

Managing Groundwater with Small Farms in Mind:

Risks, Barriers, and Opportunities of the Sustainable Groundwater Management Act

Based on three years of statewide outreach, surveys, and document review conducted with small-scale farmers across California's priority basins by UC ANR and CAFF.

This summary document contains key takeaways for Groundwater Sustainability Agencies from the report *Managing Groundwater with Small Farms in Mind*. There are also summaries written for State Agencies and California communities. Review [the full report linked here](#). Contact sgma@caff.org and sgma@ucanr.edu to get in touch with us about this report and ongoing groundwater work.



[Read the full report here](#)

What GSAs Can Do

50

Actionable Recommendations across 3 domains of GSA decision-making

“

Sustainable groundwater management should not come at the expense of the very communities it is meant to serve.”

— Farmer in the San Joaquin Valley



Red Gate Ranch, Tehama County

Summary:

Since 2014, California has taken important steps to protect its groundwater for the future, and these changes are reshaping agriculture across the state. Small farms in some regions use only a small share of groundwater, but they must navigate the same rules as larger users. It is critical to evaluate the role of small farms because these businesses support rural economies, provide local produce to California communities, produce culturally important food crops, and tend to care for land with a long-term perspective. This report highlights a growing concern that small farms face disproportionate challenges in understanding and adapting to new groundwater regulations. In an already difficult farming environment, these challenges could unintentionally put many small farms at risk of going out of business. This report outlines opportunities to address this risk by recognizing the vulnerability of small farms and providing targeted support. By taking action, California can protect its groundwater while sustaining the communities that depend on it.

GSA's Distinct Role

GSAs are where SGMA becomes real for farmers. Their outreach, governance structures, fee designs, monitoring tools, and management actions directly determine whether small farms will survive groundwater reform. The greatest opportunity for equitable SGMA implementation lies with GSAs. GSAs can identify who is most vulnerable, make accommodations to prevent disproportionate harm, and bring small farms into the process as valuable partners.

How to Acknowledge and Identify Who is Most Vulnerable

The report proposes a framework that GSAs can use to develop targeted accommodations, such as tiered fees, for vulnerable farmers and use three characteristics to identify small-scale farmers locally.

Minimal Groundwater Impact	Substantial Community Value	High Financial Vulnerability
• Small farmed acreage • Low-water-use crops in conjunction with conservation practices • Low groundwater pumping volume	• Local engagement • Supporting local food systems • Contributing to food security	• Depend on shallow groundwater • Lack of adaptive capacity • Disadvantaged farmers



Jelly's Ferry Ranch, Solano County



Lazaro Organic Farm, Monterey County

Why Small Farms Matter To California

Small farms provide important benefits to California communities. They often provide fresh, local produce and build connections between rural and urban areas. These farms also contribute to environmental stewardship, often managing soil, water, and ecological resources with a long-term perspective and supporting landscape diversity. Small farms generate economic benefits in rural communities through local purchasing and employment, while providing pathways for individuals to transition from farmwork into farm ownership. They support food security by strengthening local production and supply chains, and contribute to food sovereignty by producing culturally significant foods that allow communities (often including immigrant communities) to maintain traditional diets. As groundwater restrictions add to existing economic pressures, the small farms that provide these social, economic, and environmental benefits across California warrant targeted accommodations.



Thao's Fruit Stand, Merced County

Ideas for Targeted Actions Across GSA Decision Making

General Operations	Management Actions	Groundwater Use Regulation
• Outreach & community engagement (Topic 1) • Accessibility & language access • Board composition & governance • Financing mechanisms (Topic 2)	• Groundwater markets (Topic 3) • On-farm recharge programs (Topic 4) • Alternatives to bare ground fallowing (Topic 5)	• ET & flow meter monitoring • Monitoring networks (Topic 6) • Allocations • Fee structures (Topic 7) • Adjudications

Key Risks & Targeted Actions

Our report identifies 50 targeted actions that support equitable SGMA implementation. Some of the highest priority suggestions are presented here, read the full report for details on the full 50 actions.

Topic	Key Risk for Small Farms	Targeted Action for GSA
1. Outreach (General Operations)	Across outreach conducted in priority basins, more than half of small-scale farmers had not heard of SGMA before they met a SGMA Outreach Specialist. Tenant farmers are typically invisible – notices go only to landowners.	Conduct targeted outreach through trusted local organizations. Establish small farm liaisons. Attempt to reach lessees, not only landowners. Ensure inclusive information sharing (multilingual and multimodal).
2. Financing (General Operations)	Legal complexity and uncertainty for GSAs regarding financing options and limited outreach during budget development discourage equitable fee structures.	Integrate targeted outreach into all financing efforts and ensure that low volume pumpers are not unfairly burdened.

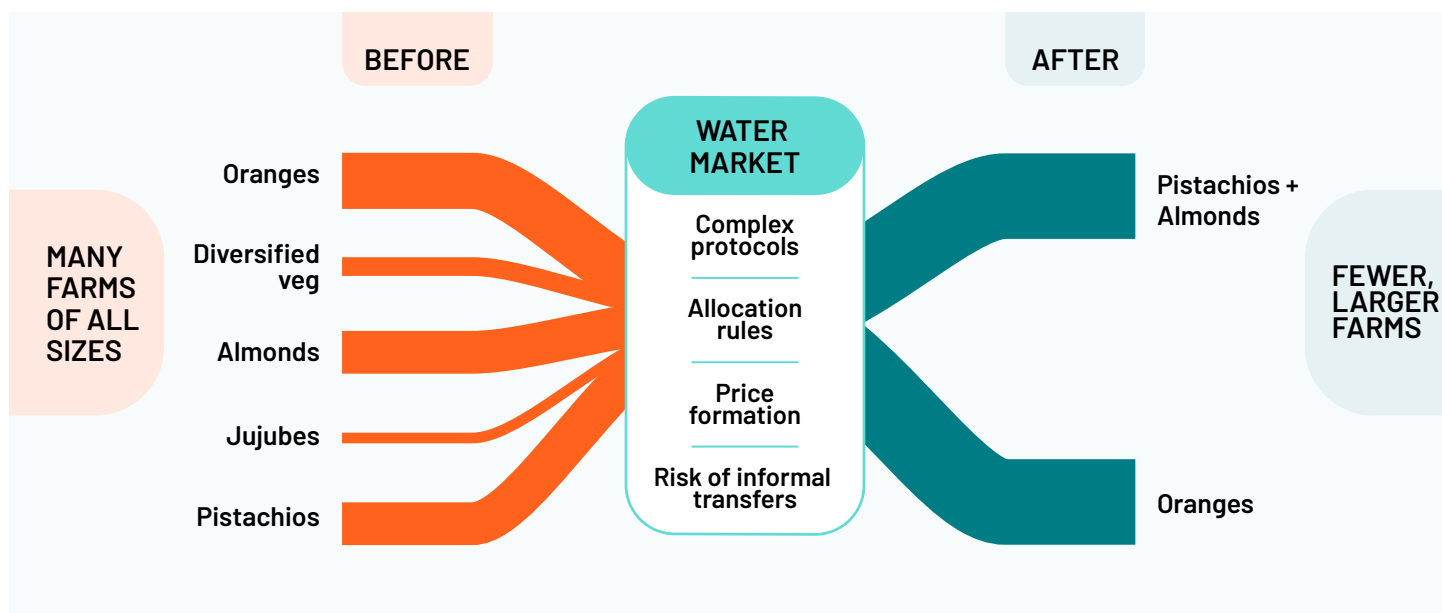


Evenson Family Farms, San Luis Obispo County

Key Risks & Targeted Actions (Continued)

Topic	Key Risk for Small Farms	Targeted Action for GSA
3. Groundwater Markets (Management Actions)	The high administrative burden of accurately tracking and accounting for equitable trades opens opportunities for abuse of groundwater markets, worsening inequities in water access and threatening sustainability goals.	Pursue alternatives to markets first. If markets are established, apply a “Do No Harm” principle to protect small farms, drinking water, and vulnerable ecosystems. If markets are pursued, ensure there are robust accounting structures in place to adequately track trades and impact of markets.
4. Recharge Programs (Management Actions)	Small farms often lack surface water access or infrastructure to participate in recharge – pumping credits and other benefits flow primarily to larger, better-resourced operations.	Prioritize recharge sites near small farms and groundwater dependent communities. Avoid 1:1 pumping credits for single-user recharge. Offer incentives and technical assistance for retention ponds.
5. Fallowing (Management Actions)	Fallowing any land on a small farm can eliminate their entire livelihood. Bare ground fallowing creates dust and harms public health.	Incentivize cover cropping, irrigation efficiency, and crop transitions as alternatives to bare ground fallowing.
6. Monitoring (Groundwater Use Regulation)	Satellite ET models are not well calibrated for diversified small farms – creating risk of systematic overcharges for mixed cropping systems.	Allow meter-based appeals through a streamlined process. Publish modeling assumptions and local calibration summaries transparently. Strengthen monitoring network equity and coverage.
7. Fee Structures (Groundwater Use Regulation)	Flat fees are inherently regressive – the same per-acre fee represents a far greater share of revenue for a 10-acre operation than a 1,000-acre one.	Implement fair, protective water use rates such as tiered or progressive fee structures. Establish a ‘small farm de minimis’ category with reduced or waived fees for negligible pumpers.





Conceptual diagram of how water market design can reshape water access, resulting in consolidation from a variety of farms growing a range of crops (left) toward fewer, larger farms specializing in high-value, water-intensive crops (e.g., pistachios and almonds). Line thickness represents relative groundwater pumping intensity.

Examples of Inclusive Outreach & Management Actions

SONOMA GSAS

Inclusive Outreach

Contracted with CAFF to hire a small farm Outreach Specialist embedded in the farming community – expanding meaningful participation across monitoring programs, water use efficiency programs, and data exchange systems.

EAST TURLOCK SUBBASIN GSA

Cover Crop Accounting

Developed an innovative groundwater accounting approach that credits cover crop adoption by recognizing increased infiltration – directly incentivizing sustainable practice adoption.

NORTH KINGS GSA

Accessible Engagement

Coordinated with UC ANR Fresno Small Farms bilingual team to provide targeted SGMA outreach and education to South East Asian small-scale farmers – creating space for inclusive small farm engagement.

PAJARO VALLEY WATER MANAGEMENT AGENCY

Recharge Incentive

ReNeM program offers landowner rebates based on infiltration volume – making on-farm recharge economically viable for smaller operations that would otherwise lack resources to participate.



Vision for the Future: Small Farms as Part of the SGMA Solution



Groundwater basins are sustainable and small farms are thriving with access to reliable water supplies; local food remains accessible, and rural drinking water is protected.



GSAs are funded through tiered fee structures ensuring that the costs of groundwater management do not fall disproportionately on those who pump the least.



Large-scale acreage currently in water-intensive crops slated for fallowing is transitioned to lower water use, diversified crops preserving working lands and economic opportunity rather than leaving land bare, and opening doors for small-scale farmers to expand access to affordable farmland.



Retention ponds across dozens of small farms allow conjunctive use of pond water with groundwater to irrigate and passively recharge the aquifer during the winter - turning small farms into active partners in basin sustainability.



Farmer liaison staff work collaboratively with local small farms ensuring they understand demand management actions and are able to actively adapt to and participate in SGMA implementation.

Conclusion

GSAs are where SGMA is translated from policy into practice. By intentionally identifying vulnerable small-scale farmers and embedding equity into outreach, governance, fees, and management actions, GSAs can prevent disproportionate harm while strengthening local buy-in and long-term compliance. Done well, this is not a tradeoff. Supporting small farms can improve the durability, legitimacy, and effectiveness of groundwater management itself. **The future success of SGMA will be measured not only by hydrologic indicators, but by whether California's agricultural communities remain viable, diverse, and resilient.**



Turkey Tail Farm, Butte County

You can learn more about our programs at ucanr.edu/program/uc-small-farms-network and caff.org.