

A Farming Future: Analysis of Local Farmer Views of Climate Change in Pajaro Valley



Ahtziri Carranza Medrano, Christopher Shatto
Mentors: Victoria Derr, Nancy Faulstich

With support from the Undergraduate Research Opportunities Center



California State University
MONTEREY BAY

Planning for Agriculture & Community: The Separation

Ecological approach in agricultural sector (water, soil, carbon)

- Does not address labor, health, or vulnerable populations in agriculture

Risk-based approach in climate adaptation planning

- Includes vulnerabilities
- Lack of guidance for planning & health in agricultural context

Our goal is to link the entire agricultural community: farmers, farmworkers, and the community at large.

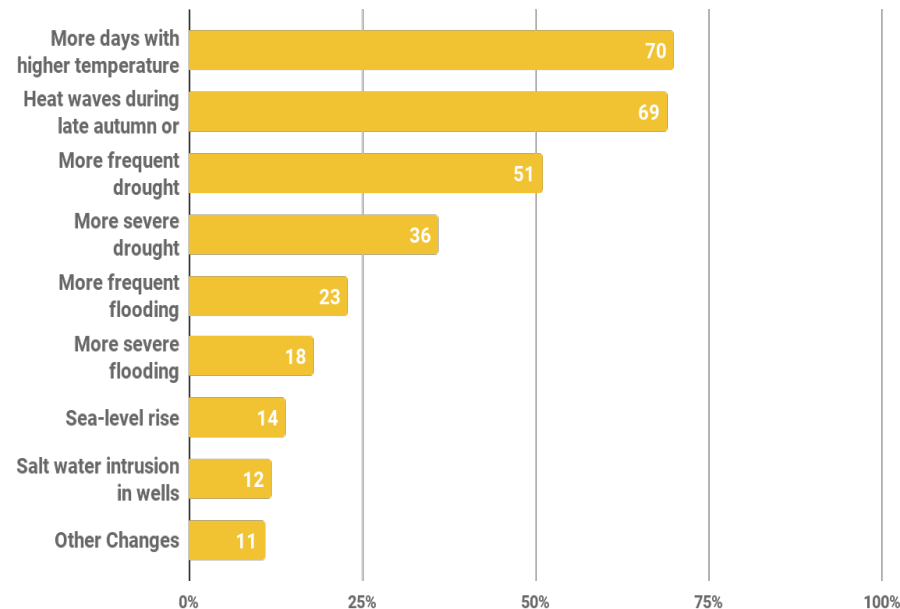
Community Surveys

Two surveys to understand local effects of climate change and local interests to help combat it:

- 2017 Community Survey, 324 responses (online and paper)
- 2019 Farmer Survey, 5 farmers interviewed, 1 online

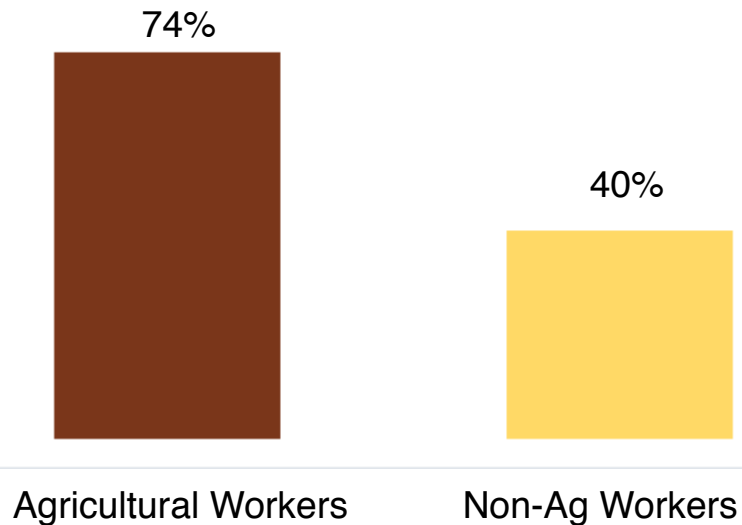
Experiences of Change

“I saw people working in the fields during the extreme heat ... and they were lying in the ditches. It must be so incredibly challenging to survive in the heat.”



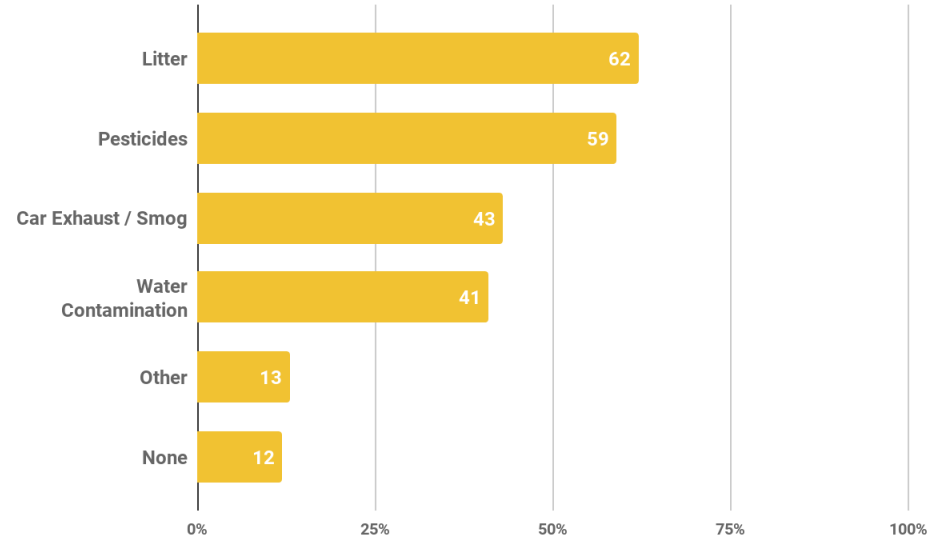
Experience of extreme heat by occupation

Three-quarters of agriculture workers, their families or neighbors in the Pájaro Valley suffer from extreme heat conditions at the workplace.



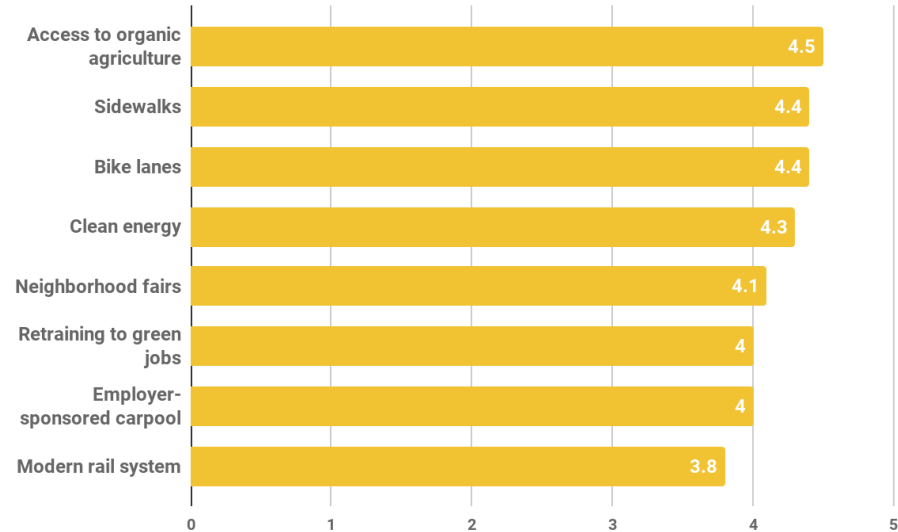
Concerns of pollutants

“I've stopped swimming in the water due to contamination. This was my primary source of joy and exercise. It's affected my mental health as I have found it difficult to replace the peace it gave me.”



Interests in Initiatives

“Every one of these initiatives should be accompanied by a facilitated activity that changes habits in people ... Access is not enough, it is about a culture change ...”



*Likert Scale responses, with 5 being highest

Farmer Survey

1 | Experiences of change

- More days with very high temperature
- Heatwaves
- Droughts
- Flooding
- Fog
- Increased wildfire smoke
- Saltwater intrusion
- Sea level rise
- Unpredictability

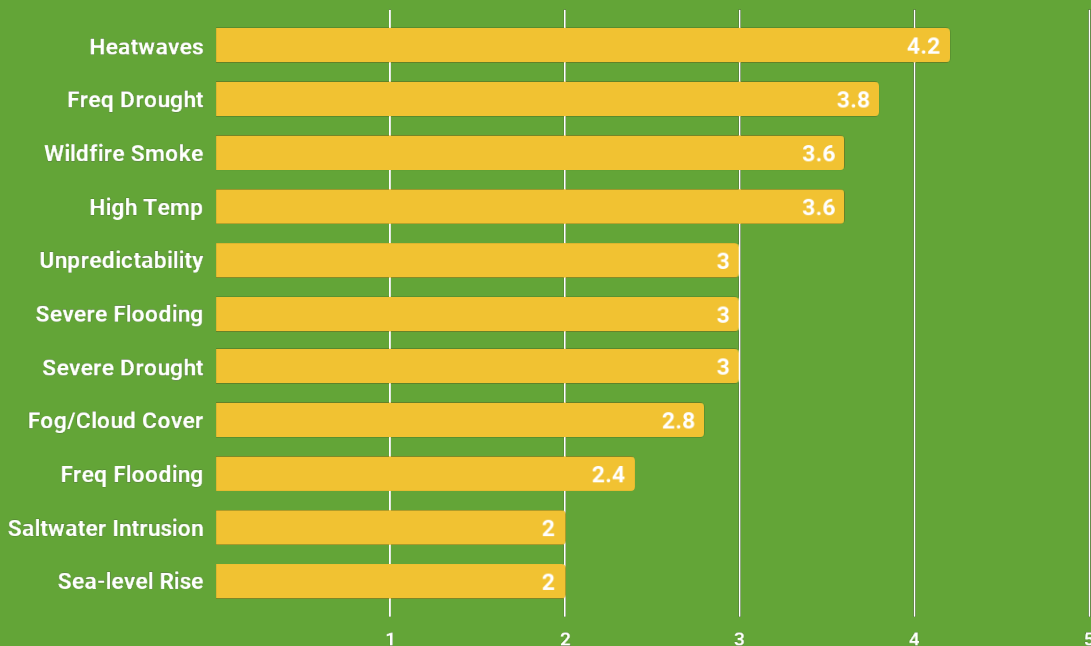
2 | Effects of change on production

- Damaged crops
- Changes in crops planted
- Worker health
- Work stoppages
- Changes in weeds and pests
- Viability and feasibility

3 | Interests in initiatives

- Rainwater capture
- Soil banking
- Adaptation and mitigation information
- Worker transportation
- Funding to support workers and farm owners
- Policies for local distribution

Experiences of Change



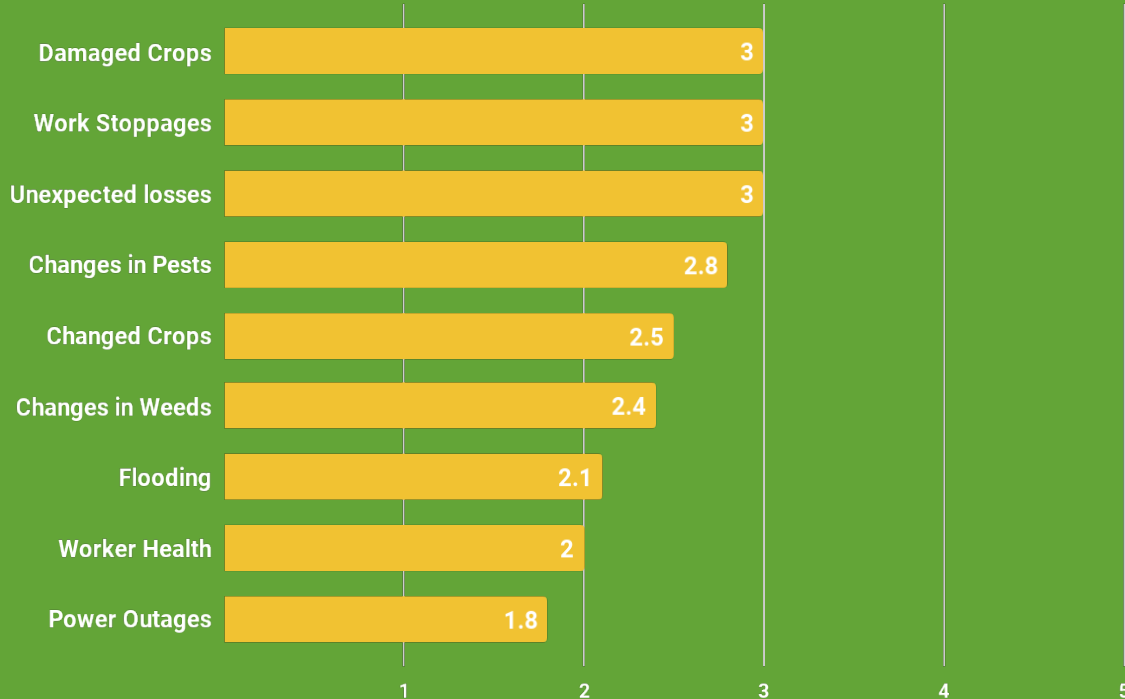
n=5, Likert Scale responses, with 5 being highest

“Only thing that’s been changing and hurting is when we get the heatwave...”

“Watsonville used to be a very moderate climate and that has definitely changed.”

“You lose part of crop because it burns and you lose a lot more because if it’s too hot you have to let the workers go...”

Effects on Farming Operations

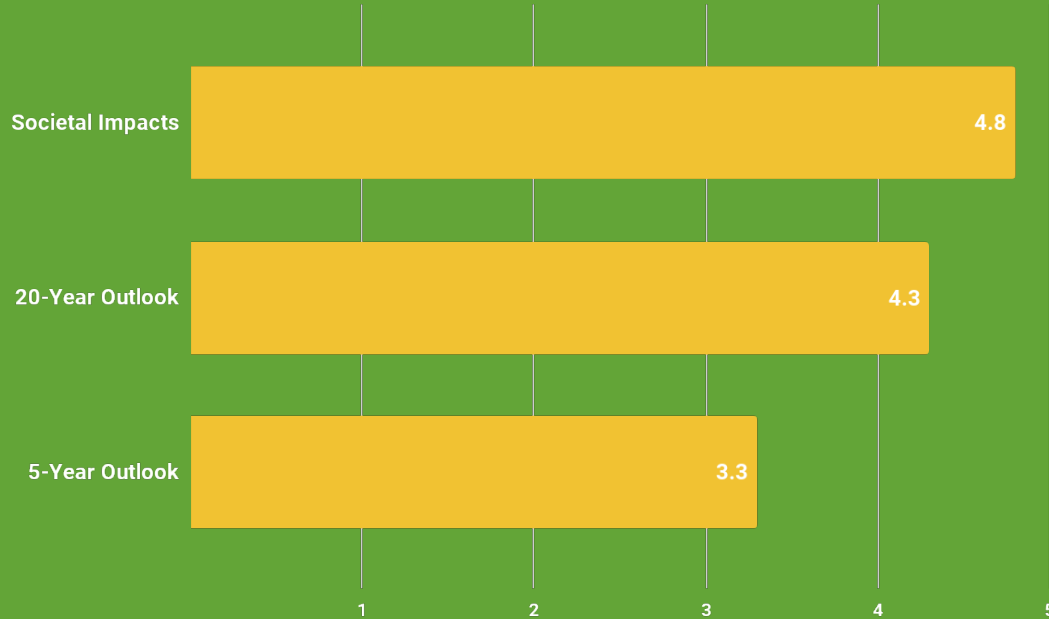


n=6, Likert Scale responses with 5 being highest

“Ending a crop earlier than expected - the heat or the rain can put a halt to it and ruin a crop for the remainder of the season.”

“Apples are blooming at odd times, different months. Some aren’t blooming at all.”

Beyond the Farm

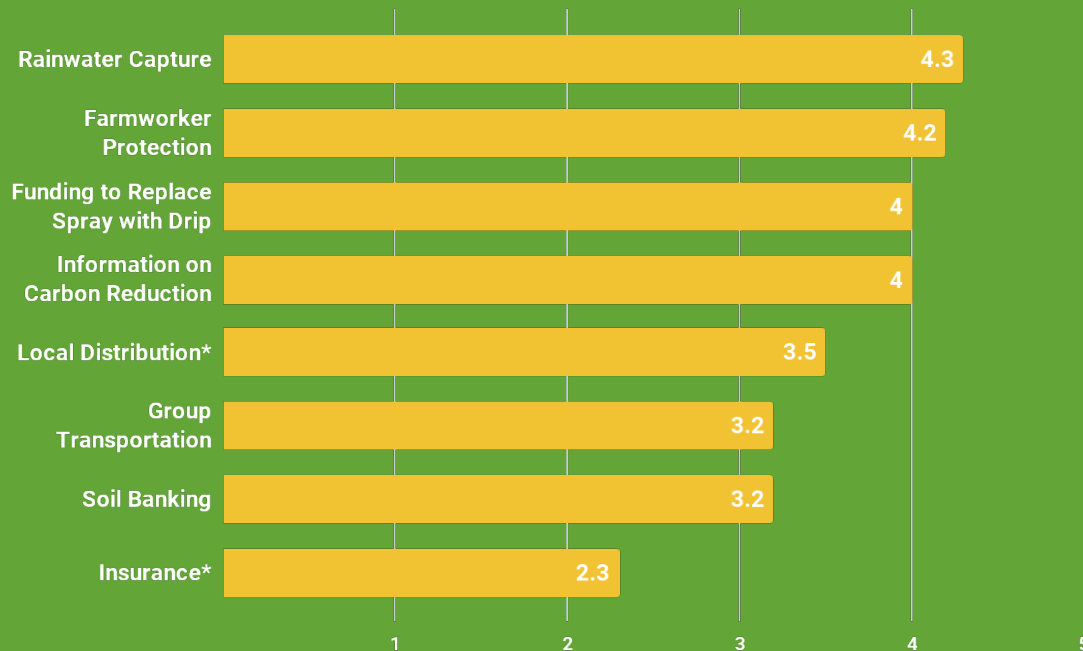


“Who knows what the world looks like in 20 years...”

“There needs to be more awareness about the little things each person can do to impact climate change...”

n=6, Likert Scale responses with 5 being highest

Interests in Initiatives



n=6, Likert Scale responses with 5 being highest

*“To jump into something new
we really need to see
somebody doing it at our
scale.”*

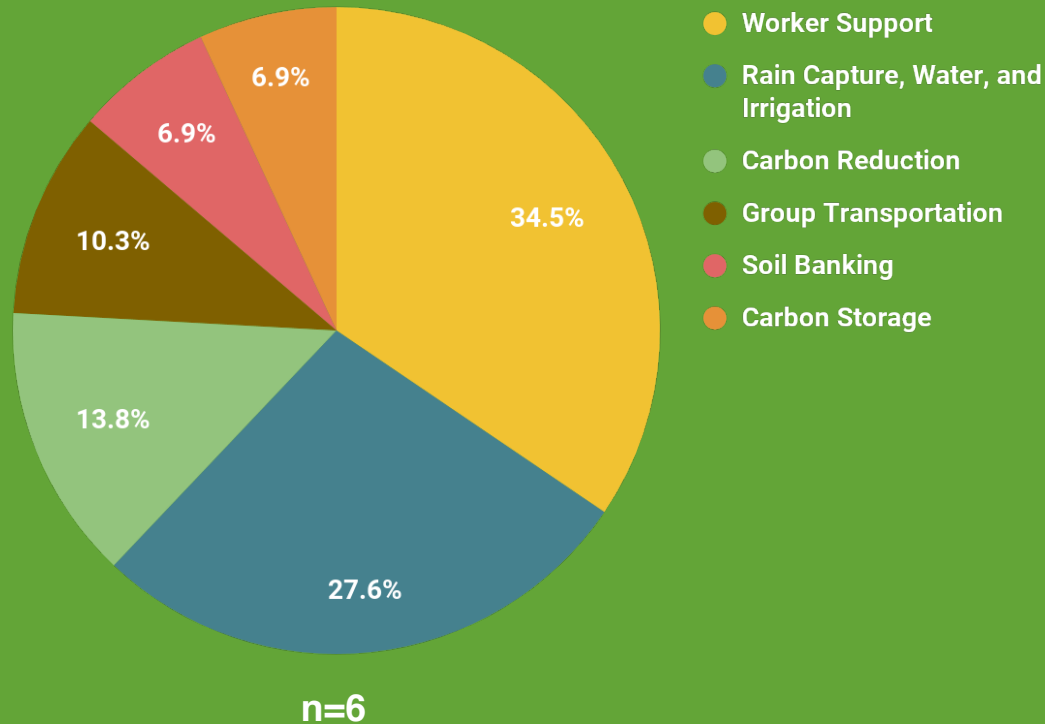
“We don’t want to lose a life!”

*“It’s just not humane to have
people working in these
conditions.”*

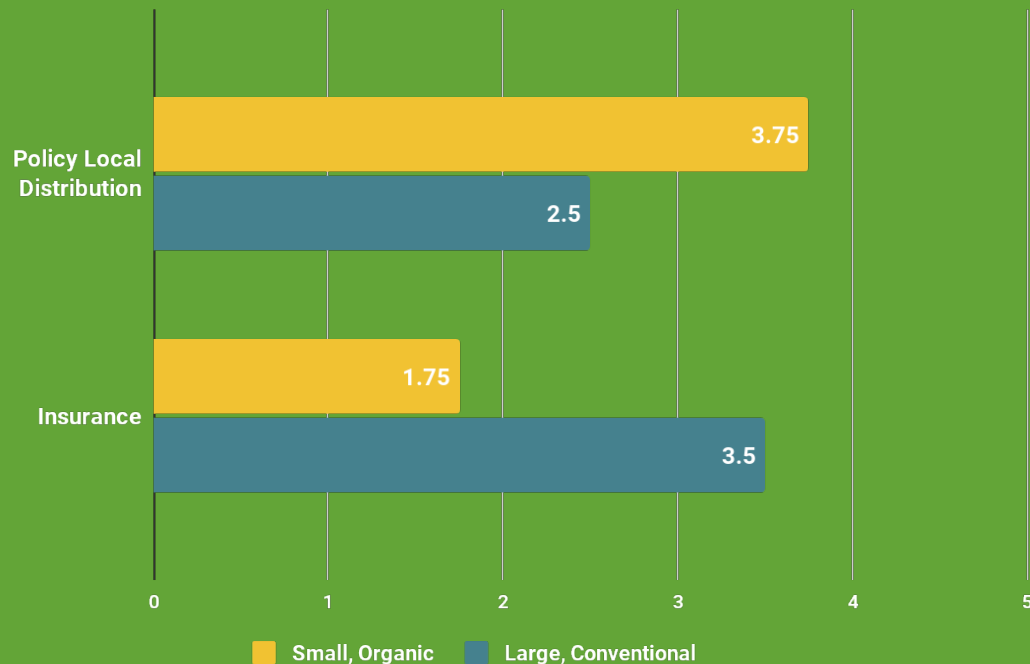
Top Farmer Initiatives: Qualitative Analysis

Top Initiative: **Worker Support**

- Farmworker Health
- Payment on days with poor air quality, high heat, or rain.



Insurance and Local Distribution



Highest disparity between farm types:

- Small, Organic farmers show interest in policies geared towards local distribution
- Large, Conventional farmer reported greater concern for insurance prices

n=6, Likert Scale responses with 5 being highest

Points of Overlap: Concerns

Community, Farmworkers, Farmers

-
- Heat: especially when it concerns the health of farmworkers
 - Water: drought, efficiency, and water contamination
 - Work stoppages: hurts both the employee and employer economically
 - Concern: about the future of the planet for future generations

Points of Overlap: Initiatives

Community, Farmworkers, Farmers

-
- Local food:
 - Community: access to local organic food
 - Farmers: local food distribution
 - Health: create measures that protect the health of workers
 - Work / worker stability: Being able to have better stability for work. Ties to health and well-being
 - Leadership for mitigating climate change

Future Research & Action

- Thresholds for heat stress & heat stroke in coastal climate
- Health impacts of climate change locally
- More farming perspectives, Pajaro Valley (& beyond)
- More models for climate adaptation in agricultural communities
- Potential solutions for the financial cost of work stoppages due to heat
- Possibilities for local food distribution
- Possibilities for increasing water capture & efficiency

People are aware and they want
action!

Thank you!

If you would like to receive the final paper
that describes this work, email
vderr@csumb.edu



[Photo via Facebook: Sal Lua](#)