#) - advocacy and technical assistance for a fair and just food system

[US Composting Council](#) - education, advocacy, and coalition to advance organics recycling and compost production and utilization

[International Biochar Initiative](#) - resources and education on biochar

[Carbon Cycle Institute](#) - carbon cycling and farming resources

[Understanding Ag](#) - sustainable agriculture technical assistance

[National Center for Appropriate Technology](#) - technical assistance on sustainable agriculture

[US Composting Infrastructure Coalition](#) - national compost infrastructure advocacy

Resources For More Background Information:

Compost Research and Education Foundation
[compost application and return on investment
datasheets](#)

American Farmland Trust [Soil Health Stewards](#) and
[Soil Health Benefits Quantification](#) Programs

USDA NRCS [fact sheet on Principles for
High-Functioning Soils](#)

IFOAM - Organics International [Principles of Organic
Agriculture](#)

Pasa Sustainable Agriculture [Soil Health
Benchmarks](#)

Northeast Organic Farming Association of New York
[Soil Health Resources](#)

Organic Farming Research Foundation [resources](#)

Center for International Forestry/World
Agroforestry [research library](#)

SoilLife.org [media library](#)

BioCycle Magazine [archives](#)

Oxford Real Farming Conference [Indigenous
Approaches to Soil Health Management](#)

National Center for Appropriate Technology
[Indigenous and Traditional Soil Health Practices](#)

[3000 Year-Old Solutions to Modern Day Problems](#)

TED Talk - Lyla June

Localized Resources:

State/Regional Groups

National Soil Health Policy Network's state and local member groups

Other groups (not a comprehensive list):

- Grow Montana
- Quivira Coalition
- Colorado Coalition to Enhance Working Lands
- Wyoming Collaborative for Healthy Soils

Many other local groups... including those listed in the Nerds for Earth State Soil Health Policy Tracker

Local Resources

Local Soil Conservation Districts (or equivalent) - National Association of Conservation Districts

State University Extension Services

USDA Regional Climate Hubs include resources to support USDA Climate Resilience and Adaptation Plan

Soils For Salmon, Washington State

CalRecycle Compost and Mulch Use Toolbox