

CLIMATE-SMART AGRICULTURE



The What

Climate-smart agriculture (CSA) is a holistic approach to farming, ranching, and forestry that focuses on improving soil health and biodiversity through regenerative practices that include but are not limited to:



ROTATIONAL GRAZING

A system that divides large pastures into smaller portions to prevent soil from becoming overly impacted and reducing fertilizer needs over time.



FEED ADDITIVES

Supplements that can inhibit methane-producing microorganisms in ruminants and reduce methane emissions at the source.



ANAEROBIC DIGESTION

A process that involves the decomposition of livestock ruminants which is then converted into biogas through a sealed vessel called a reactor.

The Why

BENEFITS

- Improves soil absorption and filtration
- Increases carbon storage capacity
- Supports resilience to soil erosion
- Minimizes soil disturbance
- Reduces fuel and labor costs
- Increases organic nutrients in soil
- Promotes animal health
- Stifles weed growth
- Controls pests and diseases
- Increases biodiversity
- Reduces fertilizer needs over time
- Provides a carbon-based fuel alternative

CHALLENGES

- Initial upfront cost
- Logistics and implementation
- Regional differences
- Results aren't always immediate
- Information and communication gap



“Agriculture is a massive user of the total landmass. If agriculture were incentivized to be part of a solution to increase biodiversity and carbon capture while reducing greenhouse gases...If we were to treat them as partners in our fight against these global changes as opposed to accusing them of doing everything wrong, I think that they could be a massive ally in so many issues.”

DR. FRANK MITLOEHNER, PROFESSOR AND AIR QUALITY SPECIALIST AT UC DAVIS ANIMAL SCIENCE



1. Know Your Goals

- Identify where your operation is today (livestock health, input costs, etc.).
- Create SMART goals (specific, measurable, achievable, realistic, and timely) for your ranch.
- Establish which [types of regenerative practices](#) suit your operational goals best.
- Consider what equipment is needed and what you already have.

2. Create a Solid Support System

- Reach out to ranchers implementing desired practices in person or online.
- Get involved in [regenerative agriculture organizations](#).
- Contact your local university extension office to explore resources available.
- Connect with local agronomist or soil consultation firm to establish a transitional game plan.
- Explore the [USDA NRCS website](#) for conservation programs and grants available.
- Apply for cost-share programs to support transitional expenses.
- Secure additional financing (if needed).

3. Be Adaptable

- Evaluate current chemical use.
- Identify the root problem that synthetic inputs address.
- Explore [alternative solutions](#).

4. Measure Results

- Establish key performance indicators (KPIs) and metrics.
- Record starting point data (production rates, soil health, input costs, etc.).
- Identify metrics timeline (yearly, semiannually, etc.).
- Vet [software to measure success](#).

5. Train and Scale

- Implement training sessions with all ranch hands involved.
- Conduct periodic check-ins to ensure practices are being followed.
- Share [conservation wins and learning lessons](#) with your ranching community.