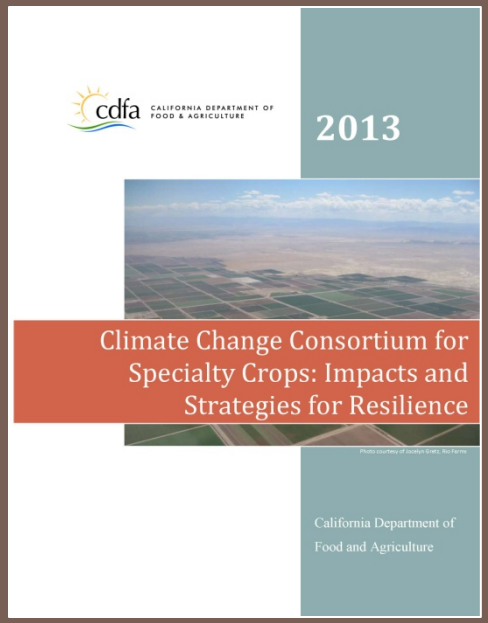
CLIMATE CHANGE CONSORTIUM FOR SPECIALTY CROPS

RESEARCH PRIORITIES

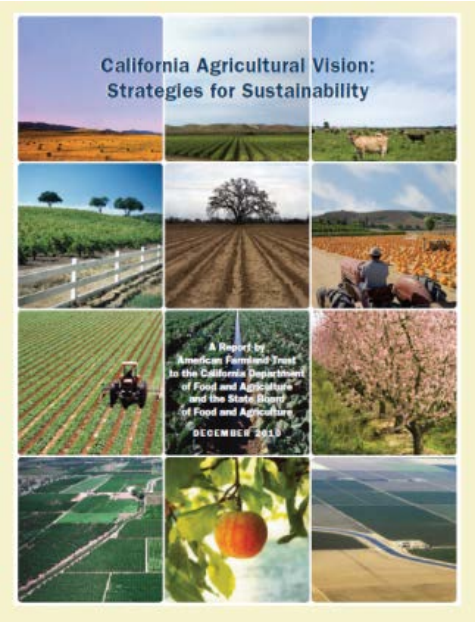


CALIFORNIA STATE BOARD OF FOOD AND AGRICULTURE

October 8, 2013

Amrith Gunasekara, PhD. Science Advisor
Carolyn Cook, Environmental Scientist

AG VISION- 2010



Strategy 9

Assure Agricultural Adaptation to Climate Change

"Assure that all sectors of California agriculture can adapt to the most likely climate related changes in seasonal weather, water supply, pests and diseases, and other factors affecting agricultural production."

News Release

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE

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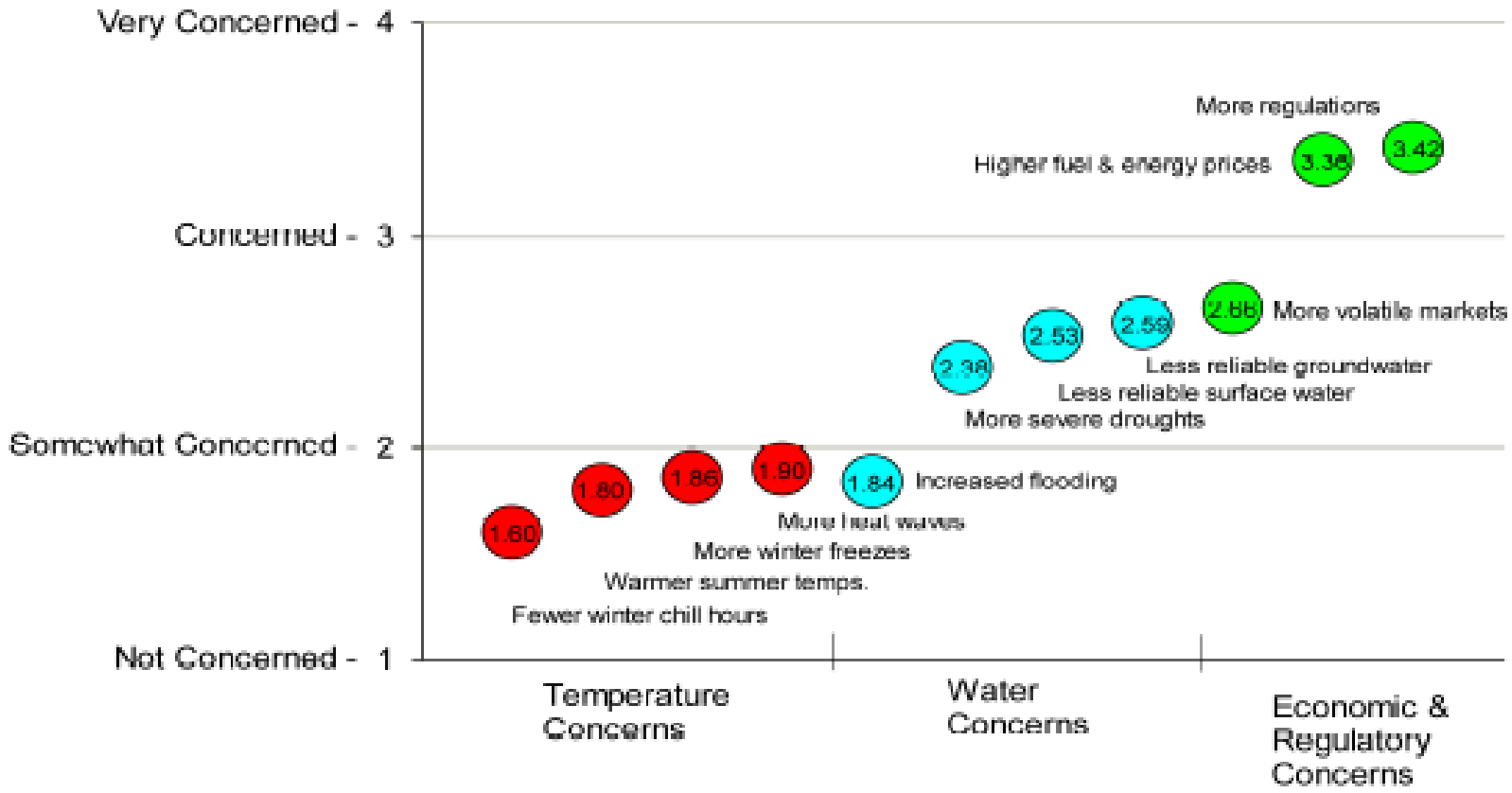
CDFA TO ESTABLISH CLIMATE CHANGE CONSORTIUM TO HELP SPECIALTY CROP GROWERS PLAN FOR FUTURE IMPACTS

Release #12-029
Print This Release

SACRAMENTO, August 2, 2012- California's specialty crops account for more than half of the nation's fruits, vegetables, and nuts as well as nearly $7 billion dollars of exports worldwide. California's production of diverse specialty crops is threatened by potential climate-related phenomena, including reduced water supplies, increased plant heat stress, decreased chill hours, shifts in pollinator lifecycles and increased influx of invasive species. Addressing these risks to ensure agricultural adaptation to climate change will require a concerted effort and is an objective of California Agricultural Vision: Strategies for Sustainability.

ADAPTATION STRATEGIES FOR AGRICULTURAL SUSTAINABILITY IN YOLO COUNTY, CALIFORNIA



Jackson et al. *Adaptation Strategies for Agricultural Sustainability in Yolo Co., California*. CEC report, submitted.

Policies worry farmers more than climate change, says new study

September 10, 2013

California farmers feel more threatened by climate policy than they do by climate change, according to a new study from the University of California, Davis.

The study, published in the journal Global Environmental Change, found that the greatest climate risk Yolo County farmers believe they face in the future is not drought, water shortages, or temperature changes, but government regulations.

However, this view did not make them less likely to participate in government incentive programs that would help their climate adaptation and mitigation efforts.

We found that the past matters, said lead author Meredith Niles, a doctoral candidate in the Graduate Group in Ecology and Department of Environmental Science and Policy at UC Davis. Farmers past perceptions of different environmental policies had a larger impact on their climate change beliefs and policy behaviors than their actual experience with climate change.

Yolo County is a north Central Valley community that is home to UC Davis and a diverse mix of crops and livestock systems. More than 80 percent of land in Yolo County is devoted to agriculture.

UC Davis researchers analyzed 162 surveys returned by farmers and ranchers in 2011, and they conducted interviews with 11 farmers and two cooperative extension agents in 2010.

CCC MEMBERS

- Four members from different agricultural associations
- One grower of each of the following specialty food crops; grapes, strawberries, almonds, tomatoes, walnuts, lettuce, citrus, pistachios, broccoli, and tree fruits.
- One scientist from the University of California system
- One extension specialist from the University of California
- Two scientists from the California State University system
- One Pest Control Adviser/Crop Control Adviser
- One member that is an Agricultural Commissioner
- One member from the California Resource Conservation Districts

CCC ACTIVITIES

- Met 4 times from November 2012- June 2013:
  - At the meetings the CCC members heard from scientists, researchers and industry about climate change impacts and potential adaptation measures
  - Break out groups and roundtable discussions were used to create and refine recommendations
  - Discussed increased temperatures, drought, flooding, pests and pollinators
  - Facilitated by the Center of Collaborative Policy at CSU, Sacramento
- Report and Final Recommendations were completed in September 2013

News Release

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE

Media Contacts:
Steve Lyle, CDFA Public Affairs, (916) 654-0462

CLIMATE CHANGE CONSORTIUM FOR SPECIALTY CROPS FINAL REPORT IDENTIFIES CHALLENGES AND MAKES RECOMMENDATIONS FOR AGRICULTURE

Release #13-032
Print This Release

SACRAMENTO - October 3, 2013 - As part of the ongoing effort to ensure that California is prepared for the impacts of climate change, the Climate Change Consortium for Specialty Crops has produced a report, *Climate Change Consortium for Specialty Crops - Impacts and Strategies for Resilience*, which identifies recommendations to address the challenges posed by climate change to producers of specialty crops. As a member of the Governor's Climate Action Team, the California Department of Food and Agriculture (CDFA) convened the Consortium to prepare the report. Climate change is expected to have significant and widespread impacts on California's economy and environment.

CCC FINAL REPORT

- **Executive Summary**
- An **Introduction** providing background information on climate change observations and predictions
- Chapters to cover Increased Temperatures, Water Resources, Impacts on Pest and Pollinators
- Chapters include a literature review of observed and anticipated climate change impacts and the Consortium's recommended adaptation strategies
- Chapter 5: Additional Recommendations- These are recommendations for CDFA and key partners to help growers adapt
- **Summary and <u>Recommendations</u>**

CCC RECOMMENDATIONS

1. Research Needs
2. Planning and Resource Optimization
3. Outreach and Education
4. Technology and Innovation

Additionally each chapter outlines several "On-farm Strategies to Increase Resilience to Climate Change"

These are to assist growers and are farm management practices

Prioritized as primary, secondary and tertiary activities.

NEXT STEPS - CDFA

Recommendation

Establish an Online Research Needs Forum

CDFA should fund and establish on online research needs forum to match grower adaptation needs with researchers in the field.

Recognition for Innovative Growers

CDFA should recognize growers who adopt climate change adaptation and resilience practices. The CDFA should acknowledge growers in a publically accessible, *food-focused* context, using:

- Grower case studies posted to the CDFA website;
- A food-focused media campaign that includes farmers markets, events with celebrity chefs, California grower "branding";
- A CDFA "Climate Change Adaptation" award.

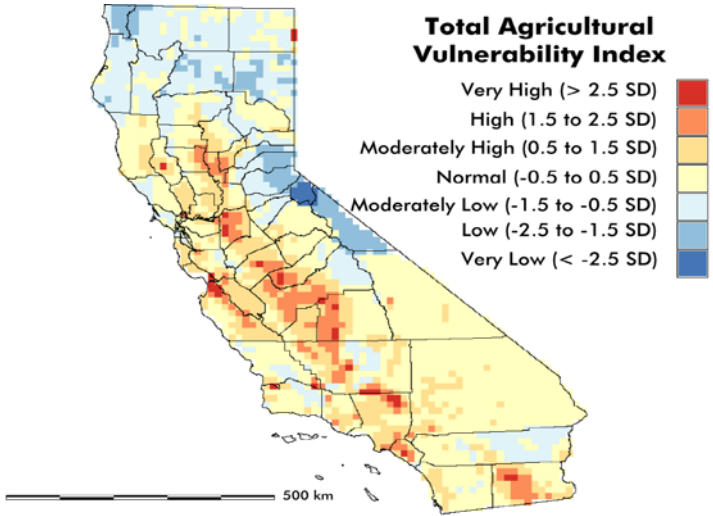
NEXT STEPS - MOVING FORWARD

Recommendation

Research Needs

Economic and Environmental Studies of the Costs, Benefits, and Risks of:

- Crop relocation, including infrastructure considerations, and climate analogues; define where crops will be best suited under future climate conditions considering soil type, topography, water availability, and potential hazards;



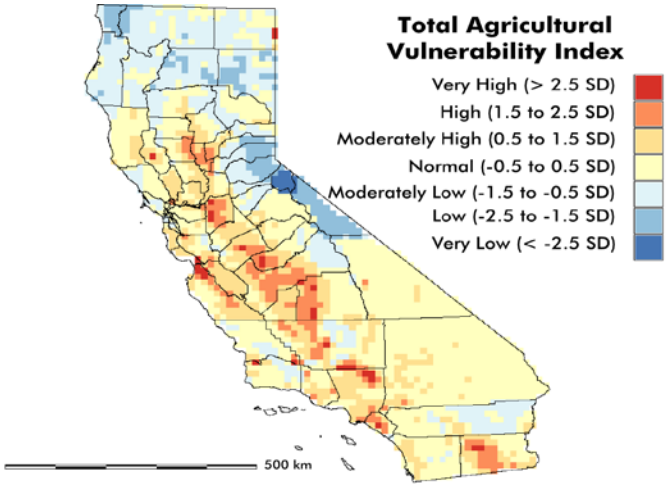
NEXT STEPS - MOVING FORWARD

Recommendation

Research Needs

Economic and Environmental Studies of the Costs, Benefits, and Risks of:

- Water Management, in terms of:
  - Increasing above and below ground water storage capacity;
  - Groundwater recharge;
  - Use of recycled/reused or desalinated water;
  - Efficient irrigation technology implementation;
  - Reduction of evaporation from irrigation canals using solar panels or chemicals;
  - Sustainable forest management practices to enhance water resource availability for agricultural systems downstream.



NEXT STEPS - CDFA

1. Evaluate the potential to tailor RFP's
2. Interagency coordination
   1. CAT Research Plan update
   2. Climate Change Adaptation Plan update
3. External funding opportunities
4. Opportunity for CDFA to be an information hub
5. Integration of activities with existing CDFA programs
6. Close coordination with the scientists at research universities

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Morgan Levy from UC Berkeley

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THANKS

... OK, I THINK WE FINALLY HAVE ALL OARS IN...
GLOBAL CLIMATE SUMMIT
... WE CAN BEGIN TO MOVE FORWARD ON CLIMATE CHANGE
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