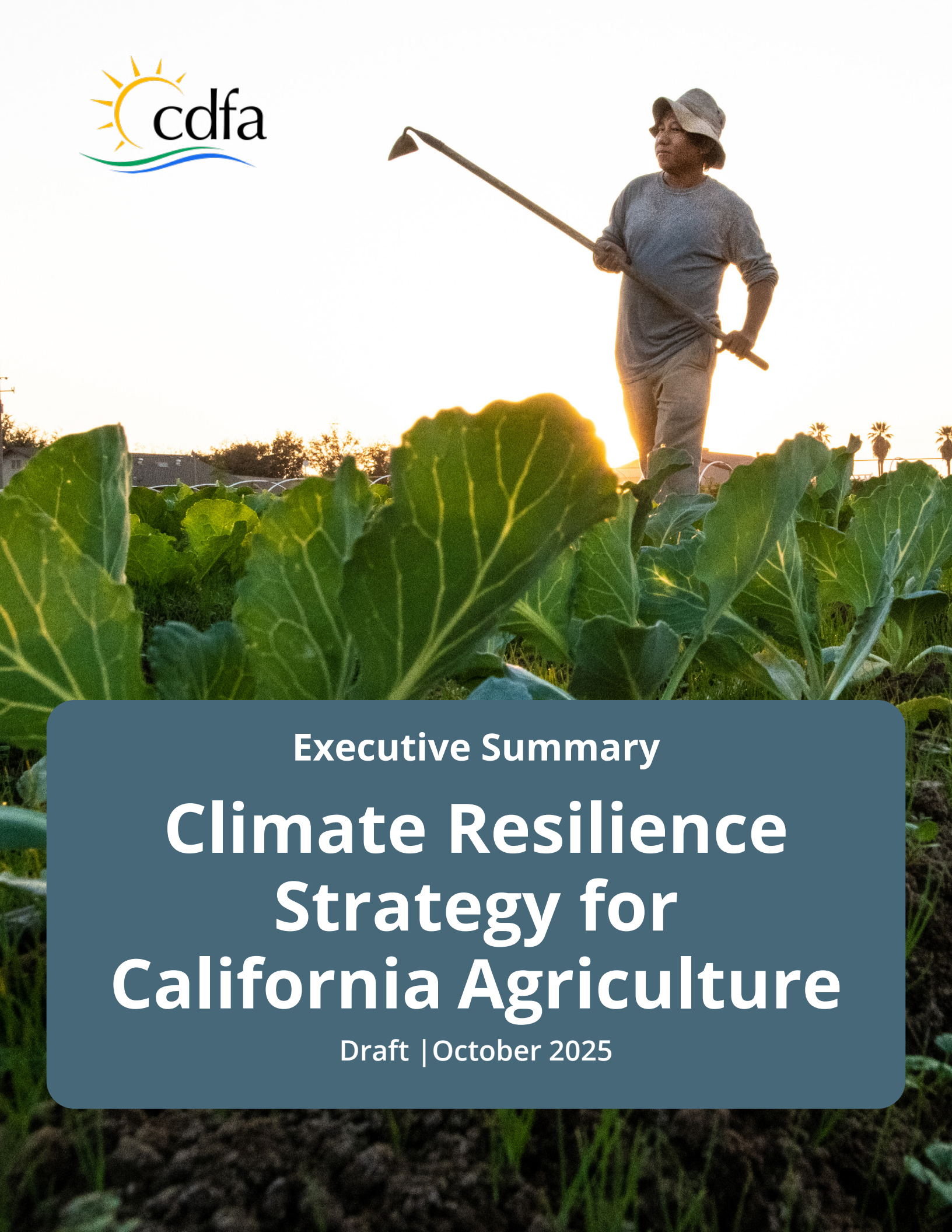


Executive Summary

Climate Resilience Strategy for California Agriculture

Draft | October 2025

Building a Thriving Food System

Our farmers and ranchers are facing an increasingly difficult landscape, including climate change effects, economic uncertainties, and more. The state is dedicated to supporting our agricultural industry and food system and the Climate Resilience Strategy for California Agriculture is a key step in ensuring that the state is fostering resilience in the agricultural sector.

California's Ag Vision 2030 states:

California agriculture is growing opportunity – for farmers and ranchers, farmworkers, individuals and communities – and is demonstrating leadership on climate action

The Ag Vision 2030 set the focus for this decade and prioritizes the need to "Foster climate-smart, resilient, and regenerative food systems." This top priority recognizes that maintaining an abundant agricultural system requires that California foster resilience in the farming and ranching communities doing the work to feed our planet and bolster the natural systems that support those farms and ranches — the infrastructure that has allowed us to develop one of the most efficient, safe, and productive food systems in the world.

The Climate Resilience Strategy for California Agriculture (RSA) captures the myriad resilience and climate-forward efforts underway by the State and identifies the additional needs to ensure California agriculture not only thrives in the face of climate change but is also a central part of the solution.

All work must center on and uplift the diversity of our state's farmers and ranchers, invest in tools and innovations, and cultivate healthier land, water, air, and communities. The costly impacts of climate change on our agricultural communities and their livelihoods drive urgency in this work, reinforcing the need to integrate climate resilience into the vision for California Agriculture.

When fully implemented, the RSA will help the State to build resilience for the future and maintain California as the premier agricultural industry in the world.

Climate Change Impacts and Effects on California Agriculture

Generally, climate change in California is driving warmer temperatures and increasingly variable precipitation. Although all regions are experiencing warmer temperatures, the effects of climate change are felt differently region by region and require regionally appropriate approaches.

Hazards from climate change include:

- Drought
- Extreme Heat
- Extreme Storms
- Flooding
- Sea Level Rise
- Decreased Snowpack
- Wildfire
- Rising Temperatures

The changing climate has a number of varying impacts on agriculture, such as:

- **Increasing pest and disease pressure**, further impacting agricultural operations and lowering crop yields
- **Rising sea levels** are causing saltwater intrusion that is impacting aquifers beneath low-lying coastal farms
- **Increased demand** for crop evaporative water and reduced surface water, resulting in an increased need to pump groundwater
- **Decreasing crop yields**, though impacts vary crop to crop
- **Decreasing nutritional value of foods**, heightening the risk of increased nutritional deficiencies including in essential nutrients such as protein, iron, and zinc for millions of people around the world
- **Worsening working conditions** for those in the agricultural industry
- **Diminishing meat and milk production** as animals experience extreme heat events causing impacts ranging from discomfort to mortality

Greenhouse Gas Emissions

California is a leader in taking action to mitigate climate change through GHG emission reductions and carbon sequestration, and in addressing the effects of climate change on its land, waters, people, infrastructure, animals, and plants. California agriculture is a relatively small slice of California's greenhouse gas emissions pie – eight percent of total emissions – but has the potential to be part of the solution to the climate crisis.

Key Objectives

The RSA is organized under three overarching pillars and twelve key objectives. Each objective embodies a critical topic area for the industry.

Support a Thriving and Resilient Food Sector

1. Foster a Robust and Sustainable Agricultural Economy
2. Ensure a Water System for Food System Resilience in a Hotter, Drier Future
3. Support Agricultural Workforce Wellbeing and Health
4. Protect Animal Health
5. Advance Energy Efficiency and Decarbonization for Agricultural Operations

Protect Natural Systems Critical to Agriculture

6. Conserve Productive Farmland
7. Deploy Sustainable, Adaptable, and Integrated Pest Management
8. Boost Biodiversity on Farmlands

Encourage Resilient Agriculture Practices

9. Enhance Agricultural Practices to Support Clean Air Communities
10. Advance Climate-Smart and Healthy Soils Practices
11. Improve Sustainability of Ranching and Rangeland Management
12. Increase Dairy Farming Sustainability

Goals

The RSA weaves the following five goals throughout the document, connecting targeted strategies and actions to each key objective area.

Goal 1: Increase and Enhance Technical Assistance

Increase and enhance technical assistance to promote and share program information and enable all farmers to utilize a broad suite of agricultural resources.

Goal 2: Enhance Program Effectiveness

Align program design, through engagement, tracking and monitoring, to on-the-ground requirements including funding, eligibility, and access to spur the transition to climate smart practices.

Goal 3: Grow Partnerships and Collaboration

Grow durable local, state, federal, tribal, and academic partnerships and internal collaboration to increase awareness, effectiveness, and expand reach and uptake of programs.

Goal 4: Align and Simplify Policies and Regulations

Improve policies and regulations to be simpler, aligned across agencies and sectors, reducing barriers to implementation and participation.

Goal 5: Demonstrate and Invest in Innovation and Technology

Demonstrate and scale climate smart agriculture through research and investment in novel technologies.

Chapter 1: Foster a Robust and Sustainable Agricultural Economy

Key Objective: Improve the economic resilience of California farms and ranches in the face of climate change.

Climate change-driven economic losses have financially impacted the backbone of the agricultural economy – farmers and ranchers. Natural disasters like wildfires, floods, and extreme weather events have damaged crops and livestock, leading to financial setbacks. In addition to climate change impacts, California farmers and ranchers are currently experiencing severe financial pressure from inflation and rising input costs, increasing labor costs, and the cost of land and equipment. This chapter explores opportunity to leverage technology, tools, and innovations to help transform our food system and build resilience in the farm economy.

Highlighted strategies include:

- Support financial risk reduction measures for farmers.
- Reduce workload associated with meeting or exceeding regulatory goals.
- Invest in research and development to provide new options for building resilience on farms.

Chapter 2: Ensure a Water System for Food System Resilience in a Hotter, Drier Future

Key Objective: Create sustainable and reliable water access for ensuring a resilient food system.

Climate change presents a threat to the state's water resources and by extension our food system. California agriculture not only depends on a secure water supply but can also play an important role in supporting the sustainability of California's water supply by protecting and restoring headwaters, safeguarding existing infrastructure, contributing to groundwater recharge, and using water efficiently. This chapter describes the role of agriculture in ensuring the sustainability of California's water supply by protecting existing infrastructure and using water efficiently.

Highlighted strategies include:

- Bring aquifers into balance to ensure groundwater supply.
- Build new water storage capacity and maintain conveyance infrastructure.
- Continue improving on-farm water use efficiency.

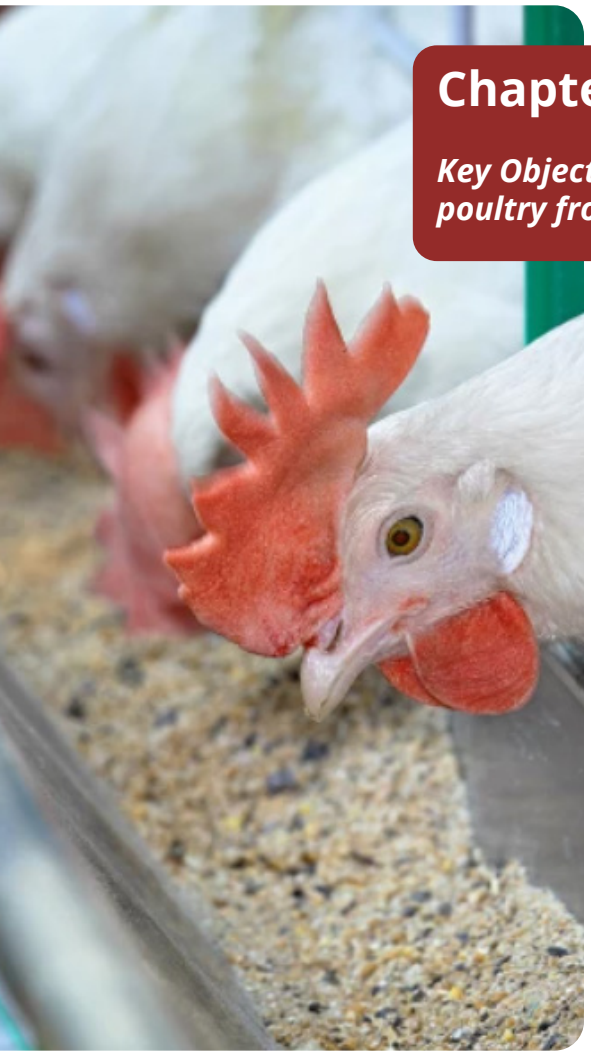
Chapter 3: Support Agricultural Workforce Wellbeing and Health

Key Objective: Improve on-farm safety and community wellbeing for California's agricultural workforce.

California's agricultural communities continue to be some of the most socially and economically disadvantaged in the state, with high rates of health and educational disparities. Farmworkers and agricultural communities are disproportionately affected by climate-related challenges, including impacts like extreme heat and poor air quality from a variety of sources, including wildfire smoke and dust. This chapter highlights state actions to uplift communities, build on-farm resilience plans, improve working conditions for farmworkers, and highlight the critical need for technical assistance and explore avenues for growing the technical assistance workforce through training and job opportunities.

Highlighted strategies and actions include:

- Enable a safer and healthier work experience for those in the agricultural industry.
- Support state policies for better working conditions for hotter, drier conditions.



Chapter 4: Protect Animal Health

Key Objective: Protect the health and wellbeing of our livestock and poultry from climate-related threats.

Dairy, livestock, and poultry are some of our top commodities in the state, however these animals are very vulnerable to the effects of climate change. Climate change driven effects such as increasing temperatures and periods of extreme heat, and pests and diseases are just a few of the climate-driven challenges facing livestock production, which can drive production losses and livestock mortality. This chapter drives home our mission of protecting animal health and welfare by covering our current actions in agriculture and also explores several opportunities to increase our preparedness and disaster response.

Highlighted strategies and actions include:

- Establish and support proactive approaches to threats against animal health.
- Be proactive to threats against animal health with ongoing technical assistance.
- Support research and predictive tool development.

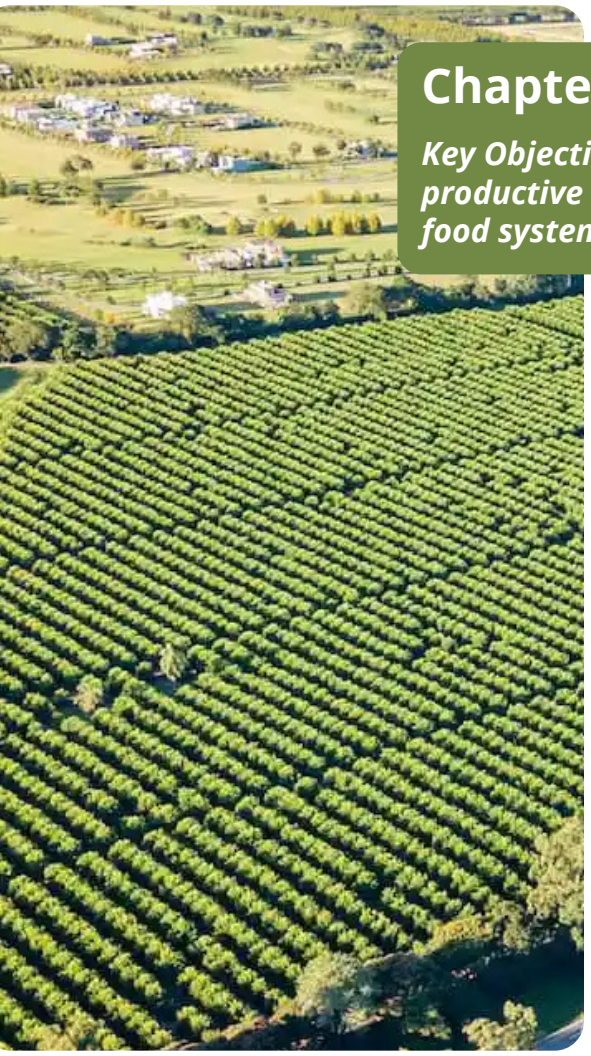
Chapter 5: Advance Energy Efficiency and Decarbonization for Agricultural Operations

Key Objective: Increase energy efficiency and access to a reliable and clean energy grid for all agricultural operations.

Energy is a critical input to every part of the food supply chain. From water conveyance to traditional on-farm equipment, access to reliable energy is a requirement. In recent years, wildfire weather conditions and extreme weather events have resulted in strains on the grid and highlight the importance of energy efficiency and reliable sources of energy to maintain agricultural operations. This chapter describes the current and future efforts and opportunities to help advance resilient energy for farming operations, including on-site generation of electricity and fuel, vehicle and equipment upgrades, infrastructure needs for grid connectivity and on-site storage, continued energy efficiency programs, and more.

Highlighted strategies include:

- Support energy needs assessment and planning for local jurisdictions.
- Support energy efficiency projects that reduce energy consumption in the food system, both on and off-farm.



Chapter 6: Conserve Productive Farmland

Key Objective: Employ a climate resilience lens to identify and protect the most productive and valuable farmland to support a thriving and diverse food system.

California's farmland is unique and highly productive, made up of alluvial soils and various microclimates that allow for production of fruits and vegetables that, in many cases, grow nowhere else in the country. However, there is significant pressure to convert California's farmland to other uses. This section discusses the many planning and conservation strategies that can be employed, as well as information on efforts toward providing access to land for new and beginning farmers.

Highlighted strategies include:

- Implement policies and initiatives to support the protection and conservation of agricultural lands.
- Facilitate informed land use decisions that support resilient agricultural systems.
- Facilitate equitable land access to promote local food production and economic growth.

Chapter 7: Deploy Sustainable, Adaptable, and Integrated Pest Management

Key Objective: Manage emerging and accelerated pests, plant diseases, and noxious weeds pressure through sustainable and integrated pest management practices through methods of least harm on human, animal, and environmental health.

Agricultural pests pose a significant threat to food production systems by undermining crop yields, which in turn can drive the use of chemical pest control practices, cause significant adverse economic impacts, and exacerbate food insecurity. Climate change is exacerbating pest pressure, by extending their lifecycles, accommodating a wider range of pests and diseases and increasing crop susceptibility. This chapter will explore integrated pest management and sustainable pest management, increase support for farmers, continue with workforce development, and more.

Highlighted strategies and actions include:

- Expand and enhance the state's ability to deploy and proactively address pest issues related to climate.
- Be proactive to threats against plant and animal health with ongoing technical assistance to facilitate widespread and equitable adoption of sustainable and integrated pest management.

Chapter 8: Boost Biodiversity on Farmlands

Key Objective: Increase beneficial biodiversity on-farm to improve resilience of farms, plants, and animals to climate change.

A diverse range of crops, livestock, soil organisms, and pollinators contributes to healthy ecosystems that maintain soil fertility, control pests and diseases naturally, and support water regulation. As ecological and agricultural systems face increasing pressure from climate change, protecting and enhancing on-farm biodiversity is key to ensuring long-term food security, supporting off-farm biodiversity, and enhancing overall ecosystem health. This chapter details the ongoing and needed efforts to increase biodiversity on farms, including an increase in research, technical assistance, and collaboration on biodiversity efforts and programs.

Highlighted strategies and actions include:

- Build understanding of resources available to limit and/or reduce negative impacts to on-farm biodiversity.
- Increase beneficial biodiversity on farms.
- Understanding the role of farm and ranch lands in the landscape for wildlife connectivity.

Chapter 9: Enhance Agricultural Practices to Support Clean Air Communities

Key Objective: Reduce air pollutants from agricultural operations and practices while ensuring health of surrounding communities and workers while meeting air quality standards.

In California, some of the most productive agricultural areas, particularly the Central Valley also have the worst air quality in the state and the nation. This poor air quality is critical problem for farmers, farmworkers, and surrounding communities who suffer from health difficulties such as asthma as a result. Contamination of the air with can cause serious long-term effects ranging from asthma to cancer, in humans and animals. This chapter describes the existing state programs and explores on-farm practices that can reduce dust, agricultural burning, and fertilizer contamination.

Highlighted strategies and actions include:

- Improve air quality from agricultural operations.
- Support research of air quality impacts related to agricultural operations.
- Increase access to equipment upgrades and changing agricultural operation practices that improve air quality.

Chapter 10: Advance Climate-Smart and Healthy Soils Practices

Key Objective: Meet state nature-based solution climate targets by 2030, 2038, and 2045 and support healthy and resilient soil ecosystems for growing food and fiber.

The term “climate smart agriculture” means an approach to farming that focuses on sustainable practices to address climate change while also improving soil health. Some examples include cover cropping to reduce erosion and enhance moisture infiltration and retention, incorporating organic matter to increase soil fertility, or rotating crops to improve soil nutrient status and reduce pest pressure. This chapter explores how the state could update and improve the Healthy Soils program, while also ensuring that healthy soils practices are continuously being improved and integrated throughout the agricultural industry.

Highlighted strategies include:

- Expand eligible soil health practices and implementation land to facilitate equitable and inclusive soil health program development.
- Promote technical assistance for increasing the knowledge of healthy soil practices and ensuring successful implementation.

Chapter 11: Improve Ranching Sustainability and Rangeland Management

Key Objective: Utilize climate-smart and emissions-reducing agricultural practices to promote resilience ranching and rangeland management

Livestock grazing is one of the most extensive uses of agricultural land statewide and many ranchers are already demonstrating what can be achieved through livestock grazing. Regenerative agricultural practices offer a multitude of benefits – including better soil health, fuel load management, maintaining natural lands, and much more. This chapter describes the multi-pronged approach to reducing emissions from livestock while bolstering the health of rangelands and sequestering carbon.

Highlighted strategies include:

- Promote multi-benefit rangeland management.
- Conserve and restore rangelands to protect natural ecosystems.
- Reduce enteric methane from grazing livestock.

Chapter 12: Increase Dairy Farming Sustainability

Key Objective: Foster a robust and environmentally friendly dairy industry and reduce methane emissions 40 percent per SB 1383.

California is taking measures to curb the environmental impacts of the dairy and ranching industry while also promoting sustainability pathways for these industries. The state has developed a number of tactics for reducing greenhouse gas emissions, improving air quality, and supporting smaller dairy farms. This chapter explores strategies to increase knowledge and implementation of methane reduction technologies, carry out additional research to bring new methods, and collaborate across agencies to offer additional revenue streams.

Highlighted strategies include:

- Increase knowledge and implementation of currently available methane reduction technologies.
- Collaborate with sister agencies and other partners to carry out additional research to bring on new methane reduction methods.
- Support new dairy waste utilization pathways that offer additional revenue streams for agricultural operations.

Equity Principles

These principles are designed to help evaluate and improve access to state programs that benefit or affect agriculture. This includes ensuring the California Department of Food and Agriculture (CDFA) and partner agencies provide support for and are accessible to all growers in the state. The intent of this section is to enable CDFA and other agencies to consider a consistent set of equity concepts and questions specific to agriculture to guide their plans, programs, and policy development and implementation.

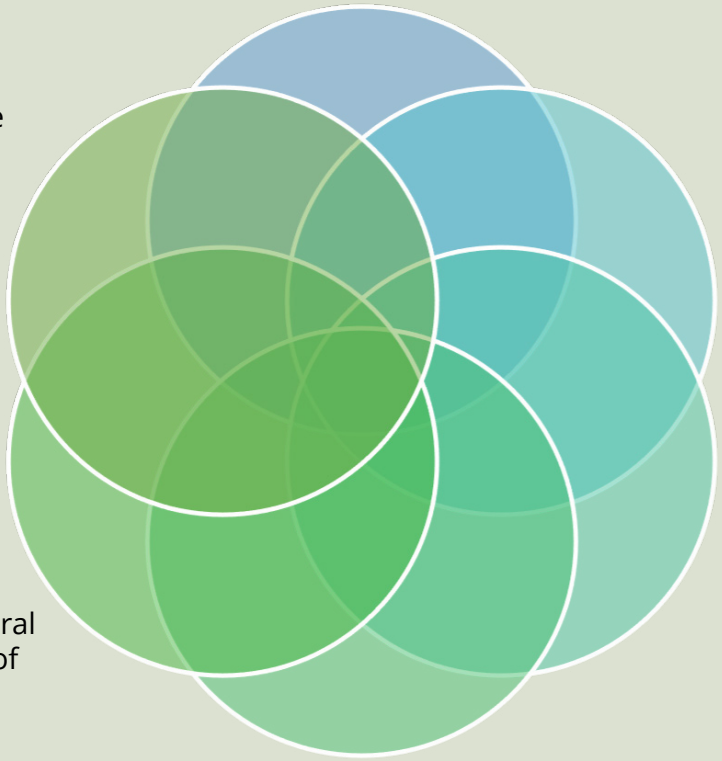
The six Equity Principles describe the objective of each Principles, a short description of what it considers, and a set of guiding questions for CDFA and other relevant agencies to use in initiative (i.e., policies, plans, and programs) evaluation and further customize according to their needs.

Financial Viability

Ensure participation and financing that works for all California growers.

Health & Wellbeing

Protect and promote the health of farmworkers, especially as it relates to climate change impacts.



Accessibility

Ensure equitable access to initiatives, trainings, and resources.

Cultural Relevancy

Deliberately and respectfully honor cultural traditions and history to maintain cultural heritage for the benefit of all generations.

Accountability & Transparency

Ensure initiatives have clear and transparent mechanisms to monitor long-term implementation.

Technical Assistance Capacity

Ensure that all farmers, including those previously underserved, and farmworkers can take part in the transition to climate resilient agricultural practices.

Strategies and Actions Index

Chapter 1: Foster a Robust and Sustainable Agricultural Economy

Key Objective: Improve the economic resilience of California farms and ranches in the face of climate change.

1.1 Support financial risk reduction measures for farmers.

- 1.1.1 Expand insurance options for specialty crops, especially to reduce risk from extreme weather-related losses.
- 1.1.2 Effectively promote and deploy the California Underserved and Small Producers (CUSP) program.

1.2 Reduce workload associated with meeting or exceeding regulatory goals.

- 1.2.1 Simplify and streamline regulatory compliance reporting.

1.3 Invest in research and development to provide new options for building resilience on farms.

- 1.3.1 Invest in research for Precision Agriculture technology to identify how to optimize inputs and improve efficiency.
- 1.3.2 Ensure equitable deployment of technical tools and support for small and under-resourced farmers.
- 1.3.3 Provide infrastructure support for broadband upgrades.
- 1.3.4 Invest in R&D for climate adaptive, heat- and drought-resistant crop varieties.

1.4 Strengthen local and regional food systems to build resilience.

- 1.4.1 Strengthen farm-to market pathways, direct-to-consumer sales, procurement opportunities, and localized processing to reduce reliance on vulnerable supply chains.
- 1.4.2 The circular bioeconomy: supporting the creation of new income streams for farmers.

1.5 Private investment in climate-smart agriculture via voluntary carbon markets.

- 1.5.1 Coordinate with sister agencies to develop outlines and methods to facilitate voluntary investment in climate-smart agriculture practices.
- 1.5.2 Train technical assistance providers with protocols for implementation, monitoring, and verification for voluntary carbon markets.

1.6 Support workforce development through programs and training.

- 1.6.1 Coordinate with California higher education systems to expand training and career development in agriculture.
- 1.6.2 Promote Jobs First programs to increase the agricultural workforce.

1.7 Expand climate-smart agricultural marketing efforts.

- 1.7.1 Expand the CA Grown Marketing Campaign to include climate-smart products.
- 1.7.2 Expand marketing efforts to highlight products from the circular economy.

1.8 Engage in international and subnational partnerships and collaboration.

- 1.8.1 Grow international climate partnerships and collaboration with other national and subnational governments.

Chapter 2: Ensure a Water System for Food System Resilience in a Hotter, Drier Future

Key Objective: Create sustainable and reliable water access for ensuring a resilient food system.

2.1 Bring aquifers into balance to ensure groundwater supply.

- 2.1.1 Increase and expand technical assistance support to help farmers understand water regulation and navigate compliance.
- 2.1.2 Support monitoring capabilities to improve our understanding of drivers of change.
- 2.1.3 Coordinate across agencies to develop new groundwater use and recharge strategies.
- 2.1.4 Work with water users to assist with groundwater use and recharge.

2.2 Build new water storage capacity and maintain conveyance infrastructure.

- 2.2.1 Support collaborative work between community groups, regulatory agencies, and project implementors for least conflict siting and plans for new infrastructure.
- 2.2.2 Advance critical infrastructure projects for water conveyance.

2.3 Improve headwaters management and restore freshwater ecosystems.

- 2.3.1 Promote ecologically appropriate prescribed grazing designed to improve ecosystem health in headwater areas.
- 2.3.2 Expand implementation of riparian zone restoration practices in agricultural land.
- 2.3.3 Promote responsible nutrient management to reduce nutrient leaching runoff from agricultural land.

2.4 Continue improving on-farm water use efficiency.

- 2.4.1 Upgrade equipment to be water efficient and conduct on-farm measurements to track water use.
- 2.4.2 Use nature-based solutions/healthy soils practices to improve water-holding capacity and percolation on farm and ranch lands.

Chapter 3: Support Agricultural Workforce Wellbeing and Health

Key Objective: Improve on-farm safety and community wellbeing for California's agricultural workforce.

3.1 Enable a safer and healthier work experience for those in the agricultural industry.

- 3.1.1 Support state policies for better working conditions for hotter, drier conditions.
- 3.1.2 Support research and collaboration into on-farm tools for health and safety.
- 3.1.3 Support programs that give resources and training for all peoples working on farms for mental health.
- 3.1.4 Implement programs that build and improve infrastructure in rural agricultural communities to better support resilience to extreme weather events.

Chapter 4: Protect Animal Health

Key Objective: Protect the health and wellbeing of our livestock and poultry from climate-related threats.

4.1 Establish and support proactive approaches to threats against animal health.

- 4.1.1 Be proactive to threats against animal health with ongoing technical assistance.
- 4.1.2 Support research and predictive tool development.
- 4.1.3 Prepare for emergency situations with state agency coordinated procedures and infrastructure.

Chapter 5: Advance Energy Efficiency and Decarbonization for Agricultural Operations

Key Objective: Increase energy efficiency and access to a reliable and clean energy grid for all agricultural operations.

5.1 Support energy needs assessment and planning for local jurisdictions.

- 5.1.1 Conduct energy demand assessments for rural and agricultural areas, taking into consideration future demand for electrified equipment, to support state and local planning efforts.

5.2 Support energy efficiency projects that reduce energy consumption in the food system, both on and off-farm.

- 5.2.1 Support demand flexibility and improve energy efficiency through incentivized behavior changes.
- 5.2.2 Improve energy efficiency and flexible electricity demand through technological upgrades.

Chapter 6: Conserve Productive Farmland

Key Objective: Employ a climate resilience lens to identify and protect the most productive and valuable farmland to support a thriving and diverse food system.

6.1 Implement policies and initiatives to support the protection and conservation of agricultural lands

- 6.1.1 Permanently protect strategic agricultural lands.
- 6.1.2 Build local government capacity to identify and protect agricultural lands.
- 6.1.3 Update General Plan guidelines to better address and prevent farmland loss.

6.2 Facilitate informed land use decisions that support resilient agricultural systems.

- 6.2.1 Enable community decision-making using land-use mapping tools.
- 6.2.2 Identify land resources needed to accommodate the state's renewable energy goals and provide technical assistance to local governments.
- 6.2.3 Where land conversion is necessary, enable orderly, community-driven land use decisions.

6.3 Facilitate equitable land access to promote local food production and economic growth.

- 6.3.1 Address challenges with agricultural land access.
- 6.3.2 Provide an in-road to agriculture for the state's urban residents.

Chapter 7: Deploy Sustainable, Adaptable, and Integrated Pest Management

Key Objective: Manage emerging and accelerated pests, plant diseases, and noxious weeds pressure through sustainable and integrated pest management practices through methods of least harm on human, animal, and environmental health.

7.1 Expand and enhance the state's ability to deploy and proactively address pest issues related to climate.

- 7.1.1 Bolster CDFA's capacity for monitoring for, treatment, and prevention of invasive species, pests, and diseases
- 7.1.2 Prepare for emergency situations with coordinated procedures in place and sufficient infrastructure.
- 7.1.3 Be proactive to threats against plant and animal health with ongoing technical assistance to facilitate widespread and equitable adoption of sustainable and integrated pest management.
- 7.1.4 Be proactive to threats against plant and animal health through research and predictive tool development.

Chapter 8: Boost Biodiversity on Farmlands

Key Objective: Increase beneficial biodiversity on-farm to improve resilience of farms, plants, and animals to climate change.

8.1 Build understanding of resources available to limit and/or reduce negative impacts to on-farm biodiversity.

- 8.1.1 Create multi-faceted resources that can help address food safety concerns and limit negative impacts to biodiversity.
- 8.1.2 Increase knowledge of best practices to treat pests while minimizing damage to biodiversity.

8.2 Increase beneficial biodiversity on farms.

- 8.2.1 Utilize programs to effectively build and protect biodiversity on farms.
- 8.2.2 Convene committees and coalitions to identify pathways to build biodiversity on farms.
- 8.2.3 Understand the needs for seed supply to support biodiversity efforts across the state.
- 8.2.4 Expand science that addresses uncertainties around biodiversity, agriculture, and climate.
- 8.2.5 Implement policies that support farms incorporating biodiversity to improve climate resiliency.

Chapter 9: Enhance Agricultural Practices to Support Clean Air Communities

Key Objective: Reduce air pollutants from agricultural operations and practices while ensuring health of surrounding communities and workers while meeting air quality standards.

9.1 Improve air quality from agricultural operations.

- 9.1.1 Support research of air quality impacts related to agriculture operations.
- 9.1.2 Coordinate outreach for state programs between state agencies.
- 9.1.3 Increase access to equipment upgrades and changing agricultural operation practices that improve air quality.

Chapter 10: Advance Climate-Smart and Healthy Soils Practices

Key Objective: Meet state nature-based solution climate targets by 2030, 2038, and 2045 and support healthy and resilient soil ecosystems for growing food and fiber.

10.1 Encourage the adoption of climate-smart and healthy soils practices to bolster California's lands against the impacts of climate change.

- 10.1.1 Coordinate state agency efforts to improve soil health.
- 10.1.2 Facilitate the adoption of climate-smart and healthy soils practices by farmers, ranchers, and private landowners.

10.2 Create and standardize methodologies for measurement and tracking of soil health properties in connection with soil health practices over time.

- 10.2.1 Adopt long-term measuring and monitoring of practice implementation impact, including multisystem indicators, such as water data metrics.

10.3 Expand inclusivity of soil health programs.

- 10.3.1 Identify land eligibility requirements that enable expanded participation in the Healthy Soils Program and work to determine solutions to expand eligibility.
- 10.3.2 Create quantification methodologies for holistic soil health practices and Traditional Ecological Knowledge practices for expanded eligible practices under the Healthy Soils Program.

10.4 Promote technical assistance for healthy soil practices and ensuring successful implementation.

- 10.4.1 Utilize technical assistance to help growers understand their soil and crop nutrition to make smart growing decisions regarding fertilizer use.
- 10.4.2 Promote and disseminate information for TA providers to assist with regional climate- appropriate crop and agriculture processes.

10.5 Ensure the availability of high-quality compost for agricultural operations statewide.

- 10.5.1 Support local jurisdictions in investing in organics diversion infrastructure including food and green waste processing.
- 10.5.2 Provide guidance for choosing and applying compost.
- 10.5.3 Continue state agency coordination to clarify on-farm composting regulations.
- 10.5.4 Identify compost and digestate research gaps and support research to address gaps.

Chapter 11: Improve Ranching Sustainability and Rangeland Management

Key Objective: Utilize climate-smart and emissions-reducing agricultural practices to promote resilience ranching and rangeland management

11.1 Promote multi-benefit rangeland management.

11.1.1 Facilitate grazing on public lands for ecological health and fuel load reduction.

11.1.2 Increase the adoption of climate-smart agricultural practices on rangeland.

11.2. Conserve and restore rangelands to protect natural ecosystems.

11.2.1 Uplift the role of rangelands in conserving and improving biodiversity, especially in conjunction with 30 x 30 initiatives.

11.2.2 Improve riparian areas in rangelands for improved water filtration, flood protection, and habitat connectivity.

11.3 Reduce enteric methane from grazing livestock.

11.3.1 Research and promote novel enteric methane mitigating practices for grazing livestock.

Chapter 12: Increase Dairy Farming Sustainability

Key Objective: Foster a robust and environmentally friendly dairy industry and reduce methane emissions 40 percent per SB 1383.

12.1 Increase knowledge and implementation of currently available methane reduction technologies.

12.1.1 Promote on-farm manure management strategies at all dairies.

12.1.2 Increase adoption of anaerobic digesters.

12.2 Collaborate with sister agencies and other partners to carry out additional research to bring on new methane reduction methods.

12.2.1 Develop methodologies and program processes for new enteric methane reduction programs.

12.2.2 Support research dedicated to enteric emissions reduction strategies.

12.2.3 Promote research and development for novel methane reduction strategies.

12.2.4 Support research to better quantify emissions from dairies.

12.3 Support new dairy waste utilization pathways that offer additional revenue streams for agricultural operations.

12.3.1 Incentivize methane capture and conversion to biogas to participate in low carbon fuel programs.

12.3.1 Promote utilization of manure solids as inputs for soil amendment products.