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"It will take both individual actions, and partnerships at all scales, to change behaviors, industries and the way we think about our place in the world... There is no time like the present for addressing climate change."

— California Agriculture.
Editorial overview.
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CalCAN Guiding Principles

There is an increasingly urgent scientific, political and economic mandate for all sectors of society to address climate change with boldness and innovation. In the sustainable food and farming community, the following principles should guide our priorities and actions:

1. Employ a systems approach and full life cycle analysis to evaluate potential climate change solutions within agriculture, looking for co-benefits, true sustainability, and maximal impact.
2. Establish leadership within California's sustainable agriculture sector on climate change policy based on best practices.
3. Seek common ground and develop collaborative partnerships among agricultural and environmental organizations.
4. Support policies that incentivize and direct revenue to fund research and sustainable farming practices that mitigate climate change and promote agriculture's sustainable adaptation.

Climate Change & Sustainable Agriculture: Opportunities & Challenges

What is at stake?

Agriculture has much to lose in a world where climate change goes unmitigated. Future conditions will fundamentally challenge the resilience of our food and farming systems. However, climate change also presents unique opportunities for agriculture to become a leader in addressing climate change.

As a land-based system dependent on weather and natural resources, agriculture is uniquely vulnerable to the predicted changes in climate. Agriculture is also exceptionally positioned to assist with climate change mitigation through on-farm conservation practices that reduce greenhouse gas (GHG) emissions and sequester CO₂. Many of the practices modeled by sustainable and organic farming practitioners offer some of the best strategies for reducing agriculture's carbon footprint, mitigating climate change, and helping farmers to adapt. However, to date, the sustainable agriculture perspective has been largely absent from the climate change policy debates.

What is the impact of agriculture on the climate?

One third of all global CO₂ emissions come from agriculture and land use changes such as forest clearing. Fertilizer applications account for most of the world's nitrous oxide emissions (298 times more potent than CO₂), and agriculture contributes two-thirds of all methane emissions (25 times more potent than CO₂). When accounting for agriculture-related activities—manufacturing chemical inputs, transporting water, and the processing, packaging, and transportation of food—agriculture's contribution to GHG emissions increases.

What is the impact of climate change on agriculture?

Agriculture faces potentially profound impacts from climate change. According to the UN Intergovernmental Panel on Climate Change, predicted climate change impacts for the west include drier conditions with more frequent and prolonged heat waves, reduced water resources and increased pest and disease pressures.

What solutions does sustainable agriculture offer?

The vision for agriculture's future that has long been articulated and modeled by sustainable agriculture provides powerful solutions to the climate crisis. These include practices and policies that minimize nitrogen-based fertilizer use, decrease tillage, increase biodiversity, conserve water, protect farmland, produce on-farm renewable energy, and build the organic content of soil to sequester more carbon—all of which mitigate climate change. Many of these solutions also help prepare farmers to adapt to the coming challenges of climate change. In addition, addressing climate change in the agricultural sector has many important co-benefits, including:

- Energy and water conservation
- Improved air and water quality
- Reduced use of petrochemicals
- Increasing biodiversity
- Improved farm worker and public health
- Diversified farmer incomes through payments for eco-system benefits

What is the role of CalCAN?

The California Climate and Agriculture Network (CalCAN) brings a sustainable agricultural perspective to climate change and agriculture policy. Our efforts are aimed at increasing funding for research, technical assistance and financial incentives for farmers whose practices reduce GHG emissions, sequester carbon, and provide many environmental co-benefits. Moreover, we aim to build capacity among sustainable agriculture advocacy organizations and our farmer members to engage in climate change debate. CalCAN represents sustainable agriculture organizations and allied groups that work directly with California's sustainable and organic farmers.